APPENDIX 'A'

GEOTECHNICAL INVESTIGATION REPORT

Stantec Consulting Ltd.
199 Henlow Bay
Winnipeg MB R3Y 1G4

January 20, 2025

Project/File: 123317464

Trevor Nickel
Dillon Consulting Limited
300-100 Innovation Drive
Winnipeg, Manitoba R3T 6G2

Good day Trevor,

Reference: 25-R-10 2025 Local Street Renewal Program - Geotechnical Investigation

Stantec Consulting Ltd. (Stantec) was retained to undertake a factual geotechnical investigation for the 25-R-10 2025 Local Street Renewal Program in Winnipeg, Manitoba. Use of this report is subject to the Statement of General Conditions provided in Appendix A.

The drilling program was conducted on December 16, 2024. A total of 15 locations were investigated by subsurface geotechnical drilling. Drilling services were provided by Maple Leaf Drilling under the supervision of Stantec's geotechnical field technologist. A Borehole Location Plan is provided in Appendix B.

1. Geotechnical Drilling

A total of 15 boreholes were investigated by geotechnical drilling. The boreholes were terminated at a depth of 2.5 m below the gravel surface, and soil samples were obtained directly from the auger flights at depths of 0.6 m, 0.9 m, 1.2 m, 1.6 m, 2.0 m, and 2.5 m. The testholes were examined for evidence of sloughing and groundwater seepage upon completion of drilling.

The borehole records are provided in Appendix C. The soil classification used in the borehole records is as per ASTM D2487 – *Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System).*

2. Laboratory Testing

Laboratory determination of moisture content (ASTM D2216) was conducted on all soil samples. The results are provided on the attached borehole records.

In addition, the following laboratory tests were conducted on select samples:

Reference: 25-R-10 2025 Local Street Renewal Program - Geotechnical Investigation

- ASTM D4318 - *Liquid Limit, Plastic Limit, and Plasticity Index of Soils*
- ASTM D7928 - *Particle-Size Distribution of Fine-Grained Soils Using The Sedimentation Analysis*
- ASTM D698 - *Laboratory Compaction Characteristics of Soil Using Standard Effort*
- ASTM D1883 - *California Bearing Ratio (CBR) of Laboratory-Compacted Soils*

The CBR tests were performed on soaked test specimens compacted to 95% of the maximum dry density.

Prior to compressive strength testing, the concrete core samples were conditioned in water at room temperature for 48 hours.

The laboratory test reports are provided in Appendix D.

3. Closure

Please contact the undersigned if you have any questions regarding this report.

Regards,

Stantec Consulting Ltd.

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Attachment: Appendix A – Statement of General Conditions
Appendix B – Borehole Location Plan
Appendix C – Borehole Records
Appendix D – Laboratory Test Reports
- Atterberg Limits Test Reports
- Particle-Size Analysis Reports
- Standard Proctor Test Reports
- CBR Test Reports

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Appendix A

Statement of General Conditions

STATEMENT OF GENERAL CONDITIONS

USE OF THIS REPORT: This report has been prepared for the sole benefit of the Client or its agent and may not be used by any third party without the express written consent of Stantec and the Client. Any use which a third party makes of this report is the responsibility of such third party.

BASIS OF THE REPORT: The information, opinions, and/or recommendations made in this report are in accordance with Stantec's present understanding of the site-specific project as described by the Client. The applicability of these is restricted to the site conditions encountered at the time of the investigation or study. If the proposed site-specific project differs or is modified from what is described in this report or if the site conditions are altered, this report is no longer valid unless Stantec is requested by the Client to review and revise the report to reflect the differing or modified project specifics and/or the altered site conditions.

STANDARD OF CARE: Preparation of this report, and all associated work, was carried out in accordance with the normally accepted standard of care in the state or province of execution for the specific professional service provided to the Client. No other warranty is made.

INTERPRETATION OF SITE CONDITIONS: Soil, rock, or other material descriptions, and statements regarding their condition, made in this report are based on site conditions encountered by Stantec at the time of the work and at the specific testing and/or sampling locations. Classifications and statements of condition have been made in accordance with normally accepted practices which are judgmental in nature; no specific description should be considered exact, but rather reflective of the anticipated material behavior. Extrapolation of in situ conditions can only be made to some limited extent beyond the sampling or test points. The extent depends on variability of the soil, rock, and groundwater conditions as influenced by geological processes, construction activity, and site use.

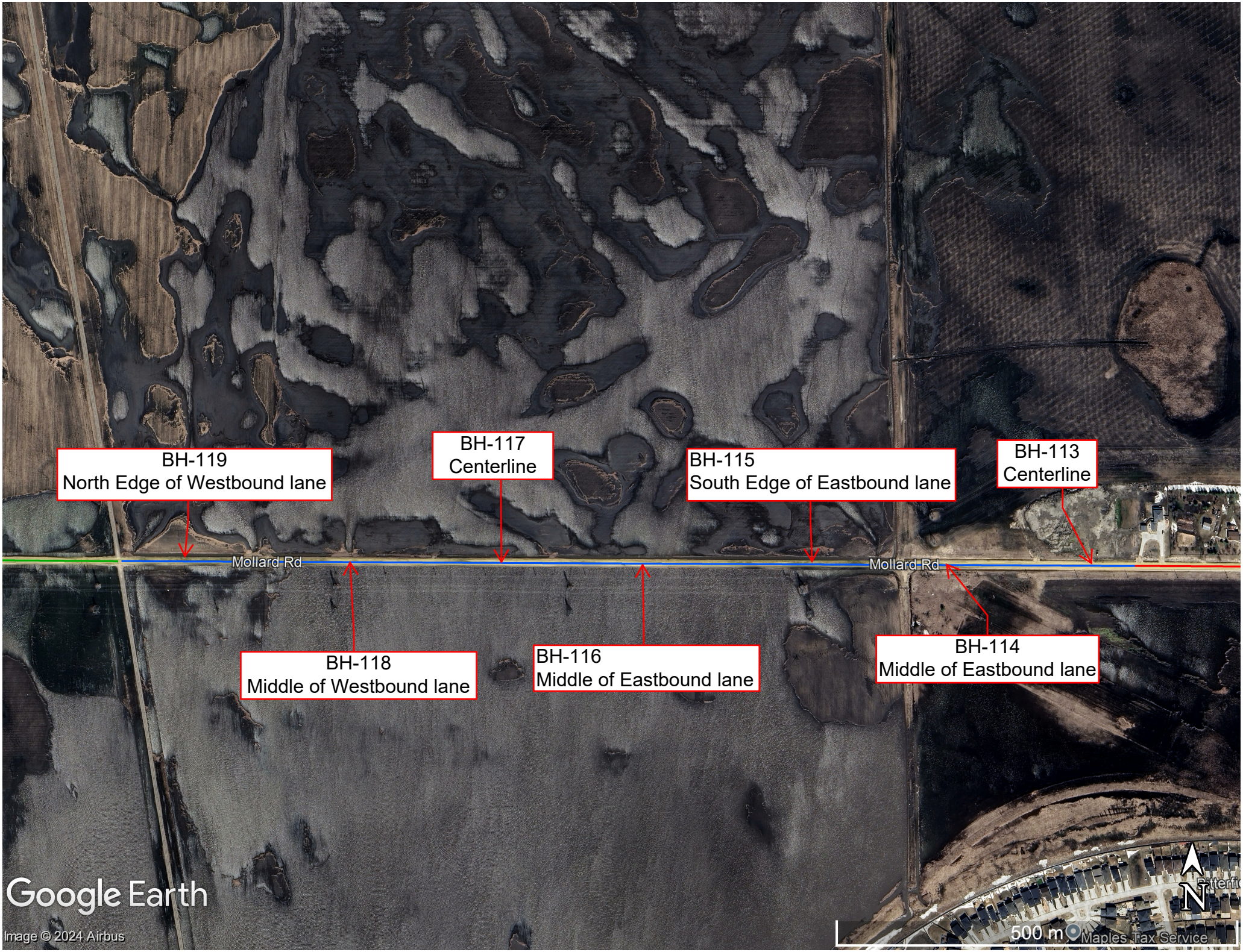
VARYING OR UNEXPECTED CONDITIONS: Should any site or subsurface conditions be encountered that are different from those described in this report or encountered at the test locations, Stantec must be notified immediately to assess if the varying or unexpected conditions are substantial and if reassessments of the report conclusions or recommendations are required. Stantec will not be responsible to any party for damages incurred as a result of failing to notify Stantec that differing site or sub-surface conditions are present upon becoming aware of such conditions.

PLANNING, DESIGN, OR CONSTRUCTION: Development or design plans and specifications should be reviewed by Stantec, sufficiently ahead of initiating the next project stage (property acquisition, tender, construction, etc.), to confirm that this report completely addresses the elaborated project specifics and that the contents of this report have been properly interpreted. Specialty quality assurance services (field observations and testing) during construction are a necessary part of the evaluation of sub-subsurface conditions and site preparation works. Site work relating to the recommendations included in this report should only be carried out in the presence of a qualified geotechnical engineer; Stantec cannot be responsible for site work carried out without being present.

Appendix B

Borehole Location Plan


BH-111
North Edge of Westbound lane
BH-109
Centerline
BH-107
Soutth Edge of Eastbound lane
BH-105
Centerline
Mollard Rd
Mollard Rd
BH-112
Middle of Westbound lane
BH-110
Middle of Westbound lane
BH-108
North Middle of Eastbound lane
BH-106
Middle of Eastbound lane
Pipeline Rd
Bitterfield Dr
Google Earth
Image © 2024 Airbus
N
400 m


BH-119
North Edge of Westbound lane
BH-117
Centerline
BH-115
South Edge of Eastbound lane
BH-113
Centerline
Mollard Rd
Mollard Rd
BH-118
Middle of Westbound lane
BH-116
Middle of Eastbound lane
BH-114
Middle of Eastbound lane
Google Earth
Image © 2024 Airbus
N
500 m
Maples Tax Service

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Appendix C

Borehole Records

SYMBOLS AND TERMS USED ON BOREHOLE AND TEST PIT RECORDS

SOIL DESCRIPTION

Terminology describing common soil genesis

Rootmat	vegetation, roots and moss with organic matter and topsoil typically forming a mattress at the ground surface
Topsoil	mixture of soil and humus capable of supporting vegetative growth
Peat	mixture of visible and invisible fragments of decayed organic matter
Till	unstratified glacial deposit which may range from clay to boulders
Fill	material below the surface identified as placed by humans (excluding buried services)

Terminology describing soil structure

Desiccated	having visible signs of weathering by oxidization of clay minerals, shrinkage cracks, etc.
Fissured	having cracks, and hence a blocky structure
Varved	composed of regular alternating layers of silt and clay
Stratified	composed of alternating successions of different soil types, e.g. silt and sand
Layer	> 75 mm in thickness
Seam	2 mm to 75 mm in thickness
Parting	< 2 mm in thickness

Terminology describing soil types

The classification of soil types are made on the basis of grain size and plasticity in accordance with the Unified Soil Classification System (USCS) (ASTM D 2487 or D 2488) which excludes particles larger than 75 mm. For particles larger than 75 mm, and for defining percent clay fraction in hydrometer results, definitions proposed by Canadian Foundation Engineering Manual, 4th Edition are used. The USCS provides a group symbol (e.g. SM) and group name (e.g. silty sand) for identification.

Terminology describing cobbles, boulders, and non-matrix materials (organic matter or debris)

Terminology describing materials outside the USCS, (e.g. particles larger than 75 mm, visible organic matter, and construction debris) is based upon the proportion of these materials present:

Trace, or occasional	Less than 10%
Some	10-20%
Frequent	> 20%

Terminology describing compactness of cohesionless soils

The standard terminology to describe cohesionless soils includes compactness (formerly "relative density"), as determined by the Standard Penetration Test (SPT) N-Value - also known as N-Index. The SPT N-Value is described further on Page 2. A relationship between compactness condition and N-Value is shown in the following table.

Compactness Condition	SPT N-Value
Very Loose	<4
Loose	4-10
Compact	10-30
Dense	30-50
Very Dense	>50

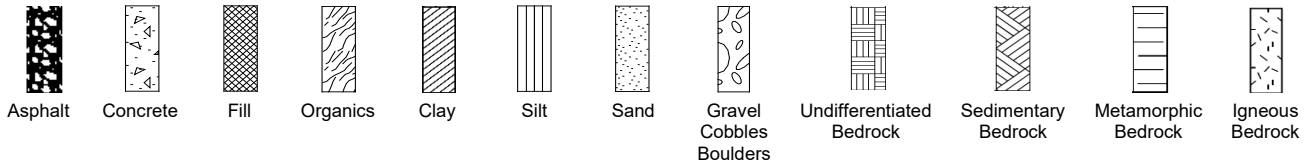
Terminology describing consistency of cohesive soils

The standard terminology to describe cohesive soils includes the consistency, which is based on undrained shear strength as measured by *in situ* vane tests, penetrometer tests, or unconfined compression tests. Consistency may be crudely estimated from SPT N-Value based on the correlation shown in the following table (Terzaghi and Peck, 1967). The correlation to SPT N-Value is used with caution as it is only very approximate.

Consistency	Undrained Shear Strength		Approximate SPT N-Value
	kips/sq.ft	kPa	
Very Soft	<0.25	<12.5	<2
Soft	0.25 - 0.5	12.5 - 25	2-4
Firm	0.5 - 1.0	25 - 50	4-8
Stiff	1.0 - 2.0	50 – 100	8-15
Very Stiff	2.0 - 4.0	100 - 200	15-30
Hard	>4.0	>200	>30

STRATA PLOT

Strata plots symbolize the soil or bedrock description. They are combinations of the following basic symbols. The dimensions within the strata symbols are not indicative of the particle size, layer thickness, etc. Not all bedrock strata plots are shown.



SAMPLE TYPE

AS, BS, GS		Auger sample; bulk sample; grab sample
DP		Direct-Push sample (small diameter tube sampler hydraulically advanced)
PS		Piston sample
SO		Sonic tube
SS		Split spoon sample (obtained by performing the Standard Penetration Test)
ST		Shelby Tube or thin wall tube
SV		Shear vane
RC *HQ, NQ, BQ, etc.*		Rock Core; samples obtained with the use of standard size diamond coring bits.

WATER LEVEL

Measured:
in standpipe, piezometer, or well

Inferred:
seepage noted or water level measured during or at completion of drilling

RECOVERY FOR SOIL SAMPLES

The recovery is recorded as the length of the soil sample recovered in the direct push, split spoon sampler, Shelby Tube, or sonic tube.

N-VALUE

Numbers in this column are the field results of the Standard Penetration Test (SPT): the number of blows of a 140-pound (63.5 kg) hammer falling 30 inches (760 mm), required to drive a 2 inch (50.8 mm) O.D. split spoon sampler one foot (300 mm) into the soil. In accordance with ASTM D1586, the N-Value equals the sum of the number of blows (N) required to drive the sampler over the interval of 6 to 18 in. (150 to 450 mm). However, when a 24 in. (610 mm) sampler is used, the number of blows (N) required to drive the sampler over the interval of 12 to 24 in. (300 to 610 mm) may be reported if this value is lower. For split spoon samples where insufficient penetration was achieved and N-Values cannot be presented, the number of blows are reported over sampler penetration in millimetres (e.g. 50 for 75 mm or 50/75 mm). Some design methods make use of N-values corrected for various factors such as overburden pressure, energy ratio, borehole diameter, etc. No corrections have been applied to the N-values presented on the log.

DYNAMIC CONE PENETRATION TEST (DCPT)

Dynamic cone penetration tests are performed using a standard 60-degree apex cone connected to 'A' size drill rods with the same standard fall height and weight as the Standard Penetration Test. The DCPT value is the number of blows of the hammer required to drive the cone one foot (300 mm) into the soil. The DCPT is used as a probe to assess soil variability.

OTHER TESTS

S	Sieve analysis
H	Hydrometer analysis
k	Laboratory permeability
γ	Unit weight
G_s	Specific gravity of soil particles
CD	Consolidated drained triaxial
CU	Consolidated undrained triaxial with pore pressure measurements
UU	Unconsolidated undrained triaxial
DS	Direct Shear
C	Consolidation
Q_u	Unconfined compression
I_p	Point Load Index (I_p on Borehole Record equals $I_p(50)$ in which the index is corrected to a reference diameter of 50 mm)

	Single packer permeability test; test interval from depth shown to bottom of borehole
	Double packer permeability test; test interval as indicated
	Falling head permeability test using casing
	Falling head permeability test using well point or piezometer

ROCK DESCRIPTION

Except where specified below, terminology for describing rock is as defined by the International Society for Rock Mechanics (ISRM) 2007 publication "The Complete ISRM Suggested Methods for Rock Characterization, Testing and Monitoring: 1974-2006"

Total Core Recovery (TCR) denotes the sum of all measurable rock core recovered in one drill run. The value is noted as a percentage of recovered rock core based on the total length of the drill run.

Solid Core Recovery (SCR) is defined as total length of solid core divided by the total drilled length, presented as a percentage. Solid core is defined as core with one full diameter.

Rock Quality Designation (RQD) is a modified core recovery that incorporates only pieces of solid core that are equal to or greater than 10 cm (4") along the core axis. It is calculated as the total cumulative length of solid core (> 10 cm) as measured along the centerline of the core divided by the total length of borehole drilled for each drill run or geotechnical interval, presented as a percentage. RQD is determined in accordance with ASTM D6032.

Fracture Index (FI) is defined as the number of naturally occurring fractures within a given length of core. The Fracture Index is reported as a simple count of natural occurring fractures.

Terminology describing rock quality

Rock Mass Quality	Rock Quality Designation Number (RQD)	Alternate (Colloquial) Rock Mass Quality	
Very Poor Quality	0-25	*Very Severely Fractured*	*Crushed*
Poor Quality	25-50	*Severely Fractured*	*Shattered or Very Blocky*
Fair Quality	50-75	*Fractured*	*Blocky*
Good Quality	75-90	*Moderately Jointed*	*Sound*
Excellent Quality	90-100	*Intact*	*Very Sound*

Terminology describing rock strength

Strength Classification	Grade	Field Estimates of Uniaxial Compressive Strength	Unconfined Compressive Strength (MPa)
Extremely Weak	R0	Indented by thumbnail	<1
Very Weak	R1	Crumbles under firm blows of geological hammer, can be peeled with a pocketknife	1 – 5
Weak	R2	Peeled by pocketknife with difficulty, shallow indentations made by firm blow with point of geological hammer	5 – 25
Medium Strong	R3	Cannot be scraped or peeled with a pocketknife, can be fractured with single firm blow of geological hammer	25 – 50
Strong	R4	More than one blow with geological hammer to fracture	50 – 100
Very Strong	R5	Many blows with geological hammer to fracture	100 – 250
Extremely Strong	R6	Can only be chipped with geological hammer	>250

Terminology describing rock weathering

Term	Symbol	Description
Fresh	W1	No visible signs of rock weathering. Slight discoloration along major discontinuities
Slightly	W2	Discoloration indicates weathering of rock on discontinuity surfaces. All the rock material may be discolored.
Moderately	W3	Less than half the rock is decomposed and/or disintegrated into soil.
Highly	W4	More than half the rock is decomposed and/or disintegrated into soil.
Completely	W5	All the rock material is decomposed and/or disintegrated into soil. The original mass structure is still largely intact.
Residual Soil	W6	All the rock converted to soil. Structure and fabric destroyed.

Terminology describing rock with respect to discontinuity and bedding spacing

Spacing (mm)	Discontinuities Spacing	Bedding
>6000	*Extremely Wide*	-
2000-6000	*Very Wide*	*Very Thick*
600-2000	*Wide*	*Thick*
200-600	*Moderate*	*Medium*
60-200	*Close*	*Thin*
20-60	*Very Close*	*Very Thin*
<20	*Extremely Close*	*Laminated*
<6	-	*Thinly Laminated*

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BOREHOLE RECORD

BH-105

CLIENT: **Dillon Consulting Ltd.**
PROJECT NO.: **123317464**
PROJECT: **25-R-10 2025 Local Street Renewal**
BH ELEVATION: **N/A**
LOCATION: **Mollard Rd**
DATUM: **N/A**
DATE BORED: **December 16 2024**
WATER LEVEL: **N/A**

DEPTH (m)	ELEVATION (m)	SOIL DESCRIPTION (USCS)	STRATA PLOT	SAMPLES: TYPE	SAMPLES: NUMBER	SAMPLES: RECOVERY (mm) or TCR %	SAMPLES: N-VALUE or RQD %	OTHER TESTS / REMARKS
0		**FILL:** granular materials, mix of sand and fine gravel						
		Soft brown **LEAN CLAY (CL)**		AS				
1				AS				
				BS				Sieve/Hydro at 1.2 m G 0% S 12% M 79% C 8%
				AS				
2		Firm grey **FAT CLAY (CH)** - trace silt		AS				
3		**End of Borehole** • Borehole terminated at a depth of 2.5 m. • No groundwater seepage or soil sloughing was observed during or upon completion of drilling. • Borehole backfilled in accordance with the City of Winnipeg Street Cuts Manual.						

UNDRAINED SHEAR STRENGTH, Cu (kPa)
▲ LABORATORY TEST ◆ FIELD VANE TEST
★ POCKET PENETROMETER □ POCKET SHEAR VANE
50 kPa 100 kPa 150 kPa 200 kPa

WATER CONTENT & ATTERBERG LIMITS W_P W W_L
✖ SPT (N-value) BLOWS/0.3m
Water Content (%) and Blow Count
10 20 30 40 50 60 70 80

BACKFILL

ELEVATION (m)

BACKFILL SYMBOL: ASPHALT, GROUT, CONCRETE, BENTONITE, DRILL CUTTINGS, SAND, SLOUGH

Drilling Contractor: Maple Leaf Drilling Ltd.
Drilling Method: 125 mm SSA
Completion Depth: 2.5 m

Logged By: LP
Reviewed By: GB
Page 1 of 1

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BOREHOLE RECORD

BH-106

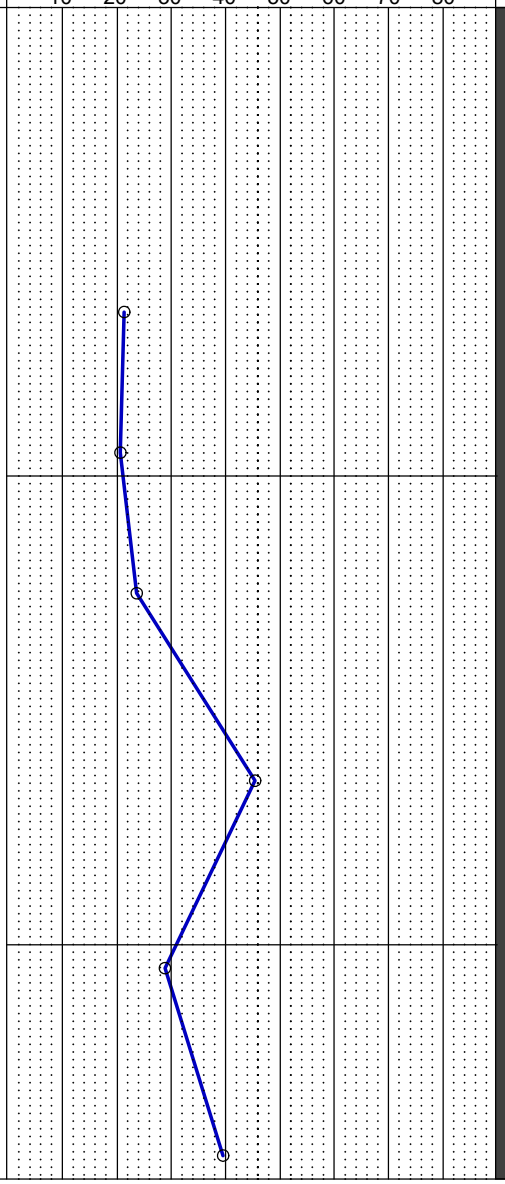
CLIENT: **Dillon Consulting Ltd.**
PROJECT NO.: **123317464**
PROJECT: **25-R-10 2025 Local Street Renewal**
BH ELEVATION: **N/A**
LOCATION: **Mollard Rd**
DATUM: **N/A**
DATE BORED: **December 16 2024**
WATER LEVEL: **N/A**

DEPTH (m)	ELEVATION (m)	SOIL DESCRIPTION (USCS)	STRATA PLOT	SAMPLES: TYPE	SAMPLES: NUMBER	SAMPLES: RECOVERY (mm) or TCR %	SAMPLES: N-VALUE or RQD %	OTHER TESTS / REMARKS
0		**FILL:** granular materials, mix of sand and fine gravel						
		Soft tan **LEAN CLAY (CL)**		AS				
1				AS				
				AS				
		Firm grey to black **FAT CLAY (CH)** - trace silt		AS				
2				AS				
				AS				
3		**End of Borehole** • Borehole terminated at a depth of 2.5 m. • No groundwater seepage or soil sloughing was observed during or upon completion of drilling. • Borehole backfilled in accordance with the City of Winnipeg Street Cuts Manual.						

UNDRAINED SHEAR STRENGTH, Cu (kPa)
▲ LABORATORY TEST ◆ FIELD VANE TEST
★ POCKET PENETROMETER □ POCKET SHEAR VANE
50 kPa 100 kPa 150 kPa 200 kPa

WATER CONTENT & ATTERBERG LIMITS W_P W W_L
✖ SPT (N-value) BLOWS/0.3m
Water Content (%) and Blow Count
10 20 30 40 50 60 70 80

BACKFILL



ELEVATION (m)

BACKFILL SYMBOL: ASPHALT GROUT CONCRETE
BENTONITE DRILL CUTTINGS SAND SLOUGH

Drilling Contractor: Maple Leaf Drilling Ltd. | Logged By: LP
Drilling Method: 125 mm SSA | Reviewed By: GB
Completion Depth: 2.5 m | Page 1 of 1

Printed Jan 15 2025 05:32:38 SOIL 123317464.GPJ 1/15/25

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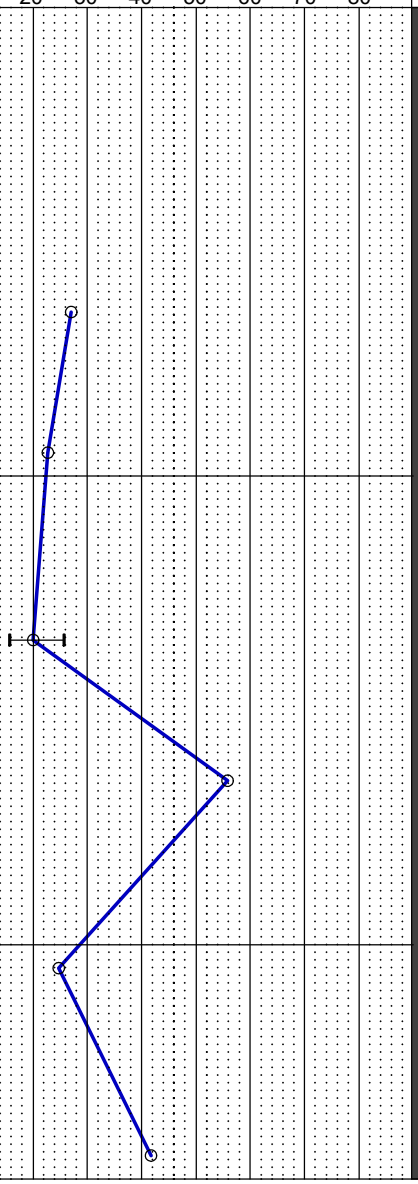
BOREHOLE RECORD

BH-107

CLIENT: **Dillon Consulting Ltd.**
PROJECT NO.: **123317464**
PROJECT: **25-R-10 2025 Local Street Renewal**
BH ELEVATION: **N/A**
LOCATION: **Mollard Rd**
DATUM: **N/A**
DATE BORED: **December 16 2024**
WATER LEVEL: **N/A**

DEPTH (m)	ELEVATION (m)	SOIL DESCRIPTION (USCS)	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES RECOVERY (mm) or TCR %	SAMPLES N-VALUE or RQD %	OTHER TESTS / REMARKS	BACKFILL	ELEVATION (m)
0		**FILL:** granular materials, mix of sand and fine gravel								
		Soft tan **LEAN CLAY (CL)**		AS						
1				AS						
				BS				Sieve/Hydro at 1.2 m G 0% S 10% M 79% C 11%		
		Firm grey **FAT CLAY (CH)** - trace silt		AS						
2				AS						
				AS						
3		**End of Borehole** • Borehole terminated at a depth of 2.5 m. • No groundwater seepage or soil sloughing was observed during or upon completion of drilling. • Borehole backfilled in accordance with the City of Winnipeg Street Cuts Manual.								

UNDRAINED SHEAR STRENGTH, Cu (kPa)
▲ LABORATORY TEST ◆ FIELD VANE TEST
★ POCKET PENETROMETER □ POCKET SHEAR VANE
50 kPa 100 kPa 150 kPa 200 kPa
WATER CONTENT & ATTERBERG LIMITS W_P W W_L
✖ SPT (N-value) BLOWS/0.3m
Water Content (%) and Blow Count
10 20 30 40 50 60 70 80



BACKFILL SYMBOL: ASPHALT, GROUT, CONCRETE, BENTONITE, DRILL CUTTINGS, SAND, SLOUGH

Drilling Contractor: Maple Leaf Drilling Ltd. | Logged By: LP
Drilling Method: 125 mm SSA | Reviewed By: GB
Completion Depth: 2.5 m | Page 1 of 1

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BOREHOLE RECORD

BH-108

CLIENT: **Dillon Consulting Ltd.**
PROJECT NO.: **123317464**
PROJECT: **25-R-10 2025 Local Street Renewal**
BH ELEVATION: **N/A**
LOCATION: **Mollard Rd**
DATUM: **N/A**
DATE BORED: **December 16 2024**
WATER LEVEL: **N/A**

DEPTH (m)	ELEVATION (m)	SOIL DESCRIPTION (USCS)	STRATA PLOT	SAMPLES: TYPE	SAMPLES: NUMBER	SAMPLES: RECOVERY (mm) or TCR %	SAMPLES: N-VALUE or RQD %	OTHER TESTS / REMARKS
0		**FILL:** granular materials, mix of sand and fine gravel						
		Firm grey **FAT CLAY (CH)**		AS				
1				AS				
				AS				
				AS				
		Soft tan **SILTY CLAY (CL-ML)**		AS				
2		Firm grey **FAT CLAY (CH)** - trace silt		AS				
3		**End of Borehole** • Borehole terminated at a depth of 2.5 m. • No groundwater seepage or soil sloughing was observed during or upon completion of drilling. • Borehole backfilled in accordance with the City of Winnipeg Street Cuts Manual.						

UNDRAINED SHEAR STRENGTH, Cu (kPa)
▲ LABORATORY TEST ◆ FIELD VANE TEST
★ POCKET PENETROMETER □ POCKET SHEAR VANE
50 kPa 100 kPa 150 kPa 200 kPa
WATER CONTENT & ATTERBERG LIMITS W_P W W_L
✖ SPT (N-value) BLOWS/0.3m
Water Content (%) and Blow Count
10 20 30 40 50 60 70 80

BACKFILL

ELEVATION (m)

BACKFILL SYMBOL: ASPHALT, GROUT, CONCRETE, BENTONITE, DRILL CUTTINGS, SAND, SLOUGH

Drilling Contractor: Maple Leaf Drilling Ltd.	Logged By: LP
Drilling Method: 125 mm SSA	Reviewed By: GB
Completion Depth: 2.5 m	Page 1 of 1

Printed Jan 15 2025 05:32:43 SOIL 123317464.GPJ 1/15/25

BOREHOLE RECORD

BH-109

CLIENT: **Dillon Consulting Ltd.**
PROJECT NO.: **123317464**
PROJECT: **25-R-10 2025 Local Street Renewal**
BH ELEVATION: **N/A**
LOCATION: **Mollard Rd**
DATUM: **N/A**
DATE BORED: **December 16 2024**
WATER LEVEL: **N/A**

DEPTH (m)	ELEVATION (m)	SOIL DESCRIPTION (USCS)	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES RECOVERY (mm) or TCR %	SAMPLES N-VALUE or RQD %	OTHER TESTS / REMARKS
0		**FILL:** granular materials, mix of sand and fine gravel						
		Stiff brown **FAT CLAY (CH)** - trace silt		AS				
				AS				
1				BS				Sieve/Hydro at 1.2 m G 0% S 1% M 22% C 77%
		Soft tan **SILTY CLAY (CL-ML)**		AS				
2				AS				
		Firm grey **FAT CLAY (CH)**		AS				
3		**End of Borehole** • Borehole terminated at a depth of 2.5 m. • No groundwater seepage or soil sloughing was observed during or upon completion of drilling. • Borehole backfilled in accordance with the City of Winnipeg Street Cuts Manual.						

UNDRAINED SHEAR STRENGTH, Cu (kPa)
▲ LABORATORY TEST ◆ FIELD VANE TEST
★ POCKET PENETROMETER □ POCKET SHEAR VANE
50 kPa 100 kPa 150 kPa 200 kPa

WATER CONTENT & ATTERBERG LIMITS W_P W W_L
✖ SPT (N-value) BLOWS/0.3m
Water Content (%) and Blow Count
10 20 30 40 50 60 70 80

BACKFILL

ELEVATION (m)

BACKFILL SYMBOL: ASPHALT, GROUT, CONCRETE, BENTONITE, DRILL CUTTINGS, SAND, SLOUGH

Drilling Contractor: Maple Leaf Drilling Ltd. | Logged By: LP
Drilling Method: 125 mm SSA | Reviewed By: GB
Completion Depth: 2.5 m | Page 1 of 1

Printed Jan 15 2025 05:32:45 SOIL 123317464.GPJ 1/15/25

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BOREHOLE RECORD

BH-110

CLIENT: **Dillon Consulting Ltd.**
PROJECT NO.: **123317464**
PROJECT: **25-R-10 2025 Local Street Renewal**
BH ELEVATION: **N/A**
LOCATION: **Mollard Rd**
DATUM: **N/A**
DATE BORED: **December 16 2024**
WATER LEVEL: **N/A**

DEPTH (m)	ELEVATION (m)	SOIL DESCRIPTION (USCS)	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES RECOVERY (mm) or TCR %	SAMPLES N-VALUE or RQD %	OTHER TESTS / REMARKS
0		**FILL:** granular materials, mix of sand and fine gravel						
		Firm brown **FAT CLAY (CH)** - trace silt		AS				
				AS				
1				BS				Sieve/Hydro at 1.2 m G S M C 0% 1% 31% 68%
				AS				
		Soft tan **SILTY CLAY (CL-ML)**		AS				
2		Firm grey **FAT CLAY (CH)**		AS				
		End of Borehole • Borehole terminated at a depth of 2.5 m. • No groundwater seepage or soil sloughing was observed during or upon completion of drilling. • Borehole backfilled in accordance with the City of Winnipeg Street Cuts Manual.						
3								

UNDRAINED SHEAR STRENGTH, Cu (kPa)
▲ LABORATORY TEST ◆ FIELD VANE TEST
★ POCKET PENETROMETER □ POCKET SHEAR VANE
50 kPa 100 kPa 150 kPa 200 kPa

WATER CONTENT & ATTERBERG LIMITS W_P W W_L
✖ SPT (N-value) BLOWS/0.3m
Water Content (%) and Blow Count
10 20 30 40 50 60 70 80

BACKFILL

ELEVATION (m)

BACKFILL SYMBOL: ASPHALT, GROUT, CONCRETE, BENTONITE, DRILL CUTTINGS, SAND, SLOUGH

Drilling Contractor: Maple Leaf Drilling Ltd.		Logged By: LP
Drilling Method: 125 mm SSA		Reviewed By: GB
Completion Depth: 2.5 m		Page 1 of 1

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Stantec

BOREHOLE RECORD

BH-111

CLIENT: **Dillon Consulting Ltd.**
PROJECT NO.: **123317464**
PROJECT: **25-R-10 2025 Local Street Renewal**
BH ELEVATION: **N/A**
LOCATION: **Mollard Rd**
DATUM: **N/A**
DATE BORED: **December 16 2024**
WATER LEVEL: **N/A**

DEPTH (m)	ELEVATION (m)	SOIL DESCRIPTION (USCS)	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES RECOVERY (mm) or TCR %	SAMPLES N-VALUE or RQD %	OTHER TESTS / REMARKS	BACKFILL	ELEVATION (m)
0		**FILL:** granular materials, mix of sand and fine gravel								
		Soft tan **LEAN CLAY (CL)**		AS						
1				AS						
				AS						
		Firm brown **FAT CLAY (CH)** - some silt		AS						
2				AS						
				AS						
3		**End of Borehole**								

UNDRAINED SHEAR STRENGTH, Cu (kPa)
▲ LABORATORY TEST ◆ FIELD VANE TEST
★ POCKET PENETROMETER □ POCKET SHEAR VANE
50 kPa 100 kPa 150 kPa 200 kPa

WATER CONTENT & ATTERBERG LIMITS W_P W W_L
✖ SPT (N-value) BLOWS/0.3m
Water Content (%) and Blow Count
10 20 30 40 50 60 70 80

- Borehole terminated at a depth of 2.5 m.
- No groundwater seepage or soil sloughing was observed during or upon completion of drilling.
- Borehole backfilled in accordance with the City of Winnipeg Street Cuts Manual.

BACKFILL SYMBOL: ASPHALT, GROUT, CONCRETE, BENTONITE, DRILL CUTTINGS, SAND, SLOUGH

Drilling Contractor: Maple Leaf Drilling Ltd.	Logged By: LP
Drilling Method: 125 mm SSA	Reviewed By: GB
Completion Depth: 2.5 m	Page 1 of 1

Stantec

BOREHOLE RECORD

BH-112

CLIENT: **Dillon Consulting Ltd.**
PROJECT NO.: **123317464**
PROJECT: **25-R-10 2025 Local Street Renewal**
BH ELEVATION: **N/A**
LOCATION: **Mollard Rd**
DATUM: **N/A**
DATE BORED: **December 16 2024**
WATER LEVEL: **N/A**

DEPTH (m)	ELEVATION (m)	SOIL DESCRIPTION (USCS)	STRATA PLOT	SAMPLES: TYPE	SAMPLES: NUMBER	SAMPLES: RECOVERY (mm) or TCR %	SAMPLES: N-VALUE or RQD %	OTHER TESTS / REMARKS
0		**FILL:** granular materials, mix of sand and fine gravel						
		Firm tan **LEAN CLAY (CL)**		AS				
1				AS				
		- soft at 1.3 m		BS				Sieve/Hydro at 1.2 m G 0% S 10% M 69% C 21%
		Firm grey **FAT CLAY (CH)**		AS				
2				AS				
				AS				
3		**End of Borehole** • Borehole terminated at a depth of 2.5 m. • No groundwater seepage or soil sloughing was observed during or upon completion of drilling. • Borehole backfilled in accordance with the City of Winnipeg Street Cuts Manual.						

UNDRAINED SHEAR STRENGTH, Cu (kPa)
▲ LABORATORY TEST ◆ FIELD VANE TEST
★ POCKET PENETROMETER □ POCKET SHEAR VANE
50 kPa 100 kPa 150 kPa 200 kPa

WATER CONTENT & ATTERBERG LIMITS W_P W W_L
✖ SPT (N-value) BLOWS/0.3m
Water Content (%) and Blow Count
10 20 30 40 50 60 70 80

BACKFILL

ELEVATION (m)

BACKFILL SYMBOL: ASPHALT, GROUT, CONCRETE, BENTONITE, DRILL CUTTINGS, SAND, SLOUGH

Drilling Contractor: Maple Leaf Drilling Ltd. | Logged By: LP
Drilling Method: 125 mm SSA | Reviewed By: GB
Completion Depth: 2.5 m | Page 1 of 1

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Stantec

BOREHOLE RECORD

BH-113

CLIENT: **Dillon Consulting Ltd.**
PROJECT NO.: **123317464**
PROJECT: **25-R-10 2025 Local Street Renewal**
BH ELEVATION: **N/A**
LOCATION: **Mollard Rd**
DATUM: **N/A**
DATE BORED: **December 16 2024**
WATER LEVEL: **N/A**

DEPTH (m)	ELEVATION (m)	SOIL DESCRIPTION (USCS)	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES RECOVERY (mm) or TCR %	SAMPLES N-VALUE or RQD %	OTHER TESTS / REMARKS
0		**FILL:** granular materials, mix of sand and fine gravel						
		Firm brown **LEAN CLAY (CL)**		AS				
1				AS				
		Soft tan **LEAN CLAY (CL)**		BS				Sieve/Hydro at 1.2 m G 0% S 13% M 68% C 19%
		Firm grey **FAT CLAY (CH)**		AS				
2				AS				
				AS				
3		**End of Borehole** • Borehole terminated at a depth of 2.5 m. • No groundwater seepage or soil sloughing was observed during or upon completion of drilling. • Borehole backfilled in accordance with the City of Winnipeg Street Cuts Manual.						

UNDRAINED SHEAR STRENGTH, Cu (kPa)
▲ LABORATORY TEST ◆ FIELD VANE TEST
★ POCKET PENETROMETER □ POCKET SHEAR VANE
50 kPa 100 kPa 150 kPa 200 kPa

WATER CONTENT & ATTERBERG LIMITS W_P W W_L
✖ SPT (N-value) BLOWS/0.3m
Water Content (%) and Blow Count
10 20 30 40 50 60 70 80

BACKFILL

ELEVATION (m)

BACKFILL SYMBOL: ASPHALT, GROUT, CONCRETE, BENTONITE, DRILL CUTTINGS, SAND, SLOUGH

Drilling Contractor: Maple Leaf Drilling Ltd. | Logged By: LP
Drilling Method: 125 mm SSA | Reviewed By: GB
Completion Depth: 2.5 m | Page 1 of 1

Printed Jan 15 2025 05:32:50 SOIL 123317464.GPJ 1/15/25

Stantec

BOREHOLE RECORD

BH-114

CLIENT: **Dillon Consulting Ltd.**
PROJECT NO.: **123317464**
PROJECT: **25-R-10 2025 Local Street Renewal**
BH ELEVATION: **N/A**
LOCATION: **Mollard Rd**
DATUM: **N/A**
DATE BORED: **December 16 2024**
WATER LEVEL: **N/A**

DEPTH (m)	ELEVATION (m)	SOIL DESCRIPTION (USCS)	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES RECOVERY (mm) or TCR %	SAMPLES N-VALUE or RQD %	OTHER TESTS / REMARKS
0		**FILL:** granular materials, mix of sand and fine gravel						
		Firm black to brown **FAT CLAY (CH)**		AS				
1		Soft tan **LEAN CLAY (CL)**		AS				
				AS				
		Firm to stiff brown **FAT CLAY (CH)** - trace silt		AS				
2				AS				
				AS				
3		**End of Borehole** • Borehole terminated at a depth of 2.5 m. • No groundwater seepage or soil sloughing was observed during or upon completion of drilling. • Borehole backfilled in accordance with the City of Winnipeg Street Cuts Manual.						

UNDRAINED SHEAR STRENGTH, Cu (kPa)
▲ LABORATORY TEST ◆ FIELD VANE TEST
★ POCKET PENETROMETER □ POCKET SHEAR VANE
50 kPa 100 kPa 150 kPa 200 kPa

WATER CONTENT & ATTERBERG LIMITS W_P W W_L
✖ SPT (N-value) BLOWS/0.3m
Water Content (%) and Blow Count
10 20 30 40 50 60 70 80

BACKFILL

ELEVATION (m)

BACKFILL SYMBOL: ASPHALT, GROUT, CONCRETE, BENTONITE, DRILL CUTTINGS, SAND, SLOUGH

Drilling Contractor: Maple Leaf Drilling Ltd.	Logged By: LP
Drilling Method: 125 mm SSA	Reviewed By: GB
Completion Depth: 2.5 m	Page 1 of 1

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Stantec

BOREHOLE RECORD

BH-115

CLIENT: **Dillon Consulting Ltd.**
PROJECT NO.: **123317464**
PROJECT: **25-R-10 2025 Local Street Renewal**
BH ELEVATION: **N/A**
LOCATION: **Mollard Rd**
DATUM: **N/A**
DATE BORED: **December 16 2024**
WATER LEVEL: **N/A**

DEPTH (m)	ELEVATION (m)	SOIL DESCRIPTION (USCS)	STRATA PLOT	SAMPLES: TYPE	SAMPLES: NUMBER	SAMPLES: RECOVERY (mm) or TCR %	SAMPLES: N-VALUE or RQD %	OTHER TESTS / REMARKS
0		**FILL:** granular materials, mix of sand and fine gravel						
		Firm to soft brown **LEAN CLAY (CL)** - trace organics		AS				
1				AS				
				BS				Sieve/Hydro at 1.2 m G 0% S 2% M 81% C 17%
		Soft tan **LEAN CLAY (CL)**		AS				
2				AS				
				AS				
3		**End of Borehole** • Borehole terminated at a depth of 2.5 m. • No groundwater seepage or soil sloughing was observed during or upon completion of drilling. • Borehole backfilled in accordance with the City of Winnipeg Street Cuts Manual.						

UNDRAINED SHEAR STRENGTH, Cu (kPa)
▲ LABORATORY TEST ◆ FIELD VANE TEST
★ POCKET PENETROMETER □ POCKET SHEAR VANE
50 kPa 100 kPa 150 kPa 200 kPa
WATER CONTENT & ATTERBERG LIMITS W_P W W_L
✖ SPT (N-value) BLOWS/0.3m
Water Content (%) and Blow Count
10 20 30 40 50 60 70 80

BACKFILL

ELEVATION (m)

BACKFILL SYMBOL: ASPHALT, GROUT, CONCRETE, BENTONITE, DRILL CUTTINGS, SAND, SLOUGH

Drilling Contractor: Maple Leaf Drilling Ltd. | Logged By: LP
Drilling Method: 125 mm SSA | Reviewed By: GB
Completion Depth: 2.5 m | Page 1 of 1

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BOREHOLE RECORD

BH-116

CLIENT: **Dillon Consulting Ltd.**
PROJECT NO.: **123317464**
PROJECT: **25-R-10 2025 Local Street Renewal**
BH ELEVATION: **N/A**
LOCATION: **Mollard Rd**
DATUM: **N/A**
DATE BORED: **December 16 2024**
WATER LEVEL: **N/A**

DEPTH (m)	ELEVATION (m)	SOIL DESCRIPTION (USCS)	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES RECOVERY (mm) or TCR %	SAMPLES N-VALUE or RQD %	OTHER TESTS / REMARKS
0		**FILL:** granular materials, mix of sand and fine gravel						
		Firm black **FAT CLAY (CH)**		AS				
1		Soft to firm tan **LEAN CLAY (CL)**		AS				
				BS				Sieve/Hydro at 1.2 m G 0% S 6% M 75% C 19%
		Firm grey **FAT CLAY (CH)**		AS				
2				AS				
				AS				
3		**End of Borehole** • Borehole terminated at a depth of 2.5 m. • No groundwater seepage or soil sloughing was observed during or upon completion of drilling. • Borehole backfilled in accordance with the City of Winnipeg Street Cuts Manual.						

UNDRAINED SHEAR STRENGTH, Cu (kPa)
▲ LABORATORY TEST ◆ FIELD VANE TEST
★ POCKET PENETROMETER □ POCKET SHEAR VANE
50 kPa 100 kPa 150 kPa 200 kPa
WATER CONTENT & ATTERBERG LIMITS W_P W W_L
✖ SPT (N-value) BLOWS/0.3m
Water Content (%) and Blow Count
10 20 30 40 50 60 70 80

BACKFILL

ELEVATION (m)

BACKFILL SYMBOL: ASPHALT, GROUT, CONCRETE, BENTONITE, DRILL CUTTINGS, SAND, SLOUGH

Drilling Contractor: Maple Leaf Drilling Ltd.	Logged By: LP
Drilling Method: 125 mm SSA	Reviewed By: GB
Completion Depth: 2.5 m	Page 1 of 1

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Stantec

BOREHOLE RECORD

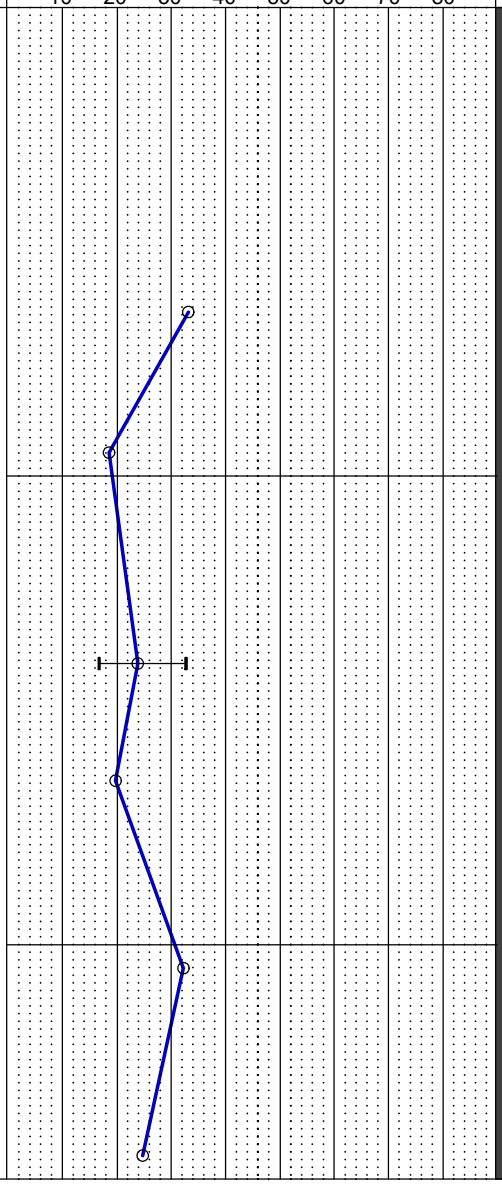
BH-117

CLIENT: **Dillon Consulting Ltd.**
PROJECT NO.: **123317464**
PROJECT: **25-R-10 2025 Local Street Renewal**
BH ELEVATION: **N/A**
LOCATION: **Mollard Rd**
DATUM: **N/A**
DATE BORED: **December 16 2024**
WATER LEVEL: **N/A**

DEPTH (m)	ELEVATION (m)	SOIL DESCRIPTION (USCS)	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES RECOVERY (mm) or TCR %	SAMPLES N-VALUE or RQD %	OTHER TESTS / REMARKS
0		**FILL:** granular materials, mix of sand and fine gravel						
		Firm black **FAT CLAY (CH)** - trace silt		AS				
1		Soft tan **LEAN CLAY (CL)**		AS				
				BS				Sieve/Hydro at 1.2 m G 0% S 2% M 81% C 17%
				AS				
2		Firm brown **SILTY CLAY (CL-ML)**		AS				
				AS				
3		**End of Borehole** • Borehole terminated at a depth of 2.5 m. • No groundwater seepage or soil sloughing was observed during or upon completion of drilling. • Borehole backfilled in accordance with the City of Winnipeg Street Cuts Manual.						

UNDRAINED SHEAR STRENGTH, Cu (kPa)
▲ LABORATORY TEST ◆ FIELD VANE TEST
★ POCKET PENETROMETER □ POCKET SHEAR VANE
50 kPa 100 kPa 150 kPa 200 kPa

WATER CONTENT & ATTERBERG LIMITS W_P W W_L
✖ SPT (N-value) BLOWS/0.3m
Water Content (%) and Blow Count
10 20 30 40 50 60 70 80



BACKFILL

ELEVATION (m)

BACKFILL SYMBOL: ASPHALT, GROUT, CONCRETE, BENTONITE, DRILL CUTTINGS, SAND, SLOUGH

Drilling Contractor: Maple Leaf Drilling Ltd.	Logged By: LP
Drilling Method: 125 mm SSA	Reviewed By: GB
Completion Depth: 2.5 m	Page 1 of 1

Printed Jan 15 2025 05:32:56 SOIL 123317464.GPJ 1/15/25

Stantec

BOREHOLE RECORD

BH-118

CLIENT: **Dillon Consulting Ltd.**
PROJECT NO.: **123317464**
PROJECT: **25-R-10 2025 Local Street Renewal**
BH ELEVATION: **N/A**
LOCATION: **Mollard Rd**
DATUM: **N/A**
DATE BORED: **December 16 2024**
WATER LEVEL: **N/A**

DEPTH (m)	ELEVATION (m)	SOIL DESCRIPTION (USCS)	STRATA PLOT	SAMPLES: TYPE	SAMPLES: NUMBER	SAMPLES: RECOVERY (mm) or TCR %	SAMPLES: N-VALUE or RQD %	OTHER TESTS / REMARKS
0		**FILL:** granular materials, mix of sand and fine gravel						
		Soft tan **LEAN CLAY (CL)**		AS				
1				AS				
				AS				
		Firm grey **FAT CLAY (CH)** - some organics at 1.5 m		AS				
2				AS				
				AS				
3		**End of Borehole** • Borehole terminated at a depth of 2.5 m. • No groundwater seepage or soil sloughing was observed during or upon completion of drilling. • Borehole backfilled in accordance with the City of Winnipeg Street Cuts Manual.						

UNDRAINED SHEAR STRENGTH, Cu (kPa)
▲ LABORATORY TEST ◆ FIELD VANE TEST
★ POCKET PENETROMETER □ POCKET SHEAR VANE
50 kPa 100 kPa 150 kPa 200 kPa

WATER CONTENT & ATTERBERG LIMITS W_P W W_L
✖ SPT (N-value) BLOWS/0.3m
Water Content (%) and Blow Count
10 20 30 40 50 60 70 80

BACKFILL

ELEVATION (m)

BACKFILL SYMBOL: ASPHALT, GROUT, CONCRETE, BENTONITE, DRILL CUTTINGS, SAND, SLOUGH

Drilling Contractor: Maple Leaf Drilling Ltd.	Logged By: LP
Drilling Method: 125 mm SSA	Reviewed By: GB
Completion Depth: 2.5 m	Page 1 of 1

Printed Jan 15 2025 05:32:57 SOIL 123317464.GPJ 1/15/25

Stantec

BOREHOLE RECORD

BH-119

CLIENT: **Dillon Consulting Ltd.**
PROJECT NO.: **123317464**
PROJECT: **25-R-10 2025 Local Street Renewal**
BH ELEVATION: **N/A**
LOCATION: **Mollard Rd**
DATUM: **N/A**
DATE BORED: **December 16 2024**
WATER LEVEL: **N/A**

UNDRAINED SHEAR STRENGTH, Cu (kPa)
▲ LABORATORY TEST ◆ FIELD VANE TEST
★ POCKET PENETROMETER □ POCKET SHEAR VANE
50 kPa 100 kPa 150 kPa 200 kPa
WATER CONTENT & ATTERBERG LIMITS W_P W W_L
✖ SPT (N-value) BLOWS/0.3m
Water Content (%) and Blow Count
10 20 30 40 50 60 70 80

DEPTH (m)	ELEVATION (m)	SOIL DESCRIPTION (USCS)	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES RECOVERY (mm) or TCR %	SAMPLES N-VALUE or RQD %	OTHER TESTS / REMARKS	BACKFILL	ELEVATION (m)
0		**FILL:** granular materials, mix of sand and fine gravel								
		Firm brown **LEAN CLAY (CL)** - some silt		AS						
1				AS						
				BS				Sieve/Hydro at 1.2 m G S M C 0% 2% 19% 79%		
		Soft tan **SILTY CLAY (CL-ML)**		AS						
2				AS						
				AS						
3		**End of Borehole** • Borehole terminated at a depth of 2.5 m. • No groundwater seepage or soil sloughing was observed during or upon completion of drilling. • Borehole backfilled in accordance with the City of Winnipeg Street Cuts Manual.								

BACKFILL SYMBOL: ASPHALT GROUT CONCRETE BENTONITE DRILL CUTTINGS SAND SLOUGH

Drilling Contractor: Maple Leaf Drilling Ltd. | Logged By: LP
Drilling Method: 125 mm SSA | Reviewed By: GB
Completion Depth: 2.5 m | Page 1 of 1

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Appendix D

Laboratory Testing Reports

- Atterberg Limits
- Particle-Size Analysis
- Standard Proctor
- California Bearing Ratio

Stantec Consulting Ltd.
199 Henlow Bay, Winnipeg, MB R3Y 1G4
Tel: (204) 488-6999

ASTM D4318 - LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX OF SOILS (LL METHOD B - ONE-POINT)

TO Dillon Consulting Ltd.
300 - 100 Innovation Dr.
Winnipeg, Manitoba
R3T 6G2

ATTN Trevor Nickel

PROJECT 25-R-10 Local Street Renewal Program

PROJECT NO. 123317464

REPORT NO. 1

DATE SAMPLED: 2024.Dec.16
SAMPLED BY: Larry Presado

DATE RECEIVED: 2024.Dec.16
SUBMITTED BY: Guillaume Beauce

DATE TESTED: 2024.Jan.06
TESTED BY: Kailash Vaghjiyani

MATERIAL IDENTIFICATION

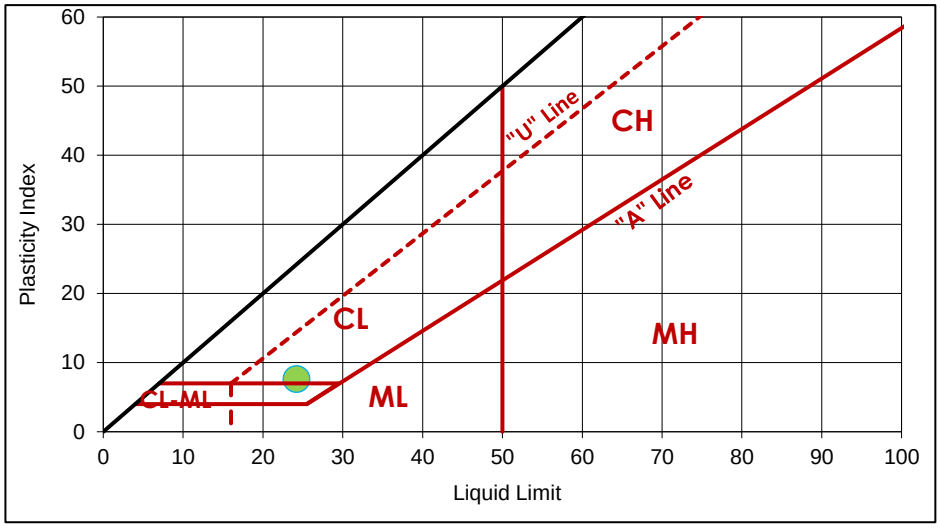
CLIENT FIELD ID BH-105, 1.2 m

STANTEC SAMPLE NO. 5504

LIQUID LIMIT		
TRIAL	1	2
BLOWS	25	25
MC (%)	24	24

PLASTIC LIMIT		
TRIAL	1	2
MC (%)	17	17

LIQUID LIMIT, LL	24
PLASTIC LIMIT, PL	17
PLASTICITY INDEX, PI	8
AS REC'D MC (%)	21.5



COMMENTS
No comments.

REPORT DATE 2025.Jan.09

REVIEWED BY Guillaume Beauce, P.Eng.
Geotechnical Engineer - Materials Testing Services

Stantec Consulting Ltd.
199 Henlow Bay, Winnipeg, MB R3Y 1G4
Tel: (204) 488-6999

ASTM D4318 - LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX OF SOILS (LL METHOD B - ONE-POINT)

TO Dillon Consulting Ltd.
300 - 100 Innovation Dr.
Winnipeg, Manitoba
R3T 6G2

ATTN Trevor Nickel

PROJECT 25-R-10 Local Street Renewal Program

PROJECT NO. 123317464

REPORT NO. 2

DATE SAMPLED: 2024.Dec.16
SAMPLED BY: Larry Presado

DATE RECEIVED: 2024.Dec.16
SUBMITTED BY: Guillaume Beauce

DATE TESTED: 2024.Jan.06
TESTED BY: Kailash Vaghjiyani

MATERIAL IDENTIFICATION

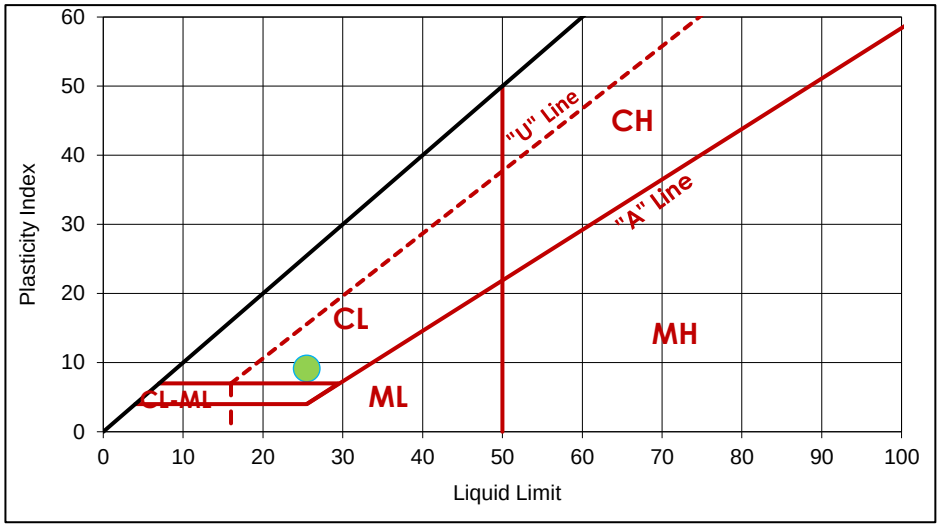
CLIENT FIELD ID BH-107, 1.2 m

STANTEC SAMPLE NO. 5505

	LIQUID LIMIT	
TRIAL	1	2
BLOWS	25	26
MC (%)	26	25

	PLASTIC LIMIT	
TRIAL	1	2
MC (%)	16	16

LIQUID LIMIT, LL	26
PLASTIC LIMIT, PL	16
PLASTICITY INDEX, PI	10
AS REC'D MC (%)	20.6



COMMENTS
No comments.

REPORT DATE 2025.Jan.09

REVIEWED BY Guillaume Beauce, P.Eng.
Geotechnical Engineer - Materials Testing Services

Stantec Consulting Ltd.
199 Henlow Bay, Winnipeg, MB R3Y 1G4
Tel: (204) 488-6999

ASTM D4318 - LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX OF SOILS (LL METHOD B - ONE-POINT)

TO Dillon Consulting Ltd.
300 - 100 Innovation Dr.
Winnipeg, Manitoba
R3T 6G2

ATTN Trevor Nickel

PROJECT 25-R-10 Local Street Renewal Program

PROJECT NO. 123317464

REPORT NO. 3

DATE SAMPLED: 2024.Dec.16
SAMPLED BY: Larry Presado

DATE RECEIVED: 2024.Dec.16
SUBMITTED BY: Guillaume Beauce

DATE TESTED: 2024.Jan.06
TESTED BY: Kailash Vaghjiyani

MATERIAL IDENTIFICATION

CLIENT FIELD ID BH-109, 1.2 m

STANTEC SAMPLE NO. 5506

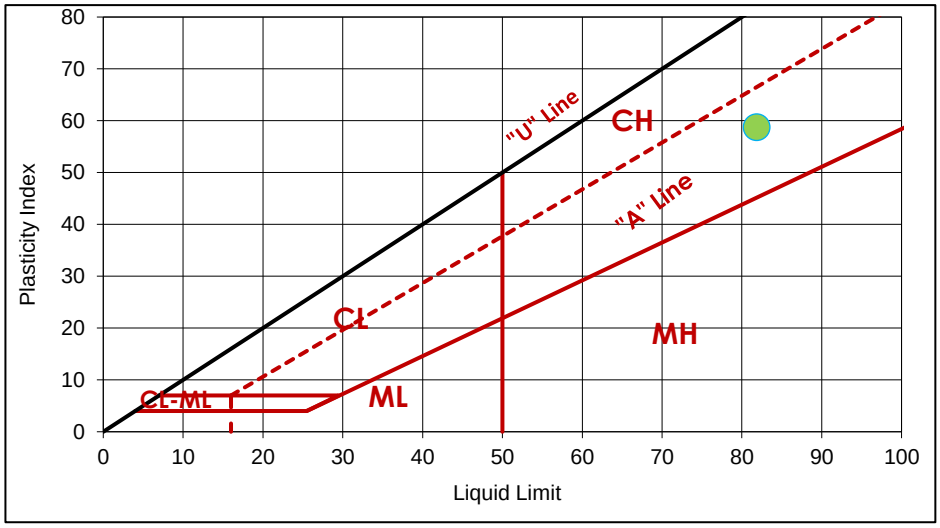
LIQUID LIMIT

TRIAL	1	2
BLOWS	25	25
MC (%)	82	82

PLASTIC LIMIT

TRIAL	1	2
MC (%)	23	23

LIQUID LIMIT, LL	82
PLASTIC LIMIT, PL	23
PLASTICITY INDEX, PI	59
AS REC'D MC (%)	35.4



COMMENTS
No comments.

REPORT DATE 2025.Jan.09

REVIEWED BY Guillaume Beauce, P.Eng.
Geotechnical Engineer - Materials Testing Services

Stantec Consulting Ltd.
199 Henlow Bay, Winnipeg, MB R3Y 1G4
Tel: (204) 488-6999

ASTM D4318 - LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX OF SOILS (LL METHOD B - ONE-POINT)

TO Dillon Consulting Ltd.
300 - 100 Innovation Dr.
Winnipeg, Manitoba
R3T 6G2

ATTN Trevor Nickel

PROJECT 25-R-10 Local Street Renewal Program

PROJECT NO. 123317464

REPORT NO. 4

DATE SAMPLED: 2024.Dec.16
SAMPLED BY: Larry Presado

DATE RECEIVED: 2024.Dec.16
SUBMITTED BY: Guillaume Beauce

DATE TESTED: 2024.Jan.06
TESTED BY: Ankit Kerai

MATERIAL IDENTIFICATION

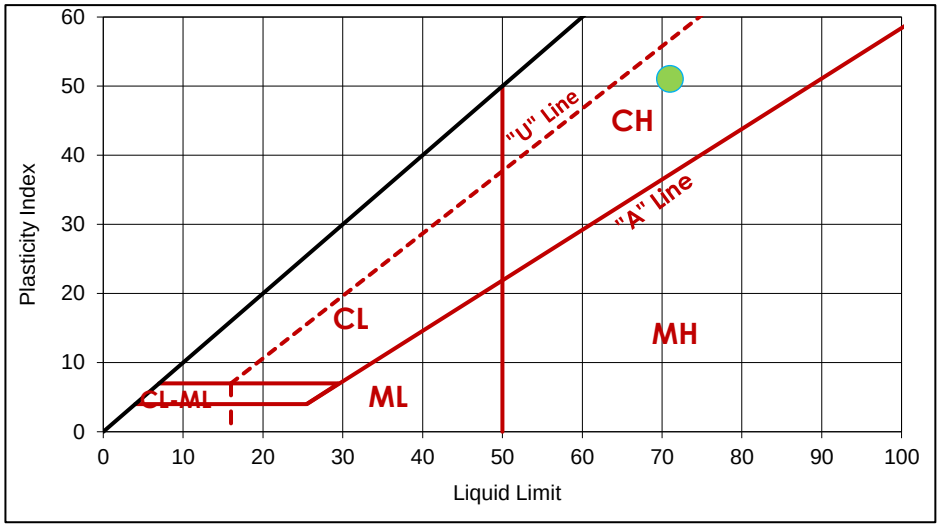
CLIENT FIELD ID BH-110, 1.2 m

STANTEC SAMPLE NO. 5507

	LIQUID LIMIT	
TRIAL	1	2
BLOWS	25	27
MC (%)	71	71

	PLASTIC LIMIT	
TRIAL	1	2
MC (%)	20	20

LIQUID LIMIT, LL	71
PLASTIC LIMIT, PL	20
PLASTICITY INDEX, PI	51
AS REC'D MC (%)	32.3



COMMENTS
No comments.

REPORT DATE 2025.Jan.09

REVIEWED BY Guillaume Beauce, P.Eng.
Geotechnical Engineer - Materials Testing Services

Stantec Consulting Ltd.
199 Henlow Bay, Winnipeg, MB R3Y 1G4
Tel: (204) 488-6999

ASTM D4318 - LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX OF SOILS (LL METHOD B - ONE-POINT)

TO Dillon Consulting Ltd.
300 - 100 Innovation Dr.
Winnipeg, Manitoba
R3T 6G2

ATTN Trevor Nickel

PROJECT 25-R-10 Local Street Renewal Program

PROJECT NO. 123317464

REPORT NO. 5

DATE SAMPLED: 2024.Dec.16
SAMPLED BY: Larry Presado

DATE RECEIVED: 2024.Dec.16
SUBMITTED BY: Guillaume Beauce

DATE TESTED: 2024.Jan.06
TESTED BY: Kailash Vaghjiyani

MATERIAL IDENTIFICATION

CLIENT FIELD ID BH-112, 1.2 m

STANTEC SAMPLE NO. 5508

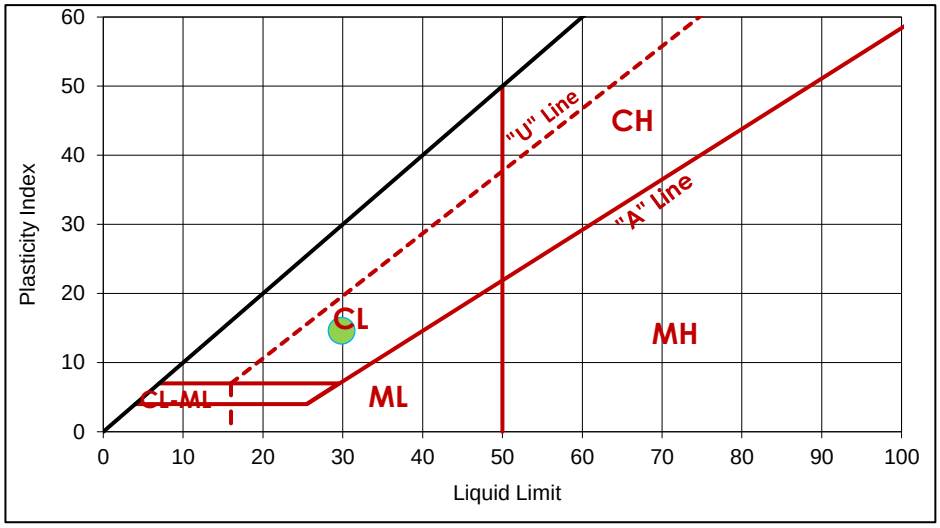
LIQUID LIMIT

TRIAL	1	2
BLOWS	26	26
MC (%)	30	30

PLASTIC LIMIT

TRIAL	1	2
MC (%)	15	15

LIQUID LIMIT, LL	30
PLASTIC LIMIT, PL	15
PLASTICITY INDEX, PI	15
AS REC'D MC (%)	22.4



COMMENTS
No comments.

REPORT DATE 2025.Jan.09

REVIEWED BY Guillaume Beauce, P.Eng.
Geotechnical Engineer - Materials Testing Services

Stantec Consulting Ltd.
199 Henlow Bay, Winnipeg, MB R3Y 1G4
Tel: (204) 488-6999

ASTM D4318 - LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX OF SOILS (LL METHOD B - ONE-POINT)

TO Dillon Consulting Ltd.
300 - 100 Innovation Dr.
Winnipeg, Manitoba
R3T 6G2

ATTN Trevor Nickel

PROJECT 25-R-10 Local Street Renewal Program

PROJECT NO. 123317464

REPORT NO. 6

DATE SAMPLED: 2024.Dec.16
SAMPLED BY: Larry Presado

DATE RECEIVED: 2024.Dec.16
SUBMITTED BY: Guillaume Beauce

DATE TESTED: 2024.Jan.06
TESTED BY: Kailash Vaghjiyani

MATERIAL IDENTIFICATION

CLIENT FIELD ID BH-113, 1.2 m

STANTEC SAMPLE NO. 5509

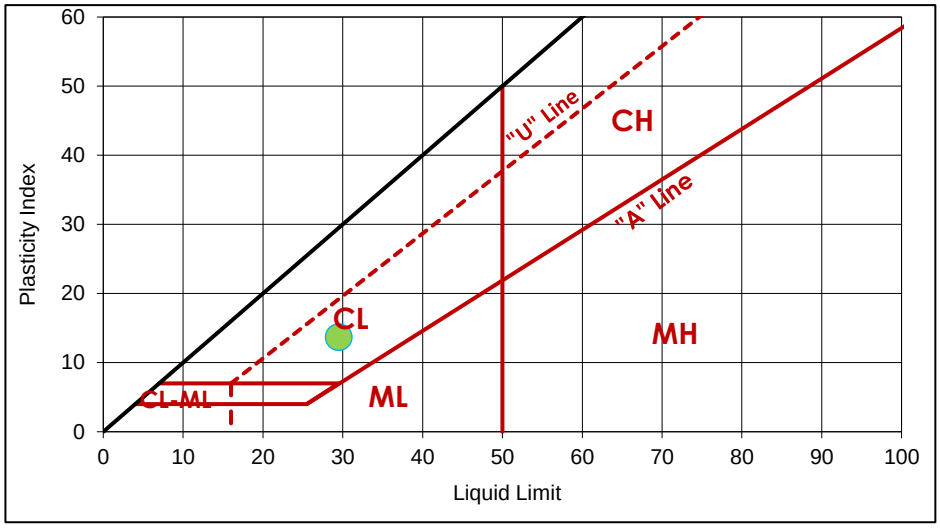
LIQUID LIMIT

TRIAL	1	2
BLOWS	26	26
MC (%)	29	29

PLASTIC LIMIT

TRIAL	1	2
MC (%)	16	16

LIQUID LIMIT, LL	30
PLASTIC LIMIT, PL	16
PLASTICITY INDEX, PI	14
AS REC'D MC (%)	23.9



COMMENTS
No comments.

REPORT DATE 2025.Jan.09

REVIEWED BY Guillaume Beauce, P.Eng.
Geotechnical Engineer - Materials Testing Services

Stantec Consulting Ltd.
199 Henlow Bay, Winnipeg, MB R3Y 1G4
Tel: (204) 488-6999

ASTM D4318 - LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX OF SOILS (LL METHOD B - ONE-POINT)

TO Dillon Consulting Ltd.
300 - 100 Innovation Dr.
Winnipeg, Manitoba
R3T 6G2

ATTN Trevor Nickel

PROJECT 25-R-10 Local Street Renewal Program

PROJECT NO. 123317464

REPORT NO. 7

DATE SAMPLED: 2024.Dec.16
SAMPLED BY: Larry Presado

DATE RECEIVED: 2024.Dec.16
SUBMITTED BY: Guillaume Beauce

DATE TESTED: 2024.Jan.06
TESTED BY: Kailash Vaghjiyani

MATERIAL IDENTIFICATION

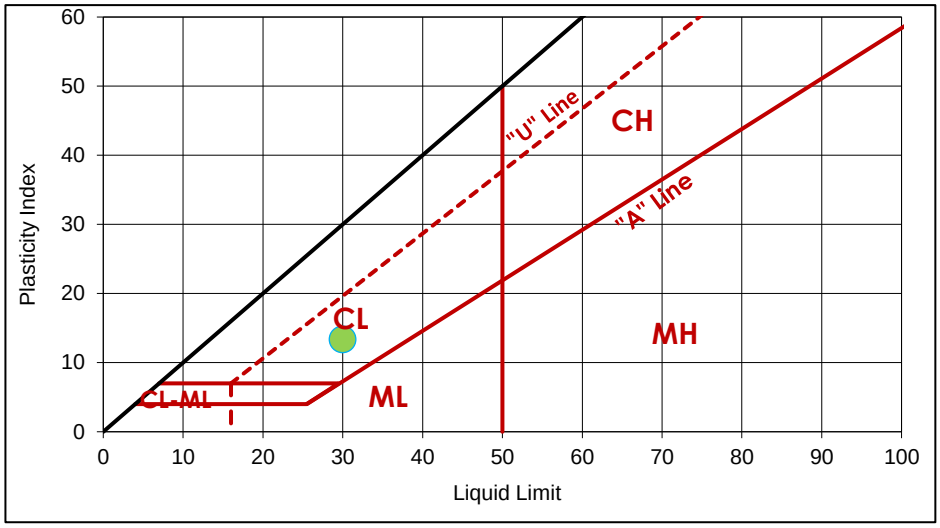
CLIENT FIELD ID BH-115, 1.2 m

STANTEC SAMPLE NO. 5510

LIQUID LIMIT		
TRIAL	1	2
BLOWS	26	27
MC (%)	30	30

PLASTIC LIMIT		
TRIAL	1	2
MC (%)	17	17

LIQUID LIMIT, LL	30
PLASTIC LIMIT, PL	17
PLASTICITY INDEX, PI	13
AS REC'D MC (%)	24.6



COMMENTS
No comments.

REPORT DATE 2025.Jan.09

REVIEWED BY Guillaume Beauce, P.Eng.
Geotechnical Engineer - Materials Testing Services

Stantec Consulting Ltd.
199 Henlow Bay, Winnipeg, MB R3Y 1G4
Tel: (204) 488-6999

ASTM D4318 - LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX OF SOILS (LL METHOD B - ONE-POINT)

TO Dillon Consulting Ltd.
300 - 100 Innovation Dr.
Winnipeg, Manitoba
R3T 6G2

ATTN Trevor Nickel

PROJECT 25-R-10 Local Street Renewal Program

PROJECT NO. 123317464

REPORT NO. 8

DATE SAMPLED: 2024.Dec.16
SAMPLED BY: Larry Presado

DATE RECEIVED: 2024.Dec.16
SUBMITTED BY: Guillaume Beauce

DATE TESTED: 2024.Jan.06
TESTED BY: Kailash Vaghjiyani

MATERIAL IDENTIFICATION

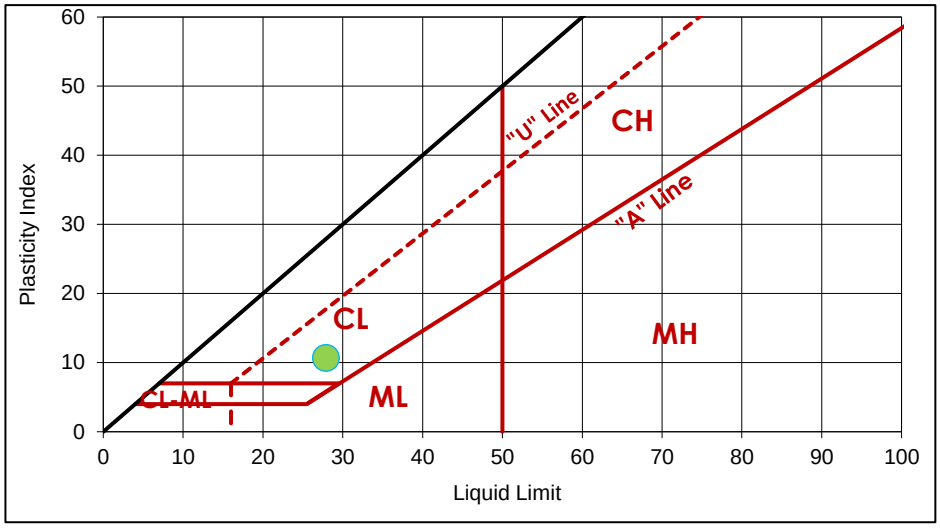
CLIENT FIELD ID BH-116, 1.2 m

STANTEC SAMPLE NO. 5511

LIQUID LIMIT		
TRIAL	1	2
BLOWS	26	26
MC (%)	28	28

PLASTIC LIMIT		
TRIAL	1	2
MC (%)	17	17

LIQUID LIMIT, LL	28
PLASTIC LIMIT, PL	17
PLASTICITY INDEX, PI	11
AS REC'D MC (%)	24.6



COMMENTS
No comments.

REPORT DATE 2025.Jan.09

REVIEWED BY Guillaume Beauce, P.Eng.
Geotechnical Engineer - Materials Testing Services

Stantec Consulting Ltd.
199 Henlow Bay, Winnipeg, MB R3Y 1G4
Tel: (204) 488-6999

ASTM D4318 - LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX OF SOILS (LL METHOD B - ONE-POINT)

TO Dillon Consulting Ltd.
300 - 100 Innovation Dr.
Winnipeg, Manitoba
R3T 6G2

ATTN Trevor Nickel

PROJECT 25-R-10 Local Street Renewal Program

PROJECT NO. 123317464

REPORT NO. 9

DATE SAMPLED: 2024.Dec.16
SAMPLED BY: Larry Presado

DATE RECEIVED: 2024.Dec.16
SUBMITTED BY: Guillaume Beauce

DATE TESTED: 2024.Jan.06
TESTED BY: Kailash Vaghjiyani

MATERIAL IDENTIFICATION

CLIENT FIELD ID BH-117, 1.2 m

STANTEC SAMPLE NO. 5512

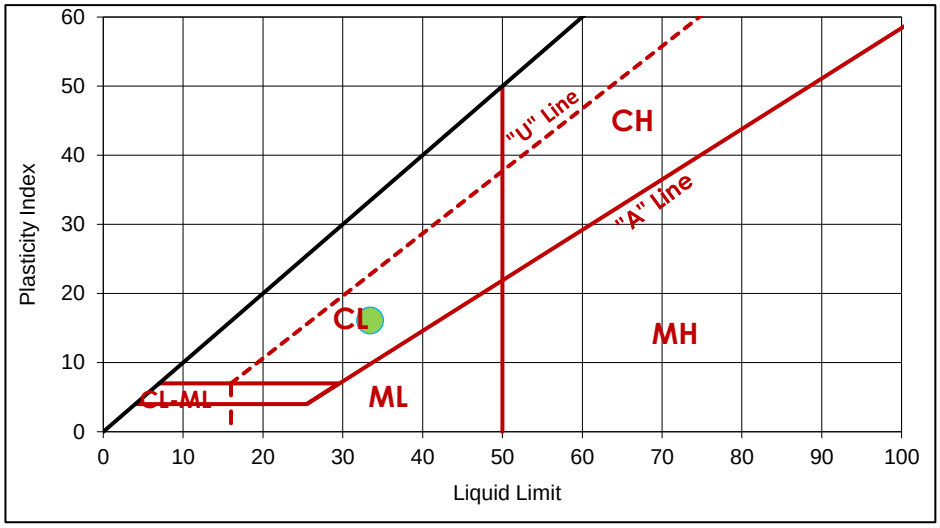
LIQUID LIMIT

TRIAL	1	2
BLOWS	28	28
MC (%)	33	33

PLASTIC LIMIT

TRIAL	1	2
MC (%)	17	17

LIQUID LIMIT, LL	33
PLASTIC LIMIT, PL	17
PLASTICITY INDEX, PI	16
AS REC'D MC (%)	24.4



COMMENTS
No comments.

REPORT DATE 2025.Jan.09

REVIEWED BY Guillaume Beauce, P.Eng.
Geotechnical Engineer - Materials Testing Services

Stantec Consulting Ltd.
199 Henlow Bay, Winnipeg, MB R3Y 1G4
Tel: (204) 488-6999

ASTM D4318 - LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX OF SOILS (LL METHOD B - ONE-POINT)

TO Dillon Consulting Ltd.
300 - 100 Innovation Dr.
Winnipeg, Manitoba
R3T 6G2

ATTN Trevor Nickel

PROJECT 25-R-10 Local Street Renewal Program

PROJECT NO. 123317464

REPORT NO. 10

DATE SAMPLED: 2024.Dec.16
SAMPLED BY: Larry Presado

DATE RECEIVED: 2024.Dec.16
SUBMITTED BY: Guillaume Beauce

DATE TESTED: 2024.Jan.06
TESTED BY: Kailash Vaghjiyani

MATERIAL IDENTIFICATION

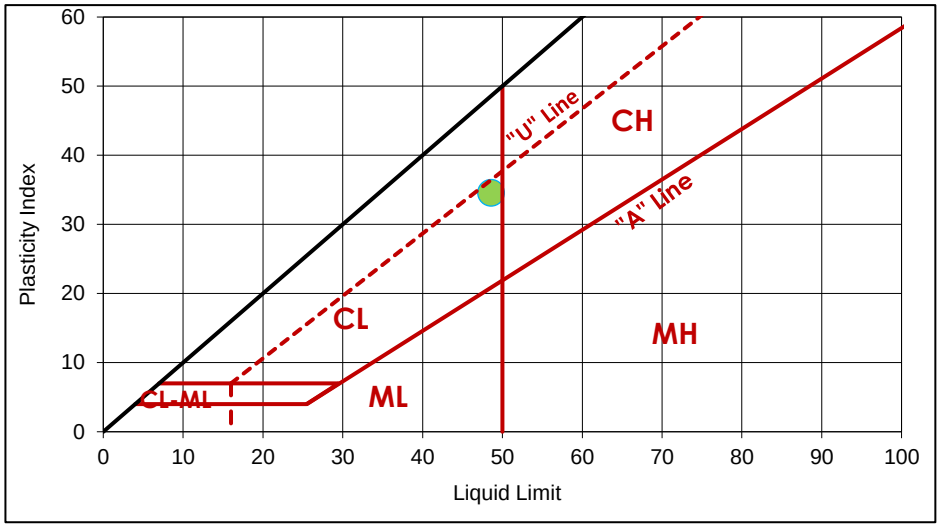
CLIENT FIELD ID BH-119, 1.2 m

STANTEC SAMPLE NO. 5513

LIQUID LIMIT		
TRIAL	1	2
BLOWS	24	24
MC (%)	49	49

PLASTIC LIMIT		
TRIAL	1	2
MC (%)	14	14

LIQUID LIMIT, LL	49
PLASTIC LIMIT, PL	14
PLASTICITY INDEX, PI	35
AS REC'D MC (%)	25.7



COMMENTS
No comments.

REPORT DATE 2025.Jan.09

REVIEWED BY Guillaume Beauce, P.Eng.
Geotechnical Engineer - Materials Testing Services

Stantec Consulting Ltd.
199 Henlow Bay, Winnipeg, MB R3Y 1G4
Tel: (204) 488-6999

ASTM D7928 - PARTICLE-SIZE DISTRIBUTION OF FINE-GRAINED SOILS USING THE SEDIMENTATION ANALYSIS

TO Dillon Consulting Ltd.
300 - 100 Innovation Dr.
Winnipeg, Manitoba
R3T 6G2

ATTN Trevor Nickel

PROJECT 25-R-10 Local Street Renewal Program

PROJECT NO. 123317464

REPORT NO. 1

DATE SAMPLED: 2024.Dec.16
SAMPLED BY: Larry Presado

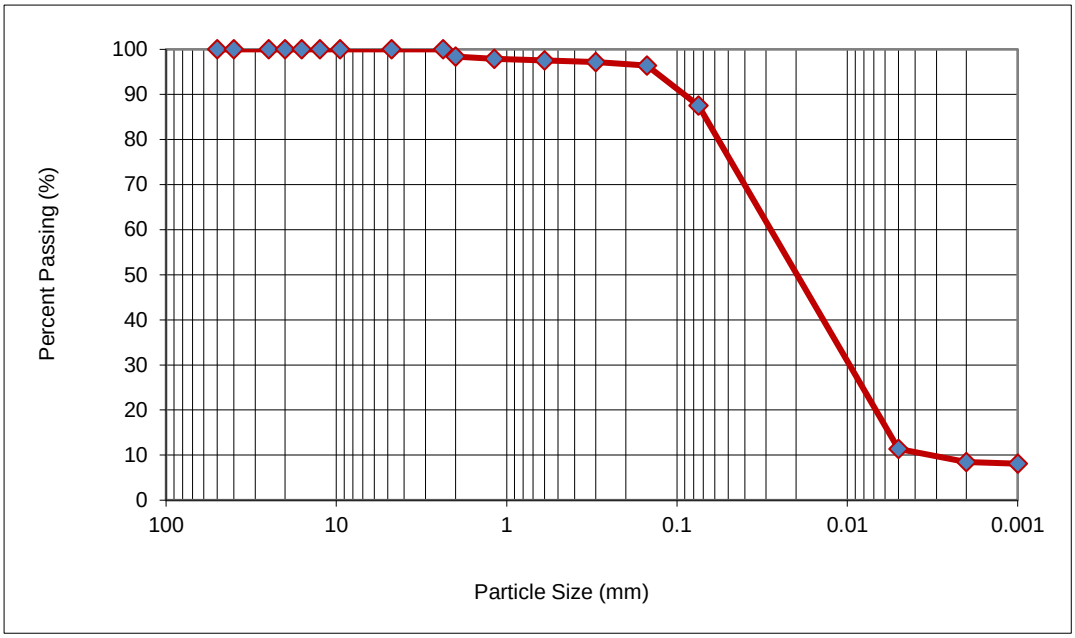
DATE RECEIVED: 2025.Dec.16
SUBMITTED BY: Guillaume Beauce

DATE TESTED: 2025.Jan.06
TESTED BY: Larry Presado

MATERIAL IDENTIFICATION

CLIENT FIELD ID BH-105, 1.2 m

STANTEC SAMPLE NO. 5504



Sieve Size (mm)	% Passing
50.0	100.0
40.0	100.0
25.0	100.0
20.0	100.0
16.0	100.0
12.5	100.0
9.5	100.0
4.75	100.0
2.36	100.0
2.00	98.4
1.18	97.9
0.600	97.6
0.300	97.2
0.150	96.4
0.075	87.6
0.005	11.4
0.002	8.4
0.001	8.1

Gravel	Sand			Silt	Clay	Colloids
	Coarse	Medium	Fine			
0.0	1.6	1.0	9.8	79.2	8.4	8.1

COMMENTS
No comments.

REPORT DATE 2025.Jan.09

REVIEWED BY Guillaume Beauce, P.Eng.
Geotechnical Engineer - Materials Testing Services

Stantec Consulting Ltd.
199 Henlow Bay, Winnipeg, MB R3Y 1G4
Tel: (204) 488-6999

ASTM D7928 - PARTICLE-SIZE DISTRIBUTION OF FINE-GRAINED SOILS USING THE SEDIMENTATION ANALYSIS

TO Dillon Consulting Ltd.
300 - 100 Innovation Dr.
Winnipeg, Manitoba
R3T 6G2

ATTN Trevor Nickel

PROJECT 25-R-10 Local Street Renewal Program

PROJECT NO. 123317464

REPORT NO. 2

DATE SAMPLED: 2024.Dec.16
SAMPLED BY: Larry Presado

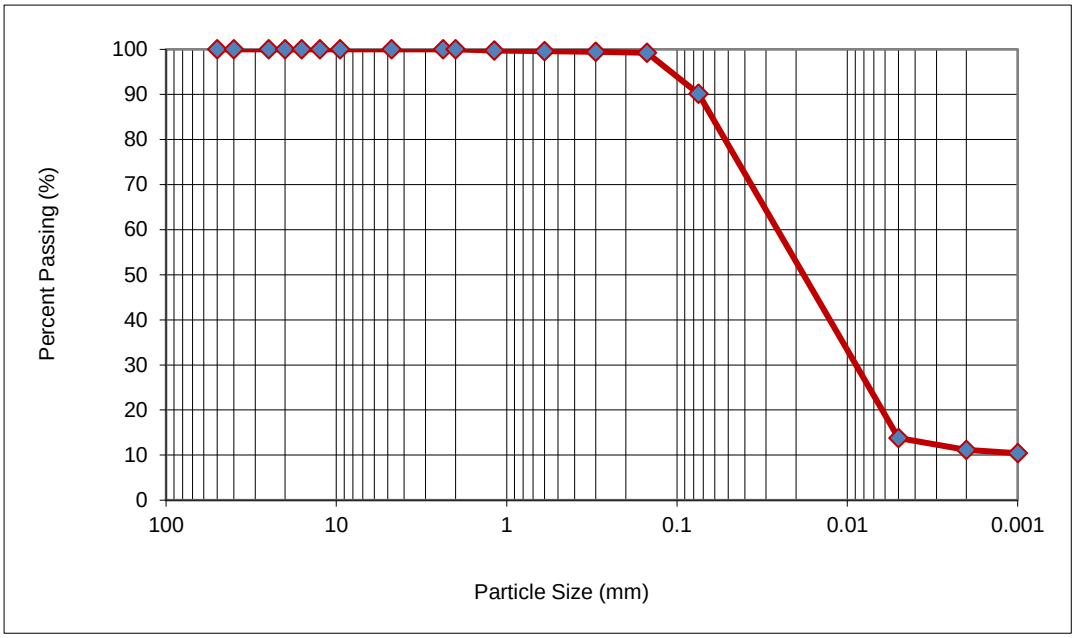
DATE RECEIVED: 2025.Dec.16
SUBMITTED BY: Guillaume Beauce

DATE TESTED: 2025.Jan.06
TESTED BY: Larry Presado

MATERIAL IDENTIFICATION

CLIENT FIELD ID BH-107, 1.2 m

STANTEC SAMPLE NO. 5505



Sieve Size (mm)	% Passing
50.0	100.0
40.0	100.0
25.0	100.0
20.0	100.0
16.0	100.0
12.5	100.0
9.5	100.0
4.75	100.0
2.36	100.0
2.00	100.0
1.18	99.7
0.600	99.6
0.300	99.4
0.150	99.2
0.075	90.1
0.005	13.8
0.002	11.1
0.001	10.4

Gravel	Sand			Silt	Clay	Colloids
	Coarse	Medium	Fine			
0.0	0.0	0.5	9.4	79.0	11.1	10.4

COMMENTS
No comments.

REPORT DATE 2025.Jan.09

REVIEWED BY Guillaume Beauce, P.Eng.
Geotechnical Engineer - Materials Testing Services

Stantec Consulting Ltd.
199 Henlow Bay, Winnipeg, MB R3Y 1G4
Tel: (204) 488-6999

ASTM D7928 - PARTICLE-SIZE DISTRIBUTION OF FINE-GRAINED SOILS USING THE SEDIMENTATION ANALYSIS

TO Dillon Consulting Ltd.
300 - 100 Innovation Dr.
Winnipeg, Manitoba
R3T 6G2

ATTN Trevor Nickel

PROJECT 25-R-10 Local Street Renewal Program

PROJECT NO. 123317464

REPORT NO. 3

DATE SAMPLED: 2024.Dec.16
SAMPLED BY: Larry Presado

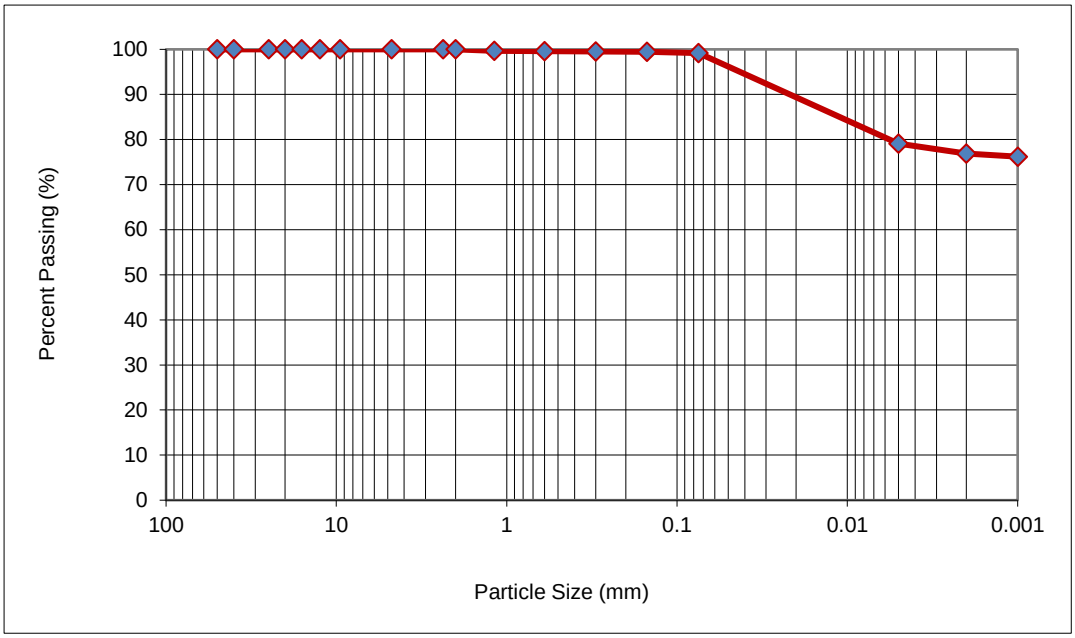
DATE RECEIVED: 2025.Dec.16
SUBMITTED BY: Guillaume Beauce

DATE TESTED: 2025.Jan.06
TESTED BY: Larry Presado

MATERIAL IDENTIFICATION

CLIENT FIELD ID BH-109, 1.2 m

STANTEC SAMPLE NO. 5506



Sieve Size (mm)	% Passing
50.0	100.0
40.0	100.0
25.0	100.0
20.0	100.0
16.0	100.0
12.5	100.0
9.5	100.0
4.75	100.0
2.36	100.0
2.00	100.0
1.18	99.7
0.600	99.6
0.300	99.6
0.150	99.5
0.075	99.2
0.005	79.1
0.002	76.9
0.001	76.2

Gravel	Sand			Silt	Clay	Colloids
	Coarse	Medium	Fine			
0.0	0.0	0.4	0.4	22.3	76.9	76.2

COMMENTS
No comments.

REPORT DATE 2025.Jan.09

REVIEWED BY Guillaume Beauce, P.Eng.
Geotechnical Engineer - Materials Testing Services

Stantec Consulting Ltd.
199 Henlow Bay, Winnipeg, MB R3Y 1G4
Tel: (204) 488-6999

ASTM D7928 - PARTICLE-SIZE DISTRIBUTION OF FINE-GRAINED SOILS USING THE SEDIMENTATION ANALYSIS

TO Dillon Consulting Ltd.
300 - 100 Innovation Dr.
Winnipeg, Manitoba
R3T 6G2

ATTN Trevor Nickel

PROJECT 25-R-10 Local Street Renewal Program

PROJECT NO. 123317464

REPORT NO. 4

DATE SAMPLED: 2024.Dec.16
SAMPLED BY: Larry Presado

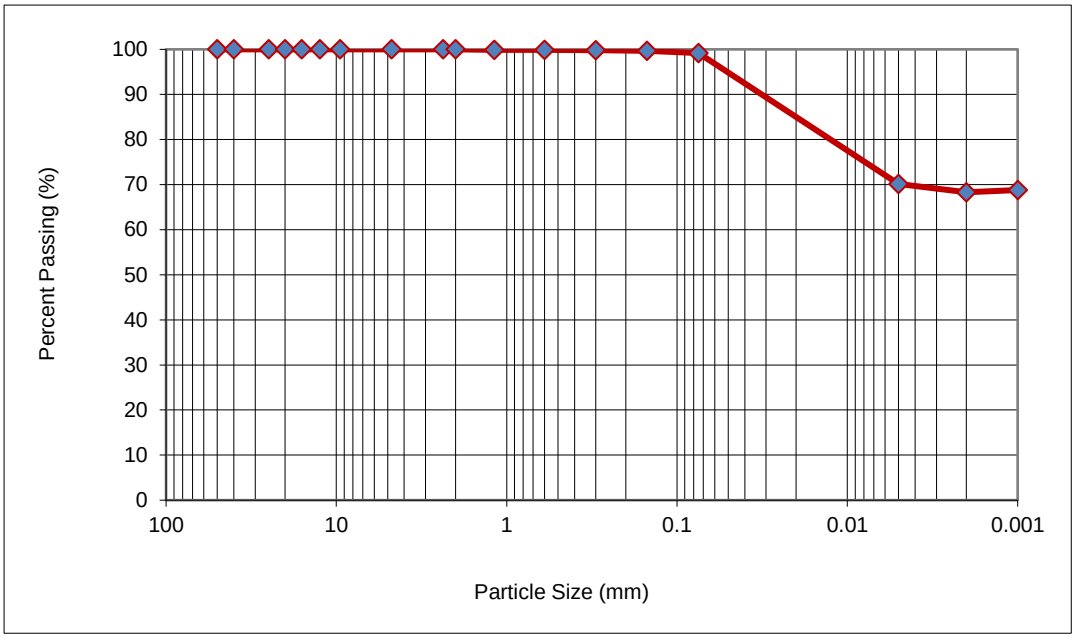
DATE RECEIVED: 2025.Dec.16
SUBMITTED BY: Guillaume Beauce

DATE TESTED: 2025.Jan.06
TESTED BY: Larry Presado

MATERIAL IDENTIFICATION

CLIENT FIELD ID BH-110, 1.2 m

STANTEC SAMPLE NO. 5507



Sieve Size (mm)	% Passing
50.0	100.0
40.0	100.0
25.0	100.0
20.0	100.0
16.0	100.0
12.5	100.0
9.5	100.0
4.75	100.0
2.36	100.0
2.00	100.0
1.18	99.9
0.600	99.9
0.300	99.8
0.150	99.7
0.075	99.2
0.005	70.1
0.002	68.3
0.001	68.8

Gravel	Sand			Silt	Clay	Colloids
	Coarse	Medium	Fine			
0.0	0.0	0.2	0.6	30.9	68.3	68.8

COMMENTS
No comments.

REPORT DATE 2025.Jan.09

REVIEWED BY Guillaume Beauce, P.Eng.
Geotechnical Engineer - Materials Testing Services

Stantec Consulting Ltd.
199 Henlow Bay, Winnipeg, MB R3Y 1G4
Tel: (204) 488-6999

ASTM D7928 - PARTICLE-SIZE DISTRIBUTION OF FINE-GRAINED SOILS USING THE SEDIMENTATION ANALYSIS

TO Dillon Consulting Ltd.
300 - 100 Innovation Dr.
Winnipeg, Manitoba
R3T 6G2

ATTN Trevor Nickel

PROJECT 25-R-10 Local Street Renewal Program

PROJECT NO. 123317464

REPORT NO. 5

DATE SAMPLED: 2024.Dec.16
SAMPLED BY: Larry Presado

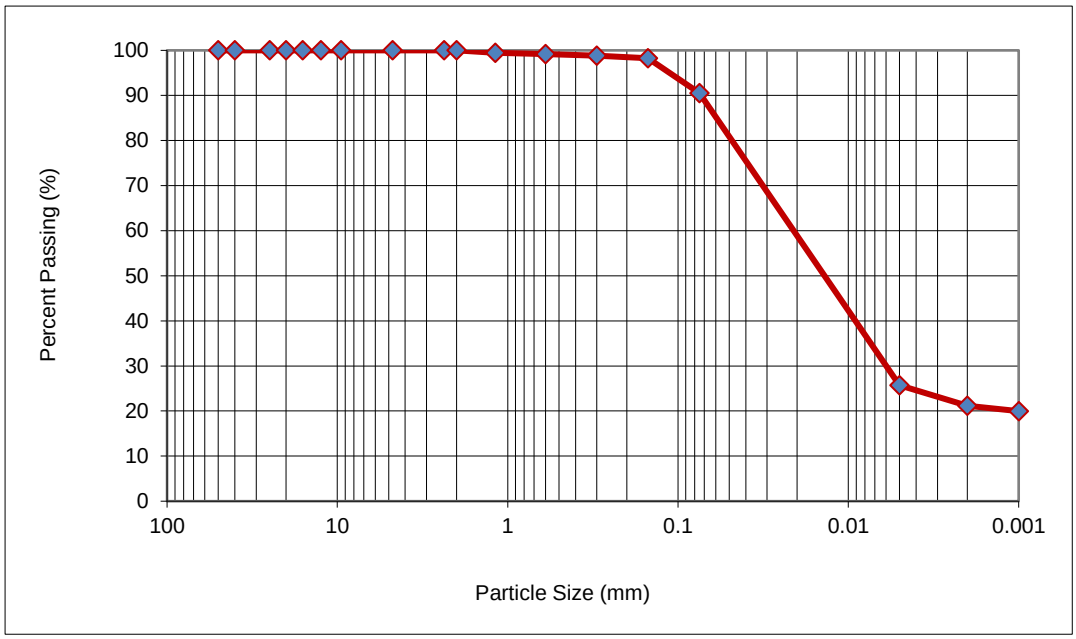
DATE RECEIVED: 2025.Dec.16
SUBMITTED BY: Guillaume Beauce

DATE TESTED: 2025.Jan.06
TESTED BY: Larry Presado

MATERIAL IDENTIFICATION

CLIENT FIELD ID BH-112, 1.2 m

STANTEC SAMPLE NO. 5508



Sieve Size (mm)	% Passing
50.0	100.0
40.0	100.0
25.0	100.0
20.0	100.0
16.0	100.0
12.5	100.0
9.5	100.0
4.75	100.0
2.36	100.0
2.00	100.0
1.18	99.5
0.600	99.2
0.300	98.8
0.150	98.3
0.075	90.5
0.005	25.7
0.002	21.2
0.001	20.0

Gravel	Sand			Silt	Clay	Colloids
	Coarse	Medium	Fine			
0.0	0.0	1.1	8.4	69.3	21.2	20.0

COMMENTS
No comments.

REPORT DATE 2025.Jan.09

REVIEWED BY Guillaume Beauce, P.Eng.
Geotechnical Engineer - Materials Testing Services

Stantec Consulting Ltd.
199 Henlow Bay, Winnipeg, MB R3Y 1G4
Tel: (204) 488-6999

ASTM D7928 - PARTICLE-SIZE DISTRIBUTION OF FINE-GRAINED SOILS USING THE SEDIMENTATION ANALYSIS

TO Dillon Consulting Ltd.
300 - 100 Innovation Dr.
Winnipeg, Manitoba
R3T 6G2

ATTN Trevor Nickel

PROJECT 25-R-10 Local Street Renewal Program

PROJECT NO. 123317464

REPORT NO. 6

DATE SAMPLED: 2024.Dec.16
SAMPLED BY: Larry Presado

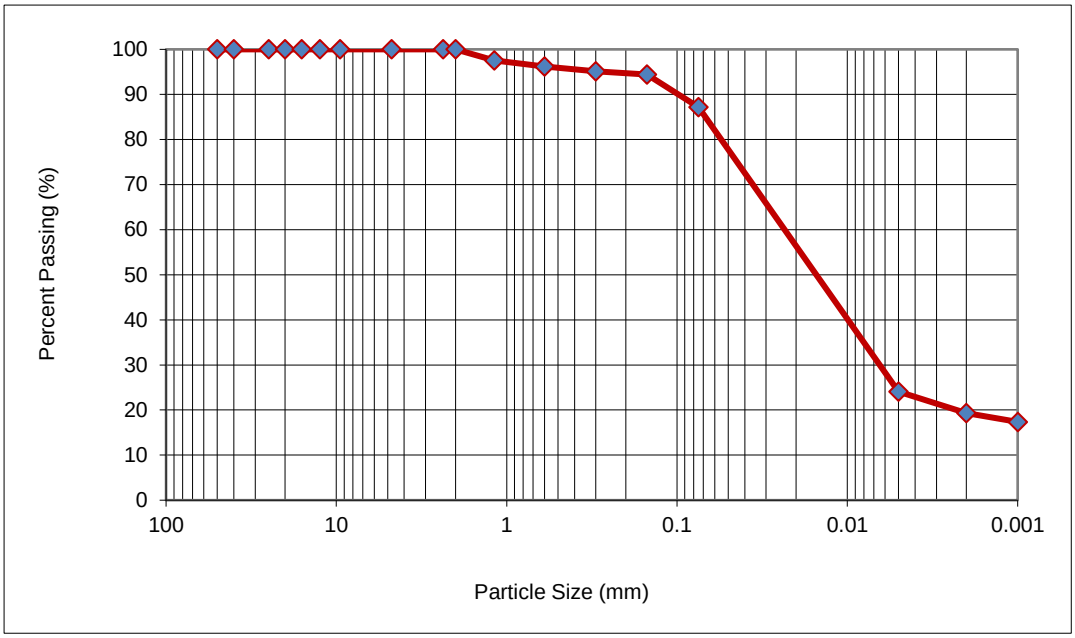
DATE RECEIVED: 2025.Dec.16
SUBMITTED BY: Guillaume Beauce

DATE TESTED: 2025.Jan.06
TESTED BY: Larry Presado

MATERIAL IDENTIFICATION

CLIENT FIELD ID BH-113, 1.2 m

STANTEC SAMPLE NO. 5509



Sieve Size (mm)	% Passing
50.0	100.0
40.0	100.0
25.0	100.0
20.0	100.0
16.0	100.0
12.5	100.0
9.5	100.0
4.75	100.0
2.36	100.0
2.00	100.0
1.18	97.5
0.600	96.2
0.300	95.2
0.150	94.4
0.075	87.2
0.005	24.1
0.002	19.3
0.001	17.4

Gravel	Sand			Silt	Clay	Colloids
	Coarse	Medium	Fine			
0.0	0.0	4.4	8.4	67.9	19.3	17.4

COMMENTS
No comments.

REPORT DATE 2025.Jan.09

REVIEWED BY Guillaume Beauce, P.Eng.
Geotechnical Engineer - Materials Testing Services

Stantec Consulting Ltd.
199 Henlow Bay, Winnipeg, MB R3Y 1G4
Tel: (204) 488-6999

ASTM D7928 - PARTICLE-SIZE DISTRIBUTION OF FINE-GRAINED SOILS USING THE SEDIMENTATION ANALYSIS

TO Dillon Consulting Ltd.
300 - 100 Innovation Dr.
Winnipeg, Manitoba
R3T 6G2

ATTN Trevor Nickel

PROJECT 25-R-10 Local Street Renewal Program

PROJECT NO. 123317464

REPORT NO. 7

DATE SAMPLED: 2024.Dec.16
SAMPLED BY: Larry Presado

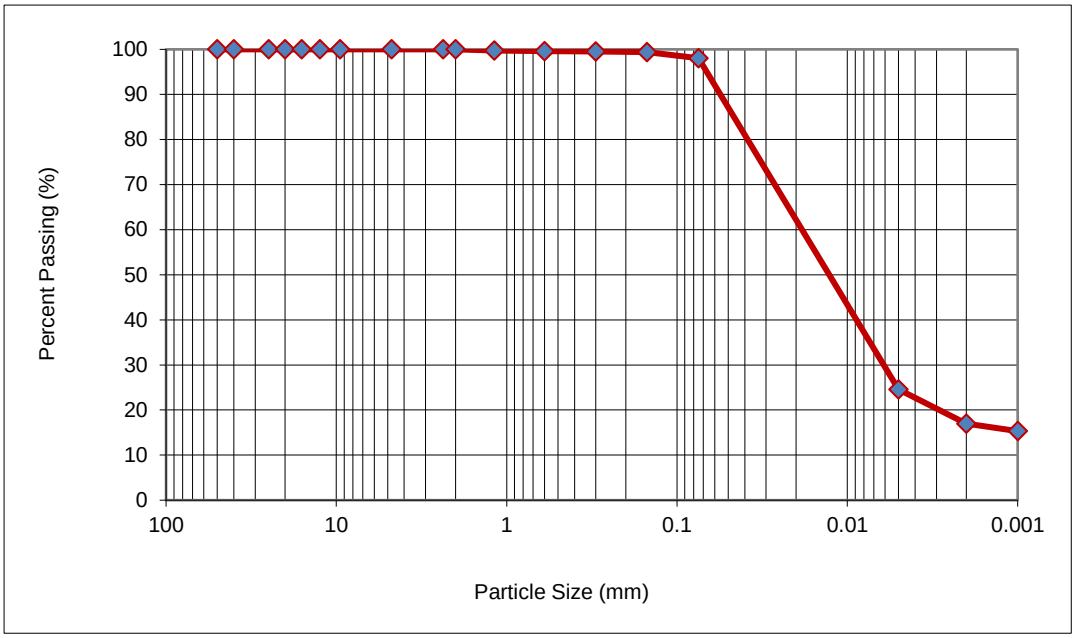
DATE RECEIVED: 2025.Dec.16
SUBMITTED BY: Guillaume Beauce

DATE TESTED: 2025.Jan.06
TESTED BY: Larry Presado

MATERIAL IDENTIFICATION

CLIENT FIELD ID BH-115, 1.2 m

STANTEC SAMPLE NO. 5510



Sieve Size (mm)	% Passing
50.0	100.0
40.0	100.0
25.0	100.0
20.0	100.0
16.0	100.0
12.5	100.0
9.5	100.0
4.75	100.0
2.36	100.0
2.00	100.0
1.18	99.7
0.600	99.6
0.300	99.5
0.150	99.4
0.075	98.1
0.005	24.6
0.002	17.0
0.001	15.3

Gravel	Sand			Silt	Clay	Colloids
	Coarse	Medium	Fine			
0.0	0.0	0.4	1.5	81.1	17.0	15.3

COMMENTS
No comments.

REPORT DATE 2025.Jan.09

REVIEWED BY Guillaume Beauce, P.Eng.
Geotechnical Engineer - Materials Testing Services

Stantec Consulting Ltd.
199 Henlow Bay, Winnipeg, MB R3Y 1G4
Tel: (204) 488-6999

ASTM D7928 - PARTICLE-SIZE DISTRIBUTION OF FINE-GRAINED SOILS USING THE SEDIMENTATION ANALYSIS

TO Dillon Consulting Ltd.
300 - 100 Innovation Dr.
Winnipeg, Manitoba
R3T 6G2

ATTN Trevor Nickel

PROJECT 25-R-10 Local Street Renewal Program

PROJECT NO. 123317464

REPORT NO. 8

DATE SAMPLED: 2024.Dec.16
SAMPLED BY: Larry Presado

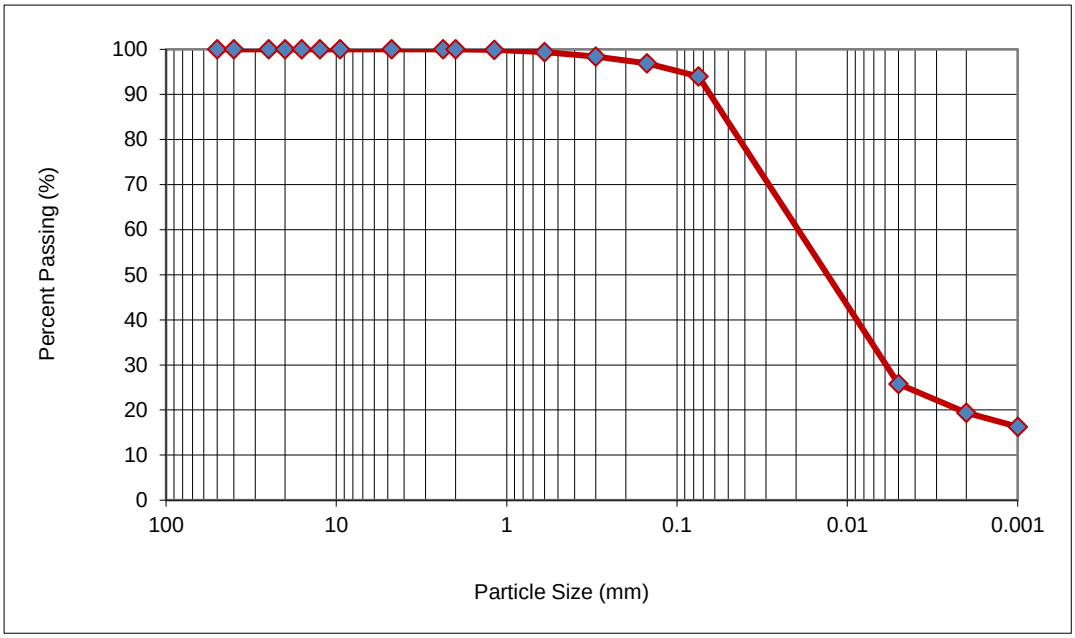
DATE RECEIVED: 2025.Dec.16
SUBMITTED BY: Guillaume Beauce

DATE TESTED: 2025.Jan.06
TESTED BY: Larry Presado

MATERIAL IDENTIFICATION

CLIENT FIELD ID BH-116, 1.2 m

STANTEC SAMPLE NO. 5511



Sieve Size (mm)	% Passing
50.0	100.0
40.0	100.0
25.0	100.0
20.0	100.0
16.0	100.0
12.5	100.0
9.5	100.0
4.75	100.0
2.36	100.0
2.00	100.0
1.18	99.9
0.600	99.4
0.300	98.4
0.150	96.9
0.075	94.0
0.005	25.8
0.002	19.4
0.001	16.3

Gravel	Sand			Silt	Clay	Colloids
	Coarse	Medium	Fine			
0.0	0.0	1.2	4.8	74.6	19.4	16.3

COMMENTS
No comments.

REPORT DATE 2025.Jan.09

REVIEWED BY Guillaume Beauce, P.Eng.
Geotechnical Engineer - Materials Testing Services

Stantec Consulting Ltd.
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Tel: (204) 488-6999

ASTM D7928 - PARTICLE-SIZE DISTRIBUTION OF FINE-GRAINED SOILS USING THE SEDIMENTATION ANALYSIS

TO Dillon Consulting Ltd.
300 - 100 Innovation Dr.
Winnipeg, Manitoba
R3T 6G2

ATTN Trevor Nickel

PROJECT 25-R-10 Local Street Renewal Program

PROJECT NO. 123317464

REPORT NO. 9

DATE SAMPLED: 2024.Dec.16
SAMPLED BY: Larry Presado

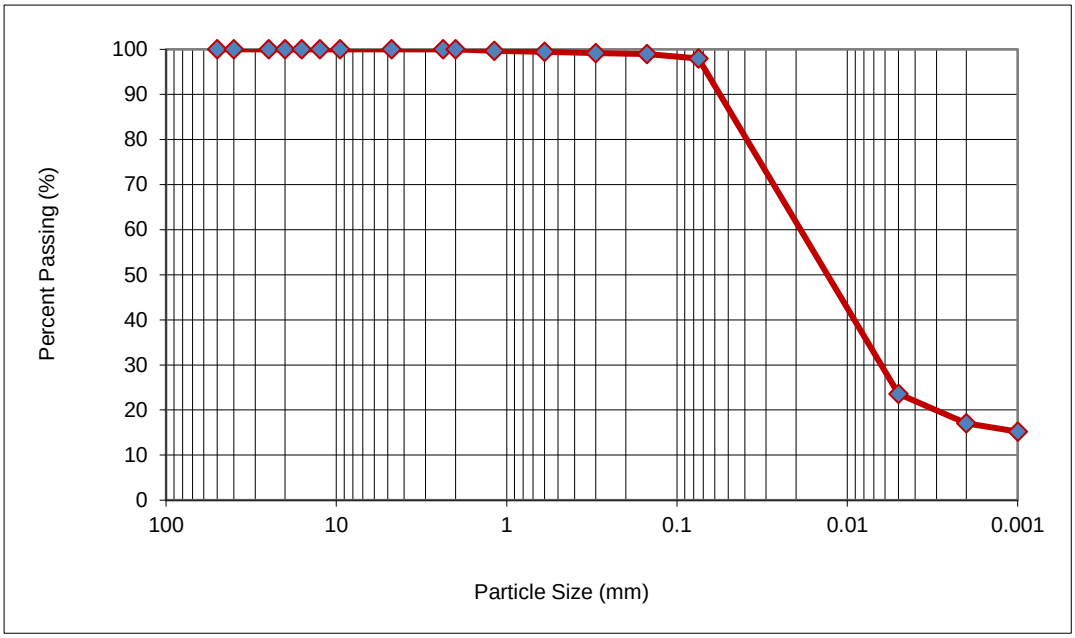
DATE RECEIVED: 2025.Dec.16
SUBMITTED BY: Guillaume Beauce

DATE TESTED: 2025.Jan.06
TESTED BY: Larry Presado

MATERIAL IDENTIFICATION

CLIENT FIELD ID BH-117, 1.2 m

STANTEC SAMPLE NO. 5512



Sieve Size (mm)	% Passing
50.0	100.0
40.0	100.0
25.0	100.0
20.0	100.0
16.0	100.0
12.5	100.0
9.5	100.0
4.75	100.0
2.36	100.0
2.00	100.0
1.18	99.7
0.600	99.5
0.300	99.2
0.150	98.9
0.075	98.0
0.005	23.6
0.002	17.1
0.001	15.2

Gravel	Sand			Silt	Clay	Colloids
	Coarse	Medium	Fine			
0.0	0.0	0.7	1.3	80.9	17.1	15.2

COMMENTS
No comments.

REPORT DATE 2025.Jan.09

REVIEWED BY Guillaume Beauce, P.Eng.
Geotechnical Engineer - Materials Testing Services

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Tel: (204) 488-6999

ASTM D7928 - PARTICLE-SIZE DISTRIBUTION OF FINE-GRAINED SOILS USING THE SEDIMENTATION ANALYSIS

TO Dillon Consulting Ltd.
300 - 100 Innovation Dr.
Winnipeg, Manitoba
R3T 6G2

ATTN Trevor Nickel

PROJECT 25-R-10 Local Street Renewal Program

PROJECT NO. 123317464

REPORT NO. 10

DATE SAMPLED: 2024.Dec.16
SAMPLED BY: Larry Presado

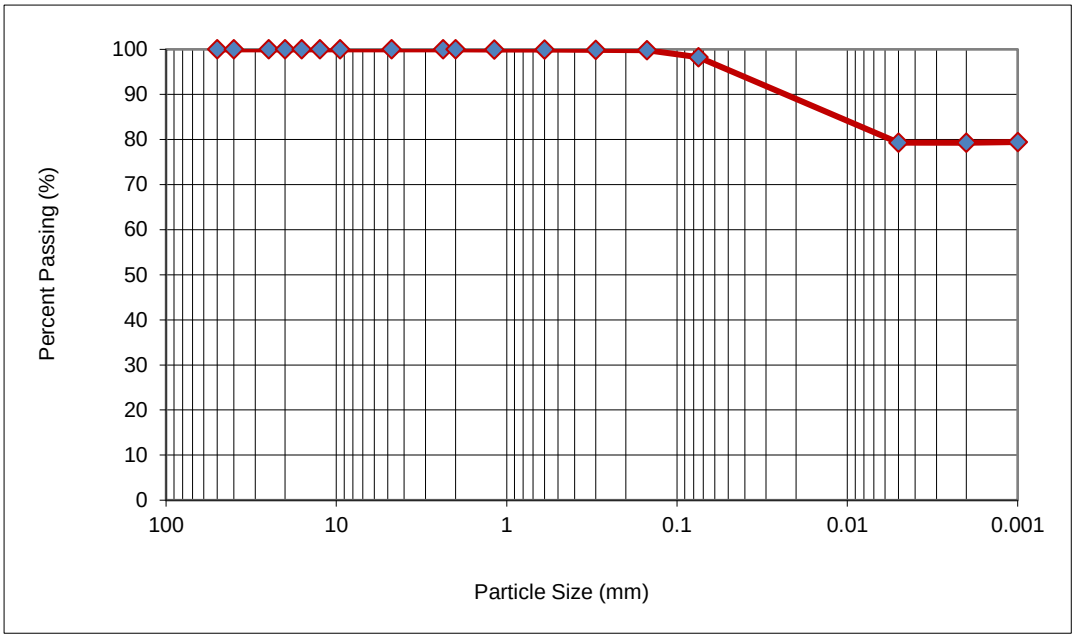
DATE RECEIVED: 2025.Dec.16
SUBMITTED BY: Guillaume Beauce

DATE TESTED: 2025.Jan.06
TESTED BY: Larry Presado

MATERIAL IDENTIFICATION

CLIENT FIELD ID BH-119, 1.2 m

STANTEC SAMPLE NO. 5513



Sieve Size (mm)	% Passing
50.0	100.0
40.0	100.0
25.0	100.0
20.0	100.0
16.0	100.0
12.5	100.0
9.5	100.0
4.75	100.0
2.36	100.0
2.00	100.0
1.18	100.0
0.600	100.0
0.300	99.9
0.150	99.8
0.075	98.3
0.005	79.3
0.002	79.3
0.001	79.4

Gravel	Sand			Silt	Clay	Colloids
	Coarse	Medium	Fine			
0.0	0.0	0.1	1.6	19.0	79.3	79.4

COMMENTS
No comments.

REPORT DATE 2025.Jan.09

REVIEWED BY Guillaume Beauce, P.Eng.
Geotechnical Engineer - Materials Testing Services

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CERTIFIED BY CCIL Canadian Council of Independent Laboratories For specific tests as listed on www.ccil.com

PROCTOR TEST REPORT

TO Dillon Consulting Ltd.
300 - 100 Innovation Dr.
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R3T 6A8

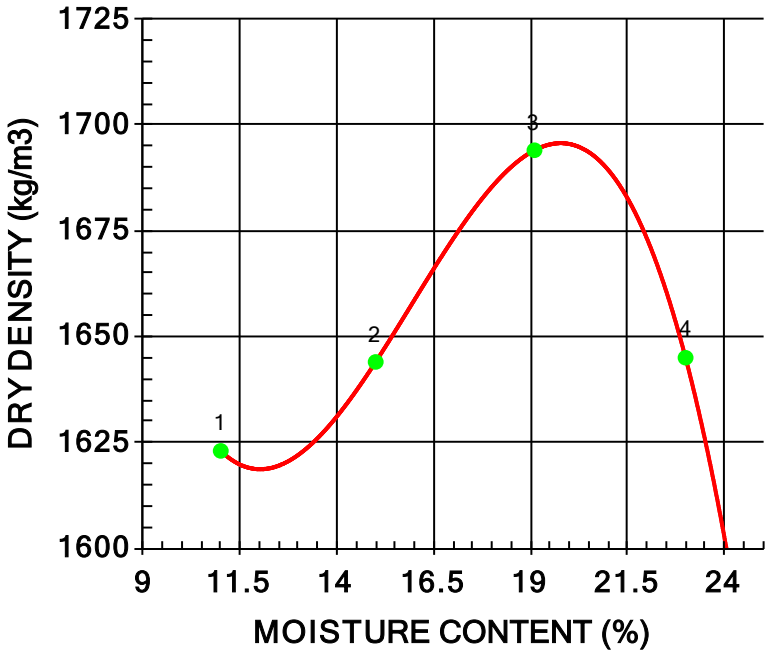
CLIENT Dillon Consulting Ltd.
C.C.

ATTN: Trevor Nickel

PROJECT 25-R-10 2025 Local Street Renewal Program

PROJECT NO. 123317464
PROCTOR NO. 1 DATE SAMPLED 2024.Dec.16 DATE RECEIVED 2024.Dec.16 DATE TESTED 2025.Jan.07

INSITU MOISTURE	26.7 %	COMPACTION STANDARD	Standard Proctor, ASTM D698
TESTED BY	Donald Eliazar		
MATERIAL IDENTIFICATION		COMPACTION PROCEDURE	A: 101.6mm Mold, Passing 4.75mm
MAJOR COMPONENT	Subgrade		
SIZE	Lean Clay (CL)	RAMMER TYPE	Manual
DESCRIPTION		PREPARATION	Moist
SUPPLIER	Existing Materials	OVERSIZE CORRECTION METHOD	None
SOURCE	BH-105. 1.2 m (Mollard Rd)	RETAINED 4.75mm SCREEN	N/A %



TRIAL NUMBER	WET DENSITY (kg/m³)	DRY DENSITY (kg/m³)	MOISTURE CONTENT (%)
1	1801	1623	11.0
2	1891	1644	15.0
3	2018	1694	19.1
4	2023	1645	23.0

	MAXIMUM DRY DENSITY (kg/m³)	OPTIMUM MOISTURE CONTENT (%)
CALCULATED	1700	20.0
OVERSIZE CORRECTED		

COMMENTS

Stantec Sample No. 5504.

 2025.Jan.10 Stantec Consulting Ltd. REVIEWED BY: Jason Thompson, C.E.T.

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PROCTOR TEST REPORT

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CLIENT Dillon Consulting Ltd.
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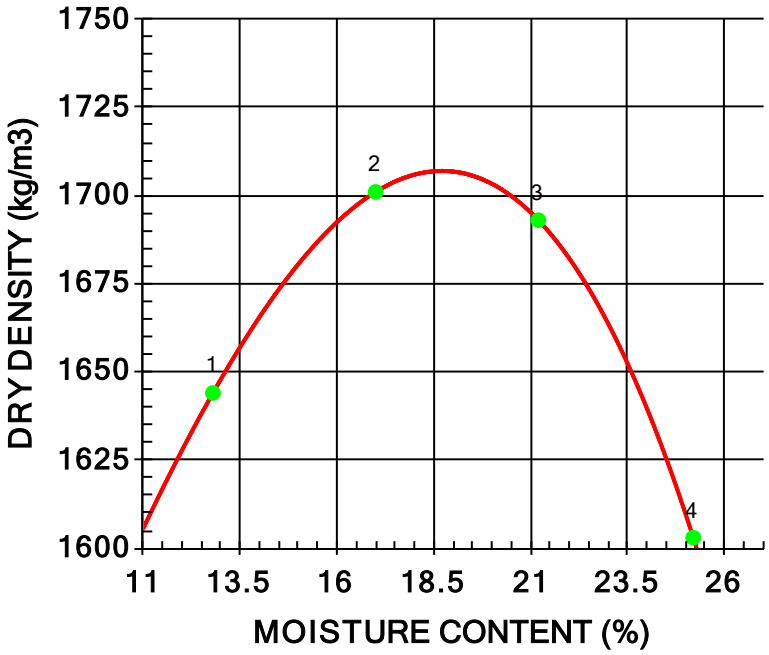
ATTN: Trevor Nickel

PROJECT 25-R-10 2025 Local Street Renewal Program

PROJECT NO. 123317464
PROCTOR NO. 2 DATE SAMPLED 2024.Dec.16 DATE RECEIVED 2024.Dec.16 DATE TESTED 2025.Jan.07

INSITU MOISTURE	27.2 %	COMPACTION STANDARD	Standard Proctor, ASTM D698
TESTED BY	Donald Eliazar		
MATERIAL IDENTIFICATION		COMPACTION PROCEDURE	A: 101.6mm Mold, Passing 4.75mm
MAJOR COMPONENT	Subgrade		
SIZE	Lean Clay (CL)	RAMMER TYPE	Manual
DESCRIPTION		PREPARATION	Moist
SUPPLIER	Existing Materials	OVERSIZE CORRECTION METHOD	None
SOURCE	BH-107, 1.2 m (Mollard Rd)	RETAINED 4.75mm SCREEN	N/A %



TRIAL NUMBER	WET DENSITY (kg/m³)	DRY DENSITY (kg/m³)	MOISTURE CONTENT (%)
1	1854	1644	12.8
2	1990	1701	17.0
3	2052	1693	21.2
4	2007	1603	25.2

	MAXIMUM DRY DENSITY (kg/m³)	OPTIMUM MOISTURE CONTENT (%)
CALCULATED	1710	19.0
OVERSIZE CORRECTED		

COMMENTS

Stantec Sample No. 5505.

Page 1 of 1 2025.Jan.10 Stantec Consulting Ltd. REVIEWED BY: Jason Thompson, C.E.T.

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PROCTOR TEST REPORT

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CLIENT Dillon Consulting Ltd.
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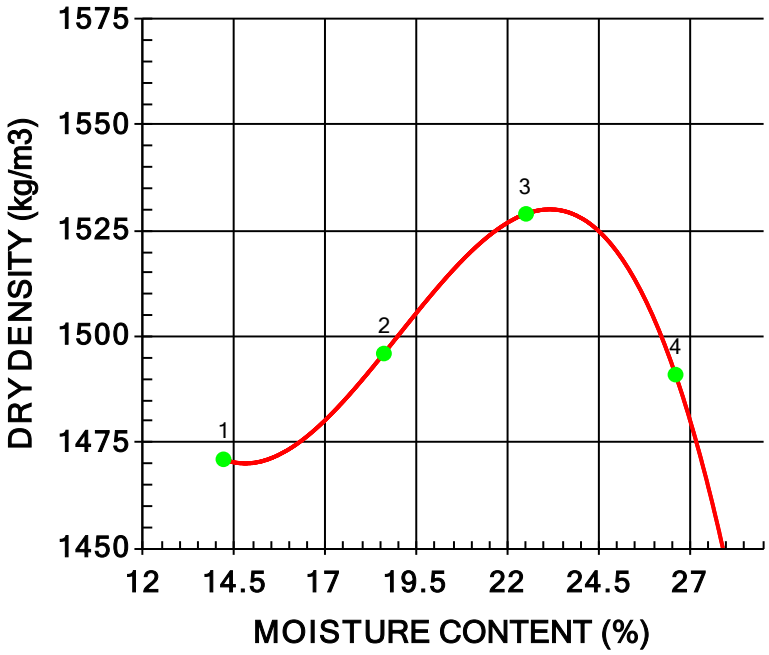
ATTN: Trevor Nickel

PROJECT 25-R-10 2025 Local Street Renewal Program

PROJECT NO. 123317464
PROCTOR NO. 3 DATE SAMPLED 2024.Dec.16 DATE RECEIVED 2024.Dec.16 DATE TESTED 2025.Jan.08

INSITU MOISTURE	34.6 %	COMPACTION STANDARD	Standard Proctor, ASTM D698
TESTED BY	Donald Eliazar		
MATERIAL IDENTIFICATION		COMPACTION PROCEDURE	A: 101.6mm Mold, Passing 4.75mm
MAJOR COMPONENT	Subgrade		
SIZE	Fat Clay (CH)	RAMMER TYPE	Manual
DESCRIPTION		PREPARATION	Moist
SUPPLIER	Existing Materials	OVERSIZE CORRECTION METHOD	None
SOURCE	BH-109, 1.2 m (Mollard Rd)	RETAINED 4.75mm SCREEN	N/A %



TRIAL NUMBER	WET DENSITY (kg/m³)	DRY DENSITY (kg/m³)	MOISTURE CONTENT (%)
1	1680	1471	14.2
2	1774	1496	18.6
3	1873	1529	22.5
4	1887	1491	26.6

	MAXIMUM DRY DENSITY (kg/m³)	OPTIMUM MOISTURE CONTENT (%)
CALCULATED	1530	23.0
OVERSIZE CORRECTED		

COMMENTS

Stantec Sample No. 5506.

 2025.Jan.10 Stantec Consulting Ltd. REVIEWED BY: Jason Thompson, C.E.T.

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PROCTOR TEST REPORT

TO Dillon Consulting Ltd.
300 - 100 Innovation Dr.
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R3T 6A8

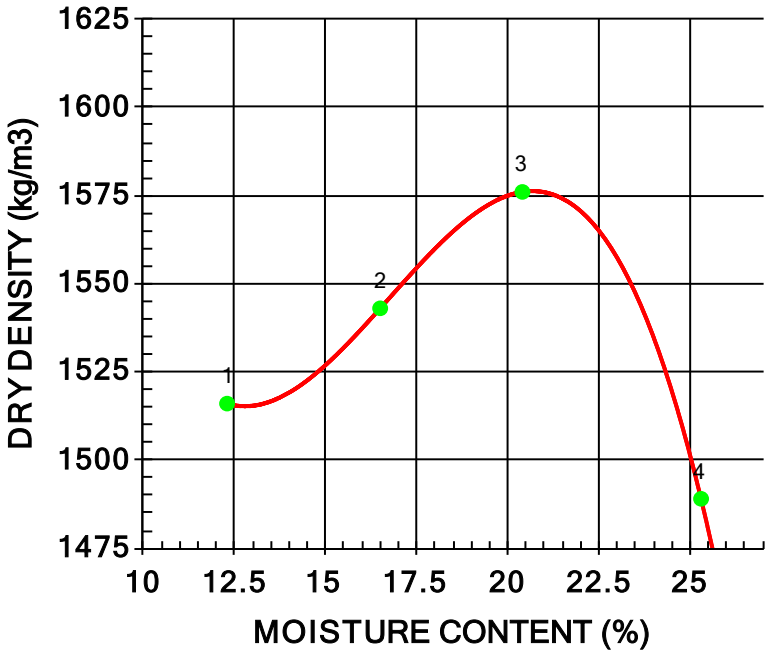
CLIENT Dillon Consulting Ltd.
C.C.

ATTN: Trevor Nickel

PROJECT 25-R-10 2025 Local Street Renewal Program

PROJECT NO. 123317464
PROCTOR NO. 4 DATE SAMPLED 2024.Dec.16 DATE RECEIVED 2024.Dec.16 DATE TESTED 2025.Jan.07

INSITU MOISTURE	32.3 %	COMPACTION STANDARD	Standard Proctor, ASTM D698
TESTED BY	Donald Eliazar		
MATERIAL IDENTIFICATION		COMPACTION PROCEDURE	A: 101.6mm Mold, Passing 4.75mm
MAJOR COMPONENT	Subgrade		
SIZE	Fat Clay (CH)	RAMMER TYPE	Manual
DESCRIPTION		PREPARATION	Moist
SUPPLIER	Existing Materials	OVERSIZE CORRECTION METHOD	None
SOURCE	BH-110, 1.2 m (Mollard Rd)	RETAINED 4.75mm SCREEN	N/A %



TRIAL NUMBER	WET DENSITY (kg/m³)	DRY DENSITY (kg/m³)	MOISTURE CONTENT (%)
1	1702	1516	12.3
2	1798	1543	16.5
3	1897	1576	20.4
4	1866	1489	25.3

	MAXIMUM DRY DENSITY (kg/m³)	OPTIMUM MOISTURE CONTENT (%)
CALCULATED	1580	20.5
OVERSIZE CORRECTED		

COMMENTS

Stantec Sample No. 5507.

 2025.Jan.10 Stantec Consulting Ltd. REVIEWED BY: Jason Thompson, C.E.T.

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PROCTOR TEST REPORT

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300 - 100 Innovation Dr.
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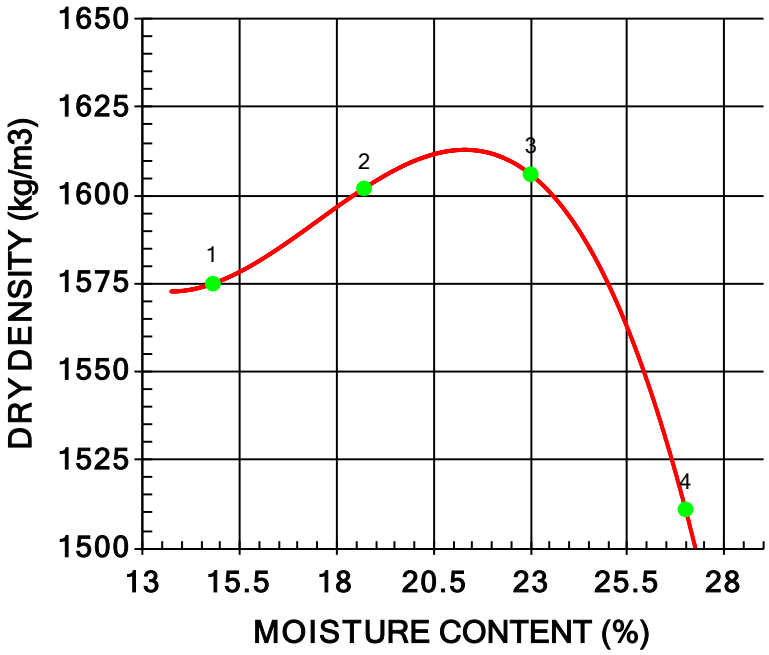
CLIENT Dillon Consulting Ltd.
C.C.

ATTN: Trevor Nickel

PROJECT 25-R-10 2025 Local Street Renewal Program

PROJECT NO. 123317464
PROCTOR NO. 5 DATE SAMPLED 2024.Dec.16 DATE RECEIVED 2024.Dec.16 DATE TESTED 2025.Jan.07

INSITU MOISTURE	22.4 %	COMPACTION STANDARD	Standard Proctor, ASTM D698
TESTED BY	Donald Eliazar		
MATERIAL IDENTIFICATION		COMPACTION PROCEDURE	A: 101.6mm Mold, Passing 4.75mm
MAJOR COMPONENT	Subgrade		
SIZE	Lean Clay (CL)	RAMMER TYPE	Manual
DESCRIPTION		PREPARATION	Moist
SUPPLIER	Existing Materials	OVERSIZE CORRECTION METHOD	None
SOURCE	BH-112, 1.2 m (Mollard Rd)	RETAINED 4.75mm SCREEN	N/A %



TRIAL NUMBER	WET DENSITY (kg/m³)	DRY DENSITY (kg/m³)	MOISTURE CONTENT (%)
1	1808	1575	14.8
2	1902	1602	18.7
3	1975	1606	23.0
4	1919	1511	27.0

	MAXIMUM DRY DENSITY (kg/m³)	OPTIMUM MOISTURE CONTENT (%)
CALCULATED	1610	21.5
OVERSIZE CORRECTED		

COMMENTS

Stantec Sample No. 5508.

Page 1 of 1 2025.Jan.10 Stantec Consulting Ltd. REVIEWED BY: Jason Thompson, C.E.T.

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CERTIFIED BY CCIL Canadian Council of Independent Laboratories For specific tests as listed on www.ccil.com

PROCTOR TEST REPORT

TO Dillon Consulting Ltd.
300 - 100 Innovation Dr.
Winnipeg, MB
R3T 6A8

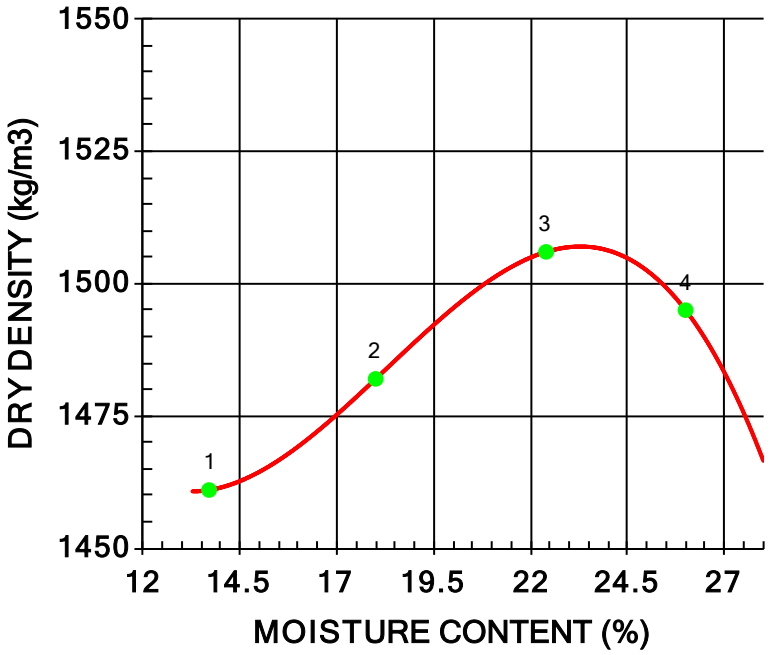
CLIENT Dillon Consulting Ltd.
C.C.

ATTN: Trevor Nickel

PROJECT 25-R-10 2025 Local Street Renewal Program

PROJECT NO. 123317464
PROCTOR NO. 6 DATE SAMPLED 2024.Dec.16 DATE RECEIVED 2024.Dec.16 DATE TESTED 2025.Jan.08

INSITU MOISTURE	23.9 %	COMPACTION STANDARD	Standard Proctor, ASTM D698
TESTED BY	Donald Eliazar		
MATERIAL IDENTIFICATION		COMPACTION PROCEDURE	A: 101.6mm Mold, Passing 4.75mm
MAJOR COMPONENT	Subgrade		
SIZE	Lean Clay (CL)	RAMMER TYPE	Manual
DESCRIPTION		PREPARATION	Moist
SUPPLIER	Existing Materials	OVERSIZE CORRECTION METHOD	None
SOURCE	BH-113, 1.2 m (Mollard Rd)	RETAINED 4.75mm SCREEN	N/A %



TRIAL NUMBER	WET DENSITY (kg/m³)	DRY DENSITY (kg/m³)	MOISTURE CONTENT (%)
1	1661	1461	13.7
2	1749	1482	18.0
3	1843	1506	22.4
4	1884	1495	26.0

	MAXIMUM DRY DENSITY (kg/m³)	OPTIMUM MOISTURE CONTENT (%)
CALCULATED	1510	23.5
OVERSIZE CORRECTED		

COMMENTS

Stantec Sample No. 5509.

Page 1 of 1 2025.Jan.10 Stantec Consulting Ltd. REVIEWED BY: Jason Thompson, C.E.T.

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PROCTOR TEST REPORT

TO Dillon Consulting Ltd.
300 - 100 Innovation Dr.
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R3T 6A8

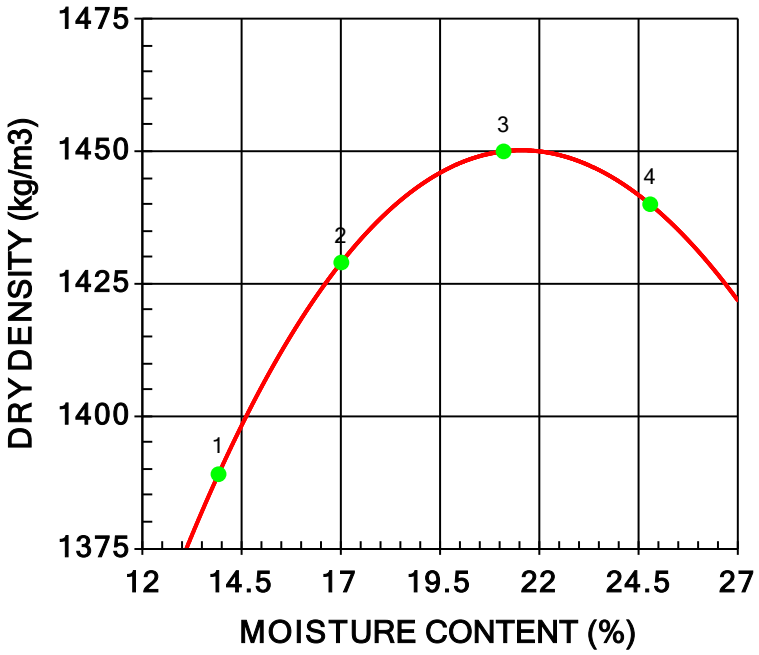
CLIENT Dillon Consulting Ltd.
C.C.

ATTN: Trevor Nickel

PROJECT 25-R-10 2025 Local Street Renewal Program

PROJECT NO. 123317464
PROCTOR NO. 7 DATE SAMPLED 2024.Dec.16 DATE RECEIVED 2024.Dec.16 DATE TESTED 2025.Jan.09

INSITU MOISTURE	24.6 %	COMPACTION STANDARD	Standard Proctor, ASTM D698
TESTED BY	Donald Eliazar		
MATERIAL IDENTIFICATION		COMPACTION PROCEDURE	A: 101.6mm Mold, Passing 4.75mm
MAJOR COMPONENT	Subgrade		
SIZE	Lean Clay (CL)	RAMMER TYPE	Manual
DESCRIPTION		PREPARATION	Moist
SUPPLIER	Existing Materials	OVERSIZE CORRECTION METHOD	None
SOURCE	BH-115, 1.2 m (Mollard Rd)	RETAINED 4.75mm SCREEN	N/A %



TRIAL NUMBER	WET DENSITY (kg/m³)	DRY DENSITY (kg/m³)	MOISTURE CONTENT (%)
1	1582	1389	13.9
2	1672	1429	17.0
3	1756	1450	21.1
4	1797	1440	24.8

	MAXIMUM DRY DENSITY (kg/m³)	OPTIMUM MOISTURE CONTENT (%)
CALCULATED	1450	21.5
OVERSIZE CORRECTED		

COMMENTS

Stantec Sample No. 5510.

Page 1 of 1 2025.Jan.10 Stantec Consulting Ltd. REVIEWED BY: Jason Thompson, C.E.T.

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CERTIFIED BY CCIL Canadian Council of Independent Laboratories For specific tests as listed on www.ccil.com

PROCTOR TEST REPORT

TO Dillon Consulting Ltd.
300 - 100 Innovation Dr.
Winnipeg, MB
R3T 6A8

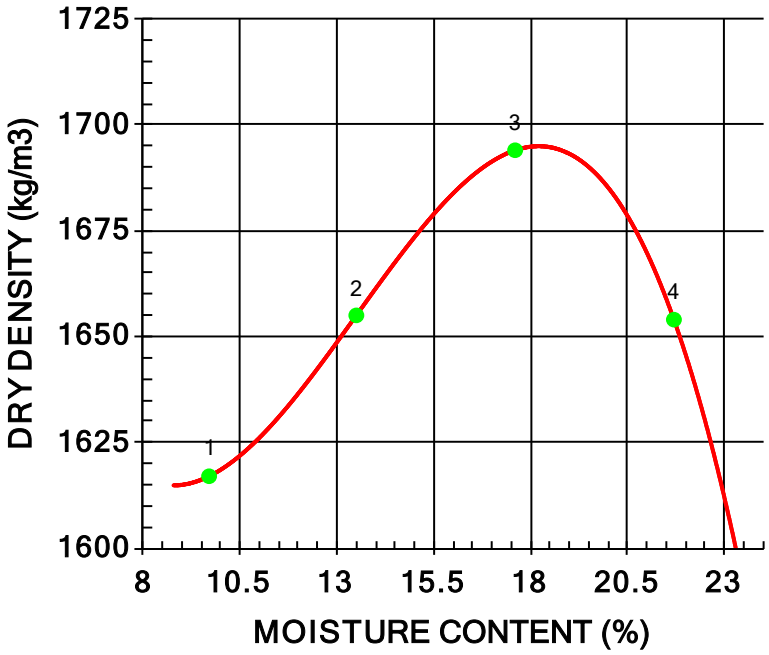
CLIENT Dillon Consulting Ltd.
C.C.

ATTN: Trevor Nickel

PROJECT 25-R-10 2025 Local Street Renewal Program

PROJECT NO. 123317464
PROCTOR NO. 8 DATE SAMPLED 2024.Dec.16 DATE RECEIVED 2024.Dec.16 DATE TESTED 2025.Jan.09

INSITU MOISTURE	24.6 %	COMPACTION STANDARD	Standard Proctor, ASTM D698
TESTED BY	Donald Eliazar		
MATERIAL IDENTIFICATION		COMPACTION PROCEDURE	A: 101.6mm Mold, Passing 4.75mm
MAJOR COMPONENT	Subgrade		
SIZE	Lean Clay (CL)	RAMMER TYPE	Manual
DESCRIPTION		PREPARATION	Moist
SUPPLIER	Existing Materials	OVERSIZE CORRECTION METHOD	None
SOURCE	BH-116, 1.2 m (Mollard Rd)	RETAINED 4.75mm SCREEN	N/A %



TRIAL NUMBER	WET DENSITY (kg/m³)	DRY DENSITY (kg/m³)	MOISTURE CONTENT (%)
1	1774	1617	9.7
2	1878	1655	13.5
3	1992	1694	17.6
4	2013	1654	21.7

	MAXIMUM DRY DENSITY (kg/m³)	OPTIMUM MOISTURE CONTENT (%)
CALCULATED	1700	18.0
OVERSIZE CORRECTED		

COMMENTS

Stantec Sample No. 5511.

 2025.Jan.10 Stantec Consulting Ltd. REVIEWED BY: Jason Thompson, C.E.T.

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PROCTOR TEST REPORT

TO Dillon Consulting Ltd.
300 - 100 Innovation Dr.
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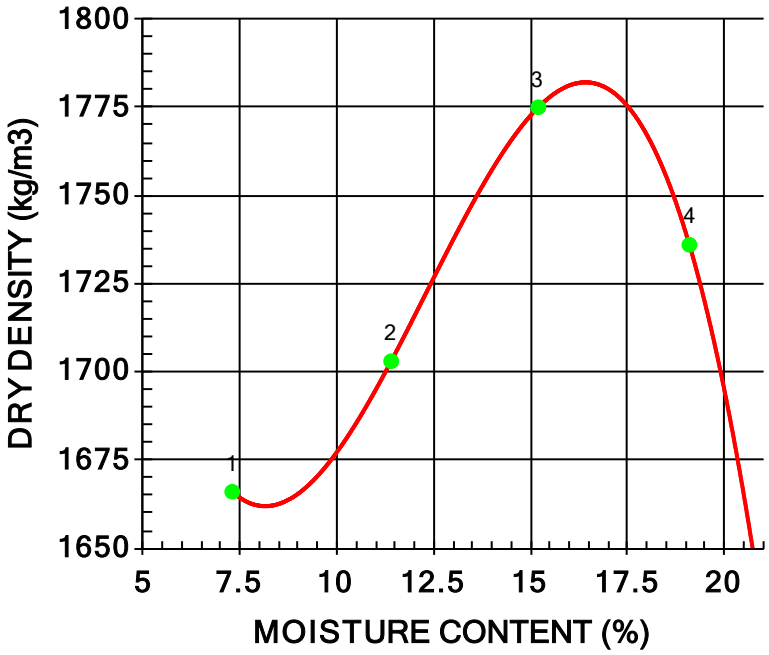
CLIENT Dillon Consulting Ltd.
C.C.

ATTN: Trevor Nickel

PROJECT 25-R-10 2025 Local Street Renewal Program

PROJECT NO. 123317464
PROCTOR NO. 9 DATE SAMPLED 2024.Dec.16 DATE RECEIVED 2024.Dec.16 DATE TESTED 2025.Jan.09

INSITU MOISTURE	24.2 %	COMPACTION STANDARD	Standard Proctor, ASTM D698
TESTED BY	Donald Eliazar		
MATERIAL IDENTIFICATION		COMPACTION PROCEDURE	A: 101.6mm Mold, Passing 4.75mm
MAJOR COMPONENT	Subgrade		
SIZE	Lean Clay (CL)	RAMMER TYPE	Manual
DESCRIPTION		PREPARATION	Moist
SUPPLIER	Existing Materials	OVERSIZE CORRECTION METHOD	None
SOURCE	BH-117, 1.2 m (Mollard Rd)	RETAINED 4.75mm SCREEN	N/A %



TRIAL NUMBER	WET DENSITY (kg/m³)	DRY DENSITY (kg/m³)	MOISTURE CONTENT (%)
1	1788	1666	7.3
2	1897	1703	11.4
3	2045	1775	15.2
4	2067	1736	19.1

	MAXIMUM DRY DENSITY (kg/m³)	OPTIMUM MOISTURE CONTENT (%)
CALCULATED	1780	16.5
OVERSIZE CORRECTED		

COMMENTS

Stantec Sample No. 5512.

 2025.Jan.10 Stantec Consulting Ltd. REVIEWED BY: Jason Thompson, C.E.T.

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PROCTOR TEST REPORT

TO Dillon Consulting Ltd.
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CLIENT Dillon Consulting Ltd.
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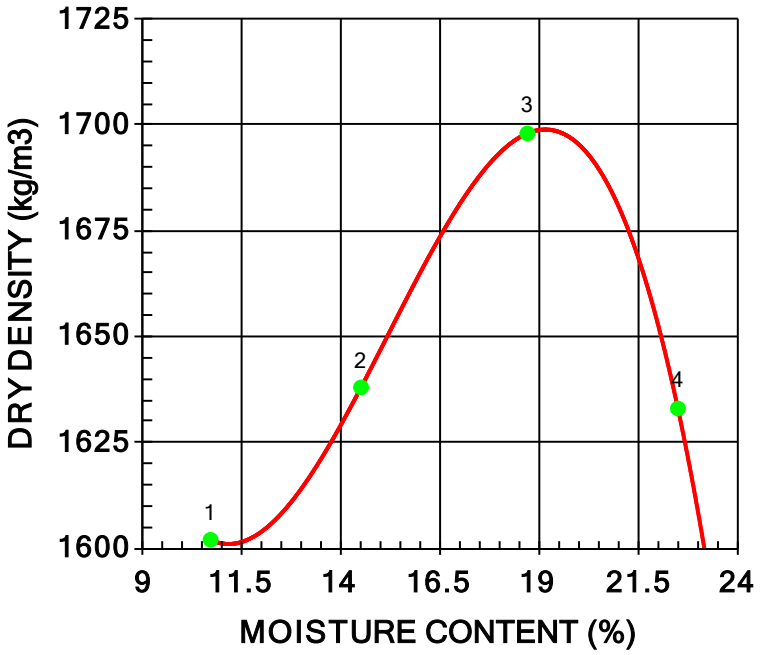
ATTN: Trevor Nickel

PROJECT 25-R-10 2025 Local Street Renewal Program

PROJECT NO. 123317464
PROCTOR NO. 10 DATE SAMPLED 2024.Dec.16 DATE RECEIVED 2024.Dec.16 DATE TESTED 2025.Jan.09

INSITU MOISTURE	24.6 %	COMPACTION STANDARD	Standard Proctor, ASTM D698
TESTED BY	Donald Eliazar		
MATERIAL IDENTIFICATION		COMPACTION PROCEDURE	A: 101.6mm Mold, Passing 4.75mm
MAJOR COMPONENT	Subgrade		
SIZE	Lean Clay (CL)	RAMMER TYPE	Manual
DESCRIPTION		PREPARATION	Moist
SUPPLIER	Existing Materials	OVERSIZE CORRECTION METHOD	None
SOURCE	BH-119, 1.2 m (Mollard Rd)	RETAINED 4.75mm SCREEN	N/A %



TRIAL NUMBER	WET DENSITY (kg/m³)	DRY DENSITY (kg/m³)	MOISTURE CONTENT (%)
1	1773	1602	10.7
2	1876	1638	14.5
3	2015	1698	18.7
4	2001	1633	22.5

	MAXIMUM DRY DENSITY (kg/m³)	OPTIMUM MOISTURE CONTENT (%)
CALCULATED	1700	19.0
OVERSIZE CORRECTED		

COMMENTS

Stantec Sample No. 5513.

 2025.Jan.10 Stantec Consulting Ltd. REVIEWED BY: Jason Thompson, C.E.T.

Stantec Consulting Ltd.
199 Henlow Bay, Winnipeg, MB R3Y 1G4
Tel: (204) 488-6999

ASTM D1883 - CALIFORNIA BEARING RATIO (CBR) OF LABORATORY-COMPACTED SOILS

TO Dillon Consulting Ltd.
300 - 100 Innovation Drive
Winnipeg, Manitoba
R3T 6A8

ATTN Trevor Nickel

PROJECT 25-R-10 2025 Local Street Renewal Program

PROJECT NO. 123317464

REPORT NO. 1

DATE SAMPLED: 2025.Dec.16
SAMPLED BY: Stantec Consulting Ltd.

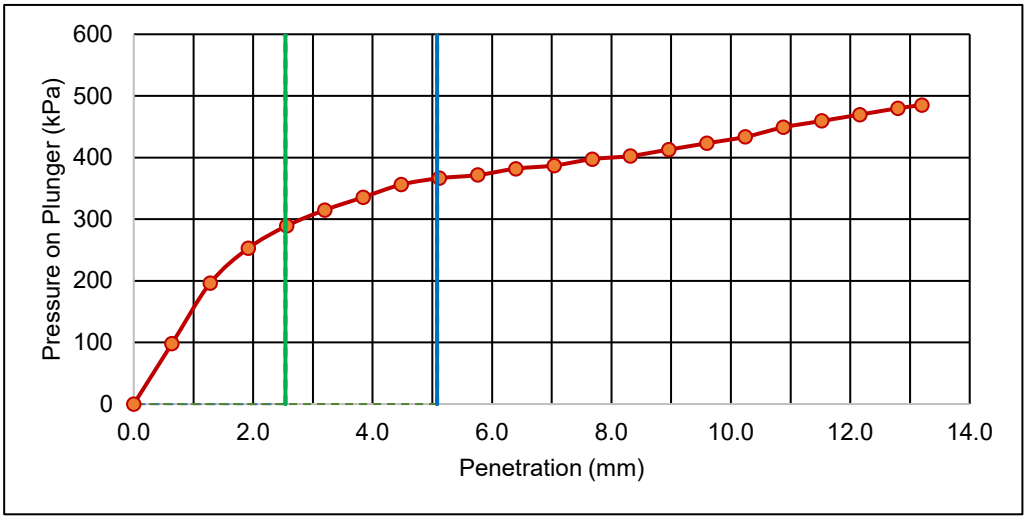
DATE RECEIVED: 2025.Dec.16
SUBMITTED BY: Stantec Consulting Ltd.

DATE TESTED: 2025.Jan.09
TESTED BY: Donald Eliazar

MATERIAL IDENTIFICATION

MATERIAL USE	Subgrade	SUPPLIER	Existing Material
MAX. NOMINAL SIZE	< 4.75 mm	SOURCE	Mollard Road
MATERIAL TYPE	Lean Clay (CL)	SAMPLE LOCATION	BH-105, 1.2 m
SPECIFICATION ID	Not Applicable	STANTEC SAMPLE NO.	5504

IMMERSION PERIOD	96 ± 2 hr	TARGET MAX. DRY DENSITY	1700 kg/m^3
CONDITION OF SAMPLE	Soaked	TARGET OPTIMUM MOISTURE	20.0 %
SURCHARGE MASS	4.54 kg		
+19 mm OVERSIZE	0 %	AS-COMPACTED DRY DENSITY	1616 kg/m^3
SWELL OF SAMPLE	1.90 %	AS-COMPACTED MOISTURE	20.0 %
POST-TEST MOISTURE	22.9 %	AS-COMPACTED % COMPACTION	95 %



CBR VALUE AT 2.54 mm PENETRATION
4.2

CBR VALUE AT 5.08 mm PENETRATION
3.7

COMMENTS
Sample prepared to 95% of the maximum dry density at the optimum moisture content as determined from ASTM D698.

REPORT DATE 2025.Jan.14

REVIEWED BY Guillaume Beauce, P.Eng.
Geotechnical Engineer - Materials Testing Services

Stantec Consulting Ltd.
199 Henlow Bay, Winnipeg, MB R3Y 1G4
Tel: (204) 488-6999

ASTM D1883 - CALIFORNIA BEARING RATIO (CBR) OF LABORATORY-COMPACTED SOILS

TO Dillon Consulting Ltd.
300 - 100 Innovation Drive
Winnipeg, Manitoba
R3T 6A8

ATTN Trevor Nickel

PROJECT 25-R-10 2025 Local Street Renewal Program

PROJECT NO. 123317464

REPORT NO. 2

DATE SAMPLED: 2025.Dec.16
SAMPLED BY: Stantec Consulting Ltd.

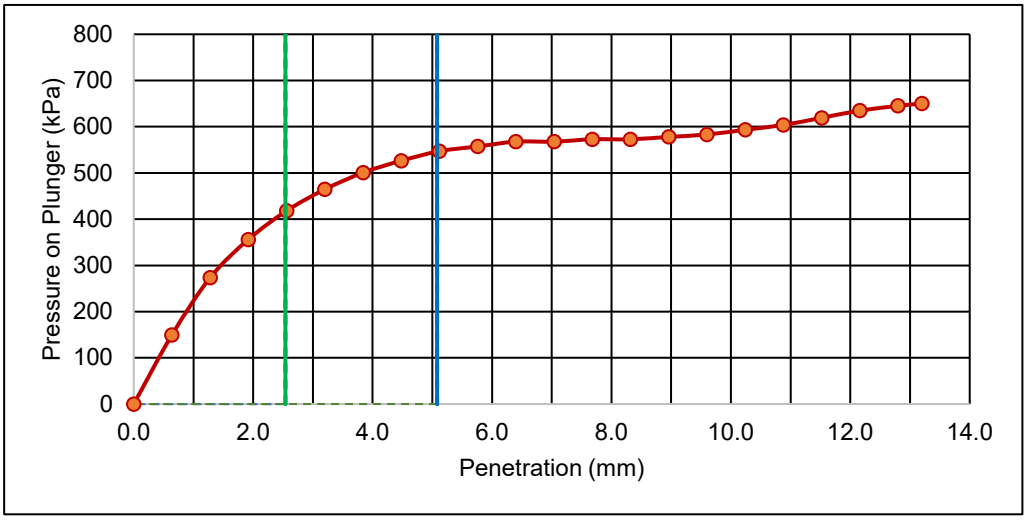
DATE RECEIVED: 2025.Dec.16
SUBMITTED BY: Stantec Consulting Ltd.

DATE TESTED: 2025.Jan.09
TESTED BY: Donald Eliazar

MATERIAL IDENTIFICATION

MATERIAL USE	Subgrade	SUPPLIER	Existing Material
MAX. NOMINAL SIZE	< 4.75 mm	SOURCE	Mollard Road
MATERIAL TYPE	Lean Clay (CL)	SAMPLE LOCATION	BH-107, 1.2 m
SPECIFICATION ID	Not Applicable	STANTEC SAMPLE NO.	5505

IMMERSION PERIOD	96 ± 2 hr	TARGET MAX. DRY DENSITY	1710 kg/m^3
CONDITION OF SAMPLE	Soaked	TARGET OPTIMUM MOISTURE	19.0 %
SURCHARGE MASS	4.54 kg		
+19 mm OVERSIZE	0 %	AS-COMPACTED DRY DENSITY	1625 kg/m^3
SWELL OF SAMPLE	1.34 %	AS-COMPACTED MOISTURE	18.9 %
POST-TEST MOISTURE	24.1 %	AS-COMPACTED % COMPACTION	95 %



CBR VALUE AT 2.54 mm PENETRATION
6.0

CBR VALUE AT 5.08 mm PENETRATION
5.5

COMMENTS
Sample prepared to 95% of the maximum dry density at the optimum moisture content as determined from ASTM D698.

REPORT DATE 2025.Jan.14

REVIEWED BY Guillaume Beauce, P.Eng.
Geotechnical Engineer - Materials Testing Services

Stantec Consulting Ltd.
199 Henlow Bay, Winnipeg, MB R3Y 1G4
Tel: (204) 488-6999

ASTM D1883 - CALIFORNIA BEARING RATIO (CBR) OF LABORATORY-COMPACTED SOILS

TO Dillon Consulting Ltd.
300 - 100 Innovation Drive
Winnipeg, Manitoba
R3T 6A8

ATTN Trevor Nickel

PROJECT 25-R-10 2025 Local Street Renewal Program

PROJECT NO. 123317464

REPORT NO. 3

DATE SAMPLED: 2025.Dec.16
SAMPLED BY: Stantec Consulting Ltd.

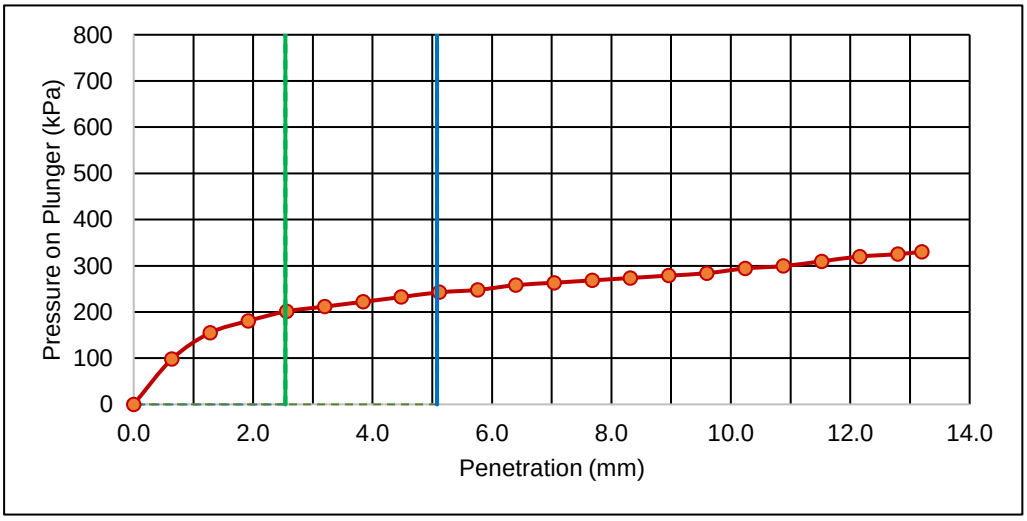
DATE RECEIVED: 2025.Dec.16
SUBMITTED BY: Stantec Consulting Ltd.

DATE TESTED: 2025.Jan.10
TESTED BY: Donald Eliazar

MATERIAL IDENTIFICATION

MATERIAL USE	Subgrade	SUPPLIER	Existing Material
MAX. NOMINAL SIZE	< 4.75 mm	SOURCE	Mollard Road
MATERIAL TYPE	Fat Clay (CH)	SAMPLE LOCATION	BH-109, 1.2 m
SPECIFICATION ID	Not Applicable	STANTEC SAMPLE NO.	5506

IMMERSION PERIOD	96 ± 2 hr	TARGET MAX. DRY DENSITY	1530 kg/m^3
CONDITION OF SAMPLE	Soaked	TARGET OPTIMUM MOISTURE	23.0 %
SURCHARGE MASS	4.54 kg		
+19 mm OVERSIZE	0 %	AS-COMPACTED DRY DENSITY	1454 kg/m^3
SWELL OF SAMPLE	4.26 %	AS-COMPACTED MOISTURE	23.0 %
POST-TEST MOISTURE	33.3 %	AS-COMPACTED % COMPACTION	95 %



CBR VALUE AT 2.54 mm PENETRATION
2.9

CBR VALUE AT 5.08 mm PENETRATION
2.4

COMMENTS
Sample prepared to 95% of the maximum dry density at the optimum moisture content as determined from ASTM D698.

REPORT DATE 2025.Jan.15

REVIEWED BY Guillaume Beauce, P.Eng.
Geotechnical Engineer - Materials Testing Services

Stantec Consulting Ltd.
199 Henlow Bay, Winnipeg, MB R3Y 1G4
Tel: (204) 488-6999

ASTM D1883 - CALIFORNIA BEARING RATIO (CBR) OF LABORATORY-COMPACTED SOILS

TO Dillon Consulting Ltd.
300 - 100 Innovation Drive
Winnipeg, Manitoba
R3T 6A8

ATTN Trevor Nickel

PROJECT 25-R-10 2025 Local Street Renewal Program

PROJECT NO. 123317464

REPORT NO. 4

DATE SAMPLED: 2025.Dec.16
SAMPLED BY: Stantec Consulting Ltd.

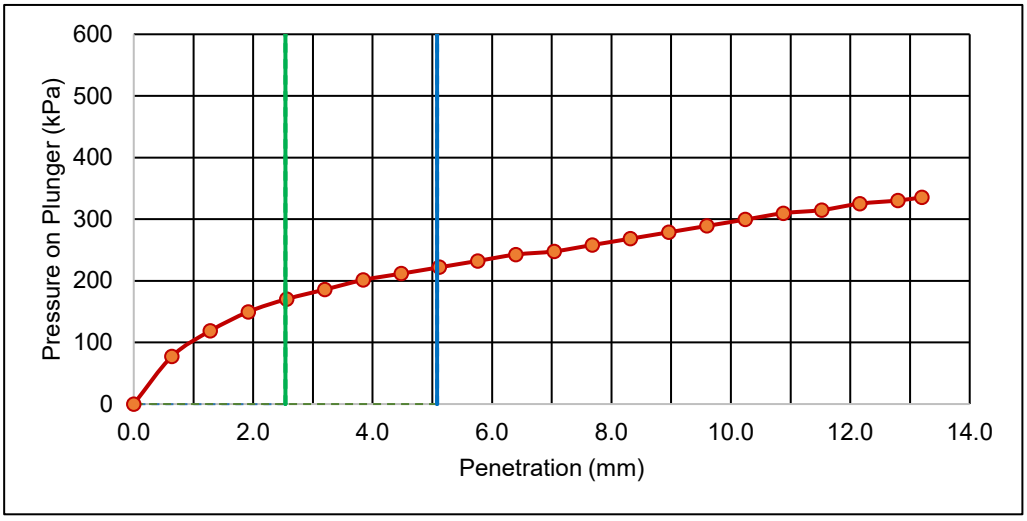
DATE RECEIVED: 2025.Dec.16
SUBMITTED BY: Stantec Consulting Ltd.

DATE TESTED: 2025.Jan.09
TESTED BY: Donald Eliazar

MATERIAL IDENTIFICATION

MATERIAL USE	Subgrade	SUPPLIER	Existing Material
MAX. NOMINAL SIZE	< 4.75 mm	SOURCE	Mollard Road
MATERIAL TYPE	Fat Clay (CH)	SAMPLE LOCATION	BH-110, 1.2 m
SPECIFICATION ID	Not Applicable	STANTEC SAMPLE NO.	5507

IMMERSION PERIOD	96 ± 2 hr	TARGET MAX. DRY DENSITY	1580 kg/m^3
CONDITION OF SAMPLE	Soaked	TARGET OPTIMUM MOISTURE	20.5 %
SURCHARGE MASS	4.54 kg		
+19 mm OVERSIZE	0 %	AS-COMPACTED DRY DENSITY	1503 kg/m^3
SWELL OF SAMPLE	3.39 %	AS-COMPACTED MOISTURE	20.3 %
POST-TEST MOISTURE	33.3 %	AS-COMPACTED % COMPACTION	95 %



CBR VALUE AT 2.54 mm PENETRATION
2.5

CBR VALUE AT 5.08 mm PENETRATION
2.2

COMMENTS
Sample prepared to 95% of the maximum dry density at the optimum moisture content as determined from ASTM D698.

REPORT DATE 2025.Jan.14

REVIEWED BY Guillaume Beauce, P.Eng.
Geotechnical Engineer - Materials Testing Services

Stantec Consulting Ltd.
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Tel: (204) 488-6999

ASTM D1883 - CALIFORNIA BEARING RATIO (CBR) OF LABORATORY-COMPACTED SOILS

TO Dillon Consulting Ltd.
300 - 100 Innovation Drive
Winnipeg, Manitoba
R3T 6A8

ATTN Trevor Nickel

PROJECT 25-R-10 2025 Local Street Renewal Program

PROJECT NO. 123317464

REPORT NO. 5

DATE SAMPLED: 2025.Dec.16
SAMPLED BY: Stantec Consulting Ltd.

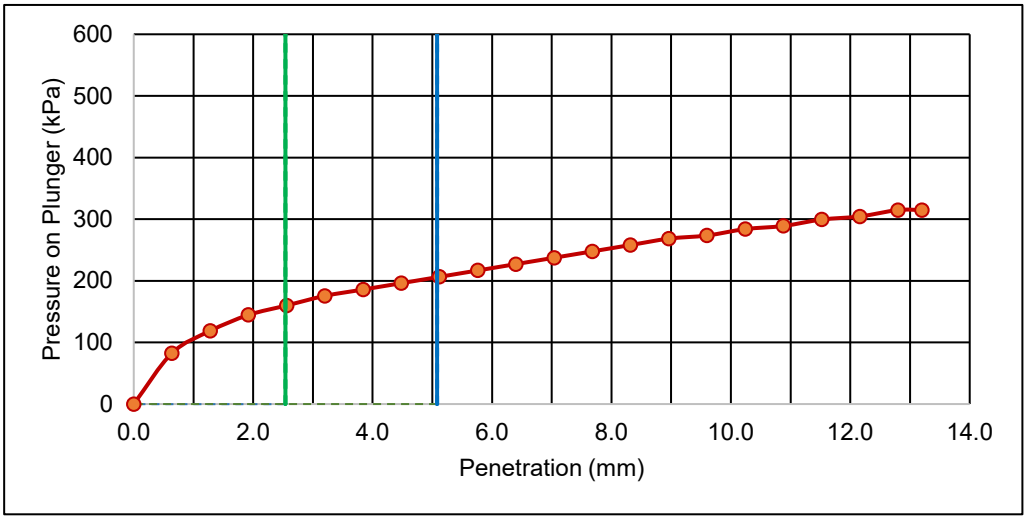
DATE RECEIVED: 2025.Dec.16
SUBMITTED BY: Stantec Consulting Ltd.

DATE TESTED: 2025.Jan.09
TESTED BY: Donald Eliazar

MATERIAL IDENTIFICATION

MATERIAL USE	Subgrade	SUPPLIER	Existing Material
MAX. NOMINAL SIZE	< 4.75 mm	SOURCE	Mollard Road
MATERIAL TYPE	Lean Clay (CL)	SAMPLE LOCATION	BH-112, 1.2 m
SPECIFICATION ID	Not Applicable	STANTEC SAMPLE NO.	5508

IMMERSION PERIOD	96 ± 2 hr	TARGET MAX. DRY DENSITY	1610 kg/m^3
CONDITION OF SAMPLE	Soaked	TARGET OPTIMUM MOISTURE	21.5 %
SURCHARGE MASS	4.54 kg		
+19 mm OVERSIZE	0 %	AS-COMPACTED DRY DENSITY	1530 kg/m^3
SWELL OF SAMPLE	2.54 %	AS-COMPACTED MOISTURE	21.4 %
POST-TEST MOISTURE	32.6 %	AS-COMPACTED % COMPACTION	95 %



CBR VALUE AT 2.54 mm PENETRATION
2.3

CBR VALUE AT 5.08 mm PENETRATION
2.1

COMMENTS
Sample prepared to 95% of the maximum dry density at the optimum moisture content as determined from ASTM D698.

REPORT DATE 2025.Jan.14

REVIEWED BY Guillaume Beauce, P.Eng.
Geotechnical Engineer - Materials Testing Services

Stantec Consulting Ltd.
199 Henlow Bay, Winnipeg, MB R3Y 1G4
Tel: (204) 488-6999

ASTM D1883 - CALIFORNIA BEARING RATIO (CBR) OF LABORATORY-COMPACTED SOILS

TO Dillon Consulting Ltd.
300 - 100 Innovation Drive
Winnipeg, Manitoba
R3T 6A8

ATTN Trevor Nickel

PROJECT 25-R-10 2025 Local Street Renewal Program

PROJECT NO. 123317464

REPORT NO. 6

DATE SAMPLED: 2025.Dec.16
SAMPLED BY: Stantec Consulting Ltd.

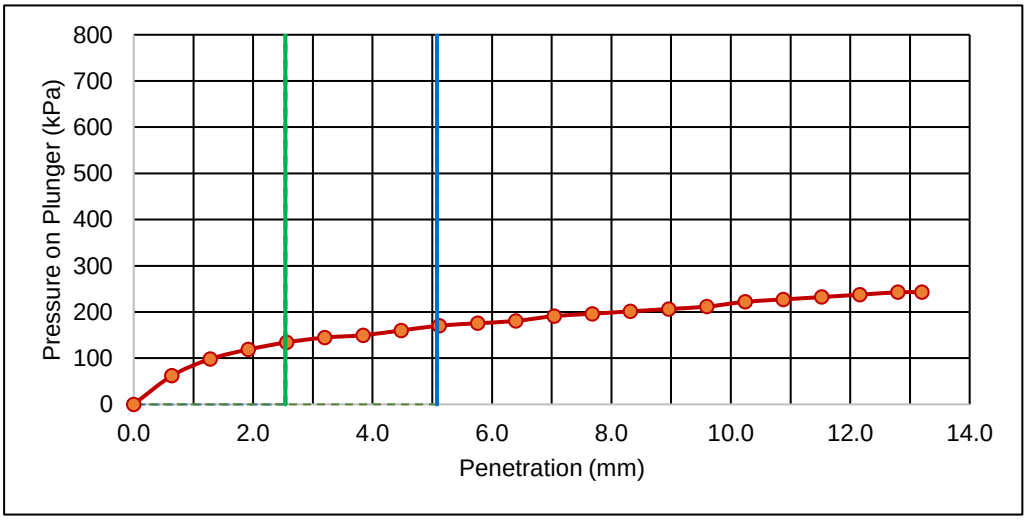
DATE RECEIVED: 2025.Dec.16
SUBMITTED BY: Stantec Consulting Ltd.

DATE TESTED: 2025.Jan.10
TESTED BY: Donald Eliazar

MATERIAL IDENTIFICATION

MATERIAL USE	Subgrade	SUPPLIER	Existing Material
MAX. NOMINAL SIZE	< 4.75 mm	SOURCE	Mollard Road
MATERIAL TYPE	Lean Clay (CL)	SAMPLE LOCATION	BH-113, 1.2 m
SPECIFICATION ID	Not Applicable	STANTEC SAMPLE NO.	5509

IMMERSION PERIOD	96 ± 2 hr	TARGET MAX. DRY DENSITY	1510 kg/m^3
CONDITION OF SAMPLE	Soaked	TARGET OPTIMUM MOISTURE	23.5 %
SURCHARGE MASS	4.54 kg		
+19 mm OVERSIZE	0 %	AS-COMPACTED DRY DENSITY	1436 kg/m^3
SWELL OF SAMPLE	4.07 %	AS-COMPACTED MOISTURE	23.4 %
POST-TEST MOISTURE	35.4 %	AS-COMPACTED % COMPACTION	95 %



CBR VALUE AT 2.54 mm PENETRATION
1.9

CBR VALUE AT 5.08 mm PENETRATION
1.7

COMMENTS
Sample prepared to 95% of the maximum dry density at the optimum moisture content as determined from ASTM D698.

REPORT DATE 2025.Jan.15

REVIEWED BY Guillaume Beauce, P.Eng.
Geotechnical Engineer - Materials Testing Services

Stantec Consulting Ltd.
199 Henlow Bay, Winnipeg, MB R3Y 1G4
Tel: (204) 488-6999

ASTM D1883 - CALIFORNIA BEARING RATIO (CBR) OF LABORATORY-COMPACTED SOILS

TO Dillon Consulting Ltd.
300 - 100 Innovation Drive
Winnipeg, Manitoba
R3T 6A8

ATTN Trevor Nickel

PROJECT 25-R-10 2025 Local Street Renewal Program

PROJECT NO. 123317464

REPORT NO. 7

DATE SAMPLED: 2025.Dec.16
SAMPLED BY: Stantec Consulting Ltd.

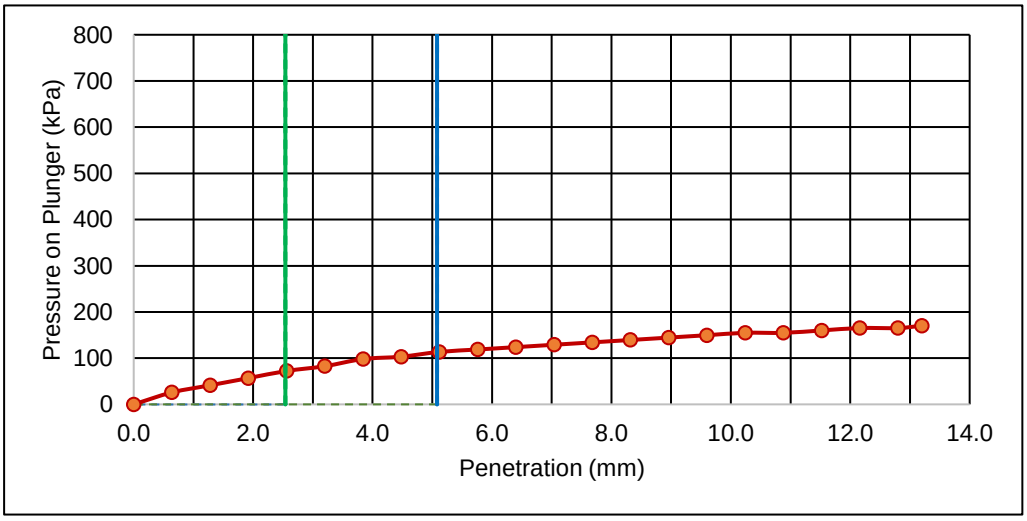
DATE RECEIVED: 2025.Dec.16
SUBMITTED BY: Stantec Consulting Ltd.

DATE TESTED: 2025.Jan.10
TESTED BY: Donald Eliazar

MATERIAL IDENTIFICATION

MATERIAL USE	Subgrade	SUPPLIER	Existing Material
MAX. NOMINAL SIZE	< 4.75 mm	SOURCE	Mollard Road
MATERIAL TYPE	Lean Clay (CL)	SAMPLE LOCATION	BH-115, 1.2 m
SPECIFICATION ID	Not Applicable	STANTEC SAMPLE NO.	5510

IMMERSION PERIOD	96 ± 2 hr	TARGET MAX. DRY DENSITY	1450 kg/m^3
CONDITION OF SAMPLE	Soaked	TARGET OPTIMUM MOISTURE	21.5 %
SURCHARGE MASS	4.54 kg		
+19 mm OVERSIZE	0 %	AS-COMPACTED DRY DENSITY	1376 kg/m^3
SWELL OF SAMPLE	8.09 %	AS-COMPACTED MOISTURE	21.6 %
POST-TEST MOISTURE	38.1 %	AS-COMPACTED % COMPACTION	95 %



CBR VALUE AT 2.54 mm PENETRATION
1.0

CBR VALUE AT 5.08 mm PENETRATION
1.1

COMMENTS
Sample prepared to 95% of the maximum dry density at the optimum moisture content as determined from ASTM D698.

REPORT DATE 2025.Jan.15

REVIEWED BY Guillaume Beauce, P.Eng.
Geotechnical Engineer - Materials Testing Services

Stantec Consulting Ltd.
199 Henlow Bay, Winnipeg, MB R3Y 1G4
Tel: (204) 488-6999

ASTM D1883 - CALIFORNIA BEARING RATIO (CBR) OF LABORATORY-COMPACTED SOILS

TO Dillon Consulting Ltd.
300 - 100 Innovation Drive
Winnipeg, Manitoba
R3T 6A8

ATTN Trevor Nickel

PROJECT 25-R-10 2025 Local Street Renewal Program

PROJECT NO. 123317464

REPORT NO. 8

DATE SAMPLED: 2025.Dec.16
SAMPLED BY: Stantec Consulting Ltd.

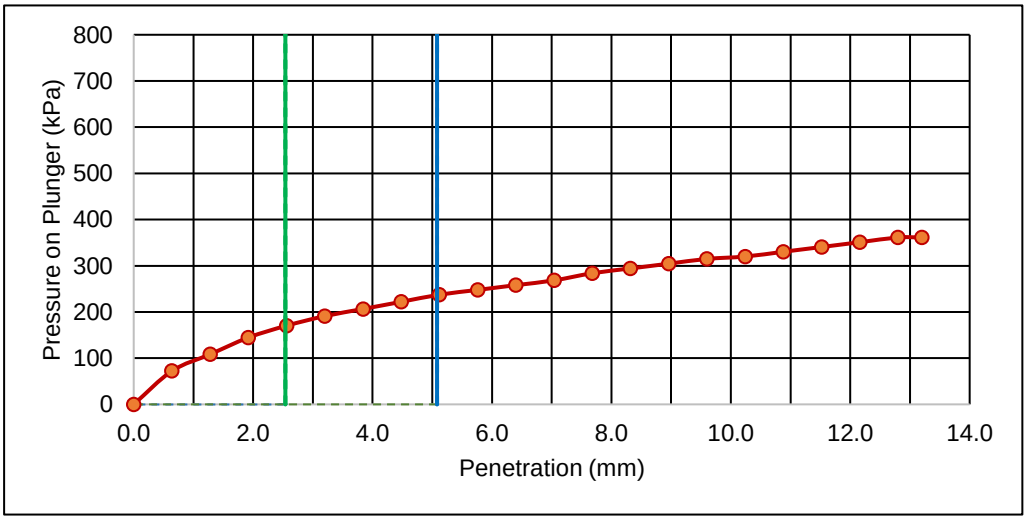
DATE RECEIVED: 2025.Dec.16
SUBMITTED BY: Stantec Consulting Ltd.

DATE TESTED: 2025.Jan.13
TESTED BY: Donald Eliazar

MATERIAL IDENTIFICATION

MATERIAL USE	Subgrade	SUPPLIER	Existing Material
MAX. NOMINAL SIZE	< 4.75 mm	SOURCE	Mollard Road
MATERIAL TYPE	Lean Clay (CL)	SAMPLE LOCATION	BH-116, 1.2 m
SPECIFICATION ID	Not Applicable	STANTEC SAMPLE NO.	5511

IMMERSION PERIOD	96 ± 2 hr	TARGET MAX. DRY DENSITY	1700 kg/m^3
CONDITION OF SAMPLE	Soaked	TARGET OPTIMUM MOISTURE	18.0 %
SURCHARGE MASS	4.54 kg		
+19 mm OVERSIZE	0 %	AS-COMPACTED DRY DENSITY	1618 kg/m^3
SWELL OF SAMPLE	3.00 %	AS-COMPACTED MOISTURE	17.9 %
POST-TEST MOISTURE	29.8 %	AS-COMPACTED % COMPACTION	95 %



CBR VALUE AT 2.54 mm PENETRATION
2.5

CBR VALUE AT 5.08 mm PENETRATION
2.4

COMMENTS
Sample prepared to 95% of the maximum dry density at the optimum moisture content as determined from ASTM D698.

REPORT DATE 2025.Jan.20

REVIEWED BY Guillaume Beauce, P.Eng.
Geotechnical Engineer - Materials Testing Services

Stantec Consulting Ltd.
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Tel: (204) 488-6999

ASTM D1883 - CALIFORNIA BEARING RATIO (CBR) OF LABORATORY-COMPACTED SOILS

TO Dillon Consulting Ltd.
300 - 100 Innovation Drive
Winnipeg, Manitoba
R3T 6A8

ATTN Trevor Nickel

PROJECT 25-R-10 2025 Local Street Renewal Program

PROJECT NO. 123317464

REPORT NO. 9

DATE SAMPLED: 2025.Dec.16
SAMPLED BY: Stantec Consulting Ltd.

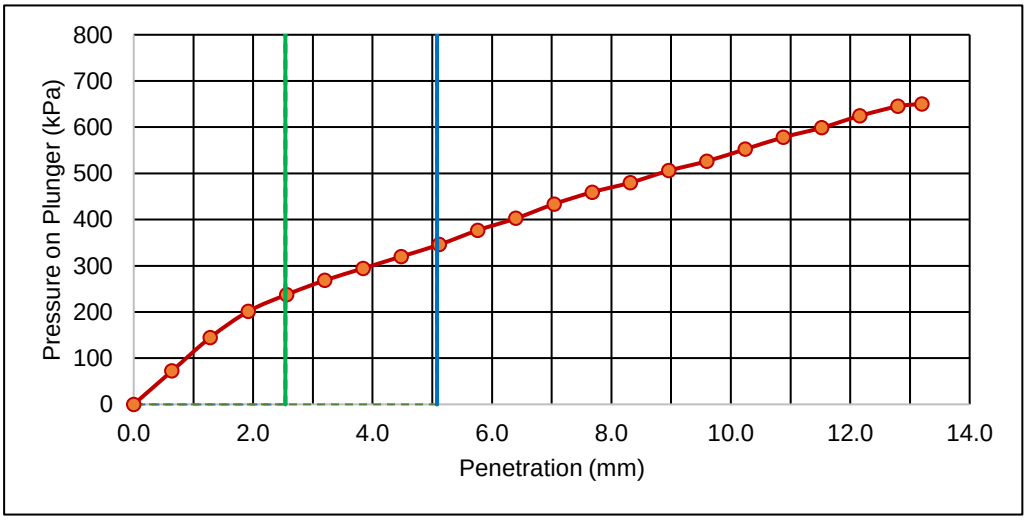
DATE RECEIVED: 2025.Dec.16
SUBMITTED BY: Stantec Consulting Ltd.

DATE TESTED: 2025.Jan.13
TESTED BY: Donald Eliazar

MATERIAL IDENTIFICATION

MATERIAL USE	Subgrade	SUPPLIER	Existing Material
MAX. NOMINAL SIZE	< 4.75 mm	SOURCE	Mollard Road
MATERIAL TYPE	Lean Clay (CL)	SAMPLE LOCATION	BH-117, 1.2 m
SPECIFICATION ID	Not Applicable	STANTEC SAMPLE NO.	5512

IMMERSION PERIOD	96 ± 2 hr	TARGET MAX. DRY DENSITY	1780 kg/m^3
CONDITION OF SAMPLE	Soaked	TARGET OPTIMUM MOISTURE	16.5 %
SURCHARGE MASS	4.54 kg		
+19 mm OVERSIZE	0 %	AS-COMPACTED DRY DENSITY	1695 kg/m^3
SWELL OF SAMPLE	1.42 %	AS-COMPACTED MOISTURE	16.3 %
POST-TEST MOISTURE	26.2 %	AS-COMPACTED % COMPACTION	95 %



CBR VALUE AT 2.54 mm PENETRATION
3.4

CBR VALUE AT 5.08 mm PENETRATION
3.4

COMMENTS
Sample prepared to 95% of the maximum dry density at the optimum moisture content as determined from ASTM D698.

REPORT DATE 2025.Jan.20

REVIEWED BY Guillaume Beauce, P.Eng.
Geotechnical Engineer - Materials Testing Services

Stantec Consulting Ltd.
199 Henlow Bay, Winnipeg, MB R3Y 1G4
Tel: (204) 488-6999

ASTM D1883 - CALIFORNIA BEARING RATIO (CBR) OF LABORATORY-COMPACTED SOILS

TO Dillon Consulting Ltd.
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Winnipeg, Manitoba
R3T 6A8

ATTN Trevor Nickel

PROJECT 25-R-10 2025 Local Street Renewal Program

PROJECT NO. 123317464

REPORT NO. 10

DATE SAMPLED: 2025.Dec.16
SAMPLED BY: Stantec Consulting Ltd.

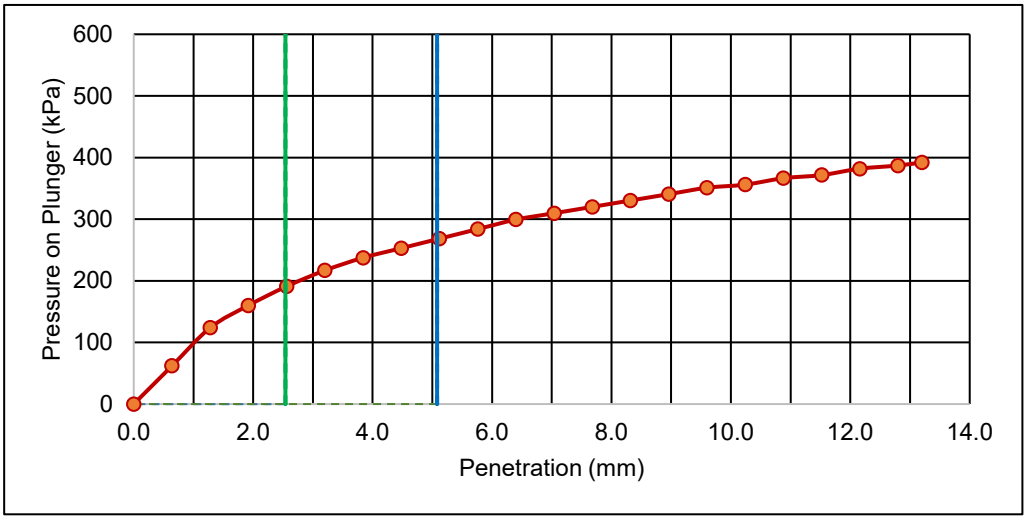
DATE RECEIVED: 2025.Dec.16
SUBMITTED BY: Stantec Consulting Ltd.

DATE TESTED: 2025.Jan.09
TESTED BY: Donald Eliazar

MATERIAL IDENTIFICATION

MATERIAL USE	Subgrade	SUPPLIER	Existing Material
MAX. NOMINAL SIZE	< 4.75 mm	SOURCE	Mollard Road
MATERIAL TYPE	Lean Clay (CL)	SAMPLE LOCATION	BH-119, 1.2 m
SPECIFICATION ID	Not Applicable	STANTEC SAMPLE NO.	5513

IMMERSION PERIOD	96 ± 2 hr	TARGET MAX. DRY DENSITY	1700 kg/m^3
CONDITION OF SAMPLE	Soaked	TARGET OPTIMUM MOISTURE	19.0 %
SURCHARGE MASS	4.54 kg		
+19 mm OVERSIZE	0 %	AS-COMPACTED DRY DENSITY	1616 kg/m^3
SWELL OF SAMPLE	2.05 %	AS-COMPACTED MOISTURE	19.0 %
POST-TEST MOISTURE	28.1 %	AS-COMPACTED % COMPACTION	95 %



CBR VALUE AT 2.54 mm PENETRATION
2.8

CBR VALUE AT 5.08 mm PENETRATION
2.7

COMMENTS
Sample prepared to 95% of the maximum dry density at the optimum moisture content as determined from ASTM D698.

REPORT DATE 2025.Jan.14

REVIEWED BY Guillaume Beauce, P.Eng.
Geotechnical Engineer - Materials Testing Services