

**APPENDIX 'A'**  
**GEOTECHNICAL INVESTIGATION REPORT**



Dillon Consulting Ltd.

**Kilcona and Harbourview Roadways, Winnipeg,  
Manitoba  
Geotechnical Investigation Report**

**Prepared for:**

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R3T 6G2

**Project Number:** 0022 235 02

**Date:** April 1, 2026



April 1, 2026

Our File No. 0022 235 02

David Wiebe, P.Eng.  
Dillon Consulting Ltd.  
300 – 100 Innovation Drive  
Winnipeg, MB  
R3T 6G2

**RE:        Kilcona and Harbourview Roadways, Winnipeg, Manitoba Geotechnical  
             Investigation Report**

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TREK Engineering Inc. is pleased to submit our final geotechnical investigation data report for the above-noted project.

Please contact the undersigned should you have any questions.

Sincerely,

**TREK Engineering Inc.**  
**Per:**

Nelson John Ferreira, Ph.D., P.Eng., FEC  
Senior Geotechnical Engineer

Encl.

## Revision History

| Revision No. | Author | Issue Date     | Description  |
|--------------|--------|----------------|--------------|
| 0            | NM     | March 27, 2026 | Draft Report |
| 1            | NM     | April 1, 2026  | Final Report |

## Authorization Signatures

### Prepared By:



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### Reviewed By:

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Senior Geotechnical Engineer

 **ENGINEERS  
GEOSCIENTISTS  
MANITOBA**  
Certificate of Authorization  
**TREK Engineering Inc.**  
No. 8557



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## 1.0 Introduction

This report summarizes the results of the geotechnical exploration completed by TREK Engineering Inc. (TREK) for the proposed reconstruction of Harbourview Roadway and new roadway at Kilcona Park in Winnipeg, Manitoba. The terms of reference for the investigation are included in our proposal to Dillon Consulting Ltd. dated October 29, 2025. The investigation was carried out following the City of Winnipeg Site Investigation Requirements for Public Works Street Projects. The scope of work includes a sub-surface investigation, laboratory testing, test hole logs, and this report. A separate report was issued for the Kilcona roadway slope stability analysis.

## 2.0 Roadway Investigation Program

The sub-surface investigation included drilling sixteen shallow test holes to 3.1 m below ground surface along the two roadways and three test holes to 15.2, 15.7 and 15.3 m below ground surface the Kilcona Roadway in order to perform slope stability analysis. The test hole locations are shown on Figures 01 and 02 attached to this report. Table 1 below summarizes the investigation program for each roadway.

**Table 1- Roadway Investigation Program**

| City of Winnipeg Industrial Streets | # of Locations | Investigation                                                   |
|-------------------------------------|----------------|-----------------------------------------------------------------|
| Harbourview Roadway                 | 4              | 4 Test Holes to 3.1 m                                           |
| Kilcona Roadway                     | 15             | 12 Test Holes to 3.1 m<br>3 Test Holes to 15.2, 15.7 and 15.3 m |

The sub-surface investigation was completed from December 11 to 17, 2025, under the supervision of Paul Hiller and Tyson Roeland of TREK to determine the soil stratigraphy and groundwater conditions at two roadways. The test holes were drilled by Paddock Drilling Ltd. with a track-mounted Acker SS3 geotechnical drill rig equipped with 125 mm solid stem augers and were backfilled with auger cuttings and topped with asphalt mix at surface where asphalt pavement was encountered. In pavement areas (asphalt) a bullet bit was used to drill through the asphalt and in this regard, intact core samples of the asphalt pavement were not obtained.

Other pertinent information, such as groundwater and drilling conditions, was also recorded during the drilling investigation. Disturbed (auger cuttings) samples and bulk samples retrieved during the sub-surface investigation were transported to TREK's material testing laboratory for further testing.

Test hole coordinates (UTM's) and elevations noted on the summary tables were recorded using an RTK GPS. A measured distance from the edge of pavement, or other permanent features was also recorded whenever possible.

Laboratory testing consisted of moisture content determination on all samples, as well as Atterberg Limits, and grain size analysis (mechanical sieve and hydrometer methods) on select samples between 0.6 and 0.9 m below pavement as well as Standard Proctor and California Bearing Ratio (CBR) testing.

Bulk unit weight measurements and unconfined compression tests were also completed on Shelby tubes. Information gathered for each roadway package is included in separate appendices (Appendices A and B).

The information provided in the Appendices includes test hole logs and laboratory testing summary tables and results.

Two CBR's were completed on bulk samples of the soil units present below the pavement. Tests were performed on clay layers encountered within the prescribed sample depth for CBR testing and the results are shown in the table below.

**Table 2- CBR Testing Summary**

| Soil Unit | Street                                | Depth (m)              | SPMDD (kg/m <sup>3</sup> ) | Opt. Moisture (%) | Percent Proctor (%) | Moisture Content (%) | CBR Value at 2.54 mm | CBR Value at 5.08 mm |
|-----------|---------------------------------------|------------------------|----------------------------|-------------------|---------------------|----------------------|----------------------|----------------------|
| Clay      | Kilcona Roadway<br>TH25-03            | 0- 1.5                 | 1418                       | 29.3              | 94.4                | 29.4                 | 2.3%                 | 1.7%                 |
| Clay      | Kilcona Roadway:<br>TH25-10 & TH25-11 | 0.3 – 1.5<br>0.8 – 1.5 | 1505                       | 24.6              | 94.7                | 24.7                 | 2.0%                 | 1.7%                 |

The test hole logs include a description of the soil units encountered during drilling and other pertinent information such as groundwater conditions and a summary of the laboratory testing results. The soils were classified in general accordance with the Unified Soil Classification System (USCS) and the AASHTO soil classification system (American Association of state highway and transportation officials). The AASHTO system classifies soils based on laboratory testing results from Atterberg Limits and grain size testing methods (hydrometer and mechanical sieve method). Where laboratory testing was not conducted, the AASHTO classification of the soils were interpreted based on a visual assessment as indicated with a (I) on the test hole logs and attached tables. For cohesive soils, the AASHTO system uses a combination of testing results to determine the Group Index of the soils and thus, were only determined where sufficient laboratory test data was available.

### **3.0 Closure**

The geotechnical information provided in this report is in accordance with current engineering principles and practices (Standard of Practice). The findings of this report were based on information provided (field investigation and laboratory testing). Soil conditions are natural deposits that can be highly variable across a site. If subsurface conditions are different than the conditions previously encountered on-site or those presented here, we should be notified to adjust our findings if necessary.

All information provided in this report is subject to our standard terms and conditions for engineering services, a copy of which is provided to each of our clients with the original scope of work or standard engineering services agreement. If these conditions are not attached, and you are not already in possession of such terms and conditions, contact our office and you will be promptly provided with a copy.

This report has been prepared by TREK Engineering Inc. (the Consultant) for the exclusive use of Dillon Consulting Ltd. (the Client) and their agents for the work product presented in the report. Any findings or recommendations provided in this report are not to be used or relied upon by any third parties, except as agreed to in writing by the Client and Consultant prior to use.

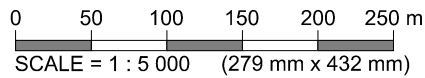
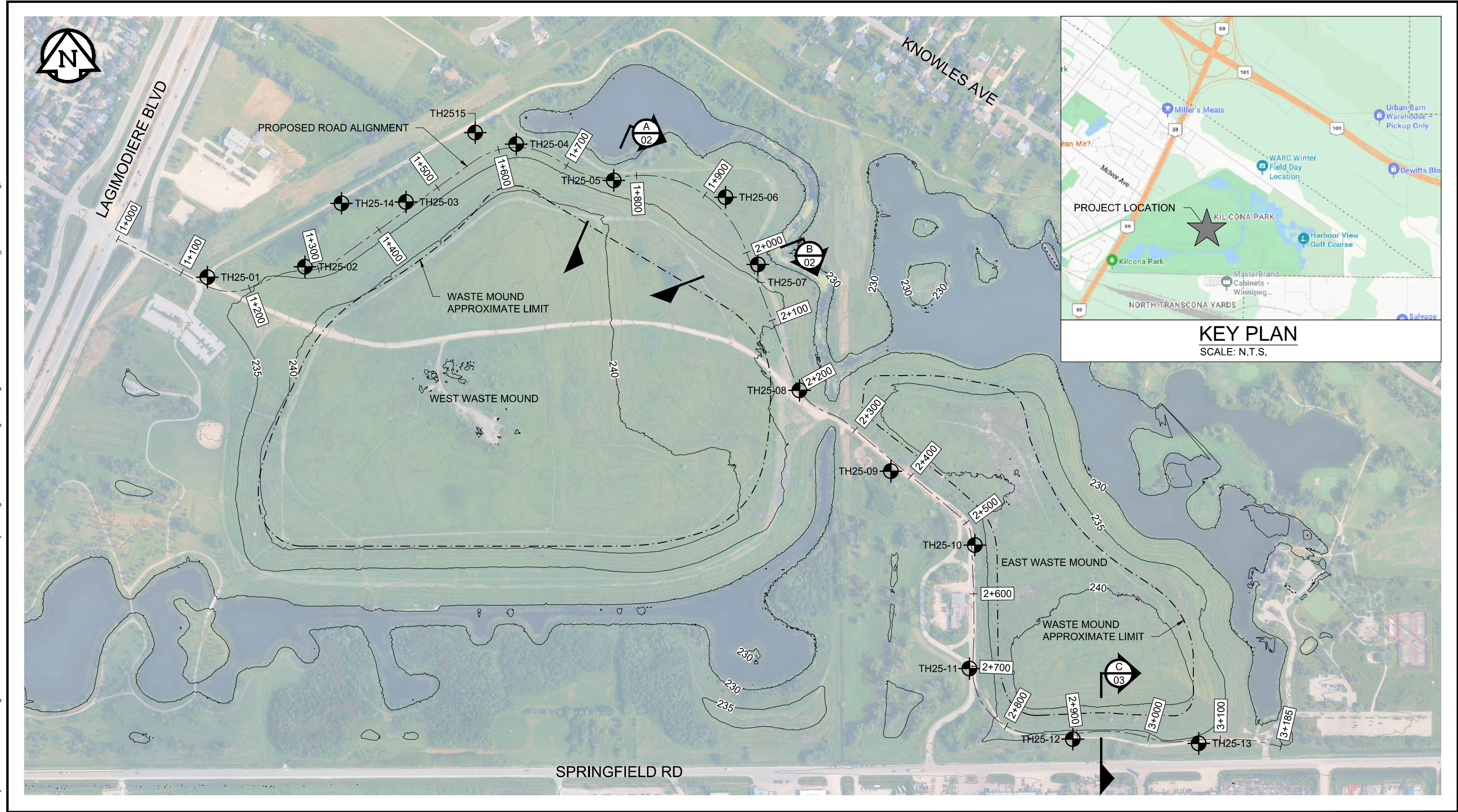
## Figures

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Z:\Projects\0022 Dillon Consulting Ltd\0022 235 00 Kilcona Park Phase 1\3 Survey and Dwg\3.4 CAD\3.4.3 Working Folder\Fig 01 2025-03-13 Kilcona Park Phase 1\_0\_A\_0022-235-00.dwg, 2026-03-27 3:26:14 PM



|         |  |                                         |
|---------|--|-----------------------------------------|
| LEGEND: |  | TEST HOLE (TREK, 2026)                  |
|         |  | EXISTING MAJOR CONTOUR (5.0 m INTERVAL) |
|         |  | EXISTING MINOR CONTOUR (1.0 m INTERVAL) |
|         |  | PROPOSED ROAD ALIGNMENT                 |

- NOTES:
1.

AERIAL IMAGERY FROM GOOGLE EARTH (2024).
2.

TEST HOLE LOCATIONS WERE RECORDED USING A RTK GPS UNIT.
3.

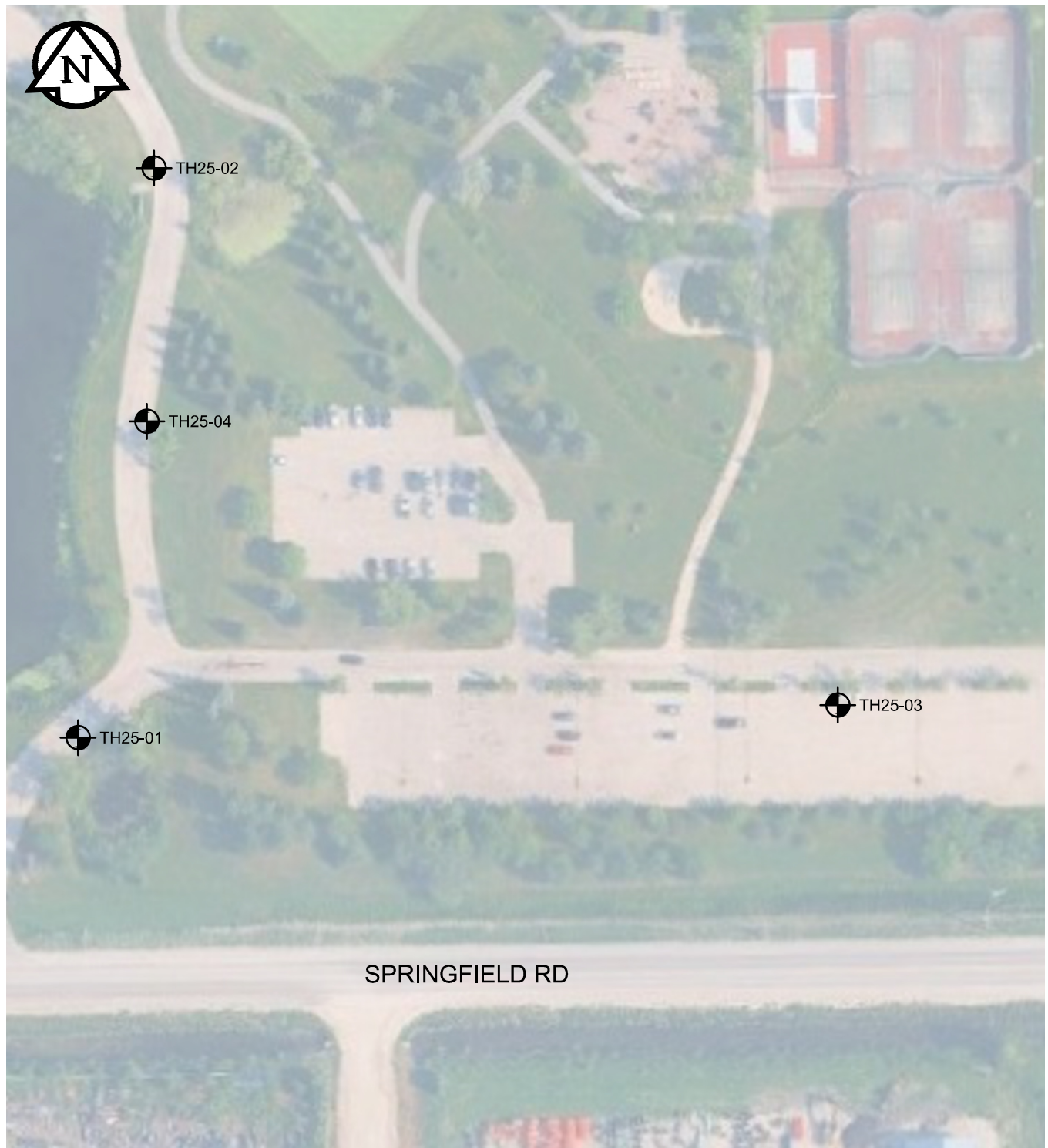
TOPOGRAPHIC INFORMATION BASED ON SURVEY DATA PROVIDED BY DILLON CONSULTING LTD. (OCTOBER 22, 2025).

Figure 01

Test Hole Location Plan



Z:\Projects\0022 Dillon Consulting Ltd\0022 235 00 Kilcona Park Phase 1\3 Survey and Dwg\3.4 CAD\3.4.3 Working Folder\Fig 02 2026-03-23 Kilcona Park Phase 1 HR 0\_A 0022-235-00.dwg, 2026-03-24 7:44:21 AM



**LEGEND:**

 TEST HOLE (TREK, 2025)

**NOTES:**

1. AERIAL IMAGERY FROM GOOGLE EARTH (2024).
2. TEST HOLE LOCATIONS WERE RECORDED USING A HANDHELD GPS UNIT.

0 10 20 30 40 50 m  
SCALE = 1 : 1 250 (216 mm x 279 mm)

**Figure 02**  
Test Hole Location Plan (2025)

**Appendix A**  
**Test Hole Logs, Summary Tables and Lab Testing Results - Kilcona**  
**Roadway**

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### GENERAL NOTES

- Classifications are based on the Unified Soil Classification System and include consistency, moisture, and color. Field descriptions have been modified to reflect results of laboratory tests where deemed appropriate.
- Descriptions on these test hole logs apply only at the specific test hole locations and at the time the test holes were drilled. Variability of soil and groundwater conditions may exist between test hole locations.
- When the following classification terms are used in this report or test hole logs, the primary and secondary soil fractions may be visually estimated.

| Major Divisions                                                  |  |  | USCS Classification                                                                                               | Symbols | Typical Names | Laboratory Classification Criteria                                                                                 |                                                                                                                     | Particle Size                                                                               | ASTM Sieve sizes | #10 to #4<br>#40 to #10<br>#200 to #40<br>< #200 |                  |                  |
|------------------------------------------------------------------|--|--|-------------------------------------------------------------------------------------------------------------------|---------|---------------|--------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|------------------|--------------------------------------------------|------------------|------------------|
| (More than half the material is larger than No. 200 sieve size)  |  |  | Gravels<br>(More than half of coarse fraction is larger than 4.75 mm)<br><br>Clean gravel<br>(little or no fines) | GW      |               | Well-graded gravels, gravel-sand mixtures, little or no fines                                                      | $C_u = \frac{D_{60}}{D_{10}}$ greater than 4; $C_c = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ between 1 and 3       |                                                                                             |                  |                                                  |                  |                  |
|                                                                  |  |  |                                                                                                                   | GP      |               | Poorly-graded gravels, gravel-sand mixtures, little or no fines                                                    | Not meeting all gradation requirements for GW                                                                       |                                                                                             |                  |                                                  |                  |                  |
| (More than half the material is larger than No. 200 sieve size)  |  |  | Gravels with fines<br>(Appreciable amount of fines)                                                               | GM      |               | Silty gravels, gravel-sand-silt mixtures                                                                           | Atterberg limits below "A" line or P.I. less than 4                                                                 | Above "A" line with P.I. between 4 and 7 are borderline cases requiring use of dual symbols |                  |                                                  |                  |                  |
|                                                                  |  |  |                                                                                                                   | GC      |               | Clayey gravels, gravel-sand-silt mixtures                                                                          | Atterberg limits above "A" line or P.I. greater than 7                                                              |                                                                                             |                  |                                                  |                  |                  |
| (More than half of coarse fraction is smaller than 4.75 mm)      |  |  | Clean sands<br>(little or no fines)                                                                               | SW      |               | Well-graded sands, gravelly sands, little or no fines                                                              | $C_u = \frac{D_{60}}{D_{10}}$ greater than 6; $C_c = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ between 1 and 3       |                                                                                             |                  |                                                  |                  |                  |
|                                                                  |  |  |                                                                                                                   | SP      |               | Poorly-graded sands, gravelly sands, little or no fines                                                            | Not meeting all gradation requirements for SW                                                                       |                                                                                             |                  |                                                  |                  |                  |
| (More than half the material is smaller than No. 200 sieve size) |  |  | Sands with fines<br>(Appreciable amount of fines)                                                                 | SM      |               | Silty sands, sand-silt mixtures                                                                                    | Atterberg limits below "A" line or P.I. less than 4                                                                 | Above "A" line with P.I. between 4 and 7 are borderline cases requiring use of dual symbols |                  |                                                  |                  |                  |
|                                                                  |  |  |                                                                                                                   | SC      |               | Clayey sands, sand-clay mixtures                                                                                   | Atterberg limits above "A" line or P.I. greater than 7                                                              |                                                                                             |                  |                                                  |                  |                  |
| (More than half the material is smaller than No. 200 sieve size) |  |  | Silt and Clays<br>(Liquid limit less than 50)                                                                     | ML      |               | Inorganic silts and very fine sands, rock floor, silty or clayey fine sands or clayey silts with slight plasticity | <div><h3>Plasticity Chart</h3><p>Plasticity chart for solid fraction with particles smaller than 0.425 mm</p></div> |                                                                                             |                  |                                                  |                  |                  |
|                                                                  |  |  |                                                                                                                   | CL      |               | Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays                  |                                                                                                                     |                                                                                             |                  |                                                  |                  |                  |
| (More than half the material is smaller than No. 200 sieve size) |  |  | Silt and Clays<br>(Liquid limit greater than 50)                                                                  | OL      |               | Organic silts and organic silty clays of low plasticity                                                            |                                                                                                                     |                                                                                             |                  |                                                  |                  |                  |
|                                                                  |  |  |                                                                                                                   | MH      |               | Inorganic silts, micaceous or distomaceous fine sandy or silty soils, organic silts                                |                                                                                                                     |                                                                                             |                  |                                                  |                  |                  |
| (More than half the material is smaller than No. 200 sieve size) |  |  | Silt and Clays<br>(Liquid limit greater than 50)                                                                  | CH      |               | Inorganic clays of high plasticity, fat clays                                                                      |                                                                                                                     |                                                                                             |                  |                                                  |                  |                  |
|                                                                  |  |  |                                                                                                                   | OH      |               | Organic clays of medium to high plasticity, organic silts                                                          |                                                                                                                     |                                                                                             |                  |                                                  |                  |                  |
| (More than half the material is smaller than No. 200 sieve size) |  |  | Highly Organic Soils                                                                                              | Pt      |               | Peat and other highly organic soils                                                                                |                                                                                                                     |                                                                                             |                  |                                                  |                  |                  |
|                                                                  |  |  |                                                                                                                   |         |               |                                                                                                                    |                                                                                                                     |                                                                                             |                  |                                                  |                  |                  |
| Von Post Classification Limit                                    |  |  |                                                                                                                   |         |               |                                                                                                                    |                                                                                                                     | Strong colour or odour, and often fibrous texture                                           | Material         | Particle Size                                    | ASTM Sieve Sizes |                  |
|                                                                  |  |  |                                                                                                                   |         |               |                                                                                                                    |                                                                                                                     |                                                                                             | mm               | mm                                               | > 12 in.         |                  |
|                                                                  |  |  |                                                                                                                   |         |               |                                                                                                                    |                                                                                                                     |                                                                                             |                  | mm                                               | 75 to 300        | 3 in. to 12 in.  |
|                                                                  |  |  |                                                                                                                   |         |               |                                                                                                                    |                                                                                                                     |                                                                                             |                  | mm                                               | 19 to 75         | 3/4 in. to 3 in. |
|                                                                  |  |  |                                                                                                                   |         |               |                                                                                                                    |                                                                                                                     |                                                                                             | mm               | 4.75 to 19                                       | #4 to 3/4 in.    |                  |

\* Borderline classifications used for soils possessing characteristics of two groups are designated by combinations of groups symbols. For example; GW-GC, well-graded gravel-sand mixture with clay binder.

### Other Symbol Types

|  |          |  |                            |  |                      |
|--|----------|--|----------------------------|--|----------------------|
|  | Asphalt  |  | Bedrock (undifferentiated) |  | Cobbles              |
|  | Concrete |  | Limestone Bedrock          |  | Boulders and Cobbles |
|  | Fill     |  | Cemented Shale             |  | Silt Till            |
|  |          |  | Non-Cemented Shale         |  | Clay Till            |

**LEGEND OF ABBREVIATIONS AND SYMBOLS**

|                                 |                                                             |
|---------------------------------|-------------------------------------------------------------|
| LL - Liquid Limit (%)           | VW - Vibrating Wire Piezometer                              |
| PL - Plastic Limit (%)          | SI - Slope Inclinator                                       |
| PI - Plasticity Index (%)       | ▽ Water Level at Time of Drilling                           |
| MC - Moisture Content (%)       | ▼ Water Level at End of Drilling                            |
| SPT - Standard Penetration Test | ▼ Water Level After Drilling as Indicated on Test Hole Logs |
| RQD- Rock Quality Designation   |                                                             |
| Qu - Unconfined Compression     |                                                             |
| Su - Undrained Shear Strength   |                                                             |

**FRACTION OF SECONDARY SOIL CONSTITUENTS ARE BASED ON THE FOLLOWING TERMINOLOGY**

| TERM        | EXAMPLES             | PERCENTAGE       |
|-------------|----------------------|------------------|
| and         | and CLAY             | 35 to 50 percent |
| "y" or "ey" | clayey, silty        | 20 to 35 percent |
| some        | some silt            | 10 to 20 percent |
| trace       | trace gravel         | 1 to 10 percent  |
| with *      | with silt, with sand | > 35 percent     |

\* Used when the material is classified based on behaviour as a cohesive material

**TERMS DESCRIBING CONSISTENCY OR COMPACTION CONDITION**

The Standard Penetration Test blow count (N) of a non-cohesive soil can be related to compactness condition as follows:

| <u>Descriptive Terms</u> | <u>SPT (N) (Blows/300 mm)</u> |
|--------------------------|-------------------------------|
| Very loose               | < 4                           |
| Loose                    | 4 to 10                       |
| Compact                  | 10 to 30                      |
| Dense                    | 30 to 50                      |
| Very dense               | > 50                          |

The Standard Penetration Test blow count (N) of a cohesive soil can be related to its consistency as follows:

| <u>Descriptive Terms</u> | <u>SPT (N) (Blows/300 mm)</u> |
|--------------------------|-------------------------------|
| Very soft                | < 2                           |
| Soft                     | 2 to 4                        |
| Firm                     | 4 to 8                        |
| Stiff                    | 8 to 15                       |
| Very stiff               | 15 to 30                      |
| Hard                     | > 30                          |

The undrained shear strength (Su) of a cohesive soil can be related to its consistency as follows:

| <u>Descriptive Terms</u> | <u>Undrained Shear Strength (kPa)</u> |
|--------------------------|---------------------------------------|
| Very soft                | < 12                                  |
| Soft                     | 12 to 25                              |
| Firm                     | 25 to 50                              |
| Stiff                    | 50 to 100                             |
| Very stiff               | 100 to 200                            |
| Hard                     | > 200                                 |

**Client:** Dillon Consulting Ltd. **Project Number:** 0022-235-01  
**Project Name:** Kilcona Park **Location:** UTM: 14U, 5533469.514 m N, 640872.713 m E  
**Contractor:** Paddock Drilling Ltd. **Ground Elevation:** 232.04 m (geodetic)  
**Method:** 125 mm Solid Stem Auger, Acker SS3 Track Mount **Date Drilled:** 10 December 2025

**Sample Type:** ☒ Grab (G) ☒ Shelby Tube (T) ☒ Split Spoon (SS) / SPT ☒ Split Barrel (SB) / LPT ☒ Core (C)

**Particle Size Legend:** ☒ Fines ☒ Clay ☒ Silt ☒ Sand ☒ Gravel ☒ Cobbles ☒ Boulders

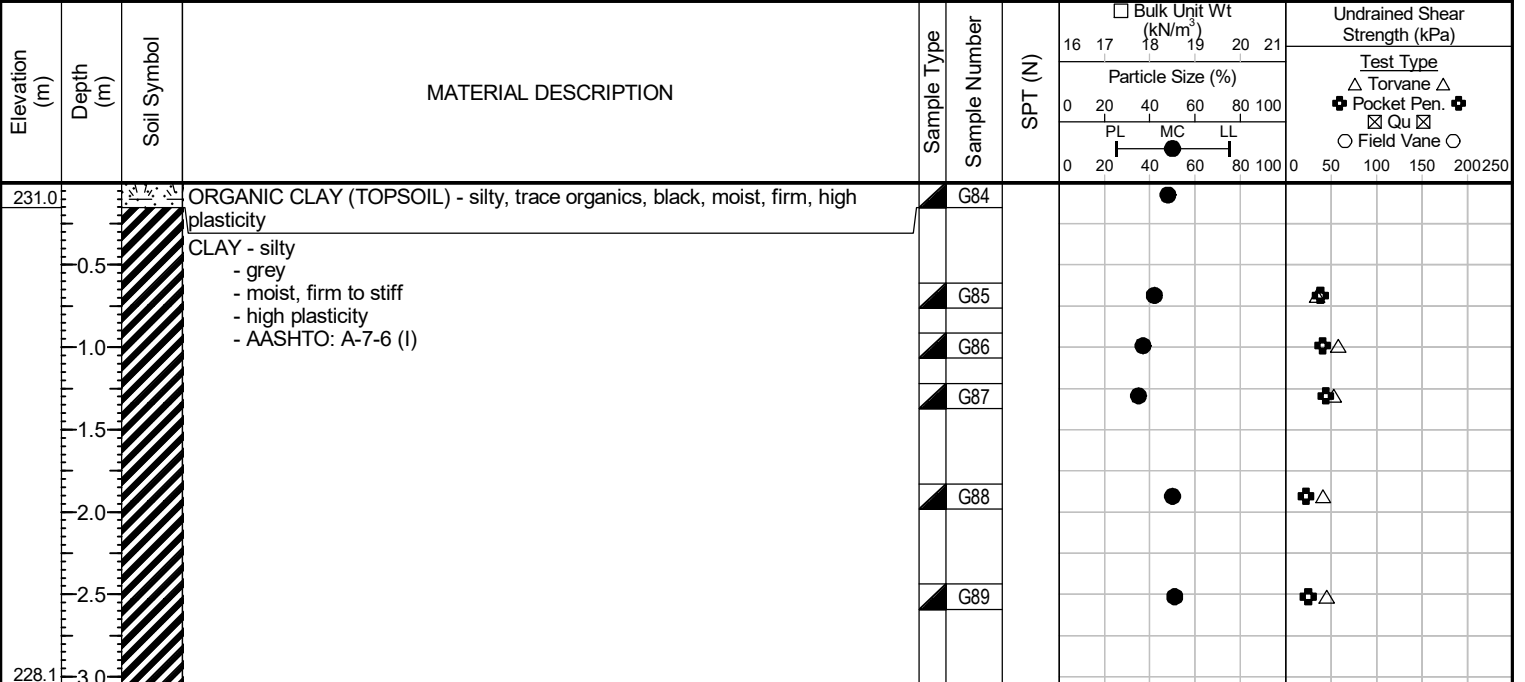
| Elevation (m) | Depth (m) | Soil Symbol                                                                         | MATERIAL DESCRIPTION                                                                                                                      | Sample Type                                                                          | Sample Number | SPT (N) | Bulk Unit Wt (kN/m <sup>3</sup> )<br>Particle Size (%)<br>Undrained Shear Strength (kPa)        |
|---------------|-----------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------|---------|-------------------------------------------------------------------------------------------------|
| 230.8         | 0.5       |    | CLAY (FILL) - silty, trace organics, trace gravel<br>- black<br>- moist, stiff to very stiff<br>- high plasticity<br>- AASHTO: A-7-6 (51) |    | G77           |         | 16 17 18 19 20 21<br>0 20 40 60 80 100<br>PL MC LL<br>0 20 40 60 80 100<br>0 50 100 150 200 250 |
| 230.4         | 1.5       |   | CLAY - silty<br>- light brown, moist, stiff, high plasticity<br>- AASHTO: A-7-6 (I)                                                       |    | G78           |         | 16 17 18 19 20 21<br>0 20 40 60 80 100<br>PL MC LL<br>0 20 40 60 80 100<br>0 50 100 150 200 250 |
| 229.6         | 2.0       |  | SILT - clayey<br>- light brown<br>- moist, loose<br>- low plasticity<br>- AASHTO: A-4                                                     |  | G79           |         | 16 17 18 19 20 21<br>0 20 40 60 80 100<br>PL MC LL<br>0 20 40 60 80 100<br>0 50 100 150 200 250 |
| 229.1         | 2.5       |  | CLAY - silty<br>- light brown, moist, stiff, high plasticity<br>- AASHTO: A-7-6 (I)                                                       |  | G80           |         | 16 17 18 19 20 21<br>0 20 40 60 80 100<br>PL MC LL<br>0 20 40 60 80 100<br>0 50 100 150 200 250 |
| 229.0         | 3.0       |  | SILT - clayey, light brown, moist, loose, low plasticity, AASHTO: A-4                                                                     |  | G81           |         | 16 17 18 19 20 21<br>0 20 40 60 80 100<br>PL MC LL<br>0 20 40 60 80 100<br>0 50 100 150 200 250 |
|               |           |                                                                                     |                                                                                                                                           |                                                                                      | G82           |         | 16 17 18 19 20 21<br>0 20 40 60 80 100<br>PL MC LL<br>0 20 40 60 80 100<br>0 50 100 150 200 250 |
|               |           |                                                                                     |                                                                                                                                           |                                                                                      | G83           |         | 16 17 18 19 20 21<br>0 20 40 60 80 100<br>PL MC LL<br>0 20 40 60 80 100<br>0 50 100 150 200 250 |

END OF TEST HOLE AT 3.1 m IN SILT  
 1. Seepage and sloughing not observed.  
 2. Test hole open to 3.1 m depth and dry immediately after drilling.  
 3. Test hole backfilled with auger cuttings to surface.  
 4. Test hole location and elevation surveyed with RTK GPS relative to geodetic datum.

**Client:** Dillon Consulting Ltd. **Project Number:** 0022-235-01  
**Project Name:** Kilcona Park **Location:** UTM: 14U, 5533483.986 m N, 641007.566 m E  
**Contractor:** Paddock Drilling Ltd. **Ground Elevation:** 231.14 m (geodetic)  
**Method:** 125 mm Solid Stem Auger, Acker SS3 Track Mount **Date Drilled:** 16 December 2025

**Sample Type:** ☒ Grab (G) ☐ Shelby Tube (T) ☐ Split Spoon (SS) / SPT ☐ Split Barrel (SB) / LPT ☐ Core (C)

**Particle Size Legend:** ☒ Fines ☒ Clay ☐ Silt ☐ Sand ☐ Gravel ☐ Cobbles ☐ Boulders



END OF TEST HOLE AT 3.1 m IN CLAY  
 1. Seepage and sloughing not observed.  
 2. Test hole open to 3.1 m depth and dry immediately after drilling.  
 3. Test hole backfilled with auger cuttings to surface.  
 4. Test hole location and elevation surveyed with RTK GPS relative to geodetic datum.





**Client:** Dillon Consulting Ltd. **Project Number:** 0022-235-01  
**Project Name:** Kilcona Park **Location:** UTM: 14U, 5533653.502 m N, 641299.657 m E  
**Contractor:** Paddock Drilling Ltd. **Ground Elevation:** 231.42 m (geodetic)  
**Method:** 125 mm Solid Stem Auger, Acker SS3 Track Mount **Date Drilled:** 16 December 2025

**Sample Type:** ☒ Grab (G) ☒ Shelby Tube (T) ☒ Split Spoon (SS) / SPT ☒ Split Barrel (SB) / LPT ☒ Core (C)

**Particle Size Legend:** ☒ Fines ☒ Clay ☒ Silt ☒ Sand ☒ Gravel ☒ Cobbles ☒ Boulders

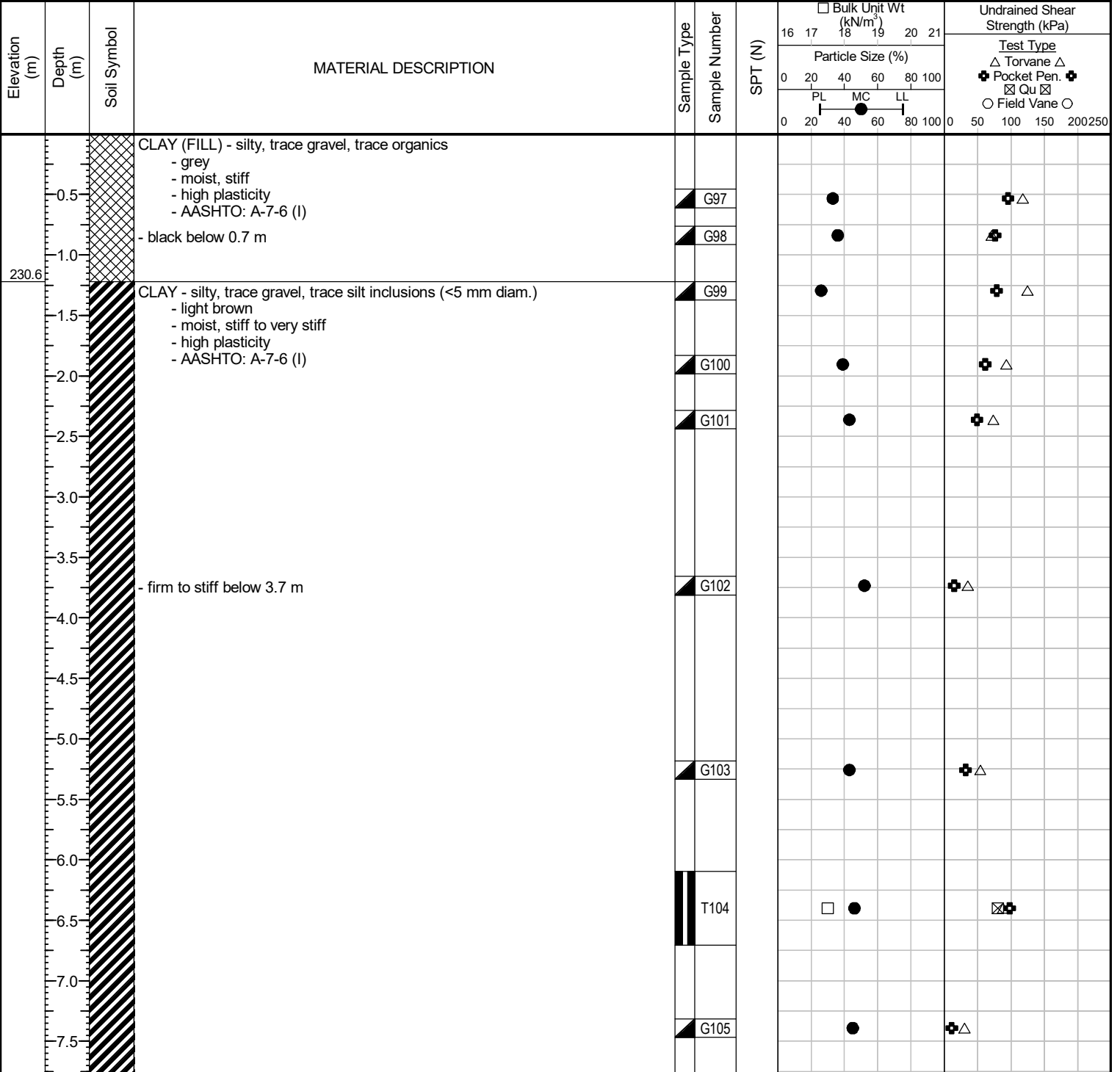
| Elevation (m) | Depth (m) | Soil Symbol                                                                         | MATERIAL DESCRIPTION                                                                                        | Sample Type                                                                          | Sample Number | SPT (N) | Bulk Unit Wt (kN/m <sup>3</sup> )<br>Particle Size (%)<br>PL MC LL<br>0 20 40 60 80 100 | Undrained Shear Strength (kPa)<br>Test Type<br>Δ Torvane Δ<br>⊕ Pocket Pen. ⊕<br>⊠ Qu ⊠<br>○ Field Vane ○ |
|---------------|-----------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------|---------|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
| 230.5         | 0.5       |    | CLAY (FILL) - silty, trace organics<br>- grey<br>- moist, stiff<br>- high plasticity<br>- AASHTO: A-7-6 (I) |    | G59           |         |      |                        |
| 230.2         | 1.0       |    | SILT - clayey, light brown, moist, loose, low plasticity,<br>- AASHTO: A-4 (7)                              |    | G60           |         |      |                        |
|               | 1.5       |   | CLAY - silty<br>- grey<br>- moist, stiff<br>- high plasticity,<br>- AASHTO: A-7-6 (I)                       |    | G61           |         |      |                        |
|               | 2.0       |  |                                                                                                             |  | G62           |         |    |                      |
|               | 2.5       |  |                                                                                                             |  | G63           |         |    |                      |
|               | 3.0       |  |                                                                                                             |  | G64           |         |    |                      |

END OF TEST HOLE AT 3.1 m IN CLAY  
 1. Seepage and sloughing not observed.  
 2. Test hole open to 3.1 m depth and dry immediately after drilling.  
 3. Test hole backfilled with auger cuttings to surface.  
 4. Test hole location and elevation surveyed with RTK GPS relative to geodetic datum.

**Client:** Dillon Consulting Ltd. **Project Number:** 0022-235-01  
**Project Name:** Kilcona Park **Location:** UTM: 14U, 5533603.301 m N, 641434.380 m E  
**Contractor:** Paddock Drilling Ltd. **Ground Elevation:** 231.81 m (geodetic)  
**Method:** 125 mm Solid Stem Auger, Acker SS3 Track Mount **Date Drilled:** 16 December 2025

**Sample Type:** ☒ Grab (G) ☒ Shelby Tube (T) ☒ Split Spoon (SS) / SPT ☒ Split Barrel (SB) / LPT ☒ Core (C)

**Particle Size Legend:** ☒ Fines ☒ Clay ☒ Silt ☒ Sand ☒ Gravel ☒ Cobbles ☒ Boulders



**Logged By:** Tyson Roeland **Reviewed By:** Nelson Ferreira **Project Engineer:** Nuno Mendonca

SUB-SURFACE LOG LOGS 2026-02-06 KILCONA PARK 0 D HS 0022-235-01.GPJ TREK.GDT 26/3/26

1. Seepage and sloughing observed below 14.5 m depth.
2. Test hole open to 14.3 m, water level at 7.9 m depth immediately after drilling.
3. Test hole backfilled with auger cuttings to surface.
4. Test hole location and elevation surveyed with RTK GPS relative to geodetic datum.





|                          |                                                 |
|--------------------------|-------------------------------------------------|
| <b>Project Number:</b>   | <u>0022-235-01</u>                              |
| <b>Location:</b>         | <u>UTM: 14U 5533487.106 m N, 641633.704 m E</u> |
| <b>Ground Elevation:</b> | <u>231.49 m (geodetic)</u>                      |
| <b>Date Drilled:</b>     | <u>17 December 2025</u>                         |

Backfill Legend:  Bentonite  Cement  Drill Cuttings  Filter Pack Sand  Grout  Slough



| Elevation<br>(m) | Depth<br>(m) | Soil Symbol | VW<br>Piezometer | MATERIAL DESCRIPTION | Sample Type | Sample Number | SPT (N) | Bulk Unit Wt<br>(kN/m <sup>3</sup> ) |    | Undrained Shear<br>Strength (kPa) |                                                            |
|------------------|--------------|-------------|------------------|----------------------|-------------|---------------|---------|--------------------------------------|----|-----------------------------------|------------------------------------------------------------|
|                  |              |             |                  |                      |             |               |         | Particle Size (%)                    |    | Test Type                         |                                                            |
|                  |              |             |                  |                      |             |               |         | PL                                   | MC | LL                                | △ Torvane △<br>⊕ Pocket Pen. ⊕<br>⊠ Qu ⊠<br>○ Field Vane ○ |
| 8.0              |              |             |                  |                      |             | T121          |         |                                      |    |                                   | ⊠ ⊕                                                        |
| 8.5              |              |             |                  |                      |             | G122          |         |                                      |    |                                   | ⊕                                                          |
| 9.0              |              |             |                  |                      |             |               |         |                                      |    |                                   |                                                            |
| 9.5              |              |             |                  |                      |             |               |         |                                      |    |                                   |                                                            |
| 10.0             |              |             |                  |                      |             | G123          |         |                                      |    |                                   | ⊕ △                                                        |
| 10.5             |              |             |                  |                      |             |               |         |                                      |    |                                   |                                                            |
| 11.0             |              |             |                  |                      |             | T124          |         |                                      |    |                                   | ⊠                                                          |
| 11.5             |              |             |                  |                      |             | G125          |         |                                      |    |                                   | ⊕ △                                                        |
| 12.0             |              |             |                  |                      |             |               |         |                                      |    |                                   |                                                            |
| 12.5             |              |             |                  |                      |             |               |         |                                      |    |                                   |                                                            |
| 13.0             |              |             |                  |                      |             | G126          |         |                                      |    |                                   | △                                                          |
| 13.5             |              |             |                  |                      |             |               |         |                                      |    |                                   |                                                            |
| 14.0             |              |             |                  |                      |             |               |         |                                      |    |                                   |                                                            |
| 14.5             |              |             |                  |                      |             | G127          |         |                                      |    |                                   |                                                            |
| 15.0             |              |             |                  |                      |             |               |         |                                      |    |                                   |                                                            |
| 15.5             |              |             |                  |                      |             |               |         |                                      |    |                                   |                                                            |
| 217.0            |              |             |                  |                      |             |               |         |                                      |    |                                   |                                                            |
| 215.8            |              |             |                  |                      |             | SS128         | 17      |                                      |    |                                   |                                                            |

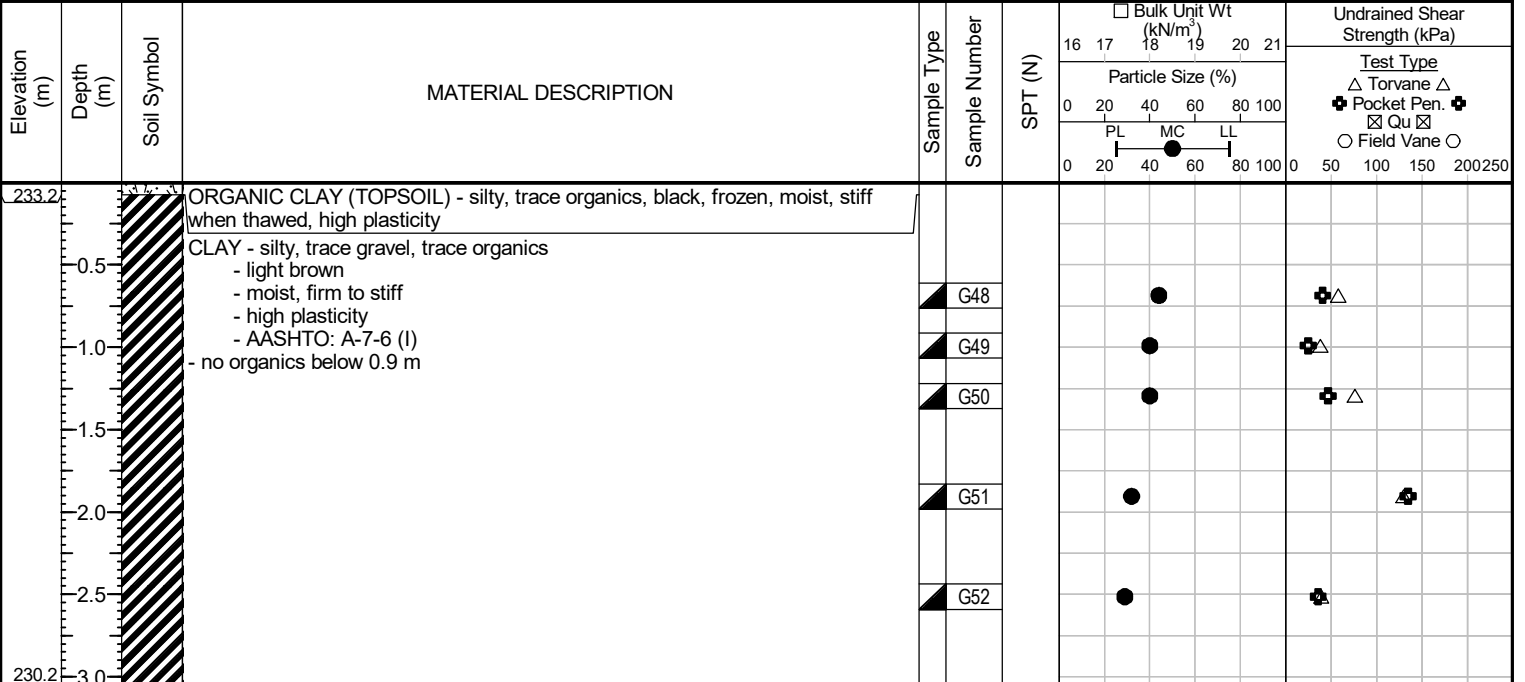
END OF TEST HOLE AT 15.7 m IN SILT TILL

- Seepage and sloughing observed below 12.2 m depth.
- Test hole open to 12.2 m, water level at 7.6 m depth immediately after drilling.
- VW25-07A (S/N:208078) was installed at 14.9 m depth within the silt (till), VW25-07B (S/N:208035) was installed at 9.2 m depth within the clay, and VW25-07C (S/N:208101) was installed at 4.6 m within the clay.
- Test hole backfilled with cement-bentonite grout to surface.
- Test hole location and elevation surveyed with RTK GPS relative to geodetic datum.

**Client:** Dillon Consulting Ltd. **Project Number:** 0022-235-01  
**Project Name:** Kilcona Park **Location:** UTM: 14U 5533313.056 m N, 641691.289 m E  
**Contractor:** Paddock Drilling Ltd. **Ground Elevation:** 233.23 m (geodetic)  
**Method:** 125 mm Solid Stem Auger, Acker SS3 Track Mount **Date Drilled:** 16 December 2025

**Sample Type:** ☒ Grab (G) ☐ Shelby Tube (T) ☐ Split Spoon (SS) / SPT ☐ Split Barrel (SB) / LPT ☐ Core (C)

**Particle Size Legend:** ☒ Fines ☐ Clay ☐ Silt ☐ Sand ☐ Gravel ☐ Cobbles ☐ Boulders



END OF TEST HOLE AT 3.1 m IN CLAY  
 1. Seepage and sloughing not observed.  
 2. Test hole open to 3.1 m depth and dry immediately after drilling.  
 3. Test hole backfilled with auger cuttings to surface.  
 4. Test hole location and elevation surveyed with RTK GPS relative to geodetic datum.

**Client:** Dillon Consulting Ltd. **Project Number:** 0022-235-01  
**Project Name:** Kilcona Park **Location:** UTM: 14U, 5533201.427 m N, 641817.536 m E  
**Contractor:** Paddock Drilling Ltd. **Ground Elevation:** 232.27 m (geodetic)  
**Method:** 125 mm Solid Stem Auger, Acker SS3 Track Mount **Date Drilled:** 16 December 2025

**Sample Type:** ☒ Grab (G) ☐ Shelby Tube (T) ☐ Split Spoon (SS) / SPT ☐ Split Barrel (SB) / LPT ☐ Core (C)

**Particle Size Legend:** ☒ Fines ☐ Clay ☐ Silt ☐ Sand ☐ Gravel ☐ Cobbles ☐ Boulders

| Elevation (m) | Depth (m) | Soil Symbol | MATERIAL DESCRIPTION                                                                                                                     | Sample Type | Sample Number | SPT (N) | Bulk Unit Wt (kN/m <sup>3</sup> ) |    | Particle Size (%) |    | Undrained Shear Strength (kPa) |    |
|---------------|-----------|-------------|------------------------------------------------------------------------------------------------------------------------------------------|-------------|---------------|---------|-----------------------------------|----|-------------------|----|--------------------------------|----|
|               |           |             |                                                                                                                                          |             |               |         | 16                                | 17 | 18                | 19 | 20                             | 21 |
|               |           |             |                                                                                                                                          |             |               |         | 0 20 40 60 80 100                 |    |                   |    |                                |    |
|               |           |             |                                                                                                                                          |             |               |         | 0 20 40 60 80 100                 |    |                   |    |                                |    |
| 231.1         | 0.5       |             | CLAY (FILL) - silty, trace gravel, trace organics<br>- black<br>- moist, stiff to very stiff<br>- high plasticity<br>- AASHTO: A-7-6 (I) |             | G41           |         |                                   |    |                   |    |                                |    |
|               | 1.0       |             |                                                                                                                                          |             | G42           |         |                                   |    |                   |    |                                |    |
|               | 1.5       |             |                                                                                                                                          |             | G43           |         |                                   |    |                   |    |                                |    |
|               | 2.0       |             |                                                                                                                                          |             | G44           |         |                                   |    |                   |    |                                |    |
|               | 2.5       |             |                                                                                                                                          |             | G45           |         |                                   |    |                   |    |                                |    |
|               | 3.0       |             |                                                                                                                                          |             | G46           |         |                                   |    |                   |    |                                |    |
|               |           |             |                                                                                                                                          |             | G47           |         |                                   |    |                   |    |                                |    |

END OF TEST HOLE AT 3.1 m IN CLAY  
 1. Seepage and sloughing not observed.  
 2. Test hole open to 3.1 m depth and dry immediately after drilling.  
 3. Test hole backfilled with auger cuttings to surface.  
 4. Test hole location and elevation surveyed with RTK GPS relative to geodetic datum.

**Client:** Dillon Consulting Ltd. **Project Number:** 0022-235-01  
**Project Name:** Kilcona Park **Location:** UTM: 14U, 5533099.216 m N, 641933.630 m E  
**Contractor:** Paddock Drilling Ltd. **Ground Elevation:** 232.62 m (geodetic)  
**Method:** 125 mm Solid Stem Auger, Acker SS3 Track Mount **Date Drilled:** 15 December 2025

**Sample Type:** ☒ Grab (G) ☒ Shelby Tube (T) ☒ Split Spoon (SS) / SPT ☒ Split Barrel (SB) / LPT ☒ Core (C)

**Particle Size Legend:** ☒ Fines ☒ Clay ☒ Silt ☒ Sand ☒ Gravel ☒ Cobbles ☒ Boulders

| Elevation (m) | Depth (m) | Soil Symbol | MATERIAL DESCRIPTION                                                                                                                                                                                                               | Sample Type | Sample Number | SPT (N) | Bulk Unit Wt (kN/m <sup>3</sup> ) |    | Particle Size (%) |    | Undrained Shear Strength (kPa) |    |
|---------------|-----------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|---------------|---------|-----------------------------------|----|-------------------|----|--------------------------------|----|
|               |           |             |                                                                                                                                                                                                                                    |             |               |         | 16                                | 17 | 18                | 19 | 20                             | 21 |
| 232.5         | 0.0       |             | ASPHALT - (76 mm thick)                                                                                                                                                                                                            |             | G34           |         |                                   |    |                   |    |                                |    |
| 231.9         | 0.5       |             | SAND AND GRAVEL (FILL) - <25 mm diam. crushed limestone, some silt, trace clay, trace rootlets<br>- dark brown, moist, compact to dense, poorly graded<br>- fine sand to fine gravel, angular, hydrocarbon like odour, AASHTO: A-1 |             | G35           |         |                                   |    |                   |    |                                |    |
|               | 1.0       |             | CLAY (FILL) - trace sand<br>- black<br>- moist, very stiff<br>- intermediate plasticity<br>- AASHTO: A-7-6 (I)                                                                                                                     |             | G36           |         |                                   |    |                   |    |                                |    |
| 230.9         | 1.5       |             |                                                                                                                                                                                                                                    |             | G37           |         |                                   |    |                   |    |                                |    |
|               | 2.0       |             | CLAY - silty, trace sand<br>- mottled brown and grey<br>- moist, stiff to very stiff<br>- high plasticity<br>- AASHTO: A-7-6 (I)                                                                                                   |             | G38           |         |                                   |    |                   |    |                                |    |
|               | 2.5       |             |                                                                                                                                                                                                                                    |             | G39           |         |                                   |    |                   |    |                                |    |
| 229.6         | 3.0       |             |                                                                                                                                                                                                                                    |             | G40           |         |                                   |    |                   |    |                                |    |

END OF TEST HOLE AT 3.1 m IN CLAY

- Seepage and sloughing not observed.
- Test hole open to 3.1 m depth and dry immediately after drilling.
- Test hole backfilled with auger cuttings and cold patch asphalt to surface.
- Test hole location and elevation surveyed with RTK GPS relative to geodetic datum.
- Test hole located approximately 2.1 m from the edge of pavement in the westbound lane.
- Bulk samples retrieved from surface to 1.5 m.



**Client:** Dillon Consulting Ltd. **Project Number:** 0022-235-01  
**Project Name:** Kilcona Park **Location:** UTM: 14U, 5532928.585 m N, 641926.248 m E  
**Contractor:** Paddock Drilling Ltd. **Ground Elevation:** 232.84 m (geodetic)  
**Method:** 125 mm Solid Stem Auger, Acker SS3 Track Mount **Date Drilled:** 15 December 2025

**Sample Type:** ☒ Grab (G) ☐ Shelby Tube (T) ☐ Split Spoon (SS) / SPT ☐ Split Barrel (SB) / LPT ☐ Core (C)

**Particle Size Legend:** ☒ Fines ☒ Clay ☐ Silt ☐ Sand ☐ Gravel ☐ Cobbles ☐ Boulders

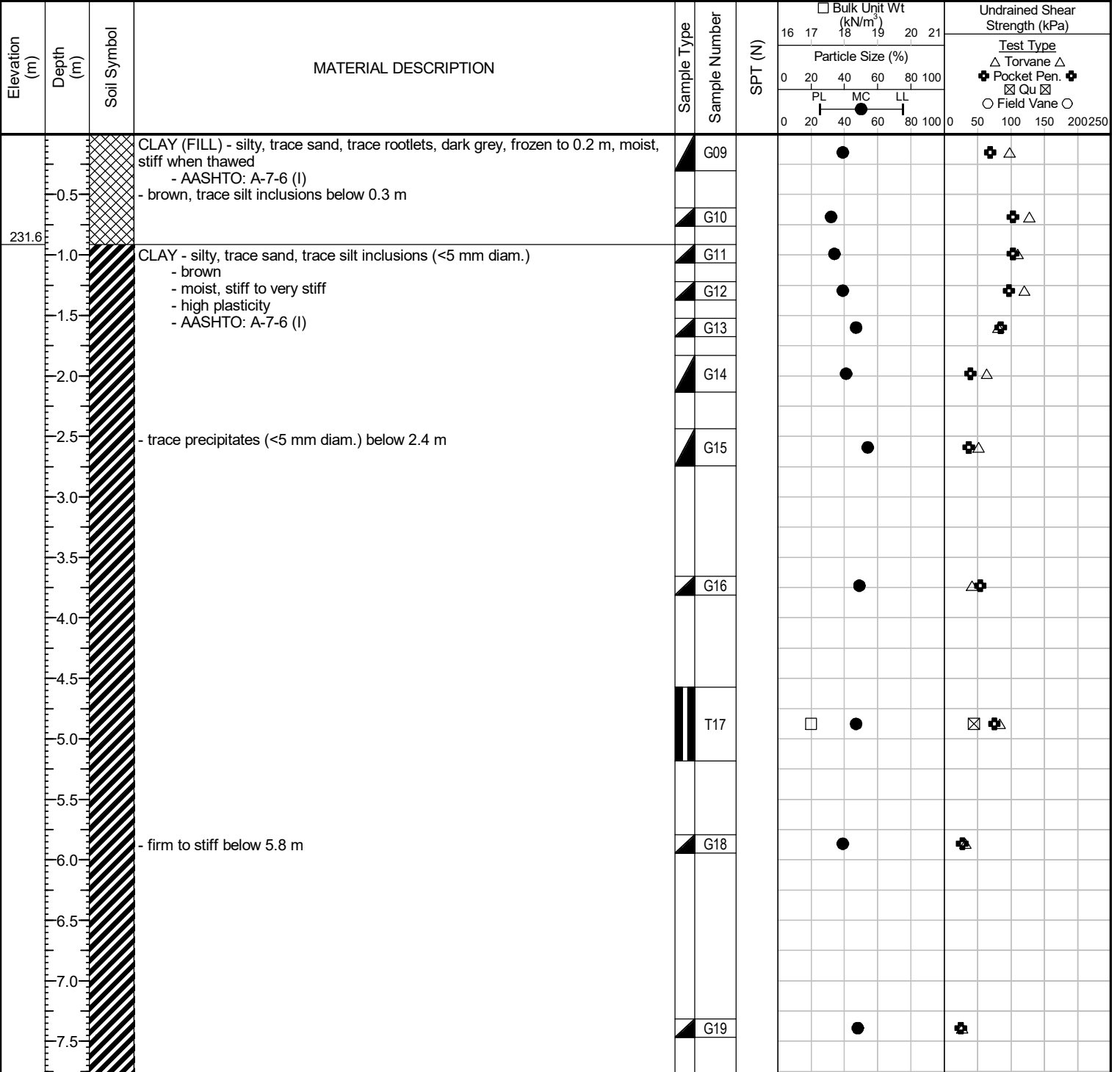
| Elevation (m) | Depth (m) | Soil Symbol | MATERIAL DESCRIPTION                                                                                                                                                        | Sample Type | Sample Number | SPT (N) | Bulk Unit Wt (kN/m <sup>3</sup> ) |    | Particle Size (%) |    | Undrained Shear Strength (kPa) |    |
|---------------|-----------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|---------------|---------|-----------------------------------|----|-------------------|----|--------------------------------|----|
|               |           |             |                                                                                                                                                                             |             |               |         | 16                                | 17 | 18                | 19 | 20                             | 21 |
| 232.8         |           |             | ASPHALT - (51 mm thick)                                                                                                                                                     |             |               |         |                                   |    |                   |    |                                |    |
| 232.5         |           |             | SAND AND GRAVEL (FILL) - <20mm diam. crushed limestone, trace to some clay, some silt, brown, moist, compact, poorly graded, fine sand to fine gravel, angular, AASHTO: A-1 |             | G27           |         |                                   |    |                   |    |                                |    |
|               | 0.5       |             | CLAY (FILL) - silty, trace sand, trace sulphate<br>- black<br>- moist, stiff to very stiff<br>- intermediate plasticity<br>- AASHTO: A-7-6 (I)                              |             | G28           |         |                                   |    |                   |    |                                |    |
|               | 1.0       |             |                                                                                                                                                                             |             | G29           |         |                                   |    |                   |    |                                |    |
|               | 1.5       |             |                                                                                                                                                                             |             | G30           |         |                                   |    |                   |    |                                |    |
| 231.0         |           |             | CLAY - silty, trace sand<br>- mottled brown and grey<br>- moist, stiff<br>- high plasticity<br>- AASHTO: A-7-6 (I)                                                          |             | G31           |         |                                   |    |                   |    |                                |    |
|               | 2.0       |             |                                                                                                                                                                             |             | G32           |         |                                   |    |                   |    |                                |    |
|               | 2.5       |             |                                                                                                                                                                             |             | G33           |         |                                   |    |                   |    |                                |    |
| 229.8         | 3.0       |             |                                                                                                                                                                             |             |               |         |                                   |    |                   |    |                                |    |

- END OF TEST HOLE AT 3.1 m IN CLAY
- Seepage and sloughing not observed.
  - Test hole open to 3.1 m depth and dry immediately after drilling.
  - Test hole backfilled with auger cuttings and cold patch asphalt to surface.
  - Test hole location and elevation surveyed with RTK GPS relative to geodetic datum.
  - Test hole located approximately 4.0 m from the edge of pavement in the eastbound lane.
  - Bulk samples retrieved from surface to 1.5 m.

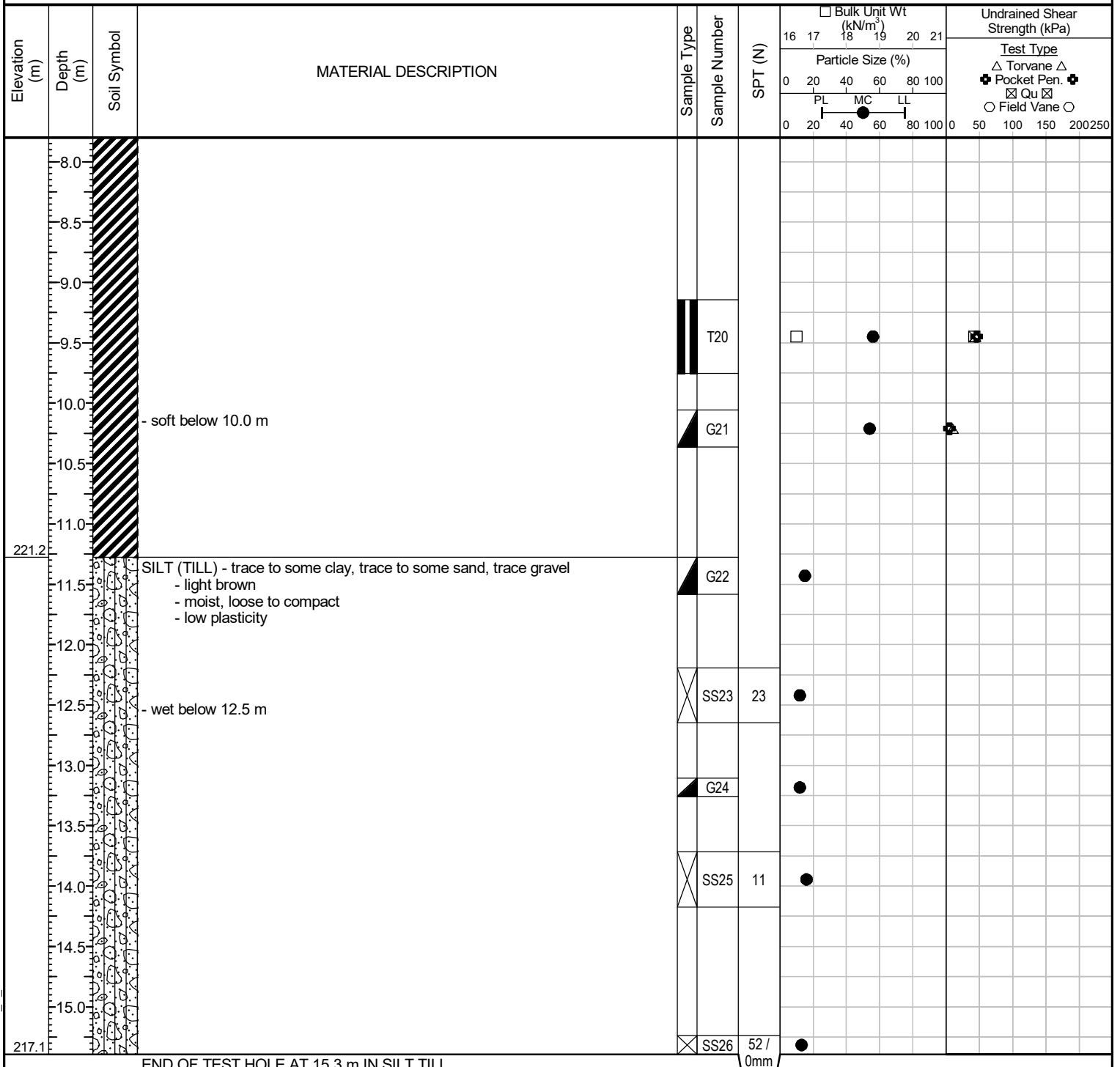
**Client:** Dillon Consulting Ltd. **Project Number:** 0022-235-01  
**Project Name:** Kilcona Park **Location:** UTM: 14U, 5532831.000 m N, 642069.000 m E  
**Contractor:** Paddock Drilling Ltd. **Ground Elevation:** 232.50 m (geodetic)  
**Method:** 125 mm Solid Stem Auger, Acker SS3 Track Mount **Date Drilled:** 15 December 2025

**Sample Type:** ☒ Grab (G) ☒ Shelby Tube (T) ☒ Split Spoon (SS) / SPT ☒ Split Barrel (SB) / LPT ☒ Core (C)

**Particle Size Legend:** ☒ Fines ☒ Clay ☒ Silt ☒ Sand ☒ Gravel ☒ Cobbles ☒ Boulders



**Logged By:** Tyson Roeland **Reviewed By:** Nelson Ferreira **Project Engineer:** Nuno Mendonca



END OF TEST HOLE AT 15.3 m IN SILT TILL

- Seepage and sloughing observed below 13.1 m depth.
- Test hole open to 8.5 m, water level at 6.1 m depth immediately after drilling.
- Test hole backfilled with auger cuttings to surface.
- Test hole location and elevation surveyed with RTK GPS relative to geodetic datum.



**Client:** Dillon Consulting Ltd. **Project Number:** 0022-235-01  
**Project Name:** Kilcona Park **Location:** UTM: 14U, 5533571.699 m N, 641058.048 m E  
**Contractor:** Paddock Drilling Ltd. **Ground Elevation:** 231.79 m (geodetic)  
**Method:** 125 mm Solid Stem Auger, Acker SS3 Track Mount **Date Drilled:** 14 December 2025

**Sample Type:** ☒ Grab (G) ☐ Shelby Tube (T) ☐ Split Spoon (SS) / SPT ☐ Split Barrel (SB) / LPT ☐ Core (C)

**Particle Size Legend:** ☒ Fines ☐ Clay ☐ Silt ☐ Sand ☐ Gravel ☐ Cobbles ☐ Boulders

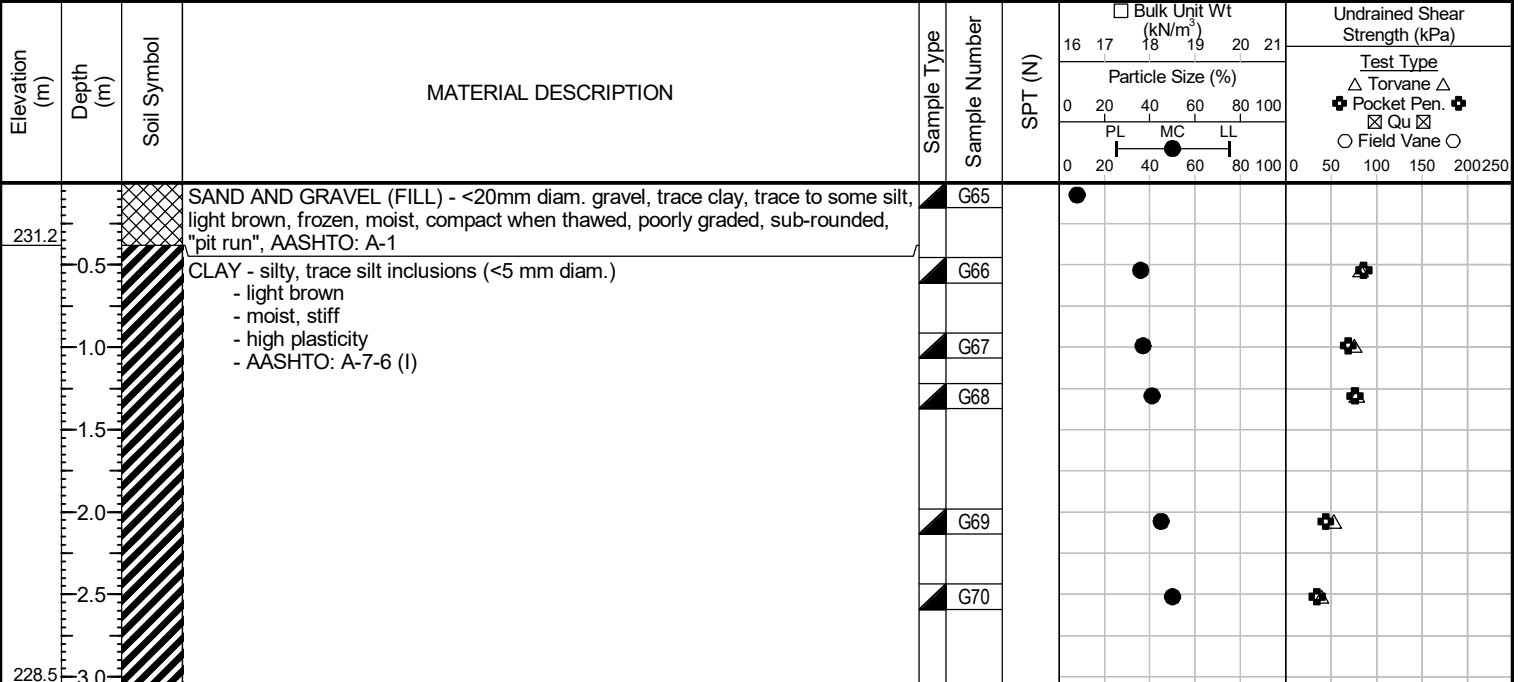
| Elevation (m) | Depth (m) | Soil Symbol                                                                        | MATERIAL DESCRIPTION                                                                                                             | Sample Type                                                                          | Sample Number | SPT (N) | Bulk Unit Wt (kN/m <sup>3</sup> )                                       |    | Particle Size (%) |    | Undrained Shear Strength (kPa) |    |
|---------------|-----------|------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------|---------|-------------------------------------------------------------------------|----|-------------------|----|--------------------------------|----|
|               |           |                                                                                    |                                                                                                                                  |                                                                                      |               |         | 16                                                                      | 17 | 18                | 19 | 20                             | 21 |
|               |           |                                                                                    |                                                                                                                                  |                                                                                      |               |         | 0 20 40 60 80 100                                                       |    |                   |    |                                |    |
|               |           |                                                                                    |                                                                                                                                  |                                                                                      |               |         | PL MC LL                                                                |    |                   |    |                                |    |
|               |           |                                                                                    |                                                                                                                                  |                                                                                      |               |         | 0 20 40 60 80 100                                                       |    |                   |    |                                |    |
|               |           |                                                                                    |                                                                                                                                  |                                                                                      |               |         | 0 50 100 150 200 250                                                    |    |                   |    |                                |    |
|               |           |                                                                                    |                                                                                                                                  |                                                                                      |               |         | Test Type<br>△ Torvane △<br>+ Pocket Pen. +<br>□ Qu □<br>○ Field Vane ○ |    |                   |    |                                |    |
| 230.1         | 0.5       |   | CLAY (FILL) - silty, trace organics, trace gravel<br>- black<br>- moist, stiff<br>- high plasticity<br>- AASHTO: A-7-6 (I)       |    | G71           |         |                                                                         |    |                   |    |                                |    |
|               | 1.0       |                                                                                    |                                                                                                                                  |    | G72           |         |                                                                         |    |                   |    |                                |    |
|               | 1.5       |                                                                                    |                                                                                                                                  |    | G73           |         |                                                                         |    |                   |    |                                |    |
|               | 2.0       |                                                                                    |                                                                                                                                  |    | G74           |         |                                                                         |    |                   |    |                                |    |
| 228.7         | 2.5       |  | CLAY - silty, trace silt inclusions (<5 mm diam.)<br>- light brown<br>- moist, stiff<br>- high plasticity<br>- AASHTO: A-7-6 (I) |   | G75           |         |                                                                         |    |                   |    |                                |    |
|               | 3.0       |                                                                                    |                                                                                                                                  |  | G76           |         |                                                                         |    |                   |    |                                |    |

END OF TEST HOLE AT 3.1 m IN CLAY  
 1. Seepage and sloughing not observed.  
 2. Test hole open to 3.1 m depth and dry immediately after drilling.  
 3. Test hole backfilled with auger cuttings to surface.  
 4. Test hole location and elevation surveyed with RTK GPS relative to geodetic datum.  
 5. Test hole located approximately 1.5 m from the edge of pavement in the southbound lane.

**Client:** Dillon Consulting Ltd. **Project Number:** 0022-235-01  
**Project Name:** Kilcona Park **Location:** UTM: 14U, 5533669.500 m N, 641243.007 m E  
**Contractor:** Paddock Drilling Ltd. **Ground Elevation:** 231.56 m (geodetic)  
**Method:** 125 mm Solid Stem Auger, Acker SS3 Track Mount **Date Drilled:** 16 December 2025

**Sample Type:** ☒ Grab (G) ☐ Shelby Tube (T) ☐ Split Spoon (SS) / SPT ☐ Split Barrel (SB) / LPT ☐ Core (C)

**Particle Size Legend:** ☒ Fines ☐ Clay ☐ Silt ☐ Sand ☐ Gravel ☐ Cobbles ☐ Boulders



END OF TEST HOLE AT 3.1 m IN CLAY  
 1. Seepage and sloughing not observed.  
 2. Test hole open to 3.1 m depth and dry immediately after drilling.  
 3. Test hole backfilled with auger cuttings to surface.  
 4. Test hole location and elevation surveyed with RTK GPS relative to geodetic datum.  
 5. Test hole located approximately 2.4 m from the edge of pavement in the southbound lane.



**Kilcona Roadway  
Sub-Surface Investigation**

| Test Hole No. | Test Hole Location                | Pavement Surface |                | Pavement Structure Material |                | Subgrade Description            | Sample Depth (m) |            | Moisture Content (%) | Grain Size Analysis |          |          |            | Atterberg Limits |        |                  |
|---------------|-----------------------------------|------------------|----------------|-----------------------------|----------------|---------------------------------|------------------|------------|----------------------|---------------------|----------|----------|------------|------------------|--------|------------------|
|               |                                   | Type             | Thickness (mm) | Type                        | Thickness (mm) |                                 | Top (m)          | Bottom (m) |                      | Clay (%)            | Silt (%) | Sand (%) | Gravel (%) | Plastic          | Liquid | Plasticity Index |
| TH25-01       | UTM : 640872 m E,<br>5533469 m N. |                  |                |                             |                | Clay (FILL), AASHTO: A-7-6 (51) | 0.0              | 0.2        | 35                   |                     |          |          |            |                  |        |                  |
|               |                                   |                  |                |                             |                | Clay (FILL), AASHTO: A-7-6 (51) | 0.6              | 0.8        | 35                   | 62                  | 35       | 3        | 0          | 26               | 72     | 45               |
|               |                                   |                  |                |                             |                | Clay (FILL), AASHTO: A-7-6 (51) | 0.9              | 1.1        | 33                   |                     |          |          |            |                  |        |                  |
|               |                                   |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)         | 1.2              | 1.4        | 31                   |                     |          |          |            |                  |        |                  |
|               |                                   |                  |                |                             |                | Silt, AASHTO: A-4               | 1.7              | 1.8        | 25                   |                     |          |          |            |                  |        |                  |
|               |                                   |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)         | 2.4              | 2.6        | 30                   |                     |          |          |            |                  |        |                  |
|               |                                   |                  |                |                             |                | Silt, AASHTO: A-4               | 2.9              | 3.0        | 23                   |                     |          |          |            |                  |        |                  |
| TH25-02       | UTM : 641007 m E,<br>5533483 m N. |                  |                |                             | -              | Organic Clay (Topsoil)          | 0.0              | 0.2        | 48                   |                     |          |          |            |                  |        |                  |
|               |                                   |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)         | 0.6              | 0.8        | 42                   |                     |          |          |            |                  |        |                  |
|               |                                   |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)         | 0.9              | 1.1        | 37                   |                     |          |          |            |                  |        |                  |
|               |                                   |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)         | 1.2              | 1.4        | 35                   |                     |          |          |            |                  |        |                  |
|               |                                   |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)         | 1.8              | 2.0        | 50                   |                     |          |          |            |                  |        |                  |
|               |                                   |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)         | 2.4              | 2.6        | 51                   |                     |          |          |            |                  |        |                  |
| TH25-03       | UTM : 641147 m E,<br>5533573 m N. |                  |                |                             | -              | Clay, AASHTO: A-7-6 (I)         | 0.0              | 0.2        | 50                   |                     |          |          |            |                  |        |                  |
|               |                                   |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)         | 0.6              | 0.8        | 37                   |                     |          |          |            |                  |        |                  |
|               |                                   |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)         | 0.9              | 1.1        | 40                   |                     |          |          |            |                  |        |                  |
|               |                                   |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)         | 1.2              | 1.4        | 35                   |                     |          |          |            |                  |        |                  |
|               |                                   |                  |                |                             |                | Silt, AASHTO: A-4               | 1.6              | 1.7        | 26                   |                     |          |          |            |                  |        |                  |
|               |                                   |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)         | 1.8              | 2.0        | 40                   |                     |          |          |            |                  |        |                  |
|               |                                   |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)         | 2.4              | 2.6        | 45                   |                     |          |          |            |                  |        |                  |

**Kilcona Roadway  
Sub-Surface Investigation**

| Test Hole No. | Test Hole Location                | Pavement Surface |                | Pavement Structure Material |                | Subgrade Description           | Sample Depth (m) |            | Moisture Content (%) | Grain Size Analysis |          |          |            | Atterberg Limits |        |                  |
|---------------|-----------------------------------|------------------|----------------|-----------------------------|----------------|--------------------------------|------------------|------------|----------------------|---------------------|----------|----------|------------|------------------|--------|------------------|
|               |                                   | Type             | Thickness (mm) | Type                        | Thickness (mm) |                                | Top (m)          | Bottom (m) |                      | Clay (%)            | Silt (%) | Sand (%) | Gravel (%) | Plastic          | Liquid | Plasticity Index |
| TH25-04       | UTM : 641299 m E,<br>5533653 m N. |                  |                |                             | -              | Clay (FILL), AASHTO: A-7-6 (I) | 0.0              | 0.2        | 31                   |                     |          |          |            |                  |        |                  |
|               |                                   |                  |                |                             |                | Clay (FILL), AASHTO: A-7-6 (I) | 0.6              | 0.8        | 31                   |                     |          |          |            |                  |        |                  |
|               |                                   |                  |                |                             |                | Silt, AASHTO: A-4              | 0.9              | 1.1        | 15                   | 20                  | 75       | 5        | 0          | 16               | 25     | 9                |
|               |                                   |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)        | 1.2              | 1.4        | 35                   |                     |          |          |            |                  |        |                  |
|               |                                   |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)        | 2.0              | 2.1        | 46                   |                     |          |          |            |                  |        |                  |
|               |                                   |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)        | 2.4              | 2.6        | 52                   |                     |          |          |            |                  |        |                  |
| TH25-05       | UTM : 641434 m E,<br>5533603 m N. |                  |                |                             | -              | Clay (FILL), AASHTO: A-7-6 (I) | 0.5              | 0.6        | 33                   |                     |          |          |            |                  |        |                  |
|               |                                   |                  |                |                             |                | Clay (FILL), AASHTO: A-7-6 (I) | 0.8              | 0.9        | 36                   |                     |          |          |            |                  |        |                  |
|               |                                   |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)        | 1.2              | 1.4        | 26                   |                     |          |          |            |                  |        |                  |
|               |                                   |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)        | 1.8              | 2.0        | 39                   |                     |          |          |            |                  |        |                  |
|               |                                   |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)        | 2.3              | 2.4        | 43                   |                     |          |          |            |                  |        |                  |
|               |                                   |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)        | 3.7              | 3.8        | 52                   |                     |          |          |            |                  |        |                  |
|               |                                   |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)        | 5.2              | 5.3        | 43                   |                     |          |          |            |                  |        |                  |
|               |                                   |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)        | 6.1              | 6.7        | 46                   |                     |          |          |            |                  |        |                  |
|               |                                   |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)        | 7.3              | 7.5        | 45                   |                     |          |          |            |                  |        |                  |
|               |                                   |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)        | 8.2              | 8.4        | 46                   |                     |          |          |            |                  |        |                  |
|               |                                   |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)        | 9.8              | 9.9        | 56                   |                     |          |          |            |                  |        |                  |
|               |                                   |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)        | 10.7             | 11.3       | 59                   |                     |          |          |            |                  |        |                  |
|               |                                   |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)        | 11.6             | 11.7       | 39                   |                     |          |          |            |                  |        |                  |
|               |                                   |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)        | 13.1             | 13.3       | 30                   |                     |          |          |            |                  |        |                  |
|               |                                   |                  |                |                             |                | Silt Till                      | 14.5             | 14.6       | 20                   |                     |          |          |            |                  |        |                  |

**Kilcona Roadway  
Sub-Surface Investigation**

| Test Hole No. | Test Hole Location                | Pavement Surface |                | Pavement Structure Material |                | Subgrade Description           | Sample Depth (m) |            | Moisture Content (%) | Grain Size Analysis |          |          |            | Atterberg Limits |        |                  |
|---------------|-----------------------------------|------------------|----------------|-----------------------------|----------------|--------------------------------|------------------|------------|----------------------|---------------------|----------|----------|------------|------------------|--------|------------------|
|               |                                   | Type             | Thickness (mm) | Type                        | Thickness (mm) |                                | Top (m)          | Bottom (m) |                      | Clay (%)            | Silt (%) | Sand (%) | Gravel (%) | Plastic          | Liquid | Plasticity Index |
| TH25-06       | UTM : 641589 m E,<br>5533580 m N. |                  |                |                             | -              | Clay, AASHTO: A-7-6 (57)       | 0.0              | 0.2        | 39                   |                     |          |          |            |                  |        |                  |
|               |                                   |                  |                |                             |                | Clay, AASHTO: A-7-6 (57)       | 0.6              | 0.8        | 34                   | 75                  | 23       | 2        | 0          | 23               | 74     | 51               |
|               |                                   |                  |                |                             |                | Clay, AASHTO: A-7-6 (57)       | 0.9              | 1.1        | 32                   |                     |          |          |            |                  |        |                  |
|               |                                   |                  |                |                             |                | Clay, AASHTO: A-7-6 (57)       | 1.2              | 1.4        | 32                   |                     |          |          |            |                  |        |                  |
|               |                                   |                  |                |                             |                | Clay, AASHTO: A-7-6 (57)       | 1.8              | 2.0        | 41                   |                     |          |          |            |                  |        |                  |
|               |                                   |                  |                |                             |                | Clay, AASHTO: A-7-6 (57)       | 2.3              | 2.4        | 47                   |                     |          |          |            |                  |        |                  |
| TH25-07       | UTM : 641633 m E,<br>5533487 m N. |                  |                |                             | -              | Clay (FILL), AASHTO: A-7-6 (I) | 0.0              | 0.2        | 31                   |                     |          |          |            |                  |        |                  |
|               |                                   |                  |                |                             |                | Clay (FILL), AASHTO: A-7-6 (I) | 0.6              | 0.8        | 25                   |                     |          |          |            |                  |        |                  |
|               |                                   |                  |                |                             |                | Clay (FILL), AASHTO: A-7-6 (I) | 0.9              | 1.1        | 22                   |                     |          |          |            |                  |        |                  |
|               |                                   |                  |                |                             |                | Clay (FILL), AASHTO: A-7-6 (I) | 1.2              | 1.4        | 25                   |                     |          |          |            |                  |        |                  |
|               |                                   |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)        | 1.8              | 2.0        | 37                   |                     |          |          |            |                  |        |                  |
|               |                                   |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)        | 2.6              | 2.7        | 48                   |                     |          |          |            |                  |        |                  |
|               |                                   |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)        | 3.8              | 4.0        | 51                   |                     |          |          |            |                  |        |                  |
|               |                                   |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)        | 5.2              | 5.3        | 51                   |                     |          |          |            |                  |        |                  |
|               |                                   |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)        | 6.7              | 6.9        | 41                   |                     |          |          |            |                  |        |                  |
|               |                                   |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)        | 7.6              | 8.2        | 39                   |                     |          |          |            |                  |        |                  |
|               |                                   |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)        | 8.5              | 8.7        | 43                   |                     |          |          |            |                  |        |                  |
|               |                                   |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)        | 9.8              | 9.9        | 53                   |                     |          |          |            |                  |        |                  |
|               |                                   |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)        | 10.7             | 11.3       | 60                   |                     |          |          |            |                  |        |                  |
|               |                                   |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)        | 11.6             | 11.7       | 59                   |                     |          |          |            |                  |        |                  |
|               |                                   |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)        | 12.8             | 13.0       | 46                   |                     |          |          |            |                  |        |                  |
|               |                                   |                  |                |                             |                | Silt Till                      | 14.5             | 14.6       | 20                   |                     |          |          |            |                  |        |                  |
|               |                                   |                  |                |                             |                | Silt Till                      | 15.2             | 15.7       | 15                   |                     |          |          |            |                  |        |                  |

**Kilcona Roadway  
Sub-Surface Investigation**

| Test Hole No. | Test Hole Location                                                                                             | Pavement Surface |                | Pavement Structure Material |                | Subgrade Description           | Sample Depth (m) |            | Moisture Content (%) | Grain Size Analysis |          |          |            | Atterberg Limits |        |                  |
|---------------|----------------------------------------------------------------------------------------------------------------|------------------|----------------|-----------------------------|----------------|--------------------------------|------------------|------------|----------------------|---------------------|----------|----------|------------|------------------|--------|------------------|
|               |                                                                                                                | Type             | Thickness (mm) | Type                        | Thickness (mm) |                                | Top (m)          | Bottom (m) |                      | Clay (%)            | Silt (%) | Sand (%) | Gravel (%) | Plastic          | Liquid | Plasticity Index |
| TH25-08       | UTM : 641691 m E,<br>5533313 m N.                                                                              |                  |                |                             | -              | Clay, AASHTO: A-7-6 (I)        | 0.6              | 0.8        | 44                   |                     |          |          |            |                  |        |                  |
|               |                                                                                                                |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)        | 0.9              | 1.1        | 40                   |                     |          |          |            |                  |        |                  |
|               |                                                                                                                |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)        | 1.2              | 1.4        | 40                   |                     |          |          |            |                  |        |                  |
|               |                                                                                                                |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)        | 1.8              | 2.0        | 32                   |                     |          |          |            |                  |        |                  |
|               |                                                                                                                |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)        | 2.4              | 2.6        | 29                   |                     |          |          |            |                  |        |                  |
| TH25-09       | UTM : 641817 m E,<br>5533201 m N.                                                                              |                  |                |                             | -              | Clay (FILL), AASHTO: A-7-6 (I) | 0.0              | 0.2        | 23                   |                     |          |          |            |                  |        |                  |
|               |                                                                                                                |                  |                |                             |                | Clay (FILL), AASHTO: A-7-6 (I) | 0.3              | 0.5        | 36                   |                     |          |          |            |                  |        |                  |
|               |                                                                                                                |                  |                |                             |                | Clay (FILL), AASHTO: A-7-6 (I) | 0.6              | 0.8        | 35                   |                     |          |          |            |                  |        |                  |
|               |                                                                                                                |                  |                |                             |                | Clay (FILL), AASHTO: A-7-6 (I) | 0.9              | 1.1        | 37                   |                     |          |          |            |                  |        |                  |
|               |                                                                                                                |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)        | 1.2              | 1.4        | 36                   |                     |          |          |            |                  |        |                  |
|               |                                                                                                                |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)        | 1.8              | 2.0        | 38                   |                     |          |          |            |                  |        |                  |
|               |                                                                                                                |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)        | 2.1              | 2.3        | 41                   |                     |          |          |            |                  |        |                  |
| TH25-10       | UTM : 641933 m E,<br>5533099 m N. Located approximately 2.1 m from the edge of pavement in the westbound lane. | Asphalt          | 76             | Granular                    | 674            | Sand and Gravel, AASHTO: A-1   | 0.1              | 0.3        | 19                   |                     |          |          |            |                  |        |                  |
|               |                                                                                                                |                  |                |                             |                | Sand and Gravel, AASHTO: A-1   | 0.5              | 0.6        | 12                   | 5                   | 23       | 50       | 22         |                  |        |                  |
|               |                                                                                                                |                  |                |                             |                | Clay (FILL), AASHTO: A-7-6 (I) | 0.8              | 0.9        | 29                   |                     |          |          |            |                  |        |                  |
|               |                                                                                                                |                  |                |                             |                | Clay (FILL), AASHTO: A-7-6 (I) | 1.2              | 1.4        | 35                   |                     |          |          |            |                  |        |                  |
|               |                                                                                                                |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)        | 1.7              | 1.8        | 36                   |                     |          |          |            |                  |        |                  |
|               |                                                                                                                |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)        | 2.3              | 2.4        | 44                   |                     |          |          |            |                  |        |                  |
|               |                                                                                                                |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)        | 2.9              | 3.0        | 49                   |                     |          |          |            |                  |        |                  |



**Kilcona Roadway  
Sub-Surface Investigation**

| Test Hole No. | Test Hole Location                                                                                             | Pavement Surface |                | Pavement Structure Material |                | Subgrade Description           | Sample Depth (m) |            | Moisture Content (%) | Grain Size Analysis |          |          |            | Atterberg Limits |        |                  |
|---------------|----------------------------------------------------------------------------------------------------------------|------------------|----------------|-----------------------------|----------------|--------------------------------|------------------|------------|----------------------|---------------------|----------|----------|------------|------------------|--------|------------------|
|               |                                                                                                                | Type             | Thickness (mm) | Type                        | Thickness (mm) |                                | Top (m)          | Bottom (m) |                      | Clay (%)            | Silt (%) | Sand (%) | Gravel (%) | Plastic          | Liquid | Plasticity Index |
| TH25-11       | UTM : 641926 m E,<br>5532928 m N. Located approximately 4.0 m from the edge of pavement in the eastbound lane. | Asphalt          | 51             | Granular                    | 249            | Sand and Gravel, AASHTO: A-1   | 0.1              | 0.3        | 9                    |                     |          |          |            |                  |        |                  |
|               |                                                                                                                |                  |                |                             |                | Clay (FILL), AASHTO: A-7-6 (I) | 0.3              | 0.5        | 26                   |                     |          |          |            |                  |        |                  |
|               |                                                                                                                |                  |                |                             |                | Clay (FILL), AASHTO: A-7-6 (I) | 0.6              | 0.8        | 36                   |                     |          |          |            |                  |        |                  |
|               |                                                                                                                |                  |                |                             |                | Clay (FILL), AASHTO: A-7-6 (I) | 1.2              | 1.4        | 30                   |                     |          |          |            |                  |        |                  |
|               |                                                                                                                |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)        | 1.8              | 2.0        | 44                   |                     |          |          |            |                  |        |                  |
|               |                                                                                                                |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)        | 2.4              | 2.6        | 44                   |                     |          |          |            |                  |        |                  |
|               |                                                                                                                |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)        | 2.9              | 3.0        | 49                   |                     |          |          |            |                  |        |                  |

**Kilcona Roadway  
Sub-Surface Investigation**

| Test Hole No. | Test Hole Location                | Pavement Surface |                | Pavement Structure Material |                | Subgrade Description           | Sample Depth (m) |            | Moisture Content (%) | Grain Size Analysis |          |          |            | Atterberg Limits |        |                  |
|---------------|-----------------------------------|------------------|----------------|-----------------------------|----------------|--------------------------------|------------------|------------|----------------------|---------------------|----------|----------|------------|------------------|--------|------------------|
|               |                                   | Type             | Thickness (mm) | Type                        | Thickness (mm) |                                | Top (m)          | Bottom (m) |                      | Clay (%)            | Silt (%) | Sand (%) | Gravel (%) | Plastic          | Liquid | Plasticity Index |
| TH25-12       | UTM : 641933 m E,<br>5533099 m N. |                  |                |                             |                | Clay (FILL), AASHTO: A-7-6 (I) | 0.0              | 0.3        | 39                   |                     |          |          |            |                  |        |                  |
|               |                                   |                  |                |                             |                | Clay (FILL), AASHTO: A-7-6 (I) | 0.6              | 0.8        | 32                   |                     |          |          |            |                  |        |                  |
|               |                                   |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)        | 0.9              | 1.1        | 34                   |                     |          |          |            |                  |        |                  |
|               |                                   |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)        | 1.2              | 1.4        | 39                   |                     |          |          |            |                  |        |                  |
|               |                                   |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)        | 1.5              | 1.7        | 47                   |                     |          |          |            |                  |        |                  |
|               |                                   |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)        | 1.8              | 2.1        | 41                   |                     |          |          |            |                  |        |                  |
|               |                                   |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)        | 2.4              | 2.7        | 54                   |                     |          |          |            |                  |        |                  |
|               |                                   |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)        | 3.7              | 3.8        | 49                   |                     |          |          |            |                  |        |                  |
|               |                                   |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)        | 4.6              | 5.2        | 47                   |                     |          |          |            |                  |        |                  |
|               |                                   |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)        | 5.8              | 5.9        | 39                   |                     |          |          |            |                  |        |                  |
|               |                                   |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)        | 7.3              | 7.5        | 48                   |                     |          |          |            |                  |        |                  |
|               |                                   |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)        | 9.1              | 9.8        | 56                   |                     |          |          |            |                  |        |                  |
|               |                                   |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)        | 10.1             | 10.4       | 54                   |                     |          |          |            |                  |        |                  |
|               |                                   |                  |                |                             |                | Silt Till                      | 11.3             | 11.6       | 15                   |                     |          |          |            |                  |        |                  |
|               |                                   |                  |                |                             |                | Silt Till                      | 12.2             | 12.6       | 12                   |                     |          |          |            |                  |        |                  |
|               |                                   |                  |                |                             |                | Silt Till                      | 13.1             | 13.3       | 12                   |                     |          |          |            |                  |        |                  |
|               |                                   |                  |                |                             |                | Silt Till                      | 13.7             | 14.2       | 16                   |                     |          |          |            |                  |        |                  |
|               |                                   |                  |                |                             |                | Silt Till                      | 15.2             | 15.4       | 13                   |                     |          |          |            |                  |        |                  |



**Kilcona Roadway  
Sub-Surface Investigation**

| Test Hole No. | Test Hole Location                                                                                              | Pavement Surface |                | Pavement Structure Material |                | Subgrade Description            | Sample Depth (m) |            | Moisture Content (%) | Grain Size Analysis |          |          |            | Atterberg Limits |        |                  |
|---------------|-----------------------------------------------------------------------------------------------------------------|------------------|----------------|-----------------------------|----------------|---------------------------------|------------------|------------|----------------------|---------------------|----------|----------|------------|------------------|--------|------------------|
|               |                                                                                                                 | Type             | Thickness (mm) | Type                        | Thickness (mm) |                                 | Top (m)          | Bottom (m) |                      | Clay (%)            | Silt (%) | Sand (%) | Gravel (%) | Plastic          | Liquid | Plasticity Index |
| TH25-13       | UTM : 642243 m E,<br>5532825 m N.                                                                               |                  |                |                             |                | Organic Clay (Topsoil)          | 0.0              | 0.1        | 37                   |                     |          |          |            |                  |        |                  |
|               |                                                                                                                 |                  |                |                             |                | Clay (FILL), AASHTO: A-7-6 (61) | 0.2              | 0.3        | 38                   |                     |          |          |            |                  |        |                  |
|               |                                                                                                                 |                  |                |                             |                | Clay (FILL), AASHTO: A-7-6 (61) | 0.6              | 0.8        | 32                   | 76                  | 22       | 2        | 0          | 23               | 77     | 54               |
|               |                                                                                                                 |                  |                |                             |                | Clay (FILL), AASHTO: A-7-6 (61) | 0.9              | 1.1        | 27                   |                     |          |          |            |                  |        |                  |
|               |                                                                                                                 |                  |                |                             |                | Clay (FILL), AASHTO: A-7-6 (61) | 1.2              | 1.4        | 31                   |                     |          |          |            |                  |        |                  |
|               |                                                                                                                 |                  |                |                             |                | Clay (FILL), AASHTO: A-7-6 (61) | 1.5              | 1.7        | 37                   |                     |          |          |            |                  |        |                  |
|               |                                                                                                                 |                  |                |                             |                | Clay (FILL), AASHTO: A-7-6 (61) | 1.8              | 2.1        | 38                   |                     |          |          |            |                  |        |                  |
|               |                                                                                                                 |                  |                |                             |                | Clay (FILL), AASHTO: A-7-6 (61) | 2.4              | 2.7        | 34                   |                     |          |          |            |                  |        |                  |
| TH25-14       | UTM : 641058 m E,<br>5533571 m N. Located approximately 1.5 m from the edge of pavement in the southbound lane. |                  |                |                             |                | Clay (FILL), AASHTO: A-7-6 (I)  | 0.0              | 0.2        | 38                   |                     |          |          |            |                  |        |                  |
|               |                                                                                                                 |                  |                |                             |                | Clay (FILL), AASHTO: A-7-6 (I)  | 0.6              | 0.8        | 38                   |                     |          |          |            |                  |        |                  |
|               |                                                                                                                 |                  |                |                             |                | Clay (FILL), AASHTO: A-7-6 (I)  | 0.9              | 1.1        | 39                   |                     |          |          |            |                  |        |                  |
|               |                                                                                                                 |                  |                |                             |                | Clay (FILL), AASHTO: A-7-6 (I)  | 1.2              | 1.4        | 37                   |                     |          |          |            |                  |        |                  |
|               |                                                                                                                 |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)         | 1.7              | 1.8        | 36                   |                     |          |          |            |                  |        |                  |
|               |                                                                                                                 |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)         | 2.3              | 2.4        | 46                   |                     |          |          |            |                  |        |                  |
| TH25-15       | UTM : 641933 m E,<br>641243 m N. Located approximately 2.4 m from the edge of pavement in the southbound lane.  |                  |                |                             |                | Sand and Gravel, AASHTO: A-1    | 0.0              | 0.2        | 8                    |                     |          |          |            |                  |        |                  |
|               |                                                                                                                 |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)         | 0.5              | 0.6        | 36                   |                     |          |          |            |                  |        |                  |
|               |                                                                                                                 |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)         | 0.9              | 1.0        | 37                   |                     |          |          |            |                  |        |                  |
|               |                                                                                                                 |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)         | 1.2              | 1.4        | 41                   |                     |          |          |            |                  |        |                  |
|               |                                                                                                                 |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)         | 2.0              | 2.1        | 45                   |                     |          |          |            |                  |        |                  |
|               |                                                                                                                 |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)         | 2.4              | 2.6        | 50                   |                     |          |          |            |                  |        |                  |

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|                    |                                               |
|--------------------|-----------------------------------------------|
| <b>Date</b>        | February 3, 2026                              |
| <b>To</b>          | Tyson Roeland, TREK Engineering               |
| <b>From</b>        | Angela Fidler-Kliewer, TREK Engineering       |
| <b>Project No.</b> | 0022-235-01                                   |
| <b>Project</b>     | Kilcona Park                                  |
| <b>Subject</b>     | Laboratory Testing Results – Lab Req. R26-012 |

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|                     |                            |
|---------------------|----------------------------|
| <b>Distribution</b> | Paul Hillar, Nuno Mendonca |
|---------------------|----------------------------|

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Attached are the laboratory testing results for the above noted project. The testing included moisture content determinations, Atterberg Limits, grain size distribution (Hydrometer method), Standard Proctor, CBR and unconfined compressive strength with related testing on Shelby tube samples.

Regards,

Angela Fidler-Kliewer, C.Tech.

Attach.

*Review Control:*

|                         |                         |                        |
|-------------------------|-------------------------|------------------------|
| <i>Prepared By:</i> AFK | <i>Reviewed By:</i> AFK | <i>Checked By:</i> NJF |
|-------------------------|-------------------------|------------------------|

CLIENT Dillon Consulting Ltd.PROJECT NO: 0022-235-01PROJECT NAME Kilcona ParkFIELD TECHNICIAN: Tyson Roeland

| TEST HOLE NUMBER | SAMPLE NUMBER | DEPTH OF SAMPLE (ft) | Sample Date | MOISTURE | VISUAL CLASS. | ATTERBERG LIMITS | HYDROMETER | GRADATION | STD. PROCTOR | UNCONFINED AND AUXILIARY TESTS | SO <sub>4</sub> - Water Soluble Sulfate (CSA-A23.2-3B) | Soil Description/Comments |
|------------------|---------------|----------------------|-------------|----------|---------------|------------------|------------|-----------|--------------|--------------------------------|--------------------------------------------------------|---------------------------|
| TH25-01          | G22           | 0.2 - 0.7            | Dec 15-19   | X        |               |                  |            |           |              |                                |                                                        | Clay                      |
| TH25-01          | G23           | 1.5 - 2.5            |             | X        | XX            |                  |            |           |              |                                |                                                        |                           |
| TH25-01          | G24           | 3.0 - 3.5            |             | X        |               |                  |            |           |              |                                |                                                        |                           |
| TH25-01          | G25           | 4.0 - 4.5            |             | X        |               |                  |            |           |              |                                |                                                        |                           |
| TH25-01          | G26           | 5.0 - 5.5            |             | X        |               |                  |            |           |              |                                |                                                        |                           |
| TH25-01          | G27           | 6.0 - 7.0            |             | X        |               |                  |            |           |              |                                |                                                        | Silt Clay                 |
| TH25-01          | G28           | 8.0 - 9.0            |             | X        |               |                  |            |           |              |                                |                                                        |                           |
| TH25-02          | G84           | 0.0 - 0.5            |             | X        |               |                  |            |           |              |                                |                                                        |                           |
| TH25-02          | G85           | 2.0 - 2.5            |             | X        |               |                  |            |           |              |                                |                                                        |                           |
| TH25-02          | G86           | 3.0 - 3.5            |             | X        |               |                  |            |           |              |                                |                                                        |                           |
| TH25-02          | G87           | 4.0 - 4.5            |             | X        |               |                  |            |           |              |                                |                                                        |                           |
| TH25-02          | G88           | 6.0 - 6.5            |             | X        |               |                  |            |           |              |                                |                                                        |                           |
| TH25-02          | G89           | 8.0 - 8.5            |             | X        |               |                  |            |           |              |                                |                                                        |                           |
| TH25-03          | G90           | 0.0 - 0.5            |             | X        |               |                  |            |           |              |                                |                                                        |                           |
| TH25-03          | G91           | 2.0 - 2.5            |             | X        |               |                  |            |           |              |                                |                                                        |                           |
| TH25-03          | G92           | 3.0 - 3.5            |             | X        |               |                  |            |           |              |                                |                                                        |                           |
| TH25-03          | G93           | 4.0 - 4.5            |             | X        |               |                  |            |           |              |                                |                                                        |                           |
| TH25-03          | G94           | 5.3 - 5.5            |             | X        |               |                  |            |           |              |                                |                                                        | Silt Clay                 |
| TH25-03          | G95           | 6.0 - 6.5            |             | X        |               |                  |            |           |              |                                |                                                        |                           |
| TH25-03          | G96           | 8.0 - 8.5            |             | X        |               |                  |            |           |              |                                |                                                        |                           |
| TH25-04          | G59           | 0.0 - 0.5            |             | X        |               |                  |            |           |              |                                |                                                        |                           |
| TH25-04          | G60           | 2.0 - 2.5            |             | X        |               |                  |            |           |              |                                |                                                        |                           |
| TH25-04          | G61           | 3.0 - 3.5            |             | X        | XX            |                  |            |           |              |                                |                                                        | Silt Clay                 |
| TH25-04          | G62           | 4.0 - 4.5            |             | X        |               |                  |            |           |              |                                |                                                        |                           |
| TH25-04          | G63           | 6.5 - 7.0            |             | X        |               |                  |            |           |              |                                |                                                        |                           |
| TH25-04          | G64           | 8.0 - 8.5            |             | X        |               |                  |            |           |              |                                |                                                        |                           |
| TH25-05          | G97           | 1.5 - 2.0            |             | X        |               |                  |            |           |              |                                |                                                        |                           |
| TH25-05          | G98           | 2.5 - 3.0            |             | X        |               |                  |            |           |              |                                |                                                        |                           |
| TH25-05          | G99           | 4.0 - 4.5            |             | X        |               |                  |            |           |              |                                |                                                        |                           |
| TH25-05          | G100          | 6.0 - 6.5            |             | X        |               |                  |            |           |              |                                |                                                        |                           |
| TH25-05          | G101          | 7.5 - 8.0            |             | X        |               |                  |            |           |              |                                |                                                        |                           |
| TH25-05          | G102          | 12.0 - 12.5          |             | X        |               |                  |            |           |              |                                |                                                        |                           |
| TH25-05          | G103          | 17.0 - 17.5          |             | X        |               |                  |            |           |              |                                |                                                        |                           |
| TH25-05          | T104          | 20.0 - 22.0          |             |          |               |                  |            |           | X            |                                |                                                        |                           |
| TH25-05          | G105          | 24.0 - 24.5          |             | X        |               |                  |            |           |              |                                |                                                        |                           |

REQUESTED BY: Tyson RoelandREPORT TO: TR PH NMREQUISITION DATE: Jan 14 / 2026DATE REQUIRED: 24th

COMMENTS:

NUND IS OKAY WITH RESULTS  
BY FEB 6

REQUISITION NO.

R26-012

PAGE 1 OF 4

\* Bulk Samples on last page → CBR's  
REPORT EVERYTHING, CBRs - LATER



CLIENT Dillon Consulting Ltd.  
PROJECT NAME Kilcona Park

PROJECT NO: 0022-235-01  
FIELD TECHNICIAN: Tyson Roeland

| TEST HOLE NUMBER | SAMPLE NUMBER | DEPTH OF SAMPLE (ft) | Sample Date | MOISTURE | VISUAL CLASS. | ATTERBERG LIMITS | HYDROMETER | GRADATION | STD. PROCTOR | UNCONFINED AND AUXILIARY TESTS | SO4 - Water Soluble Sulfate (CSA-A23.2-38) | Soil Description/Comments |
|------------------|---------------|----------------------|-------------|----------|---------------|------------------|------------|-----------|--------------|--------------------------------|--------------------------------------------|---------------------------|
| TH25-05          | G106          | 27.0 - 27.5          |             | X        |               |                  |            |           |              |                                |                                            | Clay                      |
| TH25-05          | G107          | 32.0 - 32.5          |             | X        |               |                  |            |           |              |                                |                                            |                           |
| TH25-05          | T108          | 35.0 - 37.0          |             |          |               |                  |            |           |              | X                              |                                            |                           |
| TH25-05          | G109          | 38.0 - 38.5          |             | X        |               |                  |            |           |              |                                |                                            |                           |
| TH25-05          | G110          | 43.0 - 43.5          |             | X        |               |                  |            |           |              |                                |                                            |                           |
| TH25-05          | G111          | 47.5 - 48.0          |             | X        |               |                  |            |           |              |                                |                                            | Silt till                 |
| TH25-05          | SS112         | 50.0 - 50.0          |             | X        |               |                  |            |           |              |                                |                                            | No sample                 |
| TH25-06          | G53           | 0.0 - 0.5            |             | X        |               |                  |            |           |              |                                |                                            | Clay                      |
| TH25-06          | G54           | 2.0 - 2.5            |             | X        |               |                  |            |           |              |                                |                                            |                           |
| TH25-06          | G55           | 3.0 - 3.5            |             | X        |               |                  |            |           |              |                                |                                            |                           |
| TH25-06          | G56           | 4.0 - 4.5            |             | X        |               |                  |            |           |              |                                |                                            |                           |
| TH25-06          | G57           | 6.0 - 6.5            |             | X        |               |                  |            |           |              |                                |                                            |                           |
| TH25-06          | G58           | 7.5 - 8.0            |             | X        |               |                  |            |           |              |                                |                                            |                           |
| TH25-07          | G112          | 0.0 - 0.5            |             | X        |               |                  |            |           |              |                                |                                            |                           |
| TH25-07          | G113          | 2.0 - 2.5            |             | X        |               |                  |            |           |              |                                |                                            |                           |
| TH25-07          | G114          | 3.0 - 3.5            |             | X        |               |                  |            |           |              |                                |                                            |                           |
| TH25-07          | G115          | 4.0 - 4.5            |             | X        |               |                  |            |           |              |                                |                                            |                           |
| TH25-07          | G116          | 6.0 - 6.5            |             | X        |               |                  |            |           |              |                                |                                            |                           |
| TH25-07          | G117          | 8.5 - 9.0            |             | X        |               |                  |            |           |              |                                |                                            |                           |
| TH25-07          | G118          | 12.5 - 13.0          |             | X        |               |                  |            |           |              |                                |                                            |                           |
| TH25-07          | G119          | 17.0 - 17.5          |             | X        |               |                  |            |           |              |                                |                                            |                           |
| TH25-07          | G120          | 22.0 - 22.5          |             | X        |               |                  |            |           |              |                                |                                            |                           |
| TH25-07          | T121          | 25.0 - 27.0          |             |          |               |                  |            |           |              | X                              |                                            |                           |
| TH25-07          | G122          | 28.0 - 28.5          |             | X        |               |                  |            |           |              |                                |                                            |                           |
| TH25-07          | G123          | 32.0 - 32.5          |             | X        |               |                  |            |           |              |                                |                                            |                           |
| TH25-07          | T124          | 35.0 - 37.0          |             |          |               |                  |            |           |              | X                              |                                            |                           |
| TH25-07          | G125          | 38.0 - 38.5          |             | X        |               |                  |            |           |              |                                |                                            |                           |
| TH25-07          | G126          | 42.0 - 42.5          |             | X        |               |                  |            |           |              |                                |                                            |                           |
| TH25-07          | G127          | 47.5 - 48.0          |             | X        |               |                  |            |           |              |                                |                                            | Silt till                 |
| TH25-07          | SS128         | 50.0 - 51.5          |             | X        |               |                  |            |           |              |                                |                                            |                           |
| TH25-08          | G48           | 2.0 - 2.5            |             | X        |               |                  |            |           |              |                                |                                            | Clay                      |
| TH25-08          | G49           | 3.0 - 3.5            |             | X        |               |                  |            |           |              |                                |                                            |                           |
| TH25-08          | G50           | 4.0 - 4.5            |             | X        |               |                  |            |           |              |                                |                                            |                           |
| TH25-08          | G51           | 6.0 - 6.5            |             | X        |               |                  |            |           |              |                                |                                            |                           |
| TH25-08          | G52           | 8.0 - 8.5            |             | X        |               |                  |            |           |              |                                |                                            |                           |

REQUESTED BY: Tyson Roeland REPORT TO: TR, PH, NM  
REQUISITION DATE: DEC 14, 2025 DATE REQUIRED: JAN 9/26  
COMMENTS: Jan 14/2026

REQUISITION NO. R26-012  
PAGE 2 OF 4

CLIENT Dillon Consulting Ltd.  
PROJECT NAME Kilcona Park

PROJECT NO: 0022-235-01  
FIELD TECHNICIAN: Tyson Roeland

| TEST HOLE NUMBER | SAMPLE NUMBER | DEPTH OF SAMPLE (ft) | Sample Date | MOISTURE | VISUAL CLASS. | ATTERBERG LIMITS | HYDROMETER | GRADATION | STD. PROCTOR | UNCONFINED AND AUXILIARY TESTS | SO <sub>4</sub> - Water Soluble Sulfate (CSA-A23.2-3B) | Soil Description/Comments             |
|------------------|---------------|----------------------|-------------|----------|---------------|------------------|------------|-----------|--------------|--------------------------------|--------------------------------------------------------|---------------------------------------|
| TH25-09          | G41           | 0.0 - 0.5            |             | X        |               |                  |            |           |              |                                |                                                        | Clay<br>↓                             |
| TH25-09          | G42           | 1.0 - 1.5            |             | X        |               |                  |            |           |              |                                |                                                        |                                       |
| TH25-09          | G43           | 2.0 - 2.5            |             | X        |               |                  |            |           |              |                                |                                                        |                                       |
| TH25-09          | G44           | 3.0 - 3.5            |             | X        |               |                  |            |           |              |                                |                                                        |                                       |
| TH25-09          | G45           | 4.0 - 4.5            |             | X        |               |                  |            |           |              |                                |                                                        |                                       |
| TH25-09          | G46           | 6.0 - 6.5            |             | X        |               |                  |            |           |              |                                |                                                        |                                       |
| TH25-09          | G47           | 7.0 - 7.5            |             | X        |               |                  |            |           |              |                                |                                                        |                                       |
| TH25-10          | G34           | 0.3 - 1.0            |             | X        |               |                  |            |           |              |                                |                                                        | Sand + gravel<br>↓ - see what this is |
| TH25-10          | G35           | 1.5 - 2.0            |             | X        |               |                  |            |           |              |                                |                                                        |                                       |
| TH25-10          | G36           | 2.5 - 3.0            |             | X        |               |                  |            |           |              |                                |                                                        | Clay<br>↓                             |
| TH25-10          | G37           | 4.0 - 4.5            |             | X        |               |                  |            |           |              |                                |                                                        |                                       |
| TH25-10          | G38           | 5.5 - 6.0            |             | X        |               |                  |            |           |              |                                |                                                        | Sand + gravel<br>↓                    |
| TH25-10          | G39           | 7.5 - 8.0            |             | X        |               |                  |            |           |              |                                |                                                        |                                       |
| TH25-10          | G40           | 9.5 - 10.0           |             | X        |               |                  |            |           |              |                                |                                                        | Clay<br>↓                             |
| TH25-11          | G27           | 0.2 - 1.0            |             | X        |               |                  |            |           |              |                                |                                                        |                                       |
| TH25-11          | G28           | 1.0 - 1.5            |             | X        |               |                  |            |           |              |                                |                                                        | Sand + gravel<br>↓                    |
| TH25-11          | G29           | 2.0 - 2.5            |             | X        |               |                  |            |           |              |                                |                                                        |                                       |
| TH25-11          | G30           | 4.0 - 4.5            |             | X        |               |                  |            |           |              |                                |                                                        | Clay<br>↓                             |
| TH25-11          | G31           | 6.0 - 6.5            |             | X        |               |                  |            |           |              |                                |                                                        |                                       |
| TH25-11          | G32           | 8.0 - 8.5            |             | X        |               |                  |            |           |              |                                |                                                        |                                       |
| TH25-11          | G33           | 9.5 - 10.0           |             | X        |               |                  |            |           |              |                                |                                                        |                                       |
| TH25-12          | G09           | 0.0 - 1.0            |             | X        |               |                  |            |           |              |                                |                                                        |                                       |
| TH25-12          | G10           | 2.0 - 2.5            |             | X        |               |                  |            |           |              |                                |                                                        |                                       |
| TH25-12          | G11           | 3.0 - 3.5            |             | X        |               |                  |            |           |              |                                |                                                        |                                       |
| TH25-12          | G12           | 4.0 - 4.5            |             | X        |               |                  |            |           |              |                                |                                                        |                                       |
| TH25-12          | G13           | 5.0 - 5.5            |             | X        |               |                  |            |           |              |                                |                                                        |                                       |
| TH25-12          | G14           | 6.0 - 7.0            |             | X        |               |                  |            |           |              |                                |                                                        |                                       |
| TH25-12          | G15           | 8.0 - 9.0            |             | X        |               |                  |            |           |              |                                |                                                        |                                       |
| TH25-12          | G16           | 12.0 - 12.5          |             | X        |               |                  |            |           |              |                                |                                                        |                                       |
| TH25-12          | T17           | 15.0 - 17.0          |             | X        |               |                  |            |           |              |                                |                                                        |                                       |
| TH25-12          | G18           | 19.0 - 19.5          |             | X        |               |                  |            |           |              |                                |                                                        |                                       |
| TH25-12          | G19           | 24.0 - 24.5          |             | X        |               |                  |            |           |              |                                |                                                        |                                       |
| TH25-12          | T20           | 30.0 - 32.0          |             | X        |               |                  |            |           |              |                                |                                                        |                                       |
| TH25-12          | G21           | 33.0 - 34.0          |             | X        |               |                  |            |           |              |                                |                                                        | Silt + v                              |
| TH25-12          | G22           | 37.0 - 38.0          |             | X        |               |                  |            |           |              |                                |                                                        |                                       |

REQUESTED BY: Tyson Roeland REPORT TO: TR, P14 N1  
REQUISITION DATE: DEC 19, 2021 DATE REQUIRED: JAN 9, 2022  
COMMENTS: See 14/2026

REQUISITION NO. R26-012  
PAGE 3 OF 4

CLIENT Dillon Consulting Ltd.

PROJECT NO: 0022-235-01

PROJECT NAME Kilcona Park

FIELD TECHNICIAN: Tyson Roeland

| TEST HOLE NUMBER | SAMPLE NUMBER | DEPTH OF SAMPLE (ft) | Sample Date | MOISTURE | VISUAL CLASS. | ATTERBERG LIMITS | HYDROMETER | GRADATION | STD. PROCTOR | UNCONFINED AND AUXILIARY TESTS | SO <sub>4</sub> - Water Soluble Sulfate (CSA-A23.2-3B) | STANDARD Proctor | EMC (SDAKPO) | Soil Description/Comments |
|------------------|---------------|----------------------|-------------|----------|---------------|------------------|------------|-----------|--------------|--------------------------------|--------------------------------------------------------|------------------|--------------|---------------------------|
| TH25-12          | SS23          | 40.0 - 41.5          |             | XXXX     |               |                  |            |           |              |                                |                                                        |                  |              | Silt + fill               |
| TH25-12          | G24           | 43.0 - 43.5          |             | XXXX     |               |                  |            |           |              |                                |                                                        |                  |              |                           |
| TH25-12          | SS25          | 45.0 - 46.5          |             | XXXX     |               |                  |            |           |              |                                |                                                        |                  |              |                           |
| TH25-12          | SS26          | 50.0 - 50.5          |             | XXXX     |               |                  |            |           |              |                                |                                                        |                  |              |                           |
| TH25-13          | G01           | 0.0 - 0.3            |             | XXXX     |               |                  |            |           |              |                                |                                                        |                  |              | Clay                      |
| TH25-13          | G02           | 0.5 - 1.0            |             | XXXX     |               |                  |            |           |              |                                |                                                        |                  |              |                           |
| TH25-13          | G03           | 2.0 - 2.5            |             | XXXX     |               | XX               |            |           |              |                                |                                                        |                  |              |                           |
| TH25-13          | G04           | 3.0 - 3.5            |             | XXXX     |               |                  |            |           |              |                                |                                                        |                  |              |                           |
| TH25-13          | G05           | 4.0 - 4.5            |             | XXXX     |               |                  |            |           |              |                                |                                                        |                  |              |                           |
| TH25-13          | G06           | 5.0 - 5.5            |             | XXXX     |               |                  |            |           |              |                                |                                                        |                  |              |                           |
| TH25-13          | G07           | 6.0 - 7.0            |             | XXXX     |               |                  |            |           |              |                                |                                                        |                  |              |                           |
| TH25-13          | G08           | 8.0 - 9.0            |             | XXXX     |               |                  |            |           |              |                                |                                                        |                  |              |                           |
| TH25-14          | G71           | 0.0 - 0.5            |             | XXXX     |               |                  |            |           |              |                                |                                                        |                  |              |                           |
| TH25-14          | G72           | 2.0 - 2.5            |             | XXXX     |               |                  |            |           |              |                                |                                                        |                  |              |                           |
| TH25-14          | G73           | 3.0 - 3.5            |             | XXXX     |               |                  |            |           |              |                                |                                                        |                  |              |                           |
| TH25-14          | G74           | 4.0 - 4.5            |             | XXXX     |               |                  |            |           |              |                                |                                                        |                  |              |                           |
| TH25-14          | G75           | 5.5 - 6.0            |             | XXXX     |               |                  |            |           |              |                                |                                                        |                  |              |                           |
| TH25-14          | G76           | 7.5 - 8.0            |             | XXXX     |               |                  |            |           |              |                                |                                                        |                  |              |                           |
| TH25-15          | G65           | 0.0 - 0.5            |             | XXXX     |               |                  |            |           |              |                                |                                                        |                  |              | Sand & gravel             |
| TH25-15          | G66           | 1.5 - 2.0            |             | XXXX     |               |                  |            |           |              |                                |                                                        |                  |              | Clay                      |
| TH25-15          | G67           | 3.0 - 3.5            |             | XXXX     |               |                  |            |           |              |                                |                                                        |                  |              |                           |
| TH25-15          | G68           | 4.0 - 4.5            |             | XXXX     |               |                  |            |           |              |                                |                                                        |                  |              |                           |
| TH25-15          | G69           | 6.5 - 7.0            |             | XXXX     |               |                  |            |           |              |                                |                                                        |                  |              |                           |
| TH25-15          | G70           | 8.0 - 8.5            |             | XXXX     |               |                  |            |           |              |                                |                                                        |                  |              |                           |

BULK SAMPLE TH25-03  
DEPTH 0 - 1.5m

BULK SAMPLE TH25-10 AND 11  
DEPTH 0 - 1.5m



clay

silt

REQUESTED BY: Tyson Roeland

REPORT TO: TR, PH, NPI

REQUISITION DATE: DEC 19, 2025

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COMMENTS: JAN 14, 2026

REQUISITION NO.

R26-012

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**Project No.** 0022-235-01  
**Client** Dillon Consulting Ltd.  
**Project** Kilcona Park

**Sample Date** 11-Dec-25  
**Test Date** 23-Jan-26  
**Technician** I.Araquil

| Test Hole       | TH25-01   | TH25-01   | TH25-01   | TH25-01   | TH25-01   | TH25-01   |
|-----------------|-----------|-----------|-----------|-----------|-----------|-----------|
| Depth (m)       | 0.0 - 0.2 | 0.6 - 0.8 | 0.9 - 1.1 | 1.2 - 1.4 | 1.7 - 1.8 | 2.4 - 2.6 |
| Sample #        | G77       | G78       | G79       | G80       | G81       | G82       |
| Tare ID         | E88       | AB95      | D213      | D215      | M46       | E140      |
| Mass of tare    | 7.0       | 6.9       | 6.9       | 6.8       | 6.8       | 8.7       |
| Mass wet + tare | 204.4     | 401.9     | 208.8     | 206.0     | 206.6     | 202.5     |
| Mass dry + tare | 153.8     | 299.9     | 158.2     | 159.0     | 167.3     | 158.1     |
| Mass water      | 50.6      | 102.0     | 50.6      | 47.0      | 39.3      | 44.4      |
| Mass dry soil   | 146.8     | 293.0     | 151.3     | 152.2     | 160.5     | 149.4     |
| Moisture %      | 34.5%     | 34.8%     | 33.4%     | 30.9%     | 24.5%     | 29.7%     |

| Test Hole       | TH25-01   | TH25-02   | TH25-02   | TH25-02   | TH25-02   | TH25-02   |
|-----------------|-----------|-----------|-----------|-----------|-----------|-----------|
| Depth (m)       | 2.9 - 3.0 | 0.0 - 0.2 | 0.6 - 0.8 | 0.9 - 1.1 | 1.2 - 1.4 | 1.8 - 2.0 |
| Sample #        | G83       | G84       | G85       | G86       | G87       | G88       |
| Tare ID         | ZD11      | Z248      | M37       | K2        | E09       | F38       |
| Mass of tare    | 7.9       | 6.7       | 8.6       | 8.5       | 7.0       | 8.5       |
| Mass wet + tare | 223.0     | 198.0     | 204.7     | 208.8     | 203.8     | 204.2     |
| Mass dry + tare | 183.3     | 136.3     | 147.2     | 154.6     | 152.3     | 139.4     |
| Mass water      | 39.7      | 61.7      | 57.5      | 54.2      | 51.5      | 64.8      |
| Mass dry soil   | 175.4     | 129.6     | 138.6     | 146.1     | 145.3     | 130.9     |
| Moisture %      | 22.6%     | 47.6%     | 41.5%     | 37.1%     | 35.4%     | 49.5%     |

| Test Hole       | TH25-02   | TH25-03   | TH25-03   | TH25-03   | TH25-03   | TH25-03   |
|-----------------|-----------|-----------|-----------|-----------|-----------|-----------|
| Depth (m)       | 2.4 - 2.6 | 0.0 - 0.2 | 0.6 - 0.8 | 0.9 - 1.1 | 1.2 - 1.4 | 1.6 - 1.7 |
| Sample #        | G89       | G90       | G91       | G92       | G93       | G94       |
| Tare ID         | P2        | AB        | W24       | N109      | Z127      | AC33      |
| Mass of tare    | 7.0       | 6.8       | 8.8       | 8.2       | 8.5       | 7.0       |
| Mass wet + tare | 205.3     | 209.4     | 202.0     | 205.3     | 207.0     | 224.7     |
| Mass dry + tare | 138.3     | 141.7     | 149.4     | 149.5     | 156.1     | 180.2     |
| Mass water      | 67.0      | 67.7      | 52.6      | 55.8      | 50.9      | 44.5      |
| Mass dry soil   | 131.3     | 134.9     | 140.6     | 141.3     | 147.6     | 173.2     |
| Moisture %      | 51.0%     | 50.2%     | 37.4%     | 39.5%     | 34.5%     | 25.7%     |



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| Test Hole       | TH25-03   | TH25-03   | TH25-04   | TH25-04   | TH25-04   | TH25-04   |
|-----------------|-----------|-----------|-----------|-----------|-----------|-----------|
| Depth (m)       | 1.8 - 2.0 | 2.4 - 2.6 | 0.0 - 0.2 | 0.6 - 0.8 | 0.9 - 1.1 | 1.2 - 1.4 |
| Sample #        | G95       | G96       | G59       | G60       | G61       | G62       |
| Tare ID         | H59       | N14       | E99       | Z67       | H21       | Q13       |
| Mass of tare    | 8.8       | 8.7       | 8.6       | 8.7       | 8.5       | 7.1       |
| Mass wet + tare | 202.9     | 200.9     | 204.3     | 203.7     | 406.0     | 205.2     |
| Mass dry + tare | 147.0     | 141.0     | 158.3     | 157.9     | 354.8     | 154.4     |
| Mass water      | 55.9      | 59.9      | 46.0      | 45.8      | 51.2      | 50.8      |
| Mass dry soil   | 138.2     | 132.3     | 149.7     | 149.2     | 346.3     | 147.3     |
| Moisture %      | 40.4%     | 45.3%     | 30.7%     | 30.7%     | 14.8%     | 34.5%     |

| Test Hole       | TH25-04   | TH25-04   | TH25-05   | TH25-05   | TH25-05   | TH25-05   |
|-----------------|-----------|-----------|-----------|-----------|-----------|-----------|
| Depth (m)       | 2.0 - 2.1 | 2.4 - 2.6 | 0.5 - 0.6 | 0.8 - 0.9 | 1.2 - 1.4 | 1.8 - 2.0 |
| Sample #        | G63       | G64       | G97       | G98       | G99       | G100      |
| Tare ID         | Z120      | M50       | E500      | AB77      | AB01      | B11       |
| Mass of tare    | 6.9       | 6.9       | 6.8       | 6.8       | 6.8       | 6.9       |
| Mass wet + tare | 207.5     | 211.6     | 206.7     | 205.6     | 204.2     | 219.4     |
| Mass dry + tare | 144.3     | 141.9     | 157.0     | 152.7     | 164.1     | 160.1     |
| Mass water      | 63.2      | 69.7      | 49.7      | 52.9      | 40.1      | 59.3      |
| Mass dry soil   | 137.4     | 135.0     | 150.2     | 145.9     | 157.3     | 153.2     |
| Moisture %      | 46.0%     | 51.6%     | 33.1%     | 36.3%     | 25.5%     | 38.7%     |

| Test Hole       | TH25-05   | TH25-05   | TH25-05   | TH25-05   | TH25-05   | TH25-05   |
|-----------------|-----------|-----------|-----------|-----------|-----------|-----------|
| Depth (m)       | 2.3 - 2.4 | 3.7 - 3.8 | 5.2 - 5.3 | 7.3 - 7.5 | 8.2 - 8.4 | 9.8 - 9.9 |
| Sample #        | G101      | G102      | G103      | G105      | G106      | G107      |
| Tare ID         | M37       | N80       | QT25      | QT71      | D230      | E88       |
| Mass of tare    | 6.9       | 8.6       | 8.4       | 8.3       | 6.9       | 7.3       |
| Mass wet + tare | 202.5     | 198.2     | 207.4     | 203.4     | 206.3     | 204.1     |
| Mass dry + tare | 143.9     | 133.2     | 147.7     | 143.1     | 143.5     | 133.9     |
| Mass water      | 58.6      | 65.0      | 59.7      | 60.3      | 62.8      | 70.2      |
| Mass dry soil   | 137.0     | 124.6     | 139.3     | 134.8     | 136.6     | 126.6     |
| Moisture %      | 42.8%     | 52.2%     | 42.9%     | 44.7%     | 46.0%     | 55.5%     |

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| Test Hole       | TH25-05     | TH25-05     | TH25-05     | TH25-06   | TH25-06   | TH25-06   |
|-----------------|-------------|-------------|-------------|-----------|-----------|-----------|
| Depth (m)       | 11.6 - 11.7 | 13.1 - 13.3 | 14.5 - 14.6 | 0.0 - 0.2 | 0.6 - 0.8 | 0.9 - 1.1 |
| Sample #        | G109        | G110        | G111        | G53       | G54       | G55       |
| Tare ID         | M67         | W45         | RR2         | F87       | D23       | M28       |
| Mass of tare    | 6.8         | 8.5         | 6.8         | 8.6       | 8.9       | 7.3       |
| Mass wet + tare | 201.6       | 201.1       | 188.1       | 208.5     | 406.0     | 206.1     |
| Mass dry + tare | 147.2       | 156.9       | 158.4       | 152.6     | 305.4     | 158.1     |
| Mass water      | 54.4        | 44.2        | 29.7        | 55.9      | 100.6     | 48.0      |
| Mass dry soil   | 140.4       | 148.4       | 151.6       | 144.0     | 296.5     | 150.8     |
| Moisture %      | 38.7%       | 29.8%       | 19.6%       | 38.8%     | 33.9%     | 31.8%     |

| Test Hole       | TH25-06   | TH25-06   | TH25-06   | TH25-07   | TH25-07   | TH25-07   |
|-----------------|-----------|-----------|-----------|-----------|-----------|-----------|
| Depth (m)       | 1.2 - 1.4 | 1.8 - 2.0 | 2.3 - 2.4 | 0.0 - 0.2 | 0.6 - 0.8 | 0.9 - 1.1 |
| Sample #        | G56       | G57       | G58       | G112      | G113      | G114      |
| Tare ID         | Z00       | Z185      | Z21       | Z30       | AB22      | A1        |
| Mass of tare    | 8.7       | 8.9       | 8.5       | 8.5       | 6.7       | 6.9       |
| Mass wet + tare | 203.7     | 202.3     | 205.8     | 200.0     | 215.7     | 214.0     |
| Mass dry + tare | 156.9     | 146.5     | 142.8     | 155.0     | 174.5     | 177.0     |
| Mass water      | 46.8      | 55.8      | 63.0      | 45.0      | 41.2      | 37.0      |
| Mass dry soil   | 148.2     | 137.6     | 134.3     | 146.5     | 167.8     | 170.1     |
| Moisture %      | 31.6%     | 40.6%     | 46.9%     | 30.7%     | 24.6%     | 21.8%     |

| Test Hole       | TH25-07   | TH25-07   | TH25-07   | TH25-07   | TH25-07   | TH25-07   |
|-----------------|-----------|-----------|-----------|-----------|-----------|-----------|
| Depth (m)       | 1.2 - 1.4 | 1.8 - 2.0 | 2.6 - 2.7 | 3.8 - 4.0 | 5.2 - 5.3 | 6.7 - 6.9 |
| Sample #        | G115      | G116      | G117      | G118      | G119      | G120      |
| Tare ID         | K22       | K4        | QT10      | H27       | Z3        | QT100     |
| Mass of tare    | 8.7       | 9.0       | 6.8       | 8.4       | 8.5       | 8.3       |
| Mass wet + tare | 204.9     | 203.6     | 202.2     | 211.3     | 207.7     | 205.0     |
| Mass dry + tare | 165.8     | 151.6     | 139.2     | 142.6     | 140.3     | 147.8     |
| Mass water      | 39.1      | 52.0      | 63.0      | 68.7      | 67.4      | 57.2      |
| Mass dry soil   | 157.1     | 142.6     | 132.4     | 134.2     | 131.8     | 139.5     |
| Moisture %      | 24.9%     | 36.5%     | 47.6%     | 51.2%     | 51.1%     | 41.0%     |

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| Test Hole       | TH25-07   | TH25-07   | TH25-07     | TH25-07     | TH25-07     | TH25-07     |
|-----------------|-----------|-----------|-------------|-------------|-------------|-------------|
| Depth (m)       | 8.5 - 8.7 | 9.8 - 9.9 | 11.6 - 11.7 | 12.8 - 13.0 | 14.5 - 14.6 | 15.2 - 15.7 |
| Sample #        | G122      | G123      | G125        | G126        | G127        | SS128       |
| Tare ID         | AB64      | QT88      | ZD13        | F131        | Q23         | W100        |
| Mass of tare    | 7.0       | 8.5       | 8.5         | 8.6         | 8.6         | 8.5         |
| Mass wet + tare | 212.2     | 213.4     | 204.7       | 201.0       | 175.2       | 214.8       |
| Mass dry + tare | 150.6     | 142.6     | 131.8       | 140.1       | 147.4       | 187.5       |
| Mass water      | 61.6      | 70.8      | 72.9        | 60.9        | 27.8        | 27.3        |
| Mass dry soil   | 143.6     | 134.1     | 123.3       | 131.5       | 138.8       | 179.0       |
| Moisture %      | 42.9%     | 52.8%     | 59.1%       | 46.3%       | 20.0%       | 15.3%       |

| Test Hole       | TH25-08   | TH25-08   | TH25-08   | TH25-08   | TH25-08   | TH25-09   |
|-----------------|-----------|-----------|-----------|-----------|-----------|-----------|
| Depth (m)       | 0.6 - 0.8 | 0.9 - 1.1 | 1.2 - 1.4 | 1.8 - 2.0 | 2.4 - 2.6 | 0.0 - 0.2 |
| Sample #        | G48       | G49       | G50       | G51       | G52       | G41       |
| Tare ID         | N24       | M77       | AB115     | M31       | Z111      | Q44       |
| Mass of tare    | 8.6       | 7.0       | 6.9       | 7.0       | 8.6       | 8.5       |
| Mass wet + tare | 198.7     | 207.7     | 209.6     | 205.6     | 219.0     | 202.7     |
| Mass dry + tare | 140.6     | 150.9     | 152.2     | 157.2     | 171.7     | 166.2     |
| Mass water      | 58.1      | 56.8      | 57.4      | 48.4      | 47.3      | 36.5      |
| Mass dry soil   | 132.0     | 143.9     | 145.3     | 150.2     | 163.1     | 157.7     |
| Moisture %      | 44.0%     | 39.5%     | 39.5%     | 32.2%     | 29.0%     | 23.1%     |

| Test Hole       | TH25-09   | TH25-09   | TH25-09   | TH25-09   | TH25-09   | TH25-09   |
|-----------------|-----------|-----------|-----------|-----------|-----------|-----------|
| Depth (m)       | 0.3 - 0.5 | 0.6 - 0.8 | 0.9 - 1.1 | 1.2 - 1.4 | 1.8 - 2.0 | 2.1 - 2.3 |
| Sample #        | G42       | G43       | G44       | G45       | G46       | G47       |
| Tare ID         | H2        | D222      | N87       | AC10      | W28       | W41       |
| Mass of tare    | 8.5       | 6.8       | 8.5       | 6.7       | 8.6       | 8.7       |
| Mass wet + tare | 207.5     | 208.0     | 210.1     | 204.9     | 213.0     | 202.3     |
| Mass dry + tare | 154.4     | 155.6     | 155.3     | 152.4     | 156.7     | 146.4     |
| Mass water      | 53.1      | 52.4      | 54.8      | 52.5      | 56.3      | 55.9      |
| Mass dry soil   | 145.9     | 148.8     | 146.8     | 145.7     | 148.1     | 137.7     |
| Moisture %      | 36.4%     | 35.2%     | 37.3%     | 36.0%     | 38.0%     | 40.6%     |

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| Test Hole       | TH25-10   | TH25-10   | TH25-10   | TH25-10   | TH25-10   | TH25-10   |
|-----------------|-----------|-----------|-----------|-----------|-----------|-----------|
| Depth (m)       | 0.1 - 0.3 | 0.5 - 0.6 | 0.8 - 0.9 | 1.2 - 1.4 | 1.7 - 1.8 | 2.3 - 2.4 |
| Sample #        | G34       | G35       | G36       | G37       | G38       | G39       |
| Tare ID         | E44       | D19       | C8        | Z134      | D47       | D18       |
| Mass of tare    | 8.7       | 8.5       | 8.3       | 8.7       | 8.8       | 8.6       |
| Mass wet + tare | 221.9     | 304.0     | 219.7     | 216.7     | 203.5     | 200.1     |
| Mass dry + tare | 187.8     | 273.2     | 172.0     | 162.5     | 151.8     | 141.2     |
| Mass water      | 34.1      | 30.8      | 47.7      | 54.2      | 51.7      | 58.9      |
| Mass dry soil   | 179.1     | 264.7     | 163.7     | 153.8     | 143.0     | 132.6     |
| Moisture %      | 19.0%     | 11.6%     | 29.1%     | 35.2%     | 36.2%     | 44.4%     |

| Test Hole       | TH25-10   | TH25-11   | TH25-11   | TH25-11   | TH25-11   | TH25-11   |
|-----------------|-----------|-----------|-----------|-----------|-----------|-----------|
| Depth (m)       | 2.9 - 3.0 | 0.1 - 0.3 | 0.3 - 0.5 | 0.6 - 0.8 | 1.2 - 1.4 | 1.8 - 2.0 |
| Sample #        | G40       | G27       | G28       | G29       | G30       | G31       |
| Tare ID         | K33       | C11       | F43       | N54       | M02       | E125      |
| Mass of tare    | 8.7       | 7.4       | 8.6       | 7.1       | 7.1       | 8.3       |
| Mass wet + tare | 204.7     | 212.5     | 201.2     | 205.8     | 213.3     | 211.1     |
| Mass dry + tare | 140.2     | 195.2     | 161.7     | 153.4     | 165.2     | 148.8     |
| Mass water      | 64.5      | 17.3      | 39.5      | 52.4      | 48.1      | 62.3      |
| Mass dry soil   | 131.5     | 187.8     | 153.1     | 146.3     | 158.1     | 140.5     |
| Moisture %      | 49.0%     | 9.2%      | 25.8%     | 35.8%     | 30.4%     | 44.3%     |

| Test Hole       | TH25-11   | TH25-11   | TH25-12   | TH25-12   | TH25-12   | TH25-12   |
|-----------------|-----------|-----------|-----------|-----------|-----------|-----------|
| Depth (m)       | 2.4 - 2.6 | 2.9 - 3.0 | 0.0 - 0.3 | 0.6 - 0.8 | 0.9 - 1.1 | 1.2 - 1.4 |
| Sample #        | G32       | G33       | G109      | G10       | G11       | G12       |
| Tare ID         | E136      | H67       | N28       | E18       | D208      | D231      |
| Mass of tare    | 8.6       | 8.6       | 6.9       | 6.9       | 6.8       | 6.8       |
| Mass wet + tare | 203.1     | 202.1     | 205.2     | 201.1     | 210.3     | 212.4     |
| Mass dry + tare | 143.8     | 138.4     | 149.9     | 154.0     | 158.8     | 154.8     |
| Mass water      | 59.3      | 63.7      | 55.3      | 47.1      | 51.5      | 57.6      |
| Mass dry soil   | 135.2     | 129.8     | 143.0     | 147.1     | 152.0     | 148.0     |
| Moisture %      | 43.9%     | 49.1%     | 38.7%     | 32.0%     | 33.9%     | 38.9%     |

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| Test Hole       | TH25-12   | TH25-12   | TH25-12   | TH25-12   | TH25-12   | TH25-12   |
|-----------------|-----------|-----------|-----------|-----------|-----------|-----------|
| Depth (m)       | 1.5 - 1.7 | 1.8 - 2.1 | 2.4 - 2.7 | 3.7 - 3.8 | 5.8 - 5.9 | 7.3 - 7.5 |
| Sample #        | G13       | G14       | G15       | G16       | G18       | G19       |
| Tare ID         | K27       | E8        | ZD3       | M73       | P34       | QT20      |
| Mass of tare    | 8.7       | 8.6       | 8.3       | 7.0       | 8.6       | 8.2       |
| Mass wet + tare | 204.0     | 214.9     | 204.7     | 211.1     | 201.7     | 203.6     |
| Mass dry + tare | 141.6     | 155.4     | 135.7     | 144.3     | 147.8     | 140.6     |
| Mass water      | 62.4      | 59.5      | 69.0      | 66.8      | 53.9      | 63.0      |
| Mass dry soil   | 132.9     | 146.8     | 127.4     | 137.3     | 139.2     | 132.4     |
| Moisture %      | 47.0%     | 40.5%     | 54.2%     | 48.7%     | 38.7%     | 47.6%     |

| Test Hole       | TH25-12     | TH25-12     | TH25-12     | TH25-12     | TH25-12     | TH25-12     |
|-----------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Depth (m)       | 10.1 - 10.4 | 11.3 - 11.6 | 12.2 - 12.6 | 13.1 - 13.3 | 13.7 - 14.2 | 15.2 - 15.4 |
| Sample #        | G21         | G22         | SS23        | G24         | SS25        | SS26        |
| Tare ID         | QW13        | N12         | M14         | M44         | QT28        | QW4         |
| Mass of tare    | 6.9         | 8.6         | 7.2         | 7.1         | 8.6         | 6.7         |
| Mass wet + tare | 212.9       | 209.6       | 210.4       | 207.0       | 218.6       | 216.9       |
| Mass dry + tare | 141.0       | 183.9       | 188.7       | 185.4       | 189.1       | 192.3       |
| Mass water      | 71.9        | 25.7        | 21.7        | 21.6        | 29.5        | 24.6        |
| Mass dry soil   | 134.1       | 175.3       | 181.5       | 178.3       | 180.5       | 185.6       |
| Moisture %      | 53.6%       | 14.7%       | 12.0%       | 12.1%       | 16.3%       | 13.3%       |

| Test Hole       | TH25-13   | TH25-13   | TH25-13   | TH25-13   | TH25-13   | TH25-13   |
|-----------------|-----------|-----------|-----------|-----------|-----------|-----------|
| Depth (m)       | 0.0 - 0.1 | 0.2 - 0.3 | 0.6 - 0.8 | 0.9 - 1.1 | 1.2 - 1.4 | 1.5 - 1.7 |
| Sample #        | G01       | G02       | G03       | G04       | G05       | G06       |
| Tare ID         | W102      | F86       | W111      | K29       | E28       | QT57      |
| Mass of tare    | 8.6       | 8.5       | 8.6       | 8.4       | 8.4       | 8.3       |
| Mass wet + tare | 237.7     | 291.4     | 456.8     | 258.9     | 245.1     | 249.3     |
| Mass dry + tare | 175.4     | 214.2     | 349.5     | 205.7     | 189.4     | 183.9     |
| Mass water      | 62.3      | 77.2      | 107.3     | 53.2      | 55.7      | 65.4      |
| Mass dry soil   | 166.8     | 205.7     | 340.9     | 197.3     | 181.0     | 175.6     |
| Moisture %      | 37.4%     | 37.5%     | 31.5%     | 27.0%     | 30.8%     | 37.2%     |

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| Test Hole       | TH25-13   | TH25-13   | TH25-14   | TH25-14   | TH25-14   | TH25-14   |
|-----------------|-----------|-----------|-----------|-----------|-----------|-----------|
| Depth (m)       | 1.8 - 2.1 | 2.4 - 2.7 | 0.0 - 0.2 | 0.6 - 0.8 | 0.9 - 1.1 | 1.2 - 1.4 |
| Sample #        | G07       | G08       | G71       | G72       | G73       | G74       |
| Tare ID         | F109      | E49       | E41       | E07       | M100      | N42       |
| Mass of tare    | 8.6       | 7.0       | 9.0       | 6.8       | 6.9       | 9.1       |
| Mass wet + tare | 255.6     | 235.3     | 266.2     | 245.0     | 264.0     | 225.5     |
| Mass dry + tare | 187.5     | 177.9     | 194.9     | 178.9     | 191.6     | 167.4     |
| Mass water      | 68.1      | 57.4      | 71.3      | 66.1      | 72.4      | 58.1      |
| Mass dry soil   | 178.9     | 170.9     | 185.9     | 172.1     | 184.7     | 158.3     |
| Moisture %      | 38.1%     | 33.6%     | 38.4%     | 38.4%     | 39.2%     | 36.7%     |

| Test Hole       | TH25-14   | TH25-14   | TH25-15   | TH25-15   | TH25-15   | TH25-15   |
|-----------------|-----------|-----------|-----------|-----------|-----------|-----------|
| Depth (m)       | 1.7 - 1.8 | 2.3 - 2.4 | 0.0 - 0.2 | 0.5 - 0.6 | 0.9 - 1.0 | 1.2 - 1.4 |
| Sample #        | G75       | G76       | G65       | G66       | G67       | G68       |
| Tare ID         | QT70      | H17       | F147      | M05       | M13       | QT30      |
| Mass of tare    | 8.4       | 8.6       | 8.4       | 6.9       | 6.8       | 8.3       |
| Mass wet + tare | 240.1     | 245.6     | 234.2     | 224.3     | 230.0     | 259.4     |
| Mass dry + tare | 178.4     | 171.5     | 216.7     | 166.3     | 170.1     | 186.4     |
| Mass water      | 61.7      | 74.1      | 17.5      | 58.0      | 59.9      | 73.0      |
| Mass dry soil   | 170.0     | 162.9     | 208.3     | 159.4     | 163.3     | 178.1     |
| Moisture %      | 36.3%     | 45.5%     | 8.4%      | 36.4%     | 36.7%     | 41.0%     |

| Test Hole       | TH25-15   | TH25-15   |  |  |  |  |
|-----------------|-----------|-----------|--|--|--|--|
| Depth (m)       | 2.0 - 2.1 | 2.4 - 2.6 |  |  |  |  |
| Sample #        | G69       | G70       |  |  |  |  |
| Tare ID         | QT31      | QT66      |  |  |  |  |
| Mass of tare    | 8.3       | 8.3       |  |  |  |  |
| Mass wet + tare | 245.3     | 230.4     |  |  |  |  |
| Mass dry + tare | 171.9     | 156.5     |  |  |  |  |
| Mass water      | 73.4      | 73.9      |  |  |  |  |
| Mass dry soil   | 163.6     | 148.2     |  |  |  |  |
| Moisture %      | 44.9%     | 49.9%     |  |  |  |  |

Project No. 0022-235-01  
Client Dillon Consulting  
Project Kilcona Park

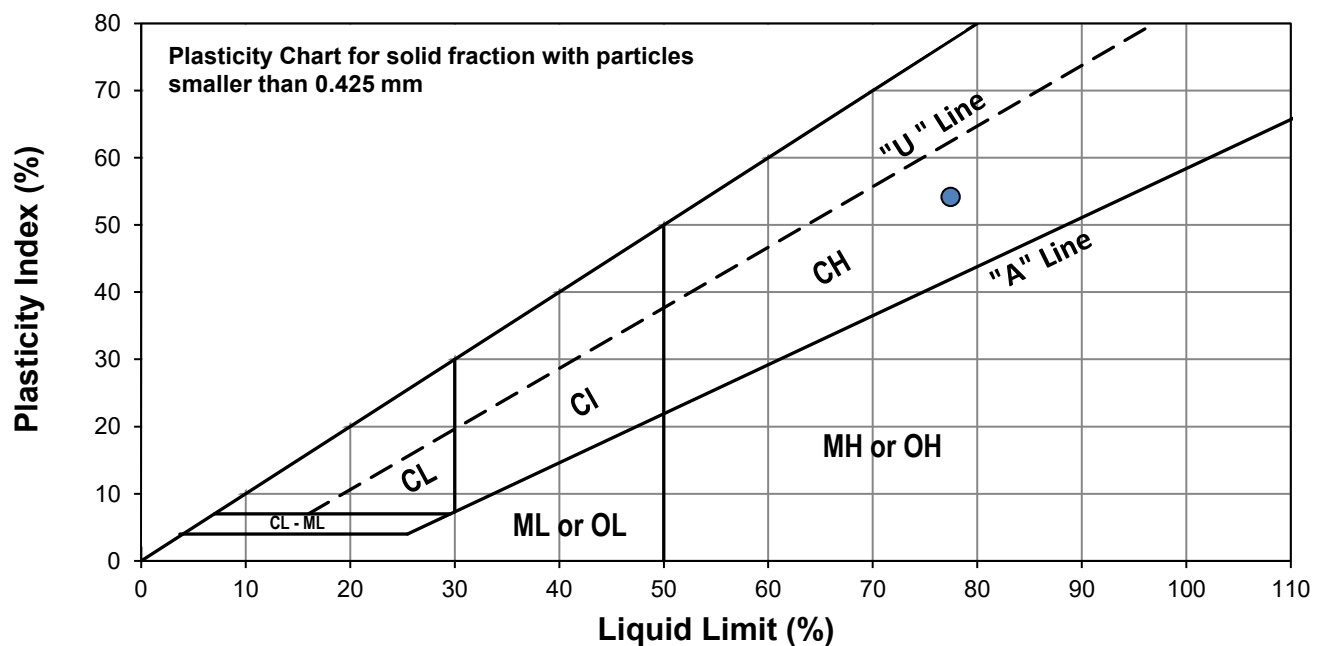


Test Hole TH25-13  
Sample # G03  
Depth (m) 0.6 - 0.8  
Sample Date 15-Dec-26  
Test Date 29-Jan-26  
Technician D.Sellick

|                  |    |
|------------------|----|
| Liquid Limit     | 77 |
| Plastic Limit    | 23 |
| Plasticity Index | 54 |

#### Liquid Limit

| Trial #                  | 1      | 2      | 3      |  |  |
|--------------------------|--------|--------|--------|--|--|
| Number of Blows (N)      | 15     | 21     | 34     |  |  |
| Mass Tare (g)            | 13.509 | 14.173 | 14.023 |  |  |
| Mass Wet Soil + Tare (g) | 20.113 | 20.963 | 22.578 |  |  |
| Mass Dry Soil + Tare (g) | 17.161 | 17.973 | 18.902 |  |  |
| Mass Water (g)           | 2.952  | 2.990  | 3.676  |  |  |
| Mass Dry Soil (g)        | 3.652  | 3.800  | 4.879  |  |  |
| Moisture Content (%)     | 80.832 | 78.684 | 75.343 |  |  |



#### Plastic Limit

| Trial #                  | 1      | 2      | 3 | 4 | 5 |
|--------------------------|--------|--------|---|---|---|
| Mass Tare (g)            | 13.979 | 14.037 |   |   |   |
| Mass Wet Soil + Tare (g) | 21.790 | 21.355 |   |   |   |
| Mass Dry Soil + Tare (g) | 20.302 | 19.985 |   |   |   |
| Mass Water (g)           | 1.488  | 1.370  |   |   |   |
| Mass Dry Soil (g)        | 6.323  | 5.948  |   |   |   |
| Moisture Content (%)     | 23.533 | 23.033 |   |   |   |

Note: Additional information recorded/measured for this test is available upon request.



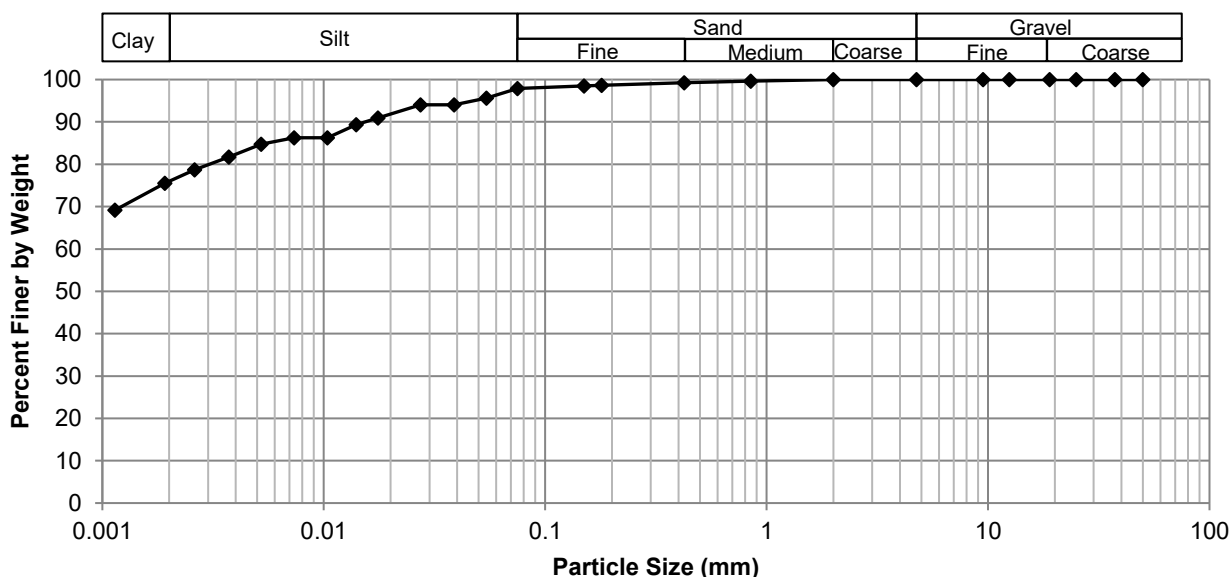
**Project No.** 0022-235-01  
**Client** Dillon Consulting Ltd.  
**Project** Kilcona Park



**Test Hole** TH25-13  
**Sample #** G03  
**Depth (m)** 0.6 - 0.8  
**Sample Date** 15-Dec-25  
**Test Date** 29-Jan-26  
**Technician** D. Sellick

|               |       |
|---------------|-------|
| <b>Gravel</b> | 0.0%  |
| <b>Sand</b>   | 2.1%  |
| <b>Silt</b>   | 22.0% |
| <b>Clay</b>   | 75.9% |

**Particle Size Distribution Curve**



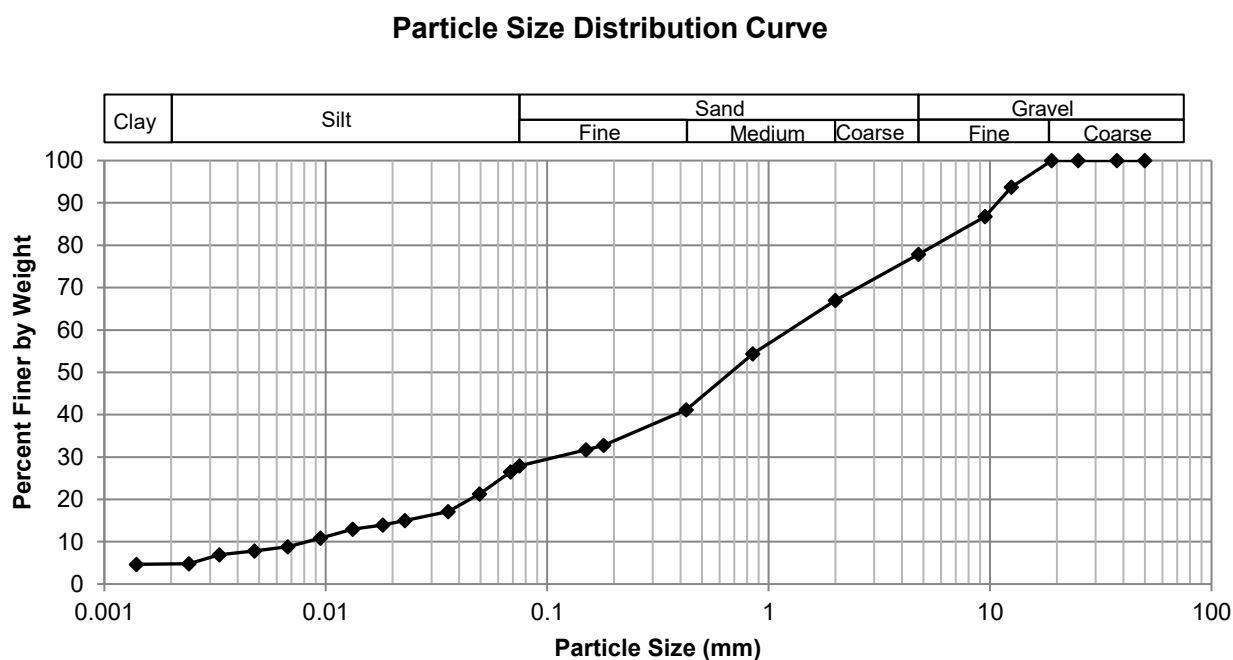
| Gravel             |                 | Sand               |                 | Silt and Clay      |                 |
|--------------------|-----------------|--------------------|-----------------|--------------------|-----------------|
| Particle Size (mm) | Percent Passing | Particle Size (mm) | Percent Passing | Particle Size (mm) | Percent Passing |
| 50.0               | 100.00          | 4.75               | 100.00          | 0.0750             | 97.91           |
| 37.5               | 100.00          | 2.00               | 100.00          | 0.0544             | 95.61           |
| 25.0               | 100.00          | 0.850              | 99.66           | 0.0388             | 94.04           |
| 19.0               | 100.00          | 0.425              | 99.29           | 0.0274             | 94.04           |
| 12.5               | 100.00          | 0.180              | 98.67           | 0.0176             | 90.92           |
| 9.50               | 100.00          | 0.150              | 98.51           | 0.0140             | 89.35           |
| 4.75               | 100.00          | 0.075              | 97.91           | 0.0104             | 86.23           |
|                    |                 |                    |                 | 0.0073             | 86.27           |
|                    |                 |                    |                 | 0.0052             | 84.75           |
|                    |                 |                    |                 | 0.0037             | 81.71           |
|                    |                 |                    |                 | 0.0026             | 78.71           |
|                    |                 |                    |                 | 0.0019             | 75.54           |
|                    |                 |                    |                 | 0.0011             | 69.16           |

**Project No.** 0022-235-01  
**Client** Dillon Consulting Ltd.  
**Project** Kilcona park



|                    |            |
|--------------------|------------|
| <b>Test Hole</b>   | TH25-10    |
| <b>Sample #</b>    | G35        |
| <b>Depth (m)</b>   | 0.5 - 0.6  |
| <b>Sample Date</b> | 15-Dec-25  |
| <b>Test Date</b>   | 29-Jan-26  |
| <b>Technician</b>  | D. Sellick |

|        |       |
|--------|-------|
| Gravel | 22.1% |
| Sand   | 50.0% |
| Silt   | 23.2% |
| Clay   | 4.7%  |



| Gravel             |                 | Sand               |                 | Silt and Clay      |                 |
|--------------------|-----------------|--------------------|-----------------|--------------------|-----------------|
| Particle Size (mm) | Percent Passing | Particle Size (mm) | Percent Passing | Particle Size (mm) | Percent Passing |
| 50.0               | 100.00          | 4.75               | 77.90           | 0.0750             | 27.93           |
| 37.5               | 100.00          | 2.00               | 67.01           | 0.0684             | 26.51           |
| 25.0               | 100.00          | 0.850              | 54.38           | 0.0495             | 21.31           |
| 19.0               | 100.00          | 0.425              | 41.12           | 0.0357             | 17.12           |
| 12.5               | 93.76           | 0.180              | 32.74           | 0.0228             | 15.02           |
| 9.50               | 86.77           | 0.150              | 31.69           | 0.0181             | 13.98           |
| 4.75               | 77.90           | 0.075              | 27.93           | 0.0133             | 12.93           |
|                    |                 |                    |                 | 0.0095             | 10.87           |
|                    |                 |                    |                 | 0.0067             | 8.81            |
|                    |                 |                    |                 | 0.0048             | 7.84            |
|                    |                 |                    |                 | 0.0033             | 6.91            |
|                    |                 |                    |                 | 0.0024             | 4.78            |
|                    |                 |                    |                 | 0.0014             | 4.66            |

**Project No.** 0022-235-01  
**Client** Dillon Consulting Ltd.  
**Project** Kilcona Park

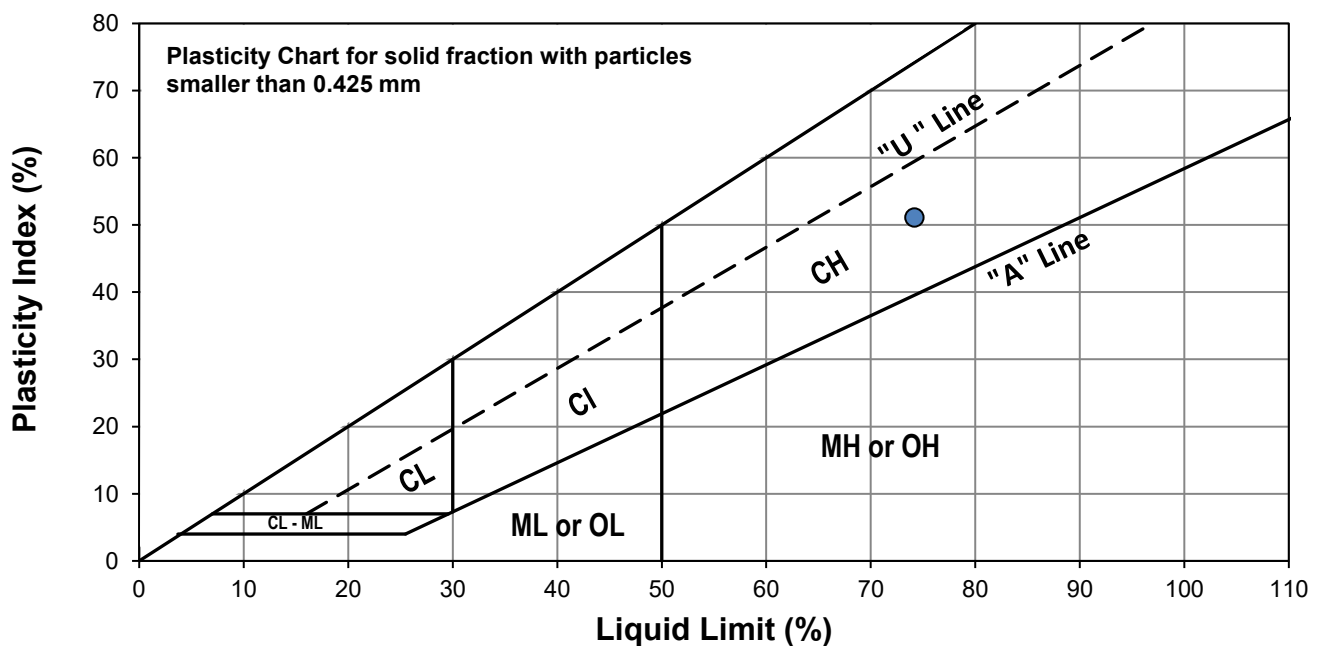


**Test Hole** TH25-06  
**Sample #** G54  
**Depth (m)** 0.6 - 0.8  
**Sample Date** 15-Dec-25  
**Test Date** 30-Jan-26  
**Technician** A.Bhullar

|                         |    |
|-------------------------|----|
| <b>Liquid Limit</b>     | 74 |
| <b>Plastic Limit</b>    | 23 |
| <b>Plasticity Index</b> | 51 |

#### Liquid Limit

| Trial #                  | 1      | 2      | 3      |  |  |
|--------------------------|--------|--------|--------|--|--|
| Number of Blows (N)      | 17     | 26     | 31     |  |  |
| Mass Tare (g)            | 13.952 | 14.065 | 14.074 |  |  |
| Mass Wet Soil + Tare (g) | 27.520 | 26.234 | 25.928 |  |  |
| Mass Dry Soil + Tare (g) | 21.598 | 21.058 | 20.958 |  |  |
| Mass Water (g)           | 5.922  | 5.176  | 4.970  |  |  |
| Mass Dry Soil (g)        | 7.646  | 6.993  | 6.884  |  |  |
| Moisture Content (%)     | 77.452 | 74.017 | 72.196 |  |  |



#### Plastic Limit

| Trial #                  | 1      | 2      | 3 | 4 | 5 |
|--------------------------|--------|--------|---|---|---|
| Mass Tare (g)            | 14.176 | 13.864 |   |   |   |
| Mass Wet Soil + Tare (g) | 21.450 | 21.336 |   |   |   |
| Mass Dry Soil + Tare (g) | 20.071 | 19.952 |   |   |   |
| Mass Water (g)           | 1.379  | 1.384  |   |   |   |
| Mass Dry Soil (g)        | 5.895  | 6.088  |   |   |   |
| Moisture Content (%)     | 23.393 | 22.733 |   |   |   |

Note: Additional information recorded/measured for this test is available upon request.

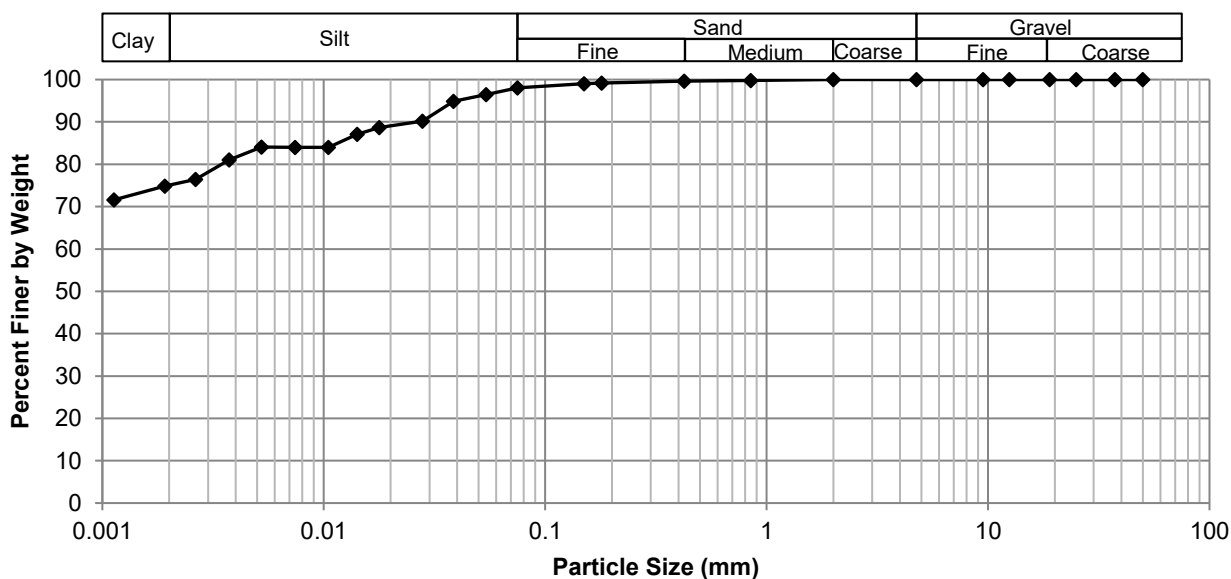
**Project No.** 0022-235-01  
**Client** Dillon Consulting Ltd.  
**Project** Kilcona Park



**Test Hole** TH25-06  
**Sample #** G54  
**Depth (m)** 0.6 - 0.8  
**Sample Date** 15-Dec-25  
**Test Date** 29-Jan-26  
**Technician** D. Sellick

|               |       |
|---------------|-------|
| <b>Gravel</b> | 0.0%  |
| <b>Sand</b>   | 1.9%  |
| <b>Silt</b>   | 23.0% |
| <b>Clay</b>   | 75.0% |

**Particle Size Distribution Curve**



| Gravel             |                 | Sand               |                 | Silt and Clay      |                 |
|--------------------|-----------------|--------------------|-----------------|--------------------|-----------------|
| Particle Size (mm) | Percent Passing | Particle Size (mm) | Percent Passing | Particle Size (mm) | Percent Passing |
| 50.0               | 100.00          | 4.75               | 100.00          | 0.0750             | 98.08           |
| 37.5               | 100.00          | 2.00               | 99.99           | 0.0542             | 96.42           |
| 25.0               | 100.00          | 0.850              | 99.82           | 0.0386             | 94.91           |
| 19.0               | 100.00          | 0.425              | 99.63           | 0.0279             | 90.22           |
| 12.5               | 100.00          | 0.180              | 99.15           | 0.0178             | 88.65           |
| 9.50               | 100.00          | 0.150              | 99.00           | 0.0142             | 87.09           |
| 4.75               | 100.00          | 0.075              | 98.08           | 0.0105             | 83.96           |
|                    |                 |                    |                 | 0.0074             | 84.01           |
|                    |                 |                    |                 | 0.0052             | 84.05           |
|                    |                 |                    |                 | 0.0037             | 81.02           |
|                    |                 |                    |                 | 0.0026             | 76.47           |
|                    |                 |                    |                 | 0.0019             | 74.86           |
|                    |                 |                    |                 | 0.0011             | 71.59           |

**Project No.** 0022-235-01  
**Client** Dillon Consulting Ltd.  
**Project** Kilcona Park

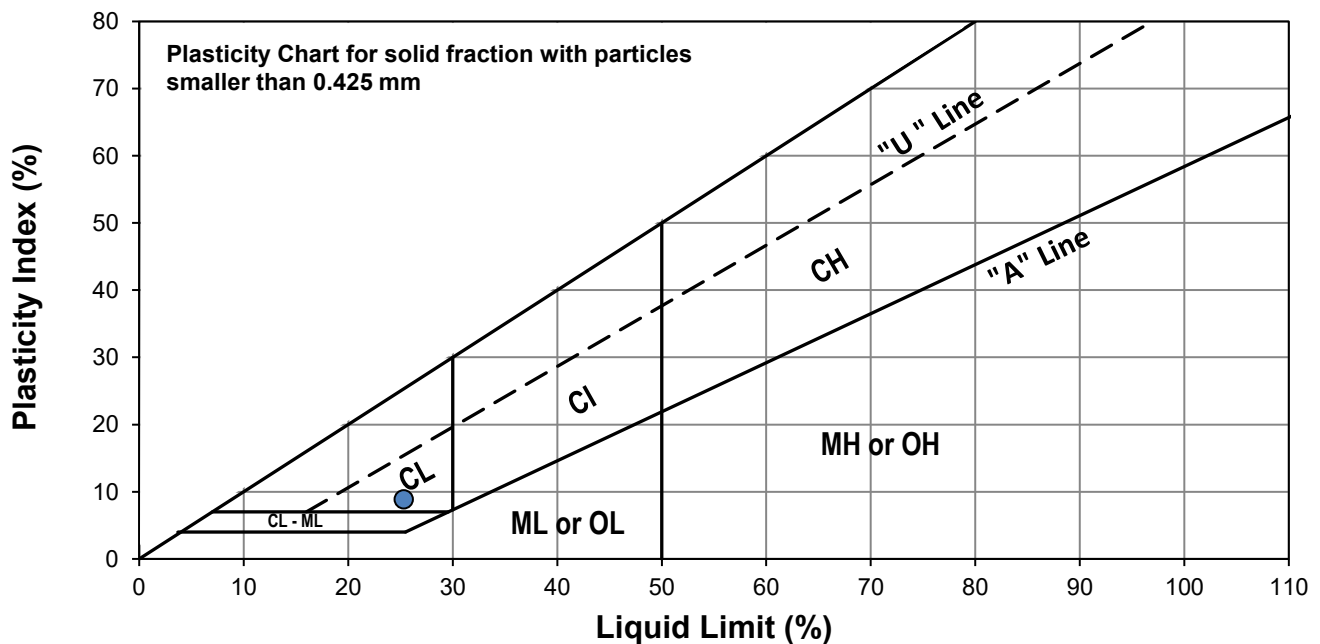


**Test Hole** TH25-04  
**Sample #** G61  
**Depth (m)** 0.9 - 1.1  
**Sample Date** 15-Dec-25  
**Test Date** 30-Jan-26  
**Technician** A.Bhullar

|                         |    |
|-------------------------|----|
| <b>Liquid Limit</b>     | 25 |
| <b>Plastic Limit</b>    | 16 |
| <b>Plasticity Index</b> | 9  |

#### Liquid Limit

| Trial #                  | 1      | 2      | 3      |  |  |
|--------------------------|--------|--------|--------|--|--|
| Number of Blows (N)      | 18     | 23     | 34     |  |  |
| Mass Tare (g)            | 14.000 | 14.036 | 13.645 |  |  |
| Mass Wet Soil + Tare (g) | 26.163 | 27.887 | 26.886 |  |  |
| Mass Dry Soil + Tare (g) | 23.650 | 25.070 | 24.275 |  |  |
| Mass Water (g)           | 2.513  | 2.817  | 2.611  |  |  |
| Mass Dry Soil (g)        | 9.650  | 11.034 | 10.630 |  |  |
| Moisture Content (%)     | 26.041 | 25.530 | 24.563 |  |  |



#### Plastic Limit

| Trial #                  | 1      | 2      | 3 | 4 | 5 |
|--------------------------|--------|--------|---|---|---|
| Mass Tare (g)            | 13.977 | 13.513 |   |   |   |
| Mass Wet Soil + Tare (g) | 21.576 | 21.347 |   |   |   |
| Mass Dry Soil + Tare (g) | 20.482 | 20.260 |   |   |   |
| Mass Water (g)           | 1.094  | 1.087  |   |   |   |
| Mass Dry Soil (g)        | 6.505  | 6.747  |   |   |   |
| Moisture Content (%)     | 16.818 | 16.111 |   |   |   |

Note: Additional information recorded/measured for this test is available upon request.

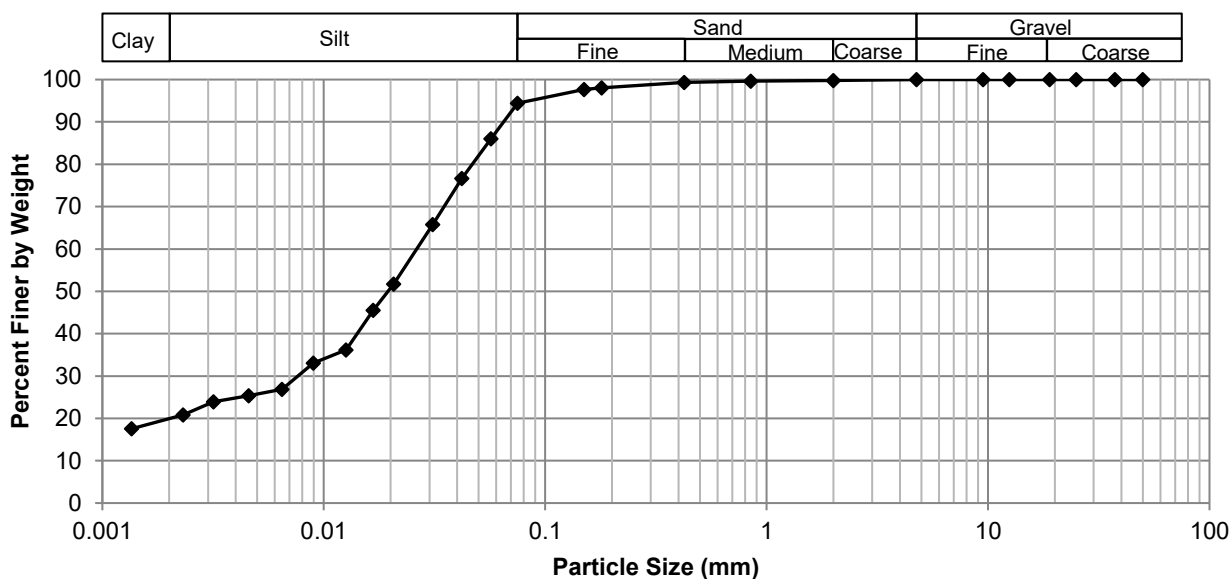
**Project No.** 0022-235-01  
**Client** Dillon Consulting Ltd.  
**Project** Kilcona Park



**Test Hole** TH25-04  
**Sample #** G61  
**Depth (m)** 0.9 - 1.1  
**Sample Date** 15-Dec-25  
**Test Date** 29-Jan-26  
**Technician** D. Sellick

|               |       |
|---------------|-------|
| <b>Gravel</b> | 0.0%  |
| <b>Sand</b>   | 5.6%  |
| <b>Silt</b>   | 74.7% |
| <b>Clay</b>   | 19.7% |

**Particle Size Distribution Curve**



| Gravel             |                 | Sand               |                 | Silt and Clay      |                 |
|--------------------|-----------------|--------------------|-----------------|--------------------|-----------------|
| Particle Size (mm) | Percent Passing | Particle Size (mm) | Percent Passing | Particle Size (mm) | Percent Passing |
| 50.0               | 100.00          | 4.75               | 100.00          | 0.0750             | 94.43           |
| 37.5               | 100.00          | 2.00               | 99.76           | 0.0570             | 86.04           |
| 25.0               | 100.00          | 0.850              | 99.64           | 0.0420             | 76.69           |
| 19.0               | 100.00          | 0.425              | 99.29           | 0.0311             | 65.77           |
| 12.5               | 100.00          | 0.180              | 98.05           | 0.0207             | 51.73           |
| 9.50               | 100.00          | 0.150              | 97.70           | 0.0167             | 45.50           |
| 4.75               | 100.00          | 0.075              | 94.43           | 0.0126             | 36.14           |
|                    |                 |                    |                 | 0.0090             | 33.06           |
|                    |                 |                    |                 | 0.0065             | 26.86           |
|                    |                 |                    |                 | 0.0046             | 25.39           |
|                    |                 |                    |                 | 0.0032             | 23.95           |
|                    |                 |                    |                 | 0.0023             | 20.79           |
|                    |                 |                    |                 | 0.0014             | 17.55           |

**Project No.** 0022-235-01  
**Client** Dillon Consulting Ltd.  
**Project** Kilcona Park

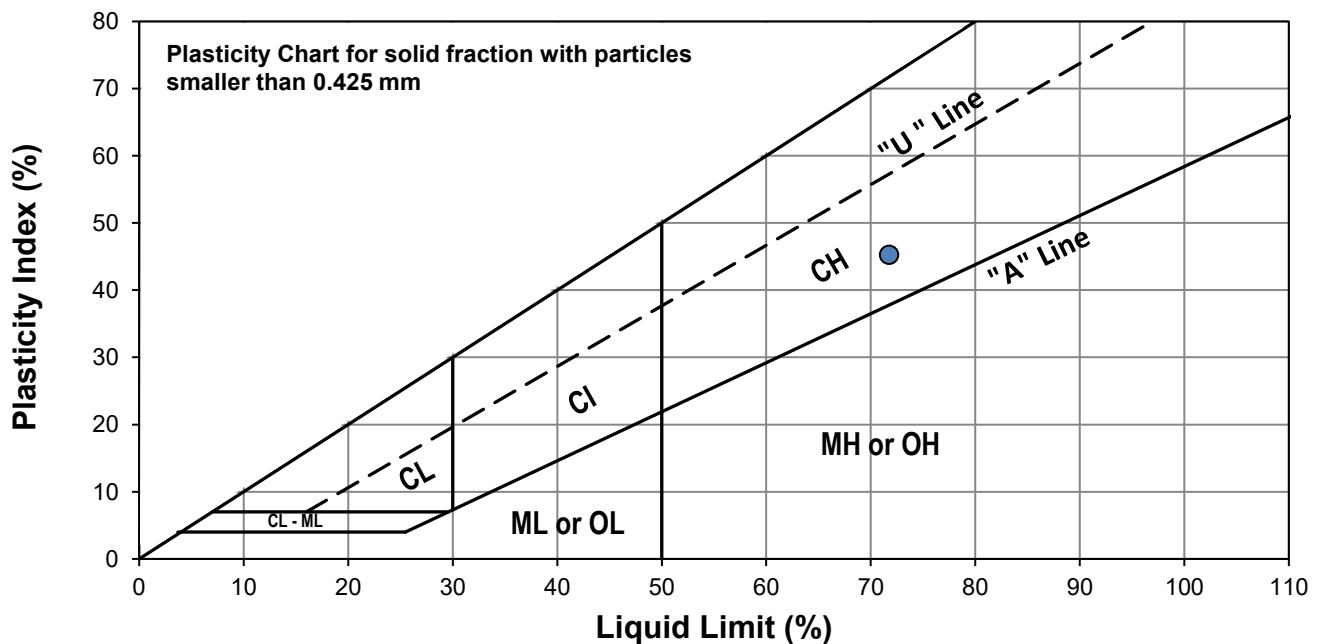


**Test Hole** TH25-01  
**Sample #** G78  
**Depth (m)** 0.6 - 0.8  
**Sample Date** 15-Dec-25  
**Test Date** 30-Jan-26  
**Technician** A.Bhullar

|                         |    |
|-------------------------|----|
| <b>Liquid Limit</b>     | 72 |
| <b>Plastic Limit</b>    | 26 |
| <b>Plasticity Index</b> | 45 |

#### Liquid Limit

| Trial #                  | 1      | 2      | 3      |  |  |
|--------------------------|--------|--------|--------|--|--|
| Number of Blows (N)      | 16     | 22     | 35     |  |  |
| Mass Tare (g)            | 14.021 | 13.908 | 14.037 |  |  |
| Mass Wet Soil + Tare (g) | 26.542 | 26.700 | 24.929 |  |  |
| Mass Dry Soil + Tare (g) | 21.196 | 21.318 | 20.459 |  |  |
| Mass Water (g)           | 5.346  | 5.382  | 4.470  |  |  |
| Mass Dry Soil (g)        | 7.175  | 7.410  | 6.422  |  |  |
| Moisture Content (%)     | 74.509 | 72.632 | 69.604 |  |  |



#### Plastic Limit

| Trial #                  | 1      | 2      | 3 | 4 | 5 |
|--------------------------|--------|--------|---|---|---|
| Mass Tare (g)            | 13.927 | 14.018 |   |   |   |
| Mass Wet Soil + Tare (g) | 21.709 | 21.282 |   |   |   |
| Mass Dry Soil + Tare (g) | 20.062 | 19.777 |   |   |   |
| Mass Water (g)           | 1.647  | 1.505  |   |   |   |
| Mass Dry Soil (g)        | 6.135  | 5.759  |   |   |   |
| Moisture Content (%)     | 26.846 | 26.133 |   |   |   |

Note: Additional information recorded/measured for this test is available upon request.



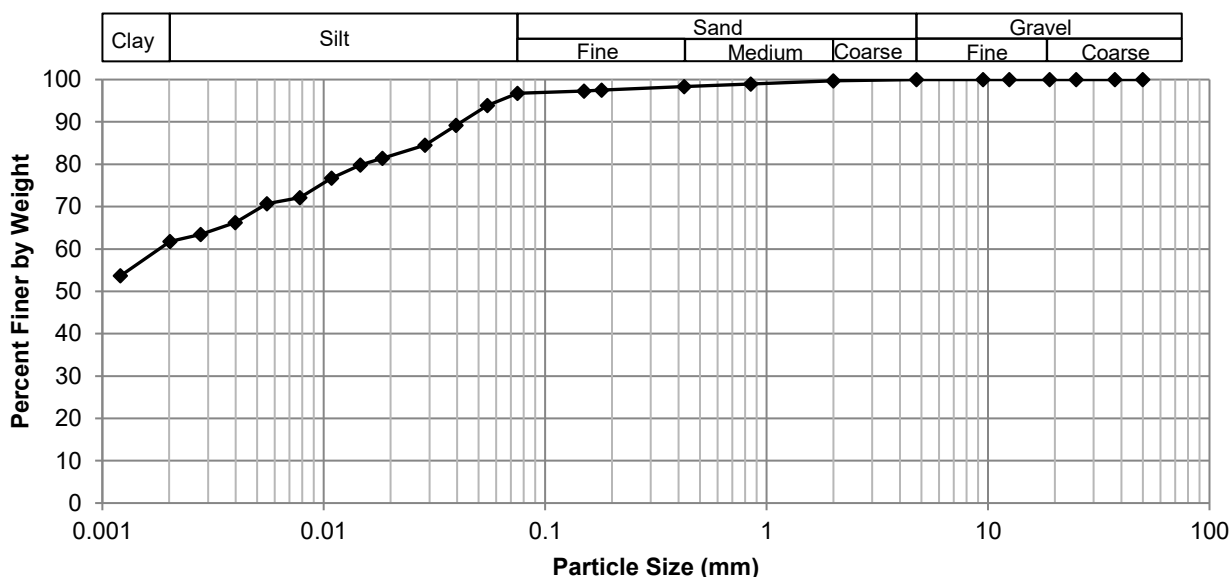
**Project No.** 0022-235-01  
**Client** Dillon Consulting Ltd.  
**Project** Kilcona Park



**Test Hole** TH25-01  
**Sample #** G78  
**Depth (m)** 0.6 - 0.8  
**Sample Date** 15-Dec-25  
**Test Date** 29-Jan-26  
**Technician** D. Sellick

|               |       |
|---------------|-------|
| <b>Gravel</b> | 0.0%  |
| <b>Sand</b>   | 3.3%  |
| <b>Silt</b>   | 35.2% |
| <b>Clay</b>   | 61.6% |

**Particle Size Distribution Curve**



| Gravel             |                 | Sand               |                 | Silt and Clay      |                 |
|--------------------|-----------------|--------------------|-----------------|--------------------|-----------------|
| Particle Size (mm) | Percent Passing | Particle Size (mm) | Percent Passing | Particle Size (mm) | Percent Passing |
| 50.0               | 100.00          | 4.75               | 100.00          | 0.0750             | 96.74           |
| 37.5               | 100.00          | 2.00               | 99.74           | 0.0548             | 93.88           |
| 25.0               | 100.00          | 0.850              | 98.95           | 0.0397             | 89.20           |
| 19.0               | 100.00          | 0.425              | 98.36           | 0.0287             | 84.53           |
| 12.5               | 100.00          | 0.180              | 97.50           | 0.0184             | 81.41           |
| 9.50               | 100.00          | 0.150              | 97.33           | 0.0146             | 79.85           |
| 4.75               | 100.00          | 0.075              | 96.74           | 0.0108             | 76.73           |
|                    |                 |                    |                 | 0.0078             | 72.16           |
|                    |                 |                    |                 | 0.0055             | 70.71           |
|                    |                 |                    |                 | 0.0040             | 66.24           |
|                    |                 |                    |                 | 0.0028             | 63.45           |
|                    |                 |                    |                 | 0.0020             | 61.78           |
|                    |                 |                    |                 | 0.0012             | 53.66           |



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Winnipeg, MB R3H 0L3  
Tel: 204.975.9433

## Shelby Tube Visual

**Project No.** 0022-235-01  
**Client** Dillon Consulting Ltd.  
**Project** Kilcona Park

**Test Hole** TH25-12  
**Sample #** T17  
**Depth (m)** 4.6 - 5.2  
**Sample Date** 12-Dec-25  
**Test Date** 27-Jan-26  
**Technician** A. Dustmamatov

### Tube Extraction

|                                        |               |               |                  |               |
|----------------------------------------|---------------|---------------|------------------|---------------|
| <b>Recovery (mm)</b>                   | 540           |               |                  |               |
| <b>Bottom</b>                          |               |               |                  |               |
| <b>5.11 m</b>                          | <b>4.99 m</b> | <b>4.82 m</b> | <b>4.72 m</b>    | <b>Top</b>    |
|                                        |               |               |                  | <b>4.57 m</b> |
| Moisture<br>Content<br>PP/TV<br>Visual | Qu<br>Bulk    | Keep          | Toss<br>(Slough) |               |
| 120 mm                                 | 170 mm        | 100 mm        | 150 mm           |               |

### Visual Classification

|                                     |                                             |
|-------------------------------------|---------------------------------------------|
| <b>Material</b>                     | CLAY                                        |
| <b>Composition</b>                  | silty                                       |
| trace silt inclusions (<10mm diam.) |                                             |
| trace oxidation                     |                                             |
|                                     |                                             |
|                                     |                                             |
|                                     |                                             |
| <b>Color</b>                        | brown                                       |
| <b>Moisture</b>                     | moist                                       |
| <b>Consistency</b>                  | stiff                                       |
| <b>Plasticity</b>                   | high plasticity                             |
| <b>Structure</b>                    | laminated (grey and brown clay - 3mm thick) |
| <b>Gradation</b>                    | -                                           |

### Torvane

|                                       |      |
|---------------------------------------|------|
| <b>Reading</b>                        | 0.85 |
| <b>Vane Size (s,m,l)</b>              | m    |
| <b>Undrained Shear Strength (kPa)</b> | 83.4 |

### Pocket Penetrometer

|                                       |                |      |
|---------------------------------------|----------------|------|
| <b>Reading</b>                        | <b>1</b>       | 1.50 |
|                                       | <b>2</b>       | 1.50 |
|                                       | <b>3</b>       | 1.60 |
|                                       | <b>Average</b> | 1.53 |
| <b>Undrained Shear Strength (kPa)</b> |                | 75.2 |

### Moisture Content

|                            |       |
|----------------------------|-------|
| <b>Tare ID</b>             | M89   |
| <b>Mass tare (g)</b>       | 7.0   |
| <b>Mass wet + tare (g)</b> | 395.0 |
| <b>Mass dry + tare (g)</b> | 270.5 |
| <b>Moisture %</b>          | 47.2% |

### Unit Weight

|                      |   |        |
|----------------------|---|--------|
| Bulk Weight (g)      |   | 1092.4 |
| Length (mm)          | 1 | 149.35 |
|                      | 2 | 149.42 |
|                      | 3 | 149.70 |
|                      | 4 | 149.26 |
| Average Length (m)   |   | 0.149  |
| Diam. (mm)           | 1 | 72.42  |
|                      | 2 | 72.90  |
|                      | 3 | 73.97  |
|                      | 4 | 73.43  |
| Average Diameter (m) |   | 0.073  |

|                                            |          |
|--------------------------------------------|----------|
| <b>Volume (m<sup>3</sup>)</b>              | 6.29E-04 |
| <b>Bulk Unit Weight (kN/m<sup>3</sup>)</b> | 17.0     |
| <b>Bulk Unit Weight (pcf)</b>              | 108.5    |
| <b>Dry Unit Weight (kN/m<sup>3</sup>)</b>  | 11.6     |
| <b>Dry Unit Weight (pcf)</b>               | 73.7     |



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## Unconfined Compressive Strength ASTM D2166

**Project No.** 0022-235-01  
**Client** Dillon Consulting Ltd.  
**Project** Kilcona Park

**Test Hole** TH25-12  
**Sample #** T17  
**Depth (m)** 4.6 - 5.2  
**Sample Date** 12-Dec-25  
**Test Date** 27-Jan-26  
**Technician** A. Dustmamatov

### Unconfined Strength

|                             | kPa  | ksf |
|-----------------------------|------|-----|
| <b>Max <math>q_u</math></b> | 88.9 | 1.9 |
| <b>Max <math>S_u</math></b> | 44.5 | 0.9 |

### Specimen Data

**Description** CLAY - silty, trace silt inclusions (<10mm diam.), trace oxidation, brown, moist, stiff, high plasticity, laminated (grey and brown clay - 3mm thick)

**Length** 149.4 (mm)  
**Diameter** 73.2 (mm)  
**L/D Ratio** 2.0  
**Initial Area** 0.00421 (m<sup>2</sup>)  
**Load Rate** 1.00 (%/min)

**Moisture %** 47%  
**Bulk Unit Wt.** 17.0 (kN/m<sup>3</sup>)  
**Dry Unit Wt.** 11.6 (kN/m<sup>3</sup>)  
**Liquid Limit** -  
**Plastic Limit** -  
**Plasticity Index** -

### Undrained Shear Strength Tests

#### Torvane

| Reading | Undrained Shear Strength |      |
|---------|--------------------------|------|
| tsf     | kPa                      | ksf  |
| 0.85    | 83.4                     | 1.74 |

**Vane Size**  
m

#### Pocket Penetrometer

| Reading        | Undrained Shear Strength |             |            |
|----------------|--------------------------|-------------|------------|
| tsf            | kPa                      | ksf         |            |
| 1.50           | 73.6                     | 1.54        |            |
| 1.50           | 73.6                     | 1.54        |            |
| 1.60           | 78.5                     | 1.64        |            |
| <b>Average</b> | <b>1.53</b>              | <b>75.2</b> | <b>1.6</b> |

### Failure Geometry

Sketch:

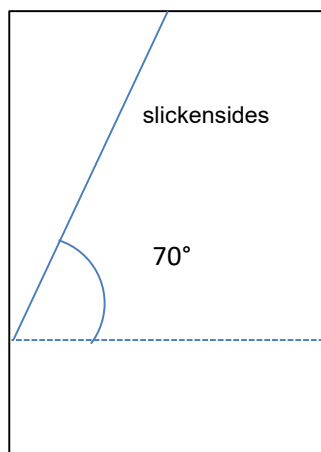


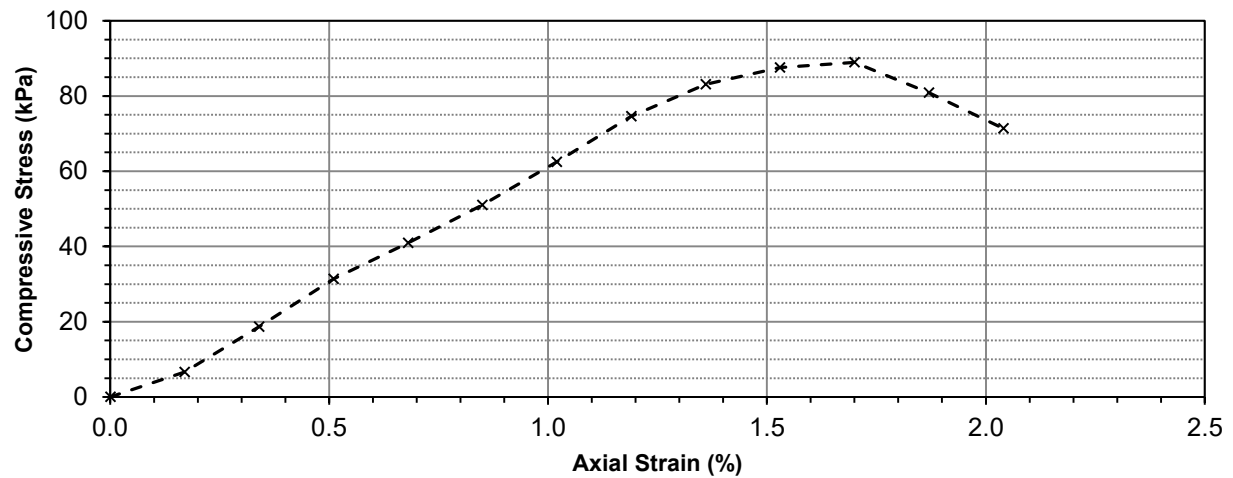
Photo:





Project No. 0022-235-01  
Client Dillon Consulting Ltd.  
Project Kilcona Park

### Unconfined Compression Test Graph



### Unconfined Compression Test Data

| Deformation Dial Reading | Load Ring Dial Reading | Deflection (mm) | Axial Strain (%) | Corrected Area (m <sup>2</sup> ) | Axial Load (N) | Compressive Stress, $q_u$ (kPa) | Shear Stress, $S_u$ (kPa) |
|--------------------------|------------------------|-----------------|------------------|----------------------------------|----------------|---------------------------------|---------------------------|
| 0                        | 1.48                   | 0.0000          | 0.00             | 0.004206                         | 0.0            | 0.00                            | 0.00                      |
| 10                       | 2.03                   | 0.2540          | 0.17             | 0.004213                         | 27.7           | 6.58                            | 3.29                      |
| 20                       | 3.04                   | 0.5080          | 0.34             | 0.004220                         | 78.6           | 18.63                           | 9.32                      |
| 30                       | 4.11                   | 0.7620          | 0.51             | 0.004228                         | 132.6          | 31.36                           | 15.68                     |
| 40                       | 4.92                   | 1.0160          | 0.68             | 0.004235                         | 173.4          | 40.94                           | 20.47                     |
| 50                       | 5.77                   | 1.2700          | 0.85             | 0.004242                         | 216.2          | 50.97                           | 25.49                     |
| 60                       | 6.75                   | 1.5240          | 1.02             | 0.004249                         | 265.6          | 62.51                           | 31.25                     |
| 70                       | 7.78                   | 1.7780          | 1.19             | 0.004257                         | 317.5          | 74.60                           | 37.30                     |
| 80                       | 8.51                   | 2.0320          | 1.36             | 0.004264                         | 354.3          | 83.10                           | 41.55                     |
| 90                       | 8.90                   | 2.2860          | 1.53             | 0.004271                         | 374.0          | 87.56                           | 43.78                     |
| 100                      | 9.03                   | 2.5400          | 1.70             | 0.004279                         | 380.5          | 88.94                           | 44.47                     |
| 110                      | 8.36                   | 2.7940          | 1.87             | 0.004286                         | 346.8          | 80.90                           | 40.45                     |
| 120                      | 7.56                   | 3.0480          | 2.04             | 0.004294                         | 306.5          | 71.37                           | 35.69                     |



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## Shelby Tube Visual

**Project No.** 0022-235-01  
**Client** Dillon Consulting Ltd.  
**Project** Kilcona Park

**Test Hole** TH25-12  
**Sample #** T20  
**Depth (m)** 9.1 - 9.8  
**Sample Date** 12-Dec-25  
**Test Date** 27-Jan-26  
**Technician** A. Dustmamatov

### Tube Extraction

|                                        |               |               |                  |                       |
|----------------------------------------|---------------|---------------|------------------|-----------------------|
| <b>Recovery (mm)</b>                   | 630           |               |                  |                       |
| <b>Bottom</b>                          |               |               |                  |                       |
| <b>9.77 m</b>                          | <b>9.65 m</b> | <b>9.48 m</b> | <b>9.31 m</b>    | <b>Top<br/>9.14 m</b> |
| Moisture<br>Content<br>PP/TV<br>Visual | Qu<br>Bulk    | Keep          | Toss<br>(Slough) |                       |
| 120 mm                                 | 170 mm        | 170 mm        | 170 mm           |                       |

### Visual Classification

|                                     |       |
|-------------------------------------|-------|
| <b>Material</b>                     | CLAY  |
| <b>Composition</b>                  | silty |
| trace sand                          |       |
| trace gravel (<15mm diam.)          |       |
| trace silt inclusions (<10mm diam.) |       |

|                    |                 |
|--------------------|-----------------|
| <b>Color</b>       | grey            |
| <b>Moisture</b>    | moist           |
| <b>Consistency</b> | firm            |
| <b>Plasticity</b>  | high plasticity |
| <b>Structure</b>   | -               |
| <b>Gradation</b>   | -               |

### Torvane

|                                       |      |
|---------------------------------------|------|
| <b>Reading</b>                        | 0.45 |
| <b>Vane Size (s,m,l)</b>              | m    |
| <b>Undrained Shear Strength (kPa)</b> | 44.1 |

### Pocket Penetrometer

|                                       |                |      |
|---------------------------------------|----------------|------|
| <b>Reading</b>                        | <b>1</b>       | 0.90 |
|                                       | <b>2</b>       | 0.90 |
|                                       | <b>3</b>       | 1.00 |
|                                       | <b>Average</b> | 0.93 |
| <b>Undrained Shear Strength (kPa)</b> |                | 45.8 |

### Moisture Content

|                            |       |
|----------------------------|-------|
| <b>Tare ID</b>             | AA7   |
| <b>Mass tare (g)</b>       | 6.8   |
| <b>Mass wet + tare (g)</b> | 416.8 |
| <b>Mass dry + tare (g)</b> | 270.0 |
| <b>Moisture %</b>          | 55.8% |

### Unit Weight

|                      |   |        |
|----------------------|---|--------|
| Bulk Weight (g)      |   | 1040.4 |
| Length (mm)          | 1 | 149.06 |
|                      | 2 | 148.83 |
|                      | 3 | 148.85 |
|                      | 4 | 148.79 |
| Average Length (m)   |   | 0.149  |
| Diam. (mm)           | 1 | 73.95  |
|                      | 2 | 72.18  |
|                      | 3 | 72.35  |
|                      | 4 | 72.42  |
| Average Diameter (m) |   | 0.073  |

|                                            |          |
|--------------------------------------------|----------|
| <b>Volume (m<sup>3</sup>)</b>              | 6.18E-04 |
| <b>Bulk Unit Weight (kN/m<sup>3</sup>)</b> | 16.5     |
| <b>Bulk Unit Weight (pcf)</b>              | 105.0    |
| <b>Dry Unit Weight (kN/m<sup>3</sup>)</b>  | 10.6     |
| <b>Dry Unit Weight (pcf)</b>               | 67.4     |



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## Unconfined Compressive Strength ASTM D2166

**Project No.** 0022-235-01  
**Client** Dillon Consulting Ltd.  
**Project** Kilcona Park

**Test Hole** TH25-12  
**Sample #** T20  
**Depth (m)** 9.1 - 9.8  
**Sample Date** 12-Dec-25  
**Test Date** 27-Jan-26  
**Technician** A. Dustmamatov

### Unconfined Strength

|                             | kPa  | ksf |
|-----------------------------|------|-----|
| <b>Max <math>q_u</math></b> | 84.1 | 1.8 |
| <b>Max <math>S_u</math></b> | 42.1 | 0.9 |

### Specimen Data

**Description** CLAY - silty, trace sand, trace gravel (<15mm diam.), trace silt inclusions (<10mm diam.), grey, moist, firm, high plasticity

**Length** 148.9 (mm)  
**Diameter** 72.7 (mm)  
**L/D Ratio** 2.0  
**Initial Area** 0.00415 (m<sup>2</sup>)  
**Load Rate** 1.00 (%/min)

**Moisture %** 56%  
**Bulk Unit Wt.** 16.5 (kN/m<sup>3</sup>)  
**Dry Unit Wt.** 10.6 (kN/m<sup>3</sup>)  
**Liquid Limit** -  
**Plastic Limit** -  
**Plasticity Index** -

### Undrained Shear Strength Tests

#### Torvane

| Reading | Undrained Shear Strength |
|---------|--------------------------|
| tsf     | kPa ksf                  |
| 0.45    | 44.1 0.92                |

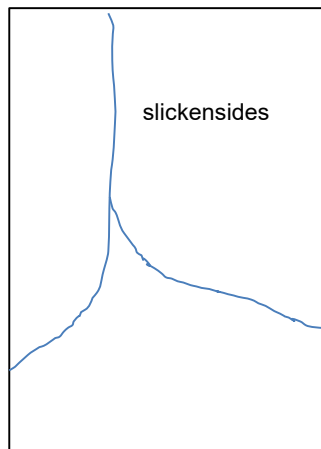
**Vane Size**  
m

#### Pocket Penetrometer

| Reading        | Undrained Shear Strength |
|----------------|--------------------------|
| tsf            | kPa ksf                  |
| 0.90           | 44.1 0.92                |
| 0.90           | 44.1 0.92                |
| 1.00           | 49.1 1.02                |
| <b>Average</b> | <b>0.93 45.8 1.0</b>     |

### Failure Geometry

**Sketch:**



**Photo:**



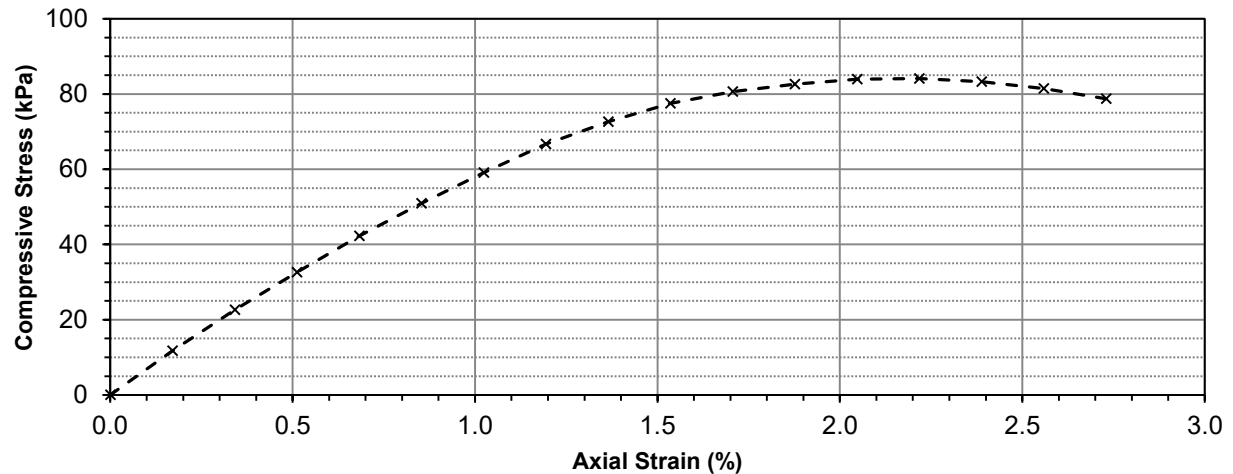


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## Unconfined Compressive Strength ASTM D2166

**Project No.** 0022-235-01  
**Client** Dillon Consulting Ltd.  
**Project** Kilcona Park

### Unconfined Compression Test Graph



### Unconfined Compression Test Data

| Deformation Dial Reading | Load Ring Dial Reading | Deflection (mm) | Axial Strain (%) | Corrected Area (m <sup>2</sup> ) | Axial Load (N) | Compressive Stress, $q_u$ (kPa) | Shear Stress, $S_u$ (kPa) |
|--------------------------|------------------------|-----------------|------------------|----------------------------------|----------------|---------------------------------|---------------------------|
| 0                        | 1.48                   | 0.0000          | 0.00             | 0.004154                         | 0.0            | 0.00                            | 0.00                      |
| 10                       | 2.45                   | 0.2540          | 0.17             | 0.004161                         | 48.9           | 11.75                           | 5.87                      |
| 20                       | 3.35                   | 0.5080          | 0.34             | 0.004168                         | 94.3           | 22.61                           | 11.31                     |
| 30                       | 4.18                   | 0.7620          | 0.51             | 0.004175                         | 136.1          | 32.59                           | 16.30                     |
| 40                       | 4.99                   | 1.0160          | 0.68             | 0.004182                         | 176.9          | 42.30                           | 21.15                     |
| 50                       | 5.71                   | 1.2700          | 0.85             | 0.004190                         | 213.2          | 50.89                           | 25.44                     |
| 60                       | 6.40                   | 1.5240          | 1.02             | 0.004197                         | 248.0          | 59.09                           | 29.54                     |
| 70                       | 7.04                   | 1.7780          | 1.19             | 0.004204                         | 280.2          | 66.66                           | 33.33                     |
| 80                       | 7.55                   | 2.0320          | 1.36             | 0.004211                         | 305.9          | 72.65                           | 36.32                     |
| 90                       | 7.97                   | 2.2860          | 1.54             | 0.004219                         | 327.1          | 77.54                           | 38.77                     |
| 100                      | 8.24                   | 2.5400          | 1.71             | 0.004226                         | 340.7          | 80.63                           | 40.31                     |
| 110                      | 8.42                   | 2.7940          | 1.88             | 0.004233                         | 349.8          | 82.63                           | 41.31                     |
| 120                      | 8.54                   | 3.0480          | 2.05             | 0.004241                         | 355.8          | 83.91                           | 41.96                     |
| 130                      | 8.57                   | 3.3020          | 2.22             | 0.004248                         | 357.4          | 84.12                           | 42.06                     |
| 140                      | 8.51                   | 3.5560          | 2.39             | 0.004256                         | 354.3          | 83.26                           | 41.63                     |
| 150                      | 8.37                   | 3.8100          | 2.56             | 0.004263                         | 347.3          | 81.46                           | 40.73                     |
| 160                      | 8.15                   | 4.0640          | 2.73             | 0.004270                         | 336.2          | 78.72                           | 39.36                     |



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## Shelby Tube Visual

**Project No.** 0022-235-01  
**Client** Dillon Consulting Ltd.  
**Project** Kilcona Park

**Test Hole** TH25-05  
**Sample #** T104  
**Depth (m)** 6.1 - 6.7  
**Sample Date** 15-Dec-25  
**Test Date** 23-Jan-26  
**Technician** A. Dustmamatov

### Tube Extraction

|                                        |               |               |                  |               |
|----------------------------------------|---------------|---------------|------------------|---------------|
| <b>Recovery (mm)</b>                   | 510           |               |                  |               |
| <b>Bottom</b>                          |               |               |                  | <b>Top</b>    |
| <b>6.61 m</b>                          | <b>6.48 m</b> | <b>6.31 m</b> | <b>6.14 m</b>    | <b>6.10 m</b> |
| Moisture<br>Content<br>PP/TV<br>Visual | Qu<br>Bulk    | Keep          | Toss<br>(Slough) |               |
| 130 mm                                 | 170 mm        | 170 mm        | 40 mm            |               |

### Visual Classification

|                                    |                                                   |
|------------------------------------|---------------------------------------------------|
| <b>Material</b>                    | CLAY                                              |
| <b>Composition</b>                 | silty                                             |
| trace silt inclusions (<5mm diam.) |                                                   |
| trace oxidation                    |                                                   |
|                                    |                                                   |
|                                    |                                                   |
|                                    |                                                   |
| <b>Color</b>                       | brown                                             |
| <b>Moisture</b>                    | moist                                             |
| <b>Consistency</b>                 | stiff                                             |
| <b>Plasticity</b>                  | high plasticity                                   |
| <b>Structure</b>                   | laminated (clay (3mm thick) and silt (1mm thick)) |
| <b>Gradation</b>                   | -                                                 |

### Torvane

|                                       |      |
|---------------------------------------|------|
| <b>Reading</b>                        | 0.90 |
| <b>Vane Size (s,m,l)</b>              | m    |
| <b>Undrained Shear Strength (kPa)</b> | 88.3 |

### Pocket Penetrometer

|                                       |                |      |
|---------------------------------------|----------------|------|
| <b>Reading</b>                        | <b>1</b>       | 2.00 |
|                                       | <b>2</b>       | 2.00 |
|                                       | <b>3</b>       | 2.00 |
|                                       | <b>Average</b> | 2.00 |
| <b>Undrained Shear Strength (kPa)</b> |                | 98.1 |

### Moisture Content

|                            |       |
|----------------------------|-------|
| <b>Tare ID</b>             | P05   |
| <b>Mass tare (g)</b>       | 6.6   |
| <b>Mass wet + tare (g)</b> | 405.0 |
| <b>Mass dry + tare (g)</b> | 280.2 |
| <b>Moisture %</b>          | 45.6% |

### Unit Weight

|                      |   |        |
|----------------------|---|--------|
| Bulk Weight (g)      |   | 1101.0 |
| Length (mm)          | 1 | 149.86 |
|                      | 2 | 149.78 |
|                      | 3 | 149.52 |
|                      | 4 | 149.60 |
| Average Length (m)   |   | 0.150  |
| Diam. (mm)           | 1 | 72.39  |
|                      | 2 | 72.25  |
|                      | 3 | 72.82  |
|                      | 4 | 72.65  |
| Average Diameter (m) |   | 0.073  |

|                                            |          |
|--------------------------------------------|----------|
| <b>Volume (m<sup>3</sup>)</b>              | 6.18E-04 |
| <b>Bulk Unit Weight (kN/m<sup>3</sup>)</b> | 17.5     |
| <b>Bulk Unit Weight (pcf)</b>              | 111.1    |
| <b>Dry Unit Weight (kN/m<sup>3</sup>)</b>  | 12.0     |
| <b>Dry Unit Weight (pcf)</b>               | 76.3     |





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## Unconfined Compressive Strength ASTM D2166

**Project No.** 0022-235-01  
**Client** Dillon Consulting Ltd.  
**Project** Kilcona Park

**Test Hole** TH25-05  
**Sample #** T104  
**Depth (m)** 6.1 - 6.7  
**Sample Date** 15-Dec-25  
**Test Date** 23-Jan-26  
**Technician** A. Dustmamatov

### Unconfined Strength

|                             | kPa   | ksf |
|-----------------------------|-------|-----|
| <b>Max <math>q_u</math></b> | 160.6 | 3.4 |
| <b>Max <math>S_u</math></b> | 80.3  | 1.7 |

### Specimen Data

**Description** CLAY - silty, trace silt inclusions (<5mm diam.), trace oxidation, brown, moist, stiff, high plasticity, laminated (clay (3mm thick) and silt (1mm thick))

**Length** 149.7 (mm)  
**Diameter** 72.5 (mm)  
**L/D Ratio** 2.1  
**Initial Area** 0.00413 (m<sup>2</sup>)  
**Load Rate** 1.00 (%/min)

**Moisture %** 46%  
**Bulk Unit Wt.** 17.5 (kN/m<sup>3</sup>)  
**Dry Unit Wt.** 12.0 (kN/m<sup>3</sup>)  
**Liquid Limit** -  
**Plastic Limit** -  
**Plasticity Index** -

### Undrained Shear Strength Tests

#### Torvane

| Reading | Undrained Shear Strength |
|---------|--------------------------|
| tsf     | kPa ksf                  |
| 0.90    | 88.3 1.84                |

**Vane Size**  
m

#### Pocket Penetrometer

| Reading        | Undrained Shear Strength |
|----------------|--------------------------|
| tsf            | kPa ksf                  |
| 2.00           | 98.1 2.05                |
| 2.00           | 98.1 2.05                |
| 2.00           | 98.1 2.05                |
| <b>Average</b> | <b>2.00 98.1 2.0</b>     |

### Failure Geometry

Sketch:



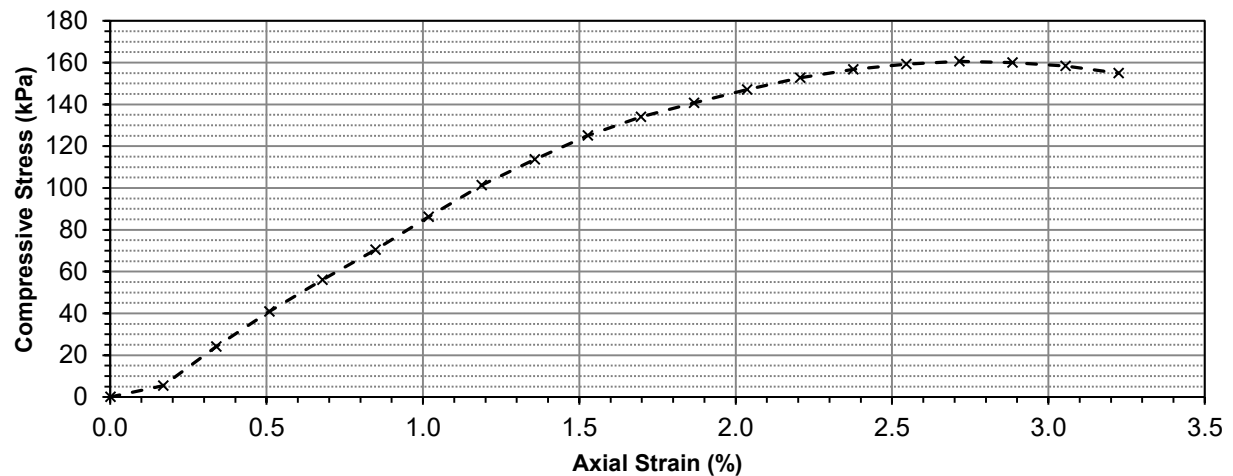
Photo:





Project No. 0022-235-01  
Client Dillon Consulting Ltd.  
Project Kilcona Park

### Unconfined Compression Test Graph



### Unconfined Compression Test Data

| Deformation Dial Reading | Load Ring Dial Reading | Deflection (mm) | Axial Strain (%) | Corrected Area (m <sup>2</sup> ) | Axial Load (N) | Compressive Stress, $q_u$ (kPa) | Shear Stress, $S_u$ (kPa) |
|--------------------------|------------------------|-----------------|------------------|----------------------------------|----------------|---------------------------------|---------------------------|
| 0                        | 1.50                   | 0.0000          | 0.00             | 0.004131                         | 0.0            | 0.00                            | 0.00                      |
| 10                       | 1.94                   | 0.2540          | 0.17             | 0.004138                         | 22.2           | 5.36                            | 2.68                      |
| 20                       | 3.48                   | 0.5080          | 0.34             | 0.004145                         | 99.8           | 24.07                           | 12.04                     |
| 30                       | 4.87                   | 0.7620          | 0.51             | 0.004153                         | 169.9          | 40.90                           | 20.45                     |
| 40                       | 6.12                   | 1.0160          | 0.68             | 0.004160                         | 232.9          | 55.98                           | 27.99                     |
| 50                       | 7.32                   | 1.2700          | 0.85             | 0.004167                         | 293.3          | 70.40                           | 35.20                     |
| 60                       | 8.64                   | 1.5240          | 1.02             | 0.004174                         | 359.9          | 86.22                           | 43.11                     |
| 70                       | 9.90                   | 1.7780          | 1.19             | 0.004181                         | 423.4          | 101.26                          | 50.63                     |
| 80                       | 10.94                  | 2.0320          | 1.36             | 0.004188                         | 475.8          | 113.60                          | 56.80                     |
| 90                       | 11.91                  | 2.2860          | 1.53             | 0.004195                         | 524.7          | 125.06                          | 62.53                     |
| 100                      | 12.67                  | 2.5400          | 1.70             | 0.004203                         | 563.0          | 133.96                          | 66.98                     |
| 110                      | 13.25                  | 2.7940          | 1.87             | 0.004210                         | 592.2          | 140.67                          | 70.34                     |
| 120                      | 13.80                  | 3.0480          | 2.04             | 0.004217                         | 620.0          | 147.00                          | 73.50                     |
| 130                      | 14.30                  | 3.3020          | 2.21             | 0.004225                         | 645.2          | 152.72                          | 76.36                     |
| 140                      | 14.66                  | 3.5560          | 2.38             | 0.004232                         | 663.3          | 156.74                          | 78.37                     |
| 150                      | 14.90                  | 3.8100          | 2.55             | 0.004239                         | 675.4          | 159.32                          | 79.66                     |
| 160                      | 15.03                  | 4.0640          | 2.71             | 0.004247                         | 682.0          | 160.59                          | 80.29                     |
| 170                      | 15.01                  | 4.3180          | 2.88             | 0.004254                         | 680.9          | 160.07                          | 80.03                     |
| 180                      | 14.89                  | 4.5720          | 3.05             | 0.004262                         | 674.9          | 158.37                          | 79.18                     |
| 190                      | 14.62                  | 4.8260          | 3.22             | 0.004269                         | 661.3          | 154.90                          | 77.45                     |



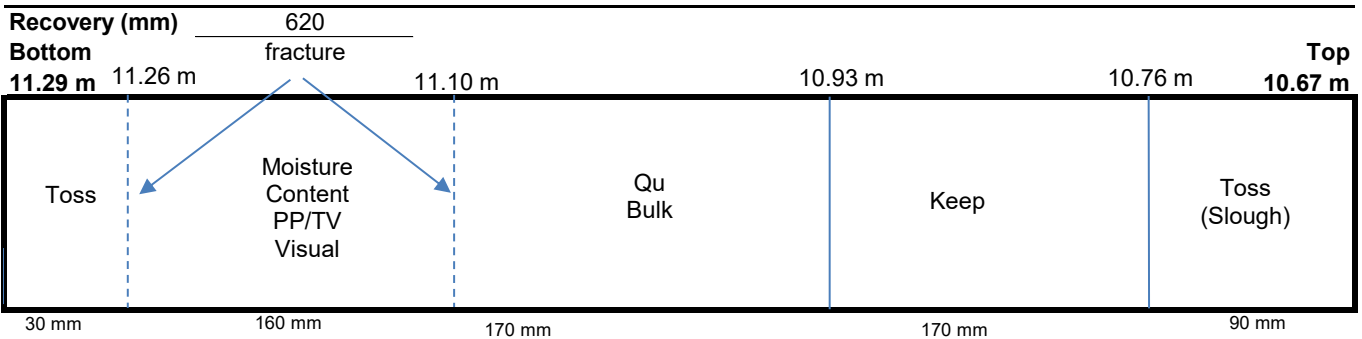
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## Shelby Tube Visual

**Project No.** 0022-235-01  
**Client** Dillon Consulting Ltd.  
**Project** Kilcona Park

**Test Hole** TH25-05  
**Sample #** T108  
**Depth (m)** 10.7 - 11.3  
**Sample Date** 16-Dec-25  
**Test Date** 23-Jan-26  
**Technician** A. Dustmamatov

### Tube Extraction



### Visual Classification

|                                    |       |
|------------------------------------|-------|
| <b>Material</b>                    | CLAY  |
| <b>Composition</b>                 | silty |
| trace silt inclusions (<5mm diam.) |       |
| trace sand                         |       |
| trace gravel (<20mm diam.)         |       |

|                    |                 |
|--------------------|-----------------|
| <b>Color</b>       | grey            |
| <b>Moisture</b>    | moist           |
| <b>Consistency</b> | firm            |
| <b>Plasticity</b>  | high plasticity |
| <b>Structure</b>   | -               |
| <b>Gradation</b>   | -               |

### Torvane

|                                       |      |
|---------------------------------------|------|
| <b>Reading</b>                        | 0.40 |
| <b>Vane Size (s,m,l)</b>              | m    |
| <b>Undrained Shear Strength (kPa)</b> | 39.2 |

### Pocket Penetrometer

|                                       |   |      |
|---------------------------------------|---|------|
| <b>Reading</b>                        | 1 | 0.80 |
|                                       | 2 | 0.80 |
|                                       | 3 | 0.80 |
| <b>Average</b>                        |   | 0.80 |
| <b>Undrained Shear Strength (kPa)</b> |   | 39.2 |

### Moisture Content

|                            |       |
|----------------------------|-------|
| <b>Tare ID</b>             | F186  |
| <b>Mass tare (g)</b>       | 8.4   |
| <b>Mass wet + tare (g)</b> | 332.4 |
| <b>Mass dry + tare (g)</b> | 211.6 |
| <b>Moisture %</b>          | 59.4% |

### Unit Weight

|                      |   |        |
|----------------------|---|--------|
| Bulk Weight (g)      |   | 999.8  |
| Length (mm)          | 1 | 148.07 |
|                      | 2 | 147.80 |
|                      | 3 | 148.15 |
|                      | 4 | 148.22 |
| Average Length (m)   |   | 0.148  |
| Diam. (mm)           | 1 | 71.18  |
|                      | 2 | 72.44  |
|                      | 3 | 71.71  |
|                      | 4 | 72.00  |
| Average Diameter (m) |   | 0.072  |

|                                            |          |
|--------------------------------------------|----------|
| <b>Volume (m<sup>3</sup>)</b>              | 6.00E-04 |
| <b>Bulk Unit Weight (kN/m<sup>3</sup>)</b> | 16.3     |
| <b>Bulk Unit Weight (pcf)</b>              | 104.0    |
| <b>Dry Unit Weight (kN/m<sup>3</sup>)</b>  | 10.2     |
| <b>Dry Unit Weight (pcf)</b>               | 65.2     |



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## Unconfined Compressive Strength ASTM D2166

**Project No.** 0022-235-01  
**Client** Dillon Consulting Ltd.  
**Project** Kilcona Park

**Test Hole** TH25-05  
**Sample #** T108  
**Depth (m)** 10.7 - 11.3  
**Sample Date** 16-Dec-25  
**Test Date** 23-Jan-26  
**Technician** A. Dustmamatov

### Unconfined Strength

|                             | kPa  | ksf |
|-----------------------------|------|-----|
| <b>Max <math>q_u</math></b> | 35.6 | 0.7 |
| <b>Max <math>S_u</math></b> | 17.8 | 0.4 |

### Specimen Data

**Description** CLAY - silty, trace silt inclusions (<5mm diam.), trace sand, trace gravel (<20mm diam.), grey, moist, firm, high plasticity

**Length** 148.1 (mm)  
**Diameter** 71.8 (mm)  
**L/D Ratio** 2.1  
**Initial Area** 0.00405 (m<sup>2</sup>)  
**Load Rate** 1.00 (%/min)

**Moisture %** 59%  
**Bulk Unit Wt.** 16.3 (kN/m<sup>3</sup>)  
**Dry Unit Wt.** 10.2 (kN/m<sup>3</sup>)  
**Liquid Limit** -  
**Plastic Limit** -  
**Plasticity Index** -

### Undrained Shear Strength Tests

#### Torvane

| Reading | Undrained Shear Strength |
|---------|--------------------------|
| tsf     | kPa ksf                  |
| 0.40    | 39.2 0.82                |

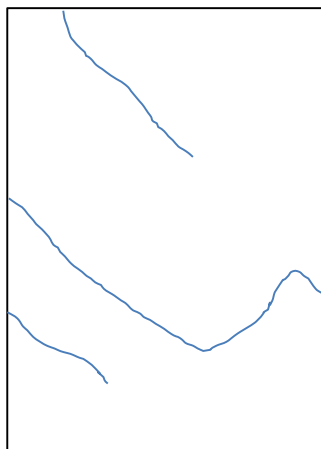
**Vane Size**  
m

#### Pocket Penetrometer

| Reading        | Undrained Shear Strength |
|----------------|--------------------------|
| tsf            | kPa ksf                  |
| 0.80           | 39.2 0.82                |
| 0.80           | 39.2 0.82                |
| 0.80           | 39.2 0.82                |
| <b>Average</b> | <b>0.80 39.2 0.8</b>     |

### Failure Geometry

**Sketch:**



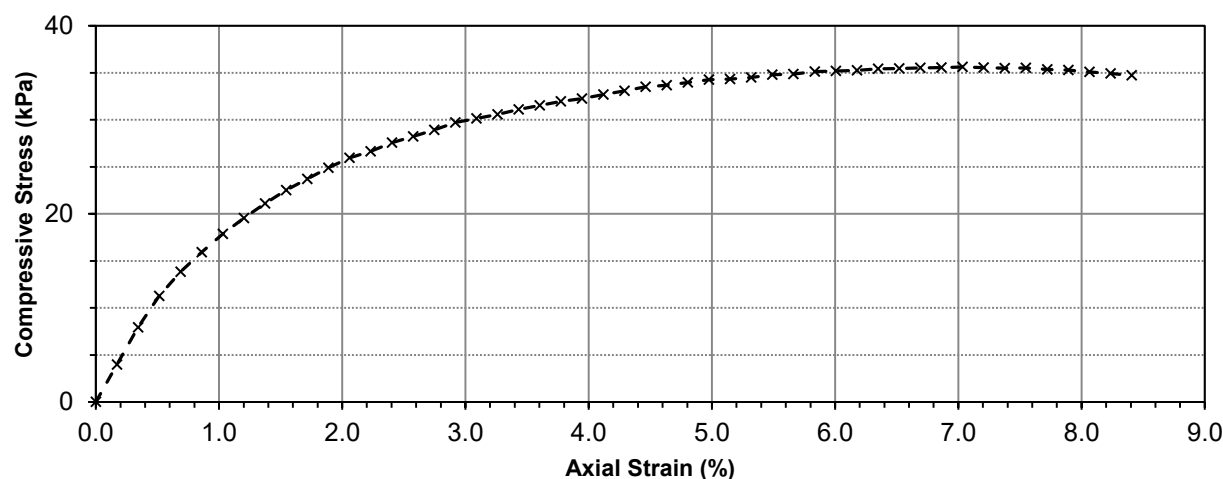
**Photo:**





Project No. 0022-235-01  
Client Dillon Consulting Ltd.  
Project Kilcona Park

### Unconfined Compression Test Graph



### Unconfined Compression Test Data

| Deformation Dial Reading | Load Ring Dial Reading | Deflection (mm) | Axial Strain (%) | Corrected Area (m <sup>2</sup> ) | Axial Load (N) | Compressive Stress, $q_u$ (kPa) | Shear Stress, $S_u$ (kPa) |
|--------------------------|------------------------|-----------------|------------------|----------------------------------|----------------|---------------------------------|---------------------------|
| 0                        | 1.47                   | 0.0000          | 0.00             | 0.004053                         | 0.0            | 0.00                            | 0.00                      |
| 10                       | 1.79                   | 0.2540          | 0.17             | 0.004060                         | 16.1           | 3.97                            | 1.99                      |
| 20                       | 2.11                   | 0.5080          | 0.34             | 0.004067                         | 32.3           | 7.93                            | 3.97                      |
| 30                       | 2.38                   | 0.7620          | 0.51             | 0.004074                         | 45.9           | 11.26                           | 5.63                      |
| 40                       | 2.59                   | 1.0160          | 0.69             | 0.004081                         | 56.5           | 13.83                           | 6.92                      |
| 50                       | 2.76                   | 1.2700          | 0.86             | 0.004088                         | 65.0           | 15.91                           | 7.95                      |
| 60                       | 2.92                   | 1.5240          | 1.03             | 0.004095                         | 73.1           | 17.85                           | 8.92                      |
| 70                       | 3.06                   | 1.7780          | 1.20             | 0.004102                         | 80.1           | 19.54                           | 9.77                      |
| 80                       | 3.19                   | 2.0320          | 1.37             | 0.004109                         | 86.7           | 21.10                           | 10.55                     |
| 90                       | 3.31                   | 2.2860          | 1.54             | 0.004116                         | 92.7           | 22.53                           | 11.27                     |
| 100                      | 3.41                   | 2.5400          | 1.72             | 0.004123                         | 97.8           | 23.71                           | 11.86                     |
| 110                      | 3.51                   | 2.7940          | 1.89             | 0.004131                         | 102.8          | 24.89                           | 12.45                     |
| 120                      | 3.60                   | 3.0480          | 2.06             | 0.004138                         | 107.4          | 25.95                           | 12.97                     |
| 130                      | 3.66                   | 3.3020          | 2.23             | 0.004145                         | 110.4          | 26.63                           | 13.32                     |
| 140                      | 3.74                   | 3.5560          | 2.40             | 0.004152                         | 114.4          | 27.55                           | 13.78                     |
| 150                      | 3.80                   | 3.8100          | 2.57             | 0.004160                         | 117.4          | 28.23                           | 14.12                     |
| 160                      | 3.86                   | 4.0640          | 2.74             | 0.004167                         | 120.5          | 28.91                           | 14.45                     |
| 170                      | 3.93                   | 4.3180          | 2.92             | 0.004174                         | 124.0          | 29.70                           | 14.85                     |
| 180                      | 3.97                   | 4.5720          | 3.09             | 0.004182                         | 126.0          | 30.13                           | 15.07                     |
| 190                      | 4.01                   | 4.8260          | 3.26             | 0.004189                         | 128.0          | 30.56                           | 15.28                     |
| 200                      | 4.06                   | 5.0800          | 3.43             | 0.004197                         | 130.5          | 31.11                           | 15.55                     |
| 210                      | 4.10                   | 5.3340          | 3.60             | 0.004204                         | 132.6          | 31.53                           | 15.77                     |
| 220                      | 4.14                   | 5.5880          | 3.77             | 0.004212                         | 134.6          | 31.95                           | 15.98                     |
| 230                      | 4.17                   | 5.8420          | 3.95             | 0.004219                         | 136.1          | 32.26                           | 16.13                     |



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## Unconfined Compressive Strength

ASTM D2166

**Project No.** 0022-235-01  
**Client** Dillon Consulting Ltd.  
**Project** Kilcona Park

### Unconfined Compression Test Data (cont'd)

| Deformation<br>Dial Reading | Load Ring<br>Dial Reading | Deflection<br>(mm) | Axial Strain<br>(%) | Corrected Area<br>(m <sup>2</sup> ) | Axial Load<br>(N) | Compressive<br>Stress, $q_u$ (kPa) | Shear<br>Stress, $S_u$<br>(kPa) |
|-----------------------------|---------------------------|--------------------|---------------------|-------------------------------------|-------------------|------------------------------------|---------------------------------|
| 240                         | 4.21                      | 6.0960             | 4.12                | 0.004227                            | 138.1             | 32.67                              | 16.34                           |
| 250                         | 4.25                      | 6.3500             | 4.29                | 0.004234                            | 140.1             | 33.09                              | 16.55                           |
| 260                         | 4.29                      | 6.6040             | 4.46                | 0.004242                            | 142.1             | 33.51                              | 16.75                           |
| 270                         | 4.31                      | 6.8580             | 4.63                | 0.004249                            | 143.1             | 33.69                              | 16.84                           |
| 280                         | 4.34                      | 7.1120             | 4.80                | 0.004257                            | 144.7             | 33.98                              | 16.99                           |
| 290                         | 4.37                      | 7.3660             | 4.98                | 0.004265                            | 146.2             | 34.27                              | 17.14                           |
| 300                         | 4.38                      | 7.6200             | 5.15                | 0.004272                            | 146.7             | 34.33                              | 17.16                           |
| 310                         | 4.40                      | 7.8740             | 5.32                | 0.004280                            | 147.7             | 34.50                              | 17.25                           |
| 320                         | 4.43                      | 8.1280             | 5.49                | 0.004288                            | 149.2             | 34.79                              | 17.40                           |
| 330                         | 4.44                      | 8.3820             | 5.66                | 0.004296                            | 149.7             | 34.85                              | 17.42                           |
| 340                         | 4.47                      | 8.6360             | 5.83                | 0.004304                            | 151.2             | 35.14                              | 17.57                           |
| 350                         | 4.48                      | 8.8900             | 6.00                | 0.004311                            | 151.7             | 35.19                              | 17.59                           |
| 360                         | 4.49                      | 9.1440             | 6.18                | 0.004319                            | 152.2             | 35.24                              | 17.62                           |
| 370                         | 4.51                      | 9.3980             | 6.35                | 0.004327                            | 153.2             | 35.41                              | 17.70                           |
| 380                         | 4.52                      | 9.6520             | 6.52                | 0.004335                            | 153.7             | 35.46                              | 17.73                           |
| 390                         | 4.53                      | 9.9060             | 6.69                | 0.004343                            | 154.2             | 35.51                              | 17.76                           |
| 400                         | 4.54                      | 10.1600            | 6.86                | 0.004351                            | 154.7             | 35.56                              | 17.78                           |
| 410                         | 4.55                      | 10.4140            | 7.03                | 0.004359                            | 155.2             | 35.61                              | 17.81                           |
| 420                         | 4.55                      | 10.6680            | 7.21                | 0.004367                            | 155.2             | 35.55                              | 17.77                           |
| 430                         | 4.55                      | 10.9220            | 7.38                | 0.004375                            | 155.2             | 35.48                              | 17.74                           |
| 440                         | 4.56                      | 11.1760            | 7.55                | 0.004383                            | 155.7             | 35.53                              | 17.77                           |
| 450                         | 4.55                      | 11.4300            | 7.72                | 0.004392                            | 155.2             | 35.35                              | 17.67                           |
| 460                         | 4.55                      | 11.6840            | 7.89                | 0.004400                            | 155.2             | 35.28                              | 17.64                           |
| 470                         | 4.54                      | 11.9380            | 8.06                | 0.004408                            | 154.7             | 35.10                              | 17.55                           |
| 480                         | 4.53                      | 12.1920            | 8.23                | 0.004416                            | 154.2             | 34.92                              | 17.46                           |
| 490                         | 4.52                      | 12.4460            | 8.41                | 0.004425                            | 153.7             | 34.74                              | 17.37                           |



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## Shelby Tube Visual

**Project No.** 0022-235-01  
**Client** Dillon Consulting Ltd.  
**Project** Kilcona Park

**Test Hole** TH25-07  
**Sample #** T121  
**Depth (m)** 7.6 - 8.2  
**Sample Date** 17-Dec-25  
**Test Date** 23-Jan-26  
**Technician** A. Dustmamatov

### Tube Extraction

|                      |                                        |        |                  |            |
|----------------------|----------------------------------------|--------|------------------|------------|
| <b>Recovery (mm)</b> | 460                                    |        |                  |            |
| <b>Bottom</b>        |                                        |        |                  | <b>Top</b> |
| 8.08 m               | 7.91 m                                 | 7.83 m | 7.66 m           | 7.62 m     |
| Qu<br>Bulk           | Moisture<br>Content<br>PP/TV<br>Visual | Keep   | Toss<br>(Slough) |            |
| 170 mm               | 80 mm                                  | 170 mm | 40 mm            |            |

### Visual Classification

|                                     |       |
|-------------------------------------|-------|
| <b>Material</b>                     | CLAY  |
| <b>Composition</b>                  | silty |
| trace silt inclusions (<15mm diam.) |       |
| trace sand                          |       |
| trace gravel (<20mm diam.)          |       |

|                    |                 |
|--------------------|-----------------|
| <b>Color</b>       | grey            |
| <b>Moisture</b>    | moist           |
| <b>Consistency</b> | stiff           |
| <b>Plasticity</b>  | high plasticity |
| <b>Structure</b>   | -               |
| <b>Gradation</b>   | -               |

### Torvane

|                                       |      |
|---------------------------------------|------|
| <b>Reading</b>                        | 0.70 |
| <b>Vane Size (s,m,l)</b>              | m    |
| <b>Undrained Shear Strength (kPa)</b> | 68.7 |

### Pocket Penetrometer

|                                       |                |      |
|---------------------------------------|----------------|------|
| <b>Reading</b>                        | 1              | 1.40 |
|                                       | 2              | 1.50 |
|                                       | 3              | 1.40 |
|                                       | <b>Average</b> | 1.43 |
| <b>Undrained Shear Strength (kPa)</b> |                | 70.3 |

### Moisture Content

|                            |       |
|----------------------------|-------|
| <b>Tare ID</b>             | W99   |
| <b>Mass tare (g)</b>       | 8.6   |
| <b>Mass wet + tare (g)</b> | 323.0 |
| <b>Mass dry + tare (g)</b> | 235.2 |
| <b>Moisture %</b>          | 38.7% |

### Unit Weight

|                        |        |
|------------------------|--------|
| <b>Bulk Weight (g)</b> | 1106.4 |
|------------------------|--------|

|                    |   |        |
|--------------------|---|--------|
| <b>Length (mm)</b> | 1 | 148.89 |
|                    | 2 | 149.07 |
|                    | 3 | 148.58 |
|                    | 4 | 148.86 |

|                           |       |
|---------------------------|-------|
| <b>Average Length (m)</b> | 0.149 |
|---------------------------|-------|

|                   |   |       |
|-------------------|---|-------|
| <b>Diam. (mm)</b> | 1 | 71.90 |
|                   | 2 | 70.59 |
|                   | 3 | 72.80 |
|                   | 4 | 70.37 |

|                             |       |
|-----------------------------|-------|
| <b>Average Diameter (m)</b> | 0.071 |
|-----------------------------|-------|

|                                            |          |
|--------------------------------------------|----------|
| <b>Volume (m<sup>3</sup>)</b>              | 5.96E-04 |
| <b>Bulk Unit Weight (kN/m<sup>3</sup>)</b> | 18.2     |
| <b>Bulk Unit Weight (pcf)</b>              | 115.8    |
| <b>Dry Unit Weight (kN/m<sup>3</sup>)</b>  | 13.1     |
| <b>Dry Unit Weight (pcf)</b>               | 83.5     |



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## Unconfined Compressive Strength ASTM D2166

**Project No.** 0022-235-01  
**Client** Dillon Consulting Ltd.  
**Project** Kilcona Park

**Test Hole** TH25-07  
**Sample #** T121  
**Depth (m)** 7.6 - 8.2  
**Sample Date** 17-Dec-25  
**Test Date** 23-Jan-26  
**Technician** A. Dustmamatov

### Unconfined Strength

|                             | kPa   | ksf |
|-----------------------------|-------|-----|
| <b>Max <math>q_u</math></b> | 104.1 | 2.2 |
| <b>Max <math>S_u</math></b> | 52.0  | 1.1 |

### Specimen Data

**Description** CLAY - silty, trace silt inclusions (<15mm diam.), trace sand, trace gravel (<20mm diam.), grey, moist, stiff, high plasticity

**Length** 148.9 (mm)  
**Diameter** 71.4 (mm)  
**L/D Ratio** 2.1  
**Initial Area** 0.00401 (m<sup>2</sup>)  
**Load Rate** 1.00 (%/min)

**Moisture %** 39%  
**Bulk Unit Wt.** 18.2 (kN/m<sup>3</sup>)  
**Dry Unit Wt.** 13.1 (kN/m<sup>3</sup>)  
**Liquid Limit** -  
**Plastic Limit** -  
**Plasticity Index** -

### Undrained Shear Strength Tests

#### Torvane

| Reading | Undrained Shear Strength |      |
|---------|--------------------------|------|
| tsf     | kPa                      | ksf  |
| 0.70    | 68.7                     | 1.43 |

**Vane Size**  
m

#### Pocket Penetrometer

| Reading        | Undrained Shear Strength |             |            |
|----------------|--------------------------|-------------|------------|
| tsf            | kPa                      | ksf         |            |
| 1.40           | 68.7                     | 1.43        |            |
| 1.50           | 73.6                     | 1.54        |            |
| 1.40           | 68.7                     | 1.43        |            |
| <b>Average</b> | <b>1.43</b>              | <b>70.3</b> | <b>1.5</b> |

### Failure Geometry

Sketch:

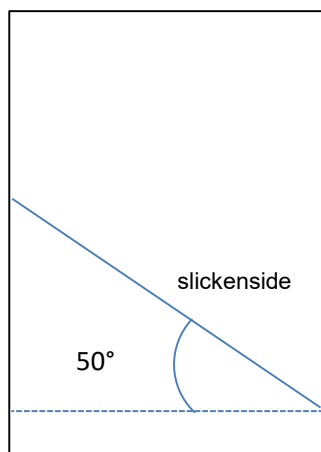


Photo:

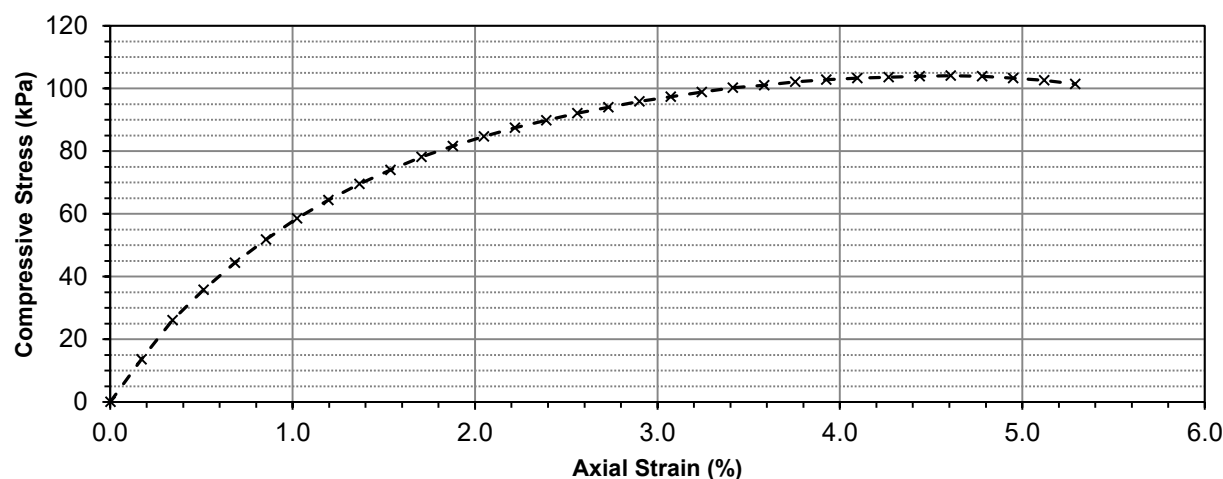






Project No. 0022-235-01  
Client Dillon Consulting Ltd.  
Project Kilcona Park

### Unconfined Compression Test Graph



### Unconfined Compression Test Data

| Deformation Dial Reading | Load Ring Dial Reading | Deflection (mm) | Axial Strain (%) | Corrected Area (m <sup>2</sup> ) | Axial Load (N) | Compressive Stress, $q_u$ (kPa) | Shear Stress, $S_u$ (kPa) |
|--------------------------|------------------------|-----------------|------------------|----------------------------------|----------------|---------------------------------|---------------------------|
| 0                        | 1.46                   | 0.0000          | 0.00             | 0.004006                         | 0.0            | 0.00                            | 0.00                      |
| 10                       | 2.54                   | 0.2540          | 0.17             | 0.004012                         | 54.4           | 13.57                           | 6.78                      |
| 20                       | 3.54                   | 0.5080          | 0.34             | 0.004019                         | 104.8          | 26.08                           | 13.04                     |
| 30                       | 4.32                   | 0.7620          | 0.51             | 0.004026                         | 144.2          | 35.80                           | 17.90                     |
| 40                       | 5.01                   | 1.0160          | 0.68             | 0.004033                         | 178.9          | 44.37                           | 22.18                     |
| 50                       | 5.61                   | 1.2700          | 0.85             | 0.004040                         | 209.2          | 51.77                           | 25.89                     |
| 60                       | 6.16                   | 1.5240          | 1.02             | 0.004047                         | 236.9          | 58.54                           | 29.27                     |
| 70                       | 6.64                   | 1.7780          | 1.19             | 0.004054                         | 261.1          | 64.40                           | 32.20                     |
| 80                       | 7.06                   | 2.0320          | 1.37             | 0.004061                         | 282.3          | 69.50                           | 34.75                     |
| 90                       | 7.43                   | 2.2860          | 1.54             | 0.004068                         | 300.9          | 73.97                           | 36.98                     |
| 100                      | 7.78                   | 2.5400          | 1.71             | 0.004075                         | 318.5          | 78.17                           | 39.08                     |
| 110                      | 8.07                   | 2.7940          | 1.88             | 0.004082                         | 333.2          | 81.61                           | 40.81                     |
| 120                      | 8.33                   | 3.0480          | 2.05             | 0.004089                         | 346.3          | 84.68                           | 42.34                     |
| 130                      | 8.57                   | 3.3020          | 2.22             | 0.004096                         | 358.4          | 87.48                           | 43.74                     |
| 140                      | 8.77                   | 3.5560          | 2.39             | 0.004104                         | 368.4          | 89.79                           | 44.89                     |
| 150                      | 8.97                   | 3.8100          | 2.56             | 0.004111                         | 378.5          | 92.08                           | 46.04                     |
| 160                      | 9.14                   | 4.0640          | 2.73             | 0.004118                         | 387.1          | 94.00                           | 47.00                     |
| 170                      | 9.31                   | 4.3180          | 2.90             | 0.004125                         | 395.7          | 95.91                           | 47.96                     |
| 180                      | 9.44                   | 4.5720          | 3.07             | 0.004133                         | 402.2          | 97.33                           | 48.66                     |
| 190                      | 9.58                   | 4.8260          | 3.24             | 0.004140                         | 409.3          | 98.86                           | 49.43                     |
| 200                      | 9.71                   | 5.0800          | 3.41             | 0.004147                         | 415.8          | 100.27                          | 50.13                     |
| 210                      | 9.79                   | 5.3340          | 3.58             | 0.004154                         | 419.9          | 101.06                          | 50.53                     |
| 220                      | 9.89                   | 5.5880          | 3.75             | 0.004162                         | 424.9          | 102.09                          | 51.05                     |
| 230                      | 9.96                   | 5.8420          | 3.92             | 0.004169                         | 428.4          | 102.76                          | 51.38                     |



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## Unconfined Compressive Strength

ASTM D2166

**Project No.** 0022-235-01  
**Client** Dillon Consulting Ltd.  
**Project** Kilcona Park

### Unconfined Compression Test Data (cont'd)

| Deformation<br>Dial Reading | Load Ring<br>Dial Reading | Deflection<br>(mm) | Axial Strain<br>(%) | Corrected Area<br>(m <sup>2</sup> ) | Axial Load<br>(N) | Compressive<br>Stress, $q_u$ (kPa) | Shear<br>Stress, $S_u$<br>(kPa) |
|-----------------------------|---------------------------|--------------------|---------------------|-------------------------------------|-------------------|------------------------------------|---------------------------------|
| 240                         | 10.02                     | 6.0960             | 4.10                | 0.004177                            | 431.4             | 103.30                             | 51.65                           |
| 250                         | 10.06                     | 6.3500             | 4.27                | 0.004184                            | 433.5             | 103.60                             | 51.80                           |
| 260                         | 10.10                     | 6.6040             | 4.44                | 0.004192                            | 435.5             | 103.89                             | 51.95                           |
| 270                         | 10.13                     | 6.8580             | 4.61                | 0.004199                            | 437.0             | 104.07                             | 52.03                           |
| 280                         | 10.13                     | 7.1120             | 4.78                | 0.004207                            | 437.0             | 103.88                             | 51.94                           |
| 290                         | 10.10                     | 7.3660             | 4.95                | 0.004214                            | 435.5             | 103.34                             | 51.67                           |
| 300                         | 10.05                     | 7.6200             | 5.12                | 0.004222                            | 433.0             | 102.56                             | 51.28                           |
| 310                         | 9.97                      | 7.8740             | 5.29                | 0.004229                            | 428.9             | 101.42                             | 50.71                           |



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## Shelby Tube Visual

**Project No.** 0022-235-01  
**Client** Dillon Consulting Ltd.  
**Project** Kilcona Park

**Test Hole** TH25-07  
**Sample #** T124  
**Depth (m)** 10.7 - 11.3  
**Sample Date** 17-Dec-25  
**Test Date** 23-Jan-26  
**Technician** A. Dustmamatov

### Tube Extraction

|                                        |                |                |                  |                        |
|----------------------------------------|----------------|----------------|------------------|------------------------|
| <b>Recovery (mm)</b>                   | 480            |                |                  |                        |
| <b>Bottom</b>                          |                |                |                  |                        |
| <b>11.15 m</b>                         | <b>11.05 m</b> | <b>10.88 m</b> | <b>10.71 m</b>   | <b>Top<br/>10.67 m</b> |
| Moisture<br>Content<br>PP/TV<br>Visual | Qu<br>Bulk     | Keep           | Toss<br>(Slough) |                        |
| 100 mm                                 | 170 mm         | 170 mm         | 40 mm            |                        |

### Visual Classification

|                                     |                 |
|-------------------------------------|-----------------|
| <b>Material</b>                     | CLAY            |
| <b>Composition</b>                  | silty           |
| trace silt inclusions (<10mm diam.) |                 |
| trace gravel (<10mm diam.)          |                 |
|                                     |                 |
|                                     |                 |
|                                     |                 |
| <b>Color</b>                        | grey            |
| <b>Moisture</b>                     | moist           |
| <b>Consistency</b>                  | firm to stiff   |
| <b>Plasticity</b>                   | high plasticity |
| <b>Structure</b>                    | -               |
| <b>Gradation</b>                    | -               |

### Torvane

|                                       |      |
|---------------------------------------|------|
| <b>Reading</b>                        | 0.50 |
| <b>Vane Size (s,m,l)</b>              | m    |
| <b>Undrained Shear Strength (kPa)</b> | 49.0 |

### Pocket Penetrometer

|                                       |                |      |
|---------------------------------------|----------------|------|
| <b>Reading</b>                        | <b>1</b>       | 1.10 |
|                                       | <b>2</b>       | 1.10 |
|                                       | <b>3</b>       | 1.00 |
|                                       | <b>Average</b> | 1.07 |
| <b>Undrained Shear Strength (kPa)</b> |                | 52.3 |

### Moisture Content

|                            |       |
|----------------------------|-------|
| <b>Tare ID</b>             | F18   |
| <b>Mass tare (g)</b>       | 7.4   |
| <b>Mass wet + tare (g)</b> | 365.4 |
| <b>Mass dry + tare (g)</b> | 231.6 |
| <b>Moisture %</b>          | 59.7% |

### Unit Weight

|                      |   |        |
|----------------------|---|--------|
| Bulk Weight (g)      |   | 1050.2 |
| Length (mm)          | 1 | 150.16 |
|                      | 2 | 150.41 |
|                      | 3 | 150.32 |
|                      | 4 | 150.28 |
| Average Length (m)   |   | 0.150  |
| Diam. (mm)           | 1 | 71.90  |
|                      | 2 | 70.59  |
|                      | 3 | 72.80  |
|                      | 4 | 70.37  |
| Average Diameter (m) |   | 0.071  |

|                                            |          |
|--------------------------------------------|----------|
| <b>Volume (m<sup>3</sup>)</b>              | 6.02E-04 |
| <b>Bulk Unit Weight (kN/m<sup>3</sup>)</b> | 17.1     |
| <b>Bulk Unit Weight (pcf)</b>              | 108.9    |
| <b>Dry Unit Weight (kN/m<sup>3</sup>)</b>  | 10.7     |
| <b>Dry Unit Weight (pcf)</b>               | 68.2     |



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## Unconfined Compressive Strength ASTM D2166

**Project No.** 0022-235-01  
**Client** Dillon Consulting Ltd.  
**Project** Kilcona Park

**Test Hole** TH25-07  
**Sample #** T124  
**Depth (m)** 10.7 - 11.3  
**Sample Date** 17-Dec-25  
**Test Date** 23-Jan-26  
**Technician** A. Dustmamatov

### Unconfined Strength

|                             | kPa   | ksf |
|-----------------------------|-------|-----|
| <b>Max <math>q_u</math></b> | 103.7 | 2.2 |
| <b>Max <math>S_u</math></b> | 51.9  | 1.1 |

### Specimen Data

**Description** CLAY - silty, trace silt inclusions (<10mm diam.), trace gravel (<10mm diam.), grey, moist, firm to stiff, high plasticity

**Length** 150.3 (mm)  
**Diameter** 71.4 (mm)  
**L/D Ratio** 2.1  
**Initial Area** 0.00401 (m<sup>2</sup>)  
**Load Rate** 1.00 (%/min)

**Moisture %** 60%  
**Bulk Unit Wt.** 17.1 (kN/m<sup>3</sup>)  
**Dry Unit Wt.** 10.7 (kN/m<sup>3</sup>)  
**Liquid Limit** -  
**Plastic Limit** -  
**Plasticity Index** -

### Undrained Shear Strength Tests

#### Torvane

| Reading | Undrained Shear Strength |
|---------|--------------------------|
| tsf     | kPa ksf                  |
| 0.50    | 49.0 1.02                |

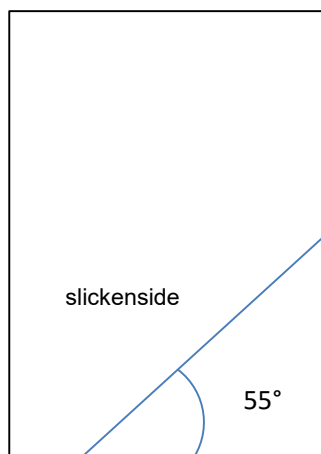
**Vane Size**  
m

#### Pocket Penetrometer

| Reading        | Undrained Shear Strength |
|----------------|--------------------------|
| tsf            | kPa ksf                  |
| 1.10           | 54.0 1.13                |
| 1.10           | 54.0 1.13                |
| 1.00           | 49.1 1.02                |
| <b>Average</b> | <b>1.07 52.3 1.1</b>     |

### Failure Geometry

**Sketch:**



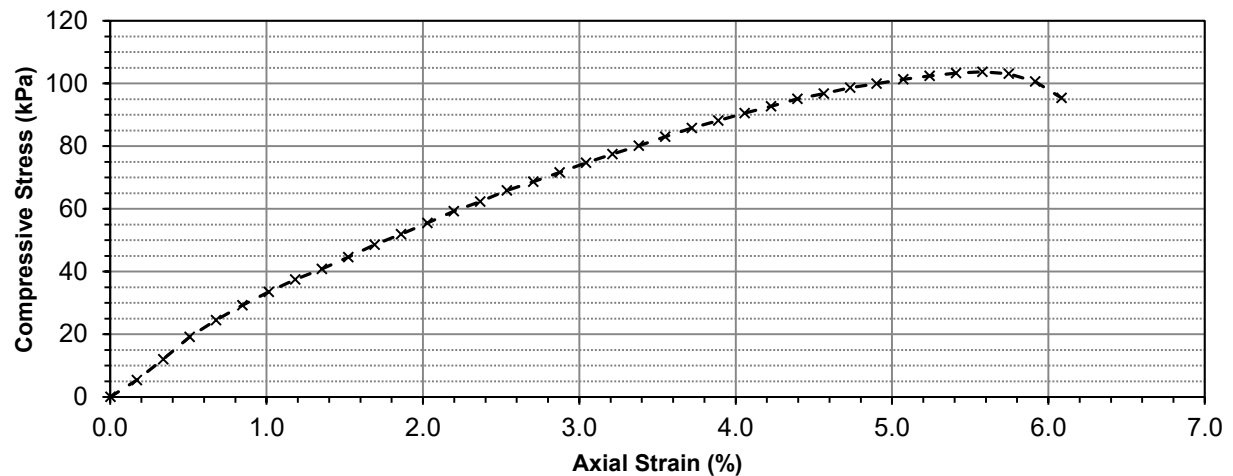
**Photo:**





Project No. 0022-235-01  
Client Dillon Consulting Ltd.  
Project Kilcona Park

### Unconfined Compression Test Graph



### Unconfined Compression Test Data

| Deformation<br>Dial Reading | Load Ring<br>Dial Reading | Deflection<br>(mm) | Axial Strain<br>(%) | Corrected Area<br>(m <sup>2</sup> ) | Axial Load<br>(N) | Compressive<br>Stress, $q_u$ (kPa) | Shear<br>Stress, $S_u$<br>(kPa) |
|-----------------------------|---------------------------|--------------------|---------------------|-------------------------------------|-------------------|------------------------------------|---------------------------------|
| 0                           | 1.48                      | 0.0000             | 0.00                | 0.004006                            | 0.0               | 0.00                               | 0.00                            |
| 10                          | 1.91                      | 0.2540             | 0.17                | 0.004012                            | 21.7              | 5.40                               | 2.70                            |
| 20                          | 2.44                      | 0.5080             | 0.34                | 0.004019                            | 48.4              | 12.04                              | 6.02                            |
| 30                          | 3.01                      | 0.7620             | 0.51                | 0.004026                            | 77.1              | 19.15                              | 9.58                            |
| 40                          | 3.44                      | 1.0160             | 0.68                | 0.004033                            | 98.8              | 24.50                              | 12.25                           |
| 50                          | 3.82                      | 1.2700             | 0.85                | 0.004040                            | 117.9             | 29.20                              | 14.60                           |
| 60                          | 4.17                      | 1.5240             | 1.01                | 0.004047                            | 135.6             | 33.51                              | 16.75                           |
| 70                          | 4.49                      | 1.7780             | 1.18                | 0.004054                            | 151.7             | 37.43                              | 18.71                           |
| 80                          | 4.77                      | 2.0320             | 1.35                | 0.004061                            | 165.8             | 40.84                              | 20.42                           |
| 90                          | 5.08                      | 2.2860             | 1.52                | 0.004067                            | 181.5             | 44.61                              | 22.31                           |
| 100                         | 5.40                      | 2.5400             | 1.69                | 0.004074                            | 197.6             | 48.49                              | 24.25                           |
| 110                         | 5.68                      | 2.7940             | 1.86                | 0.004081                            | 211.7             | 51.87                              | 25.93                           |
| 120                         | 5.98                      | 3.0480             | 2.03                | 0.004089                            | 226.8             | 55.48                              | 27.74                           |
| 130                         | 6.29                      | 3.3020             | 2.20                | 0.004096                            | 242.4             | 59.19                              | 29.60                           |
| 140                         | 6.55                      | 3.5560             | 2.37                | 0.004103                            | 255.5             | 62.29                              | 31.14                           |
| 150                         | 6.85                      | 3.8100             | 2.54                | 0.004110                            | 270.7             | 65.86                              | 32.93                           |
| 160                         | 7.09                      | 4.0640             | 2.70                | 0.004117                            | 282.8             | 68.68                              | 34.34                           |
| 170                         | 7.34                      | 4.3180             | 2.87                | 0.004124                            | 295.4             | 71.62                              | 35.81                           |
| 180                         | 7.60                      | 4.5720             | 3.04                | 0.004131                            | 308.5             | 74.67                              | 37.33                           |
| 190                         | 7.84                      | 4.8260             | 3.21                | 0.004139                            | 320.6             | 77.46                              | 38.73                           |
| 200                         | 8.07                      | 5.0800             | 3.38                | 0.004146                            | 332.2             | 80.12                              | 40.06                           |
| 210                         | 8.32                      | 5.3340             | 3.55                | 0.004153                            | 344.8             | 83.01                              | 41.51                           |
| 220                         | 8.56                      | 5.5880             | 3.72                | 0.004160                            | 356.9             | 85.78                              | 42.89                           |
| 230                         | 8.77                      | 5.8420             | 3.89                | 0.004168                            | 367.4             | 88.17                              | 44.08                           |



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## Unconfined Compressive Strength ASTM D2166

**Project No.** 0022-235-01  
**Client** Dillon Consulting Ltd.  
**Project** Kilcona Park

### Unconfined Compression Test Data (cont'd)

| Deformation<br>Dial Reading | Load Ring<br>Dial Reading | Deflection<br>(mm) | Axial Strain<br>(%) | Corrected Area<br>(m <sup>2</sup> ) | Axial Load<br>(N) | Compressive<br>Stress, $q_u$ (kPa) | Shear<br>Stress, $S_u$<br>(kPa) |
|-----------------------------|---------------------------|--------------------|---------------------|-------------------------------------|-------------------|------------------------------------|---------------------------------|
| 240                         | 8.98                      | 6.0960             | 4.06                | 0.004175                            | 378.0             | 90.55                              | 45.27                           |
| 250                         | 9.17                      | 6.3500             | 4.23                | 0.004182                            | 387.6             | 92.68                              | 46.34                           |
| 260                         | 9.38                      | 6.6040             | 4.39                | 0.004190                            | 398.2             | 95.04                              | 47.52                           |
| 270                         | 9.54                      | 6.8580             | 4.56                | 0.004197                            | 406.2             | 96.79                              | 48.40                           |
| 280                         | 9.71                      | 7.1120             | 4.73                | 0.004205                            | 414.8             | 98.66                              | 49.33                           |
| 290                         | 9.83                      | 7.3660             | 4.90                | 0.004212                            | 420.9             | 99.92                              | 49.96                           |
| 300                         | 9.96                      | 7.6200             | 5.07                | 0.004220                            | 427.4             | 101.29                             | 50.65                           |
| 310                         | 10.07                     | 7.8740             | 5.24                | 0.004227                            | 433.0             | 102.43                             | 51.21                           |
| 320                         | 10.16                     | 8.1280             | 5.41                | 0.004235                            | 437.5             | 103.31                             | 51.66                           |
| 330                         | 10.21                     | 8.3820             | 5.58                | 0.004242                            | 440.0             | 103.72                             | 51.86                           |
| 340                         | 10.17                     | 8.6360             | 5.75                | 0.004250                            | 438.0             | 103.06                             | 51.53                           |
| 350                         | 9.98                      | 8.8900             | 5.92                | 0.004257                            | 428.4             | 100.63                             | 50.31                           |
| 360                         | 9.55                      | 9.1440             | 6.08                | 0.004265                            | 406.8             | 95.37                              | 47.68                           |

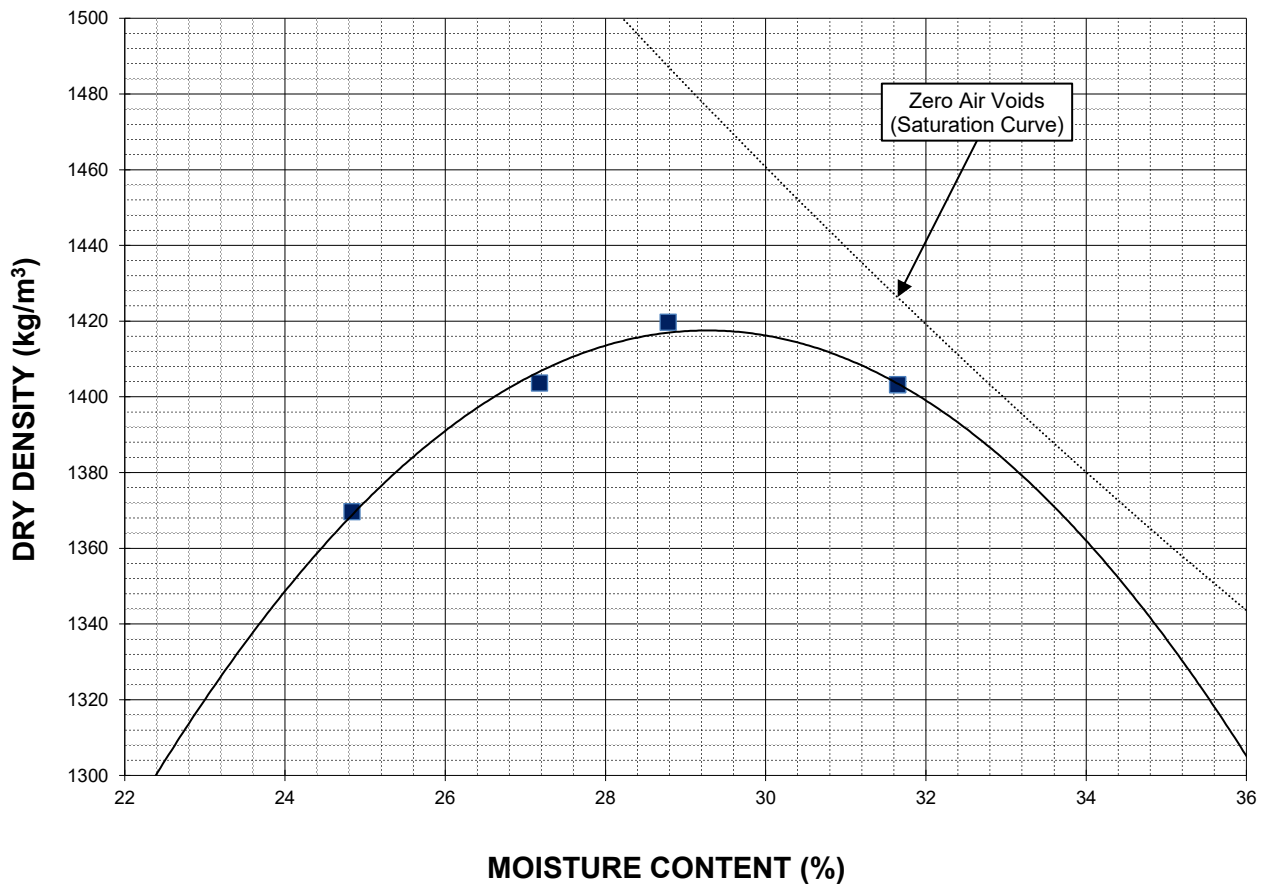
**Project No.** 0022-235-01  
**Client** Dillon Consulting Ltd  
**Project** Kilcona Park



**Sample #** R26-012  
**Source** TH25-03  
**Material** Clay  
**Sample Date** Dec 11-19, 2025  
**Test Date** 27-Jan-26  
**Technician** A. Dustmamatov

|                                               |      |
|-----------------------------------------------|------|
| <b>Maximum Dry Density (kg/m<sup>3</sup>)</b> | 1418 |
| <b>Optimum Moisture (%)</b>                   | 29.3 |

| Trial Number                          | 1    | 2    | 3    | 4    |  |
|---------------------------------------|------|------|------|------|--|
| <b>Wet Density (kg/m<sup>3</sup>)</b> | 1710 | 1785 | 1828 | 1847 |  |
| <b>Dry Density (kg/m<sup>3</sup>)</b> | 1370 | 1404 | 1420 | 1403 |  |
| <b>Moisture Content (%)</b>           | 24.8 | 27.2 | 28.8 | 31.6 |  |



Note: Additional information recorded/measured for this test is available upon request.



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## California Bearing Ratio Test Data Sheet

ASTM D1883-21

|                    |                        |                    |                       |
|--------------------|------------------------|--------------------|-----------------------|
| <b>Project No.</b> | 0022-235-01            | <b>Source</b>      | TH25-03 (0.0m - 1.5m) |
| <b>Client</b>      | Dillon Consulting Ltd. | <b>Material</b>    | Clay                  |
| <b>Project</b>     | Kilcona Park           | <b>Sample Date</b> | Dec 11-19, 2025       |
| <b>Sample #</b>    | Bulk 1                 | <b>Test Date</b>   | 29-Jan-26             |
|                    |                        | <b>Technician</b>  | A. Dustmamatov        |

### Proctor Results (ASTM D698)

|                                  |                        |
|----------------------------------|------------------------|
| Maximum Dry Density              | 1418 kg/m <sup>3</sup> |
| Optimum Moisture Content         | 29.3 %                 |
| Material Retained on 19 mm Sieve | 0.0 %                  |

### CBR Sample Compaction

|                          |                        |
|--------------------------|------------------------|
| Dry Density              | 1338 kg/m <sup>3</sup> |
| Initial Moisture Content | 29.4 %                 |
| Relative Density         | 94.4 % SPMDD           |

### Soaking Results

|                               |         |
|-------------------------------|---------|
| Surcharge                     | 4.54 kg |
| Swell                         | 1.7 %   |
| Moisture Content in top 25 mm | 44.5 %  |
| Immersion Period              | 96 h    |

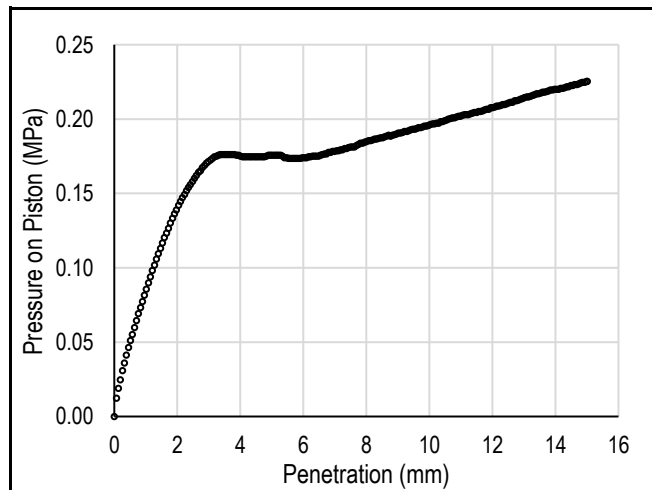
### CBR Results

|                 |       |
|-----------------|-------|
| CBR at 2.54 mm  | 2.3 % |
| CBR at 5.08 mm  | 1.7 % |
| Zero Correction | 0 mm  |

**Test Data**

| Penetration (mm) | Measured Pressure (MPa) | Corrected Pressure (MPa) |
|------------------|-------------------------|--------------------------|
| 0.64             | 0.06                    | 0.06                     |
| 1.27             | 0.10                    | 0.10                     |
| 1.91             | 0.14                    | 0.14                     |
| 2.54             | 0.16                    | 0.16                     |
| 3.18             | 0.17                    | 0.17                     |
| 3.81             | 0.18                    | 0.18                     |
| 4.45             | 0.17                    | 0.17                     |
| 5.08             | 0.18                    | 0.18                     |
| 7.62             | 0.18                    | 0.18                     |
| 10.16            | 0.20                    | 0.20                     |
| 12.70            | 0.21                    | 0.21                     |

**Load/Penetration Curve**



### Comments:



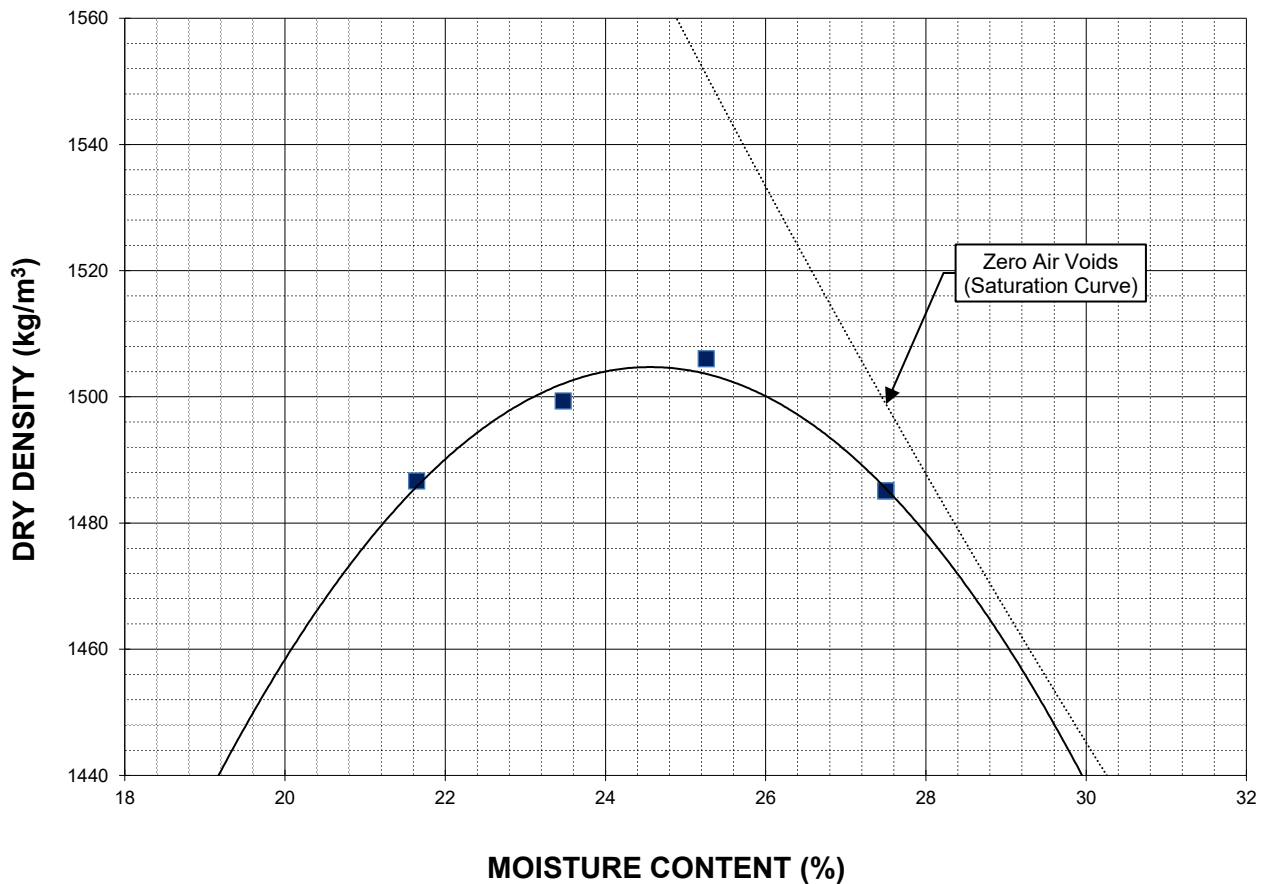
**Project No.** 0022-235-01  
**Client** Dillon Consulting Ltd  
**Project** Kilcona Park



**Sample #** R26-012  
**Source** TH25-10 and TH25-11 (combined)  
**Material** Clay  
**Sample Date** Dec 11-19, 2025  
**Test Date** 27-Jan-26  
**Technician** A. Dustmamatov

|                                               |      |
|-----------------------------------------------|------|
| <b>Maximum Dry Density (kg/m<sup>3</sup>)</b> | 1505 |
| <b>Optimum Moisture (%)</b>                   | 24.6 |

| Trial Number                     | 1    | 2    | 3    | 4    |  |
|----------------------------------|------|------|------|------|--|
| Wet Density (kg/m <sup>3</sup> ) | 1808 | 1851 | 1887 | 1894 |  |
| Dry Density (kg/m <sup>3</sup> ) | 1487 | 1499 | 1506 | 1485 |  |
| Moisture Content (%)             | 21.6 | 23.5 | 25.3 | 27.5 |  |



Note: Additional information recorded/measured for this test is available upon request.

|                    |                        |                    |                                         |
|--------------------|------------------------|--------------------|-----------------------------------------|
| <b>Project No.</b> | 0022-235-01            | <b>Source</b>      | TH25-10 and 11 (combined)(0.0m to 1.5m) |
| <b>Client</b>      | Dillon Consulting Ltd. | <b>Material</b>    | Clay                                    |
| <b>Project</b>     | Kilcona Park           | <b>Sample Date</b> | Dec 11-19, 2025                         |
| <b>Sample #</b>    | Bulk #2                | <b>Test Date</b>   | 29-Jan-26                               |
|                    |                        | <b>Technician</b>  | A. Dustmamatov                          |

### Proctor Results (ASTM D698)

|                                  |            |
|----------------------------------|------------|
| Maximum Dry Density              | 1505 kg/m3 |
| Optimum Moisture Content         | 24.6 %     |
| Material Retained on 19 mm Sieve | 0.0 %      |

### CBR Sample Compaction

|                          |              |
|--------------------------|--------------|
| Dry Density              | 1425 kg/m3   |
| Initial Moisture Content | 24.7 %       |
| Relative Density         | 94.7 % SPMDD |

### Soaking Results

|                               |         |
|-------------------------------|---------|
| Surcharge                     | 4.54 kg |
| Swell                         | 4.5 %   |
| Moisture Content in top 25 mm | 39.7 %  |
| Immersion Period              | 96 h    |

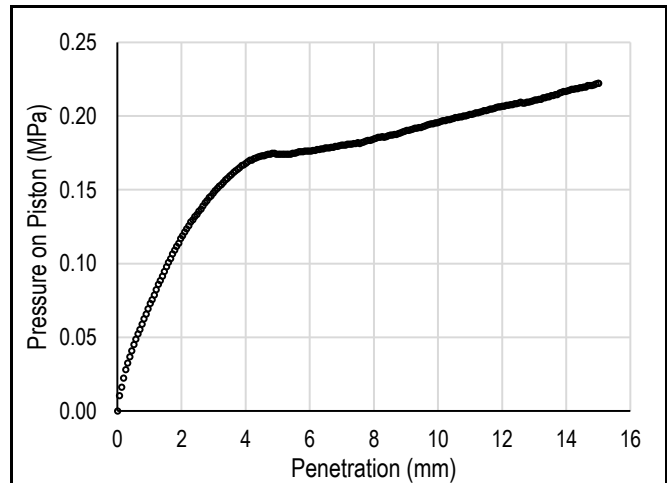
### CBR Results

|                 |       |
|-----------------|-------|
| CBR at 2.54 mm  | 2.0 % |
| CBR at 5.08 mm  | 1.7 % |
| Zero Correction | 0 mm  |

## Test Data

| Penetration (mm) | Measured Pressure (MPa) | Corrected Pressure (MPa) |
|------------------|-------------------------|--------------------------|
| 0.64             | 0.05                    | 0.05                     |
| 1.27             | 0.09                    | 0.09                     |
| 1.91             | 0.11                    | 0.11                     |
| 2.54             | 0.14                    | 0.14                     |
| 3.18             | 0.15                    | 0.15                     |
| 3.81             | 0.16                    | 0.16                     |
| 4.45             | 0.17                    | 0.17                     |
| 5.08             | 0.17                    | 0.17                     |
| 7.62             | 0.18                    | 0.18                     |
| 10.16            | 0.20                    | 0.20                     |
| 12.70            | 0.21                    | 0.21                     |

### Load/Penetration Curve



## Comments:

|  |
|--|
|  |
|--|

## **Appendix B**

### **Test Hole Logs, Summary Tables and Lab Testing Results - Harbourview Roadway**

---



### GENERAL NOTES

- Classifications are based on the Unified Soil Classification System and include consistency, moisture, and color. Field descriptions have been modified to reflect results of laboratory tests where deemed appropriate.
- Descriptions on these test hole logs apply only at the specific test hole locations and at the time the test holes were drilled. Variability of soil and groundwater conditions may exist between test hole locations.
- When the following classification terms are used in this report or test hole logs, the primary and secondary soil fractions may be visually estimated.

| Major Divisions                                                                         |                                      |    | USCS Classification                                                                               | Symbols                                                                                                       | Typical Names                                                                               | Laboratory Classification Criteria                                                                                                                                                                                                                                                                                                                 |                                                                                                               | Particle Size | ASTM Sieve sizes | #10 to #4<br>#40 to #10<br>#200 to #40<br>< #200 |    |                                                            |
|-----------------------------------------------------------------------------------------|--------------------------------------|----|---------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|---------------|------------------|--------------------------------------------------|----|------------------------------------------------------------|
| Coarse-Grained soils<br>(More than half the material is larger than No. 200 sieve size) |                                      |    |                                                                                                   |                                                                                                               |                                                                                             | Determine percentages of sand and gravel from grain size curve, depending on percentage of fines (fraction smaller than No. 200 sieve) coarse-grained soils are classified as follows:<br><br>Less than 5 percent..... GW, GP, SW, SP<br>More than 12 percent..... GM, GC, SM, SC<br>6 to 12 percent..... Borderline cases requiring dual symbols* |                                                                                                               |               |                  |                                                  | mm | 2.00 to 4.75<br>0.425 to 2.00<br>0.075 to 0.425<br>< 0.075 |
| Gravels<br>(More than half of coarse fraction is larger than 4.75 mm)                   | Clean gravel<br>(Little or no fines) | GW |                                                                                                   |                                                                                                               |                                                                                             | Well-graded gravels, gravel-sand mixtures, little or no fines                                                                                                                                                                                                                                                                                      | $C_u = \frac{D_{60}}{D_{10}}$ greater than 4; $C_c = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ between 1 and 3 |               |                  |                                                  |    |                                                            |
|                                                                                         |                                      | GP | Poorly-graded gravels, gravel-sand mixtures, little or no fines                                   |                                                                                                               |                                                                                             |                                                                                                                                                                                                                                                                                                                                                    |                                                                                                               |               |                  |                                                  |    |                                                            |
| Sands<br>(More than half of coarse fraction is smaller than 4.75 mm)                    | Clean sands<br>(Little or no fines)  | GM | Silty gravels, gravel-sand-silt mixtures                                                          | Atterberg limits below "A" line or P.I. less than 4                                                           | Above "A" line with P.I. between 4 and 7 are borderline cases requiring use of dual symbols |                                                                                                                                                                                                                                                                                                                                                    |                                                                                                               |               |                  |                                                  |    |                                                            |
|                                                                                         |                                      | GC | Clayey gravels, gravel-sand-silt mixtures                                                         |                                                                                                               |                                                                                             |                                                                                                                                                                                                                                                                                                                                                    |                                                                                                               |               |                  |                                                  |    |                                                            |
| Sands with fines<br>(Appreciable amount of fines)                                       | Clean sands<br>(Little or no fines)  | SW | Well-graded sands, gravelly sands, little or no fines                                             | $C_u = \frac{D_{60}}{D_{10}}$ greater than 6; $C_c = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ between 1 and 3 | Not meeting all gradation requirements for SW                                               |                                                                                                                                                                                                                                                                                                                                                    |                                                                                                               |               |                  |                                                  |    |                                                            |
|                                                                                         |                                      | SP | Poorly-graded sands, gravelly sands, little or no fines                                           |                                                                                                               |                                                                                             |                                                                                                                                                                                                                                                                                                                                                    |                                                                                                               |               |                  |                                                  |    |                                                            |
| Sands with fines<br>(Appreciable amount of fines)                                       | Clean sands<br>(Little or no fines)  | SM | Silty sands, sand-silt mixtures                                                                   | Atterberg limits below "A" line or P.I. less than 4                                                           | Above "A" line with P.I. between 4 and 7 are borderline cases requiring use of dual symbols |                                                                                                                                                                                                                                                                                                                                                    |                                                                                                               |               |                  |                                                  |    |                                                            |
|                                                                                         |                                      | SC | Clayey sands, sand-clay mixtures                                                                  |                                                                                                               |                                                                                             |                                                                                                                                                                                                                                                                                                                                                    |                                                                                                               |               |                  |                                                  |    |                                                            |
| Fine-Grained soils<br>(More than half the material is smaller than No. 200 sieve size)  |                                      |    |                                                                                                   |                                                                                                               |                                                                                             | Plasticity Chart                                                                                                                                                                                                                                                                                                                                   |                                                                                                               | Material      | ASTM Sieve Sizes | #10 to #4<br>#40 to #10<br>#200 to #40<br>< #200 |    |                                                            |
| Silts and Clays<br>(Liquid limit less than 50)                                          | Clean silts<br>(Little or no fines)  | ML |                                                                                                   |                                                                                                               |                                                                                             | Inorganic silts and very fine sands, rock floor, silty or clayey fine sands or clayey silts with slight plasticity                                                                                                                                                                                                                                 |                                                                                                               |               |                  |                                                  |    |                                                            |
|                                                                                         |                                      | CL | Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays |                                                                                                               |                                                                                             |                                                                                                                                                                                                                                                                                                                                                    |                                                                                                               |               |                  |                                                  |    |                                                            |
| Silts and Clays<br>(Liquid limit greater than 50)                                       | Clean silts<br>(Little or no fines)  | OL | Organic silts and organic silty clays of low plasticity                                           | Von Post Classification Limit                                                                                 |                                                                                             | Strong colour or odour, and often fibrous texture                                                                                                                                                                                                                                                                                                  |                                                                                                               |               |                  |                                                  |    |                                                            |
|                                                                                         |                                      | MH | Inorganic silts, micaceous or distomaceous fine sandy or silty soils, organic silts               |                                                                                                               |                                                                                             |                                                                                                                                                                                                                                                                                                                                                    |                                                                                                               |               |                  |                                                  |    |                                                            |
| Highly Organic Soils                                                                    | Clean silts<br>(Little or no fines)  | CH | Inorganic clays of high plasticity, fat clays                                                     |                                                                                                               |                                                                                             |                                                                                                                                                                                                                                                                                                                                                    |                                                                                                               |               |                  |                                                  |    |                                                            |
|                                                                                         |                                      | OH | Organic clays of medium to high plasticity, organic silts                                         |                                                                                                               |                                                                                             |                                                                                                                                                                                                                                                                                                                                                    |                                                                                                               |               |                  |                                                  |    |                                                            |
|                                                                                         |                                      |    | Pt                                                                                                | Peat and other highly organic soils <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td>         |                                                                                             |                                                                                                                                                                                                                                                                                                                                                    |                                                                                                               |               |                  |                                                  |    |                                                            |

\* Borderline classifications used for soils possessing characteristics of two groups are designated by combinations of groups symbols. For example; GW-GC, well-graded gravel-sand mixture with clay binder.

### Other Symbol Types

|  |          |  |                            |  |                      |
|--|----------|--|----------------------------|--|----------------------|
|  | Asphalt  |  | Bedrock (undifferentiated) |  | Cobbles              |
|  | Concrete |  | Limestone Bedrock          |  | Boulders and Cobbles |
|  | Fill     |  | Cemented Shale             |  | Silt Till            |
|  |          |  | Non-Cemented Shale         |  | Clay Till            |

**LEGEND OF ABBREVIATIONS AND SYMBOLS**

|                                 |                                                             |
|---------------------------------|-------------------------------------------------------------|
| LL - Liquid Limit (%)           | VW - Vibrating Wire Piezometer                              |
| PL - Plastic Limit (%)          | SI - Slope Inclinator                                       |
| PI - Plasticity Index (%)       | ▽ Water Level at Time of Drilling                           |
| MC - Moisture Content (%)       | ▼ Water Level at End of Drilling                            |
| SPT - Standard Penetration Test | ▼ Water Level After Drilling as Indicated on Test Hole Logs |
| RQD- Rock Quality Designation   |                                                             |
| Qu - Unconfined Compression     |                                                             |
| Su - Undrained Shear Strength   |                                                             |

**FRACTION OF SECONDARY SOIL CONSTITUENTS ARE BASED ON THE FOLLOWING TERMINOLOGY**

| TERM        | EXAMPLES             | PERCENTAGE       |
|-------------|----------------------|------------------|
| and         | and CLAY             | 35 to 50 percent |
| "y" or "ey" | clayey, silty        | 20 to 35 percent |
| some        | some silt            | 10 to 20 percent |
| trace       | trace gravel         | 1 to 10 percent  |
| with *      | with silt, with sand | > 35 percent     |

\* Used when the material is classified based on behaviour as a cohesive material

**TERMS DESCRIBING CONSISTENCY OR COMPACTION CONDITION**

The Standard Penetration Test blow count (N) of a non-cohesive soil can be related to compactness condition as follows:

| <u>Descriptive Terms</u> | <u>SPT (N) (Blows/300 mm)</u> |
|--------------------------|-------------------------------|
| Very loose               | < 4                           |
| Loose                    | 4 to 10                       |
| Compact                  | 10 to 30                      |
| Dense                    | 30 to 50                      |
| Very dense               | > 50                          |

The Standard Penetration Test blow count (N) of a cohesive soil can be related to its consistency as follows:

| <u>Descriptive Terms</u> | <u>SPT (N) (Blows/300 mm)</u> |
|--------------------------|-------------------------------|
| Very soft                | < 2                           |
| Soft                     | 2 to 4                        |
| Firm                     | 4 to 8                        |
| Stiff                    | 8 to 15                       |
| Very stiff               | 15 to 30                      |
| Hard                     | > 30                          |

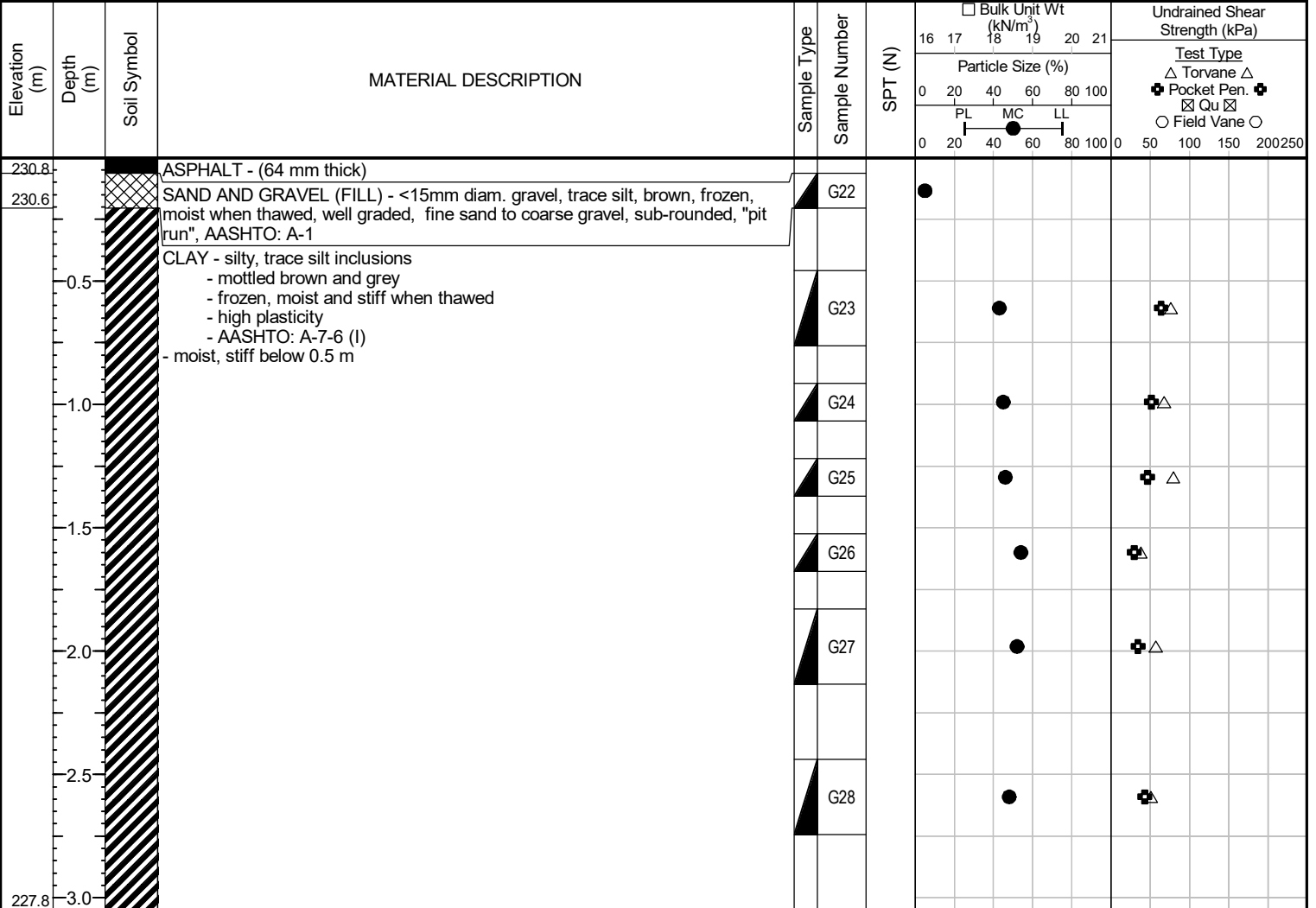
The undrained shear strength (Su) of a cohesive soil can be related to its consistency as follows:

| <u>Descriptive Terms</u> | <u>Undrained Shear Strength (kPa)</u> |
|--------------------------|---------------------------------------|
| Very soft                | < 12                                  |
| Soft                     | 12 to 25                              |
| Firm                     | 25 to 50                              |
| Stiff                    | 50 to 100                             |
| Very stiff               | 100 to 200                            |
| Hard                     | > 200                                 |

**Client:** Dillon Consulting Ltd. **Project Number:** 0022-235-02  
**Project Name:** Harbourview Roadway **Location:** UTM: 14U, 5532841.017 m N, 642356.867 m E (Road)  
**Contractor:** Paddock Drilling Ltd. **Ground Elevation:** 230.84 m (geodetic)  
**Method:** 125 mm Solid Stem Auger, Acker SS3 Track Mount **Date Drilled:** 11 December 2025

**Sample Type:** ☒ Grab (G) ☒ Shelby Tube (T) ☒ Split Spoon (SS) / SPT ☒ Split Barrel (SB) / LPT ☒ Core (C)

**Particle Size Legend:** ☒ Fines ☒ Clay ☒ Silt ☒ Sand ☒ Gravel ☒ Cobbles ☒ Boulders

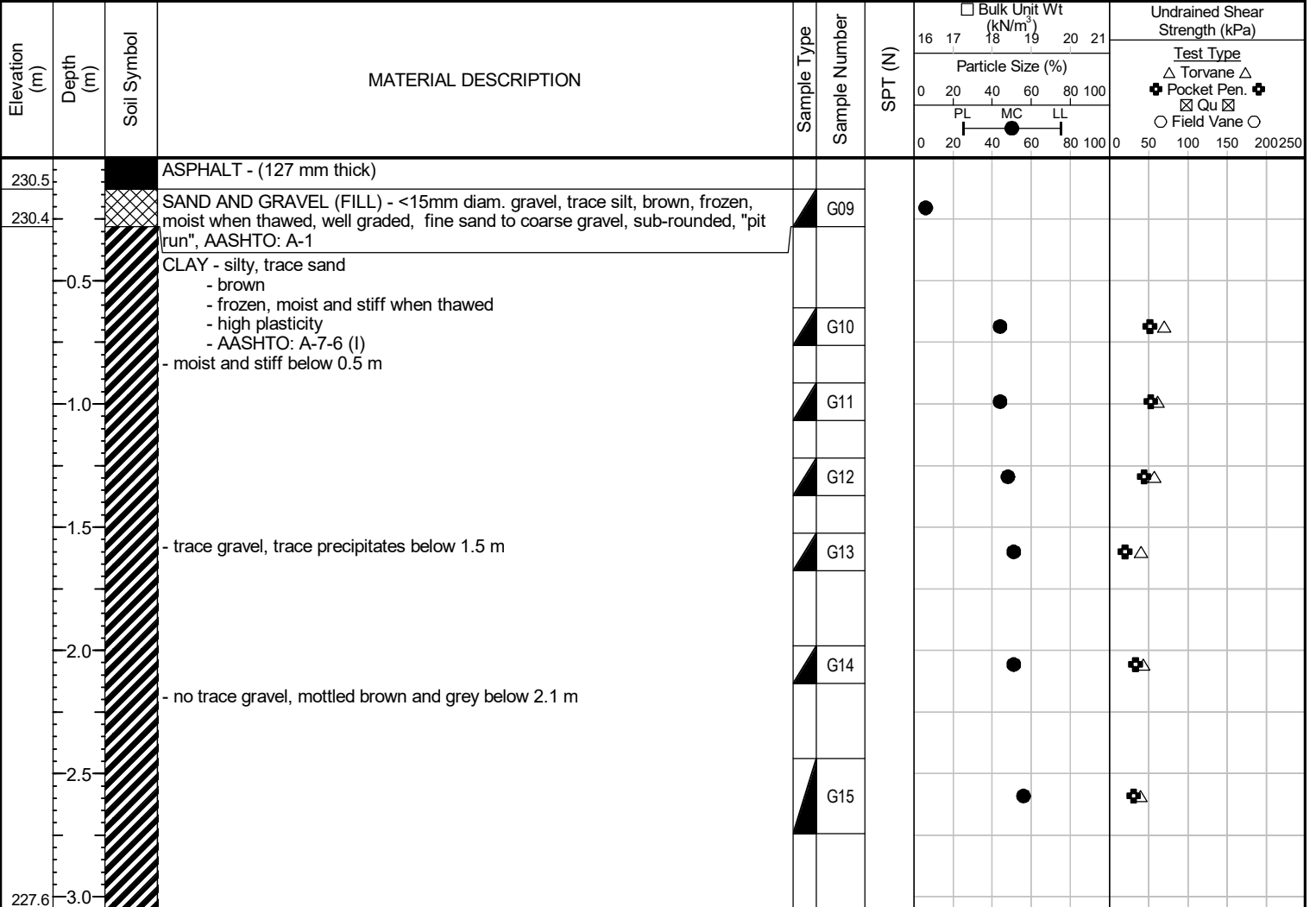


END OF TEST HOLE AT 3.1 m IN CLAY  
 1. Seepage and sloughing not observed.  
 2. Test hole open to 3.1 m depth and dry immediately after drilling.  
 3. Test hole backfilled with auger cuttings and cold patch asphalt to surface.  
 4. Test hole location and elevation surveyed with RTK GPS relative to geodetic datum.  
 5. Test hole located approximately 1.8 m from the edge of pavement in the northbound lane.

**Client:** Dillon Consulting Ltd. **Project Number:** 0022-235-02  
**Project Name:** Harbourview Roadway **Location:** UTM: 14U, 5532972.242 m N, 642370.287 m E (Road)  
**Contractor:** Paddock Drilling Ltd. **Ground Elevation:** 230.65 m (geodetic)  
**Method:** 125 mm Solid Stem Auger, Acker SS3 Track Mount **Date Drilled:** 11 December 2025

**Sample Type:** ☒ Grab (G) ☐ Shelby Tube (T) ☐ Split Spoon (SS) / SPT ☐ Split Barrel (SB) / LPT ☐ Core (C)

**Particle Size Legend:** ☒ Fines ☐ Clay ☐ Silt ☐ Sand ☐ Gravel ☐ Cobbles ☐ Boulders

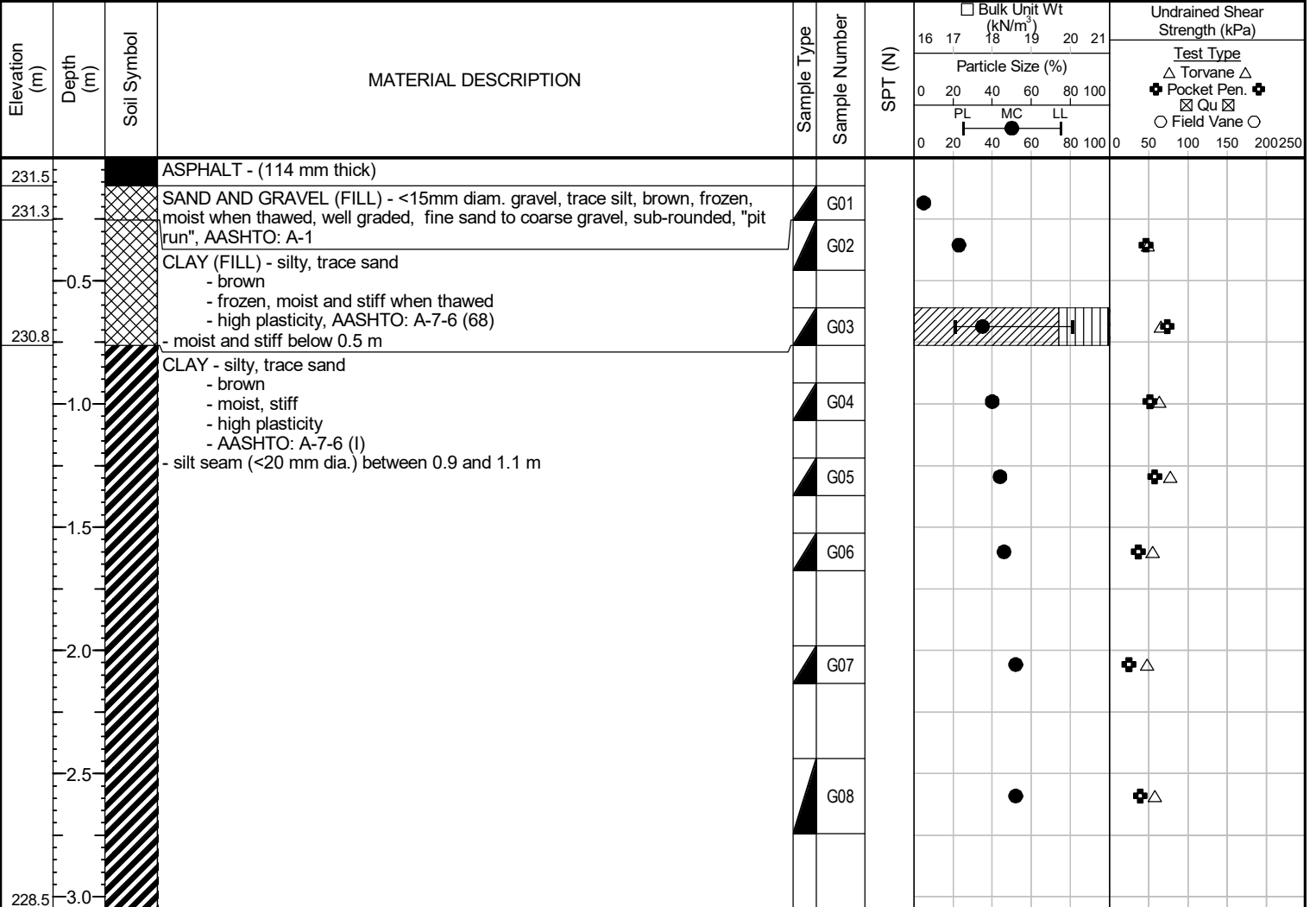


END OF TEST HOLE AT 3.1 m IN CLAY  
 1. Seepage and sloughing not observed.  
 2. Test hole open to 3.1 m depth and dry immediately after drilling.  
 3. Test hole backfilled with auger cuttings and cold patch asphalt to surface.  
 4. Test hole location and elevation surveyed with RTK GPS relative to geodetic datum.  
 5. Test hole located approximately 0.5 m from the edge of pavement in the southbound lane.

**Client:** Dillon Consulting Ltd. **Project Number:** 0022-235-02  
**Project Name:** Harbourview Roadway **Location:** UTM: 14U, 5532857.103 m N, 642517.165 m E (Road)  
**Contractor:** Paddock Drilling Ltd. **Ground Elevation:** 231.57 m (geodetic)  
**Method:** 125 mm Solid Stem Auger, Acker SS3 Track Mount **Date Drilled:** 11 December 2025

**Sample Type:** ☒ Grab (G) ☐ Shelby Tube (T) ☐ Split Spoon (SS) / SPT ☐ Split Barrel (SB) / LPT ☐ Core (C)

**Particle Size Legend:** ☒ Fines ☒ Clay ☐ Silt ☐ Sand ☐ Gravel ☐ Cobbles ☐ Boulders



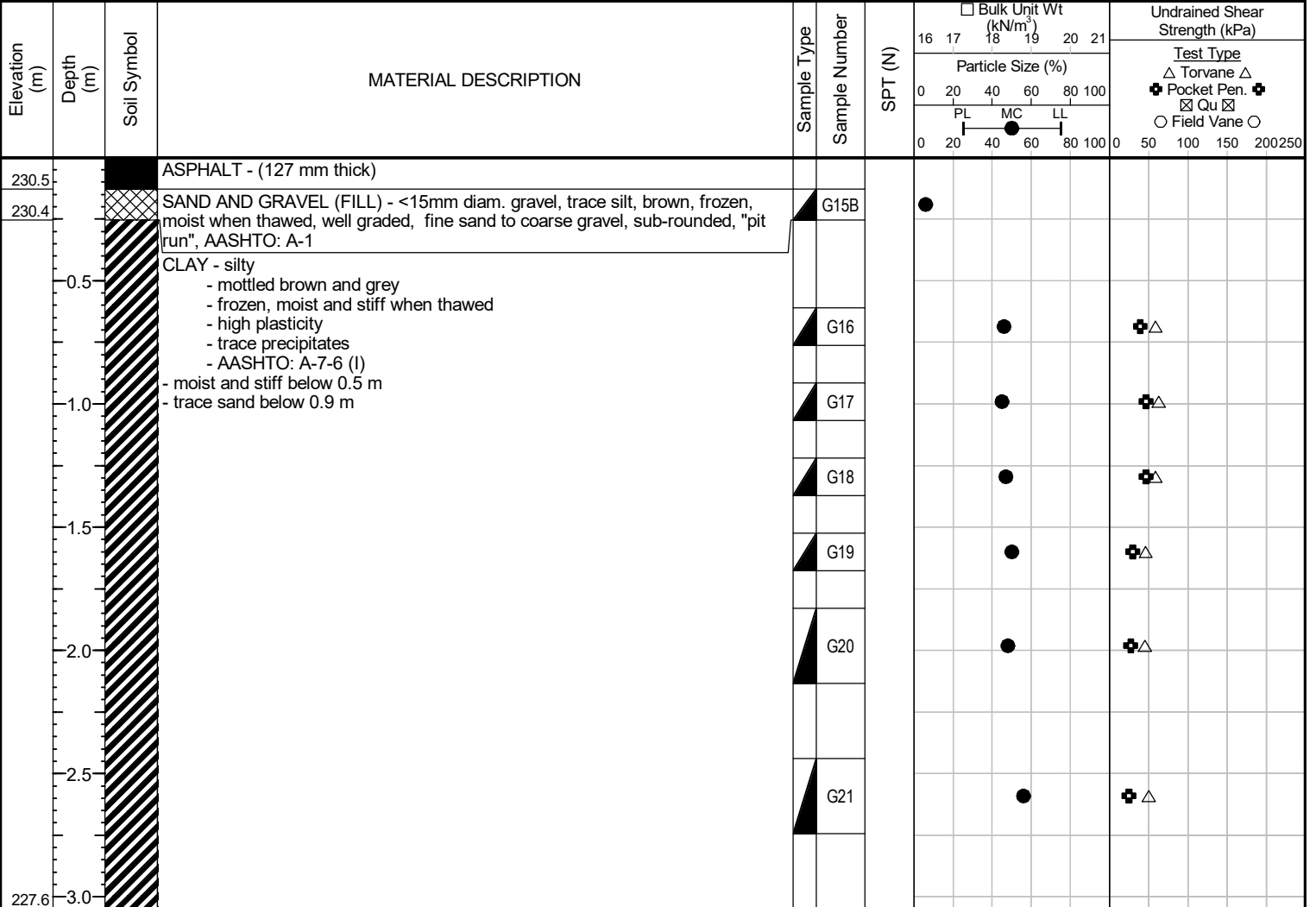
END OF TEST HOLE AT 3.1 m IN CLAY  
 1. Seepage and sloughing not observed.  
 2. Test hole open to 3.1 m depth and dry immediately after drilling.  
 3. Test hole backfilled with auger cuttings and cold patch asphalt to surface.  
 4. Test hole location and elevation surveyed with RTK GPS relative to geodetic datum.  
 5. Test hole located approximately 11.5 m south from the north edge of pavement, and 47.1 m west from the east edge pavement in the parking lot.



**Client:** Dillon Consulting Ltd. **Project Number:** 0022-235-02  
**Project Name:** Harbourview Roadway **Location:** UTM: 14U, 5532917.896 m N, 642368.773 m E (Road)  
**Contractor:** Paddock Drilling Ltd. **Ground Elevation:** 230.65 m (geodetic)  
**Method:** 125 mm Solid Stem Auger, Acker SS3 Track Mount **Date Drilled:** 11 December 2025

**Sample Type:** ☒ Grab (G) ☒ Shelby Tube (T) ☒ Split Spoon (SS) / SPT ☒ Split Barrel (SB) / LPT ☒ Core (C)

**Particle Size Legend:** ☒ Fines ☒ Clay ☒ Silt ☒ Sand ☒ Gravel ☒ Cobbles ☒ Boulders



END OF TEST HOLE AT 3.1 m IN CLAY  
 1. Seepage and sloughing not observed.  
 2. Test hole open to 3.1 m depth and dry immediately after drilling.  
 3. Test hole backfilled with auger cuttings and cold patch asphalt to surface.  
 4. Test hole location and elevation surveyed with RTK GPS relative to geodetic datum.  
 5. Test hole located approximately 1.7 m from the edge of pavement in the northbound lane.

**Harbourview Roadway  
Sub-Surface Investigation**

| Test Hole No. | Test Hole Location                                                                                                                                                   | Pavement Surface |                | Pavement Structure Material |                | Subgrade Description            | Sample Depth (m) |            | Moisture Content (%) | Grain Size Analysis |          |          |            | Atterberg Limits |        |                  |
|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|----------------|-----------------------------|----------------|---------------------------------|------------------|------------|----------------------|---------------------|----------|----------|------------|------------------|--------|------------------|
|               |                                                                                                                                                                      | Type             | Thickness (mm) | Type                        | Thickness (mm) |                                 | Top (m)          | Bottom (m) |                      | Clay (%)            | Silt (%) | Sand (%) | Gravel (%) | Plastic          | Liquid | Plasticity Index |
| TH25-01       | UTM : 642356.8m E, 5532841m N,<br>Located pproximately 1.8 m from the edge of pavement in the northbound lane.                                                       | Asphalt          | 64             | Granular                    | 336            | Sand and Gravel, AASHTO: A-1    | 0.1              | 0.2        | 5                    |                     |          |          |            |                  |        |                  |
|               |                                                                                                                                                                      |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)         | 0.5              | 0.8        | 43                   |                     |          |          |            |                  |        |                  |
|               |                                                                                                                                                                      |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)         | 0.9              | 1.1        | 45                   |                     |          |          |            |                  |        |                  |
|               |                                                                                                                                                                      |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)         | 1.2              | 1.4        | 46                   |                     |          |          |            |                  |        |                  |
|               |                                                                                                                                                                      |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)         | 1.5              | 1.7        | 54                   |                     |          |          |            |                  |        |                  |
|               |                                                                                                                                                                      |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)         | 1.8              | 2.1        | 52                   |                     |          |          |            |                  |        |                  |
|               |                                                                                                                                                                      |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)         | 2.4              | 2.7        | 48                   |                     |          |          |            |                  |        |                  |
| TH25-02       | UTM : 642370 m E, 5532972 m N,<br>Located pproximately 0.5 m from the edge of pavement in the southbound lane                                                        | Asphalt          | 127            | Granular                    | 173            | Sand and Gravel, AASHTO: A-1    | 0.1              | 0.3        | 6                    |                     |          |          |            |                  |        |                  |
|               |                                                                                                                                                                      |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)         | 0.6              | 0.8        | 44                   |                     |          |          |            |                  |        |                  |
|               |                                                                                                                                                                      |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)         | 0.9              | 1.1        | 44                   |                     |          |          |            |                  |        |                  |
|               |                                                                                                                                                                      |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)         | 1.2              | 1.4        | 48                   |                     |          |          |            |                  |        |                  |
|               |                                                                                                                                                                      |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)         | 1.5              | 1.7        | 51                   |                     |          |          |            |                  |        |                  |
|               |                                                                                                                                                                      |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)         | 2.0              | 2.1        | 51                   |                     |          |          |            |                  |        |                  |
|               |                                                                                                                                                                      |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)         | 2.4              | 2.7        | 56                   |                     |          |          |            |                  |        |                  |
| TH25-03       | UTM : 642517 m E, 5532857 m N,<br>Located approximately 11.5 m south from the north edge of pavement, and 47.1 m west from the east edge pavement in the parking lot | Asphalt          | 114            | Granular                    | 136            | Sand and Gravel, AASHTO: A-1    | 0.1              | 0.2        | 5                    |                     |          |          |            |                  |        |                  |
|               |                                                                                                                                                                      |                  |                |                             |                | Clay (FILL), AASHTO: A-7-6 (68) | 0.2              | 0.5        | 23                   |                     |          |          |            |                  |        |                  |
|               |                                                                                                                                                                      |                  |                |                             |                | Clay (FILL), AASHTO: A-7-6 (68) | 0.6              | 0.8        | 35                   | 74                  | 25       | 1        | 0          | 21               | 81     | 60               |
|               |                                                                                                                                                                      |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)         | 0.9              | 1.1        | 40                   |                     |          |          |            |                  |        |                  |
|               |                                                                                                                                                                      |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)         | 1.2              | 1.4        | 44                   |                     |          |          |            |                  |        |                  |
|               |                                                                                                                                                                      |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)         | 1.5              | 1.7        | 46                   |                     |          |          |            |                  |        |                  |
|               |                                                                                                                                                                      |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)         | 2.0              | 2.1        | 52                   |                     |          |          |            |                  |        |                  |
|               |                                                                                                                                                                      |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)         | 2.4              | 2.7        | 52                   |                     |          |          |            |                  |        |                  |



Harbourview Roadway  
Sub-Surface Investigation

| Test Hole No. | Test Hole Location                                                                                                                      | Pavement Surface |                | Pavement Structure Material |                | Subgrade Description         | Sample Depth (m) |            | Moisture Content (%) | Grain Size Analysis |          |          |            | Atterberg Limits |        |                  |
|---------------|-----------------------------------------------------------------------------------------------------------------------------------------|------------------|----------------|-----------------------------|----------------|------------------------------|------------------|------------|----------------------|---------------------|----------|----------|------------|------------------|--------|------------------|
|               |                                                                                                                                         | Type             | Thickness (mm) | Type                        | Thickness (mm) |                              | Top (m)          | Bottom (m) |                      | Clay (%)            | Silt (%) | Sand (%) | Gravel (%) | Plastic          | Liquid | Plasticity Index |
| TH25-04       | UTM : 639818m E,<br>5535476m N,<br>Located 15m South of<br>intersection with Foxgrove<br>Ave, 1m East of West edge<br>of Dundoon Street | Asphalt          | 127            | Granular                    | 123            | Sand and Gravel, AASHTO: A-1 | 0.1              | 0.2        | 6                    |                     |          |          |            |                  |        |                  |
|               |                                                                                                                                         |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)      | 0.6              | 0.8        | 46                   |                     |          |          |            |                  |        |                  |
|               |                                                                                                                                         |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)      | 0.9              | 1.1        | 45                   |                     |          |          |            |                  |        |                  |
|               |                                                                                                                                         |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)      | 1.2              | 1.4        | 47                   |                     |          |          |            |                  |        |                  |
|               |                                                                                                                                         |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)      | 1.5              | 1.7        | 50                   |                     |          |          |            |                  |        |                  |
|               |                                                                                                                                         |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)      | 1.8              | 2.1        | 48                   |                     |          |          |            |                  |        |                  |
|               |                                                                                                                                         |                  |                |                             |                | Clay, AASHTO: A-7-6 (I)      | 2.4              | 2.7        | 56                   |                     |          |          |            |                  |        |                  |



## MEMORANDUM

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**Date** January 12, 2016  
**To** Paul Hiller, TREK Engineering  
**From** Angela Fidler-Kliwer, TREK Engineering  
**Project No.** 0022-235-02  
**Project** Harbourview Roadway  
**Subject** Laboratory Testing Results – Lab Req. R25-574

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**Distribution** Nuno Mendonca, Tyson Roeland

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Attached are the laboratory testing results for the above noted project. The testing included moisture content determinations, Atterberg Limits and grain size distribution (Hydrometer method).

Regards,

Angela Fidler-Kliwer, C.Tech.

Attach.

*Review Control:*

|                         |                         |                        |
|-------------------------|-------------------------|------------------------|
| <i>Prepared By:</i> AFK | <i>Reviewed By:</i> AFK | <i>Checked By:</i> NJF |
|-------------------------|-------------------------|------------------------|



CLIENT Dillon Consulting Ltd.  
PROJECT NAME Harbourview Roadway

PROJECT NO: 0022-235-02  
FIELD TECHNICIAN: Paul Hiller

| TEST HOLE NUMBER | SAMPLE NUMBER | DEPTH OF SAMPLE (ft) | Sample Date | MOISTURE | VISUAL CLASS. | ATTERBERG LIMITS | HYDROMETER | GRADATION | STD. PROCTOR | UNCONFINED AND AUXILIARY TESTS | SO <sub>4</sub> - Water Soluble Sulfate (CSA-A23.2-3B) |  |  | Soil Description/Comments |
|------------------|---------------|----------------------|-------------|----------|---------------|------------------|------------|-----------|--------------|--------------------------------|--------------------------------------------------------|--|--|---------------------------|
| TH25-01          | G22           | 0.2 - 0.7            |             | /        |               |                  |            |           |              |                                |                                                        |  |  | SAND AND GRAVEL           |
| TH25-01          | G23           | 1.5 - 2.5            |             | /        |               |                  |            |           |              |                                |                                                        |  |  | CLAY                      |
| TH25-01          | G24           | 3.0 - 3.5            |             | /        |               |                  |            |           |              |                                |                                                        |  |  | //                        |
| TH25-01          | G25           | 4.0 - 4.5            |             | /        |               |                  |            |           |              |                                |                                                        |  |  | //                        |
| TH25-01          | G26           | 5.0 - 5.5            |             | /        |               |                  |            |           |              |                                |                                                        |  |  | //                        |
| TH25-01          | G27           | 6.0 - 7.0            |             | /        |               |                  |            |           |              |                                |                                                        |  |  | //                        |
| TH25-01          | G28           | 8.0 - 9.0            |             | /        |               |                  |            |           |              |                                |                                                        |  |  | //                        |
| TH25-02          | G09           | 0.4 - 0.9            |             | /        |               |                  |            |           |              |                                |                                                        |  |  | SAND AND GRAVEL           |
| TH25-02          | G10           | 2.0 - 2.5            |             | /        |               |                  |            |           |              |                                |                                                        |  |  | CLAY                      |
| TH25-02          | G11           | 3.0 - 3.5            |             | /        |               |                  |            |           |              |                                |                                                        |  |  | //                        |
| TH25-02          | G12           | 4.0 - 4.5            |             | /        |               |                  |            |           |              |                                |                                                        |  |  | //                        |
| TH25-02          | G13           | 5.0 - 5.5            |             | /        |               |                  |            |           |              |                                |                                                        |  |  | //                        |
| TH25-02          | G14           | 6.5 - 7.0            |             | /        |               |                  |            |           |              |                                |                                                        |  |  | //                        |
| TH25-02          | G15           | 8.0 - 9.0            |             | /        |               |                  |            |           |              |                                |                                                        |  |  | //                        |
| TH25-03          | G01           | 0.4 - 0.8            |             | /        |               |                  |            |           |              |                                |                                                        |  |  | SAND AND GRAVEL           |
| TH25-03          | G02           | 0.8 - 1.5            |             | /        |               |                  |            |           |              |                                |                                                        |  |  | CLAY FILL                 |
| TH25-03          | G03           | 2.0 - 2.5            |             | /        |               | XX               |            |           |              |                                |                                                        |  |  | //                        |
| TH25-03          | G04           | 3.0 - 3.5            |             | /        |               |                  |            |           |              |                                |                                                        |  |  | CLAY AND SILT             |
| TH25-03          | G05           | 4.0 - 4.5            |             | /        |               |                  |            |           |              |                                |                                                        |  |  | CLAY                      |
| TH25-03          | G06           | 5.0 - 5.5            |             | /        |               |                  |            |           |              |                                |                                                        |  |  | //                        |
| TH25-03          | G07           | 6.5 - 7.0            |             | /        |               |                  |            |           |              |                                |                                                        |  |  | //                        |
| TH25-03          | G08           | 8.0 - 9.0            |             | /        |               |                  |            |           |              |                                |                                                        |  |  | //                        |
| TH25-04          | G15B          | 0.4 - 0.8            |             | /        |               |                  |            |           |              |                                |                                                        |  |  | SAND AND GRAVEL           |
| TH25-04          | G16           | 2.0 - 2.5            |             | /        |               |                  |            |           |              |                                |                                                        |  |  | CLAY                      |
| TH25-04          | G17           | 3.0 - 3.5            |             | /        |               |                  |            |           |              |                                |                                                        |  |  | //                        |
| TH25-04          | G18           | 4.0 - 4.5            |             | /        |               |                  |            |           |              |                                |                                                        |  |  | //                        |
| TH25-04          | G19           | 5.0 - 5.5            |             | /        |               |                  |            |           |              |                                |                                                        |  |  | //                        |
| TH25-04          | G20           | 6.0 - 7.0            |             | /        |               |                  |            |           |              |                                |                                                        |  |  | //                        |
| TH25-04          | G21           | 8.0 - 9.0            |             | /        |               |                  |            |           |              |                                |                                                        |  |  | //                        |

REQUESTED BY: Paul Hiller REPORT TO: PH, NM, TR  
REQUISITION DATE: 2025/12/19 DATE REQUIRED: 2026/01/09  
COMMENTS:

REQUISITION NO. R25-574  
PAGE 1 OF 1



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Tel: 204.975.9433

## Moisture Content Report ASTM D2216-98

**Project No.** 0022-235-02  
**Client** Dillon Consulting Ltd.  
**Project** Harbourview Roadway

**Sample Date** 11-Dec-25  
**Test Date** 06-Jan-26  
**Technician** K.Desikan

| Test Hole       | TH25-01   | TH25-01   | TH25-01   | TH25-01   | TH25-01   | TH25-01   |
|-----------------|-----------|-----------|-----------|-----------|-----------|-----------|
| Depth (m)       | 0.1 - 0.2 | 0.5 - 0.8 | 0.9 - 1.1 | 1.2 - 1.4 | 1.5 - 1.7 | 1.8 - 2.1 |
| Sample #        | G22       | G23       | G24       | G25       | G26       | G27       |
| Tare ID         | W47       | X97       | D241      | M40       | P07       | ZDD8      |
| Mass of tare    | 8.7       | 6.9       | 6.9       | 7.0       | 8.8       | 8.5       |
| Mass wet + tare | 202.3     | 210.0     | 193.4     | 201.0     | 200.5     | 206.0     |
| Mass dry + tare | 193.2     | 149.3     | 136.0     | 140.3     | 133.7     | 138.1     |
| Mass water      | 9.1       | 60.7      | 57.4      | 60.7      | 66.8      | 67.9      |
| Mass dry soil   | 184.5     | 142.4     | 129.1     | 133.3     | 124.9     | 129.6     |
| Moisture %      | 4.9%      | 42.6%     | 44.5%     | 45.5%     | 53.5%     | 52.4%     |

| Test Hole       | TH25-01   | TH25-02   | TH25-02   | TH25-02   | TH25-02   | TH25-02   |
|-----------------|-----------|-----------|-----------|-----------|-----------|-----------|
| Depth (m)       | 2.4 - 2.7 | 0.1 - 0.3 | 0.6 - 0.8 | 0.9 - 1.1 | 1.2 - 1.4 | 1.5 - 1.7 |
| Sample #        | G28       | G09       | G10       | G11       | G12       | G13       |
| Tare ID         | AA1       | W59       | F58       | ZD19      | C3        | D49       |
| Mass of tare    | 6.9       | 8.7       | 8.9       | 8.4       | 8.7       | 8.8       |
| Mass wet + tare | 207.1     | 203.7     | 202.0     | 203.9     | 211.0     | 207.2     |
| Mass dry + tare | 142.6     | 193.2     | 143.5     | 143.8     | 145.2     | 139.9     |
| Mass water      | 64.5      | 10.5      | 58.5      | 60.1      | 65.8      | 67.3      |
| Mass dry soil   | 135.7     | 184.5     | 134.6     | 135.4     | 136.5     | 131.1     |
| Moisture %      | 47.5%     | 5.7%      | 43.5%     | 44.4%     | 48.2%     | 51.3%     |

| Test Hole       | TH25-02   | TH25-02   | TH25-03   | TH25-03   | TH25-03   | TH25-03   |
|-----------------|-----------|-----------|-----------|-----------|-----------|-----------|
| Depth (m)       | 2.0 - 2.1 | 2.4 - 2.7 | 0.1 - 0.2 | 0.2 - 0.5 | 0.6 - 0.8 | 0.9 - 1.1 |
| Sample #        | G14       | G15       | G01       | G02       | G03       | G04       |
| Tare ID         | AC37      | K11       | RR2       | D30       | F97       | E90       |
| Mass of tare    | 6.9       | 8.9       | 6.8       | 8.7       | 8.7       | 6.9       |
| Mass wet + tare | 208.0     | 210.9     | 205.0     | 204.7     | 406.2     | 200.9     |
| Mass dry + tare | 140.2     | 138.4     | 195.7     | 168.2     | 304.1     | 145.1     |
| Mass water      | 67.8      | 72.5      | 9.3       | 36.5      | 102.1     | 55.8      |
| Mass dry soil   | 133.3     | 129.5     | 188.9     | 159.5     | 295.4     | 138.2     |
| Moisture %      | 50.9%     | 56.0%     | 4.9%      | 22.9%     | 34.6%     | 40.4%     |



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## Moisture Content Report ASTM D2216-98

**Project No.** 0022-235-02  
**Client** Dillon Consulting Ltd.  
**Project** Harbourview Roadway

**Sample Date** 11-Dec-25  
**Test Date** 06-Jan-26  
**Technician** K.Desikan

| Test Hole       | TH25-03   | TH25-03   | TH25-03   | TH25-03   | TH25-04   | TH25-04   |
|-----------------|-----------|-----------|-----------|-----------|-----------|-----------|
| Depth (m)       | 1.2 - 1.4 | 1.5 - 1.7 | 2.0 - 2.1 | 2.4 - 2.7 | 0.1 - 0.2 | 0.6 - 0.8 |
| Sample #        | G05       | G06       | G07       | G08       | G15B      | G16       |
| Tare ID         | QT63      | Z00       | Z36       | P14       | N02       | N25       |
| Mass of tare    | 8.4       | 8.5       | 8.4       | 8.7       | 8.7       | 8.8       |
| Mass wet + tare | 200.8     | 199.6     | 206.1     | 211.0     | 203.3     | 203.0     |
| Mass dry + tare | 142.2     | 139.8     | 138.1     | 141.6     | 192.3     | 141.9     |
| Mass water      | 58.6      | 59.8      | 68.0      | 69.4      | 11.0      | 61.1      |
| Mass dry soil   | 133.8     | 131.3     | 129.7     | 132.9     | 183.6     | 133.1     |
| Moisture %      | 43.8%     | 45.5%     | 52.4%     | 52.2%     | 6.0%      | 45.9%     |

| Test Hole       | TH25-04   | TH25-04   | TH25-04   | TH25-04   | TH25-04   |  |
|-----------------|-----------|-----------|-----------|-----------|-----------|--|
| Depth (m)       | 0.9 - 1.1 | 1.2 - 1.4 | 1.5 - 1.7 | 1.8 - 2.1 | 2.4 - 2.7 |  |
| Sample #        | G17       | G18       | G19       | G20       | G21       |  |
| Tare ID         | J44       | H46       | J82       | H14       | WW3       |  |
| Mass of tare    | 7.0       | 7.0       | 7.0       | 8.7       | 6.8       |  |
| Mass wet + tare | 204.8     | 203.0     | 214.7     | 208.0     | 204.7     |  |
| Mass dry + tare | 143.3     | 140.3     | 145.4     | 143.4     | 133.7     |  |
| Mass water      | 61.5      | 62.7      | 69.3      | 64.6      | 71.0      |  |
| Mass dry soil   | 136.3     | 133.3     | 138.4     | 134.7     | 126.9     |  |
| Moisture %      | 45.1%     | 47.0%     | 50.1%     | 48.0%     | 55.9%     |  |



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## Atterberg Limits ASTM D4318-17e1

**Project No.** 0022-235-02  
**Client** Dillon Consulting  
**Project** Harbourview Roadway

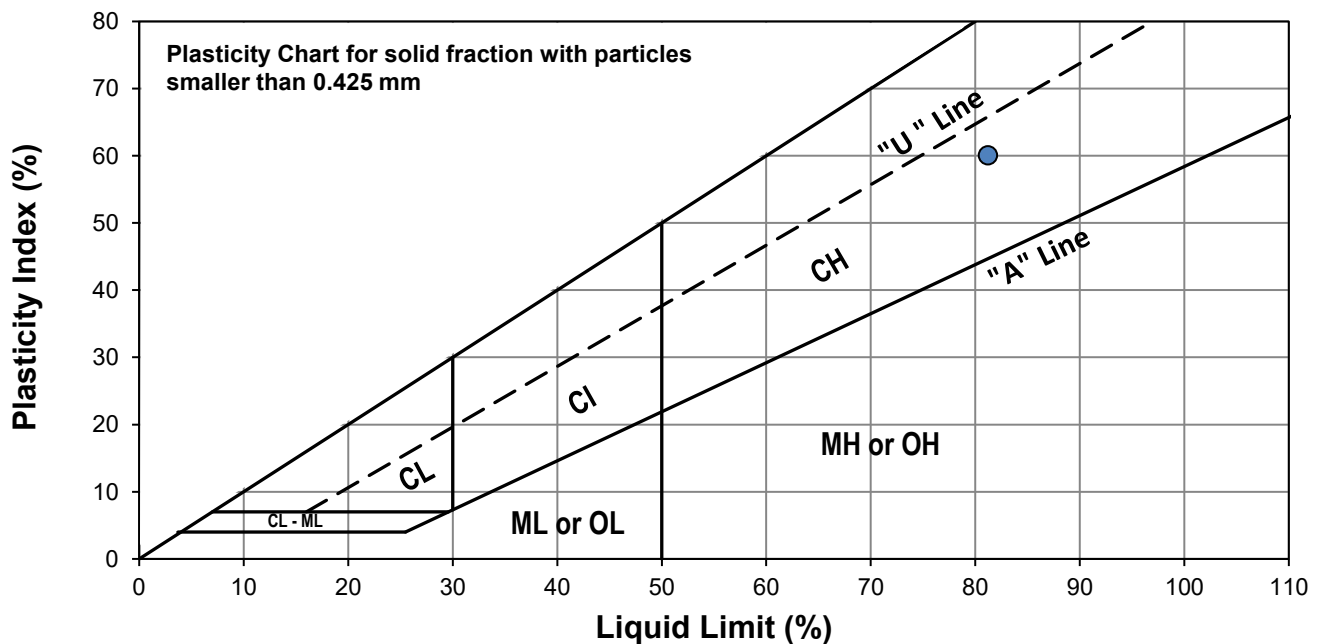


**Test Hole** TH25-03  
**Sample #** G03  
**Depth (m)** 0.6 - 0.8  
**Sample Date** 11-Dec-25  
**Test Date** 08-Jan-26  
**Technician** I.Araquil

|                         |    |
|-------------------------|----|
| <b>Liquid Limit</b>     | 81 |
| <b>Plastic Limit</b>    | 21 |
| <b>Plasticity Index</b> | 60 |

### Liquid Limit

| Trial #                  | 1      | 2      | 3      |  |  |
|--------------------------|--------|--------|--------|--|--|
| Number of Blows (N)      | 19     | 24     | 33     |  |  |
| Mass Tare (g)            | 13.987 | 14.205 | 14.107 |  |  |
| Mass Wet Soil + Tare (g) | 24.808 | 22.262 | 23.800 |  |  |
| Mass Dry Soil + Tare (g) | 19.869 | 18.639 | 19.542 |  |  |
| Mass Water (g)           | 4.939  | 3.623  | 4.258  |  |  |
| Mass Dry Soil (g)        | 5.882  | 4.434  | 5.435  |  |  |
| Moisture Content (%)     | 83.968 | 81.710 | 78.344 |  |  |



### Plastic Limit

| Trial #                  | 1      | 2      | 3 | 4 | 5 |
|--------------------------|--------|--------|---|---|---|
| Mass Tare (g)            | 14.069 | 14.068 |   |   |   |
| Mass Wet Soil + Tare (g) | 21.148 | 20.119 |   |   |   |
| Mass Dry Soil + Tare (g) | 19.929 | 19.049 |   |   |   |
| Mass Water (g)           | 1.219  | 1.070  |   |   |   |
| Mass Dry Soil (g)        | 5.860  | 4.981  |   |   |   |
| Moisture Content (%)     | 20.802 | 21.482 |   |   |   |

Note: Additional information recorded/measured for this test is available upon request.





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## Grain Size Analysis (Hydrometer Method) AASHTO T 88

**Project No.** 0022-235-02  
**Client** Dillon Consulting Ltd.  
**Project** Harbourview Roadway



**Test Hole** TH25-03  
**Sample #** G03  
**Depth (m)** 0.6 - 0.8  
**Sample Date** 11-Dec-25  
**Test Date** 08-Jan-26  
**Technician** A.Dustmamatov

|               |       |
|---------------|-------|
| <b>Gravel</b> | 0.0%  |
| <b>Sand</b>   | 1.3%  |
| <b>Silt</b>   | 24.4% |
| <b>Clay</b>   | 74.3% |

**Particle Size Distribution Curve**

