GEOPACIFIC
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Sunshine Coast Regional District
1975 Field Road
Sechelt, BC
V7Z 0A8

August 26, 2025
File: 25022
R0

Attention: Stephen Misiurak

Re: Geotechnical Investigation Report – Water Main Replacement
Reed Rd (Henry Rd to Payne Rd), Sunshine Coast Regional District, BC

1.0 INTRODUCTION

We understand that a water main replacement is proposed along Reed Road between Henry Road and Payne Road. We understand that open trench-cut construction methods will be utilized. Based on the civil drawings provided by Sunshine Coast Regional District – Infrastructure Department dated June 6th, 2025, the work generally consists of installation of 300 mm diameter ductile iron pipe at a depth of approximately 1.5 m below existing road grades. The water main replacement is shown to extend eastward from Henry Road along Reed Road and terminates east of Payne Road, in the vicinity of the Reed Road Pump Station.

This report presents a summary of our sub-surface investigation, expected soil conditions, general discussions, and geotechnical recommendations for the construction of the proposed utility works described above. This report has been prepared exclusively for our client and their design and development team. We understand that it will also be provided to the Sunshine Coast Regional District for use of in the development and permitting process, but it remains the property of GeoPacific Consultants Ltd.

2.0 SITE DESCRIPTION

The projected site works will be on Reed Road from Henry Road, to east of Payne Road and is bounded by residential properties to the north and the south. The water main works are shown to extend eastward from Henry Road along Reed Road where it terminates east of Payne Road.

The location of the water main replacement and surrounding improvements is shown on our Drawing No. 25022-01, following the text of this report.

3.0 FIELD INVESTIGATION

3.1 Test Hole Investigation

GeoPacific conducted a drill-based investigation on July 30th, 2025, to review the subsurface soils and groundwater conditions. The investigation was conducted using a truck mounted auger drill rig supplied and operated by Blue Max Drilling of Surrey, BC. Five test holes was advanced to 3 m below current site grades within the existing roadway of Reed Road. Test holes were supplemented with a Dynamic Cone Penetration Test (DCPT) soundings to estimate the relative density of the subsurface soils.

The drill locations were scanned and cleared for underground utilities using the subcontracted services of Municon West Coast prior to drilling. The site was supervised by a member of our geotechnical team who logged the observed soil and groundwater conditions, and obtained samples of select soils strata during drilling. Upon completion, all test holes were backfilled and sealed upon completion of testing and logging in accordance with provincial abandonment requirements.

Test hole locations are shown on the attached drawing 25022-01 following the text of his report. The detailed test hole logs are presented in Appendix A.

4.0 RESULTS

4.1 Subsurface Conditions

According to Bulletin 65, Figure 1, the BC Ministry of Mines and Petroleum Resources describes the surficial geology of the area as being composed of Capilano Sediments including fluvial deltaic, fan, and channel deposits comprised of cobbles, gravel, sand and silt.

A general summary description of the subsurface materials encountered in our field investigation is provided below.

ASPHALT

Asphalt thicknesses at our test hole locations were observed to be approximately 75 mm, increasing to approximately 100 mm at the eastern most test hole (TH25-05).

SAND to SAND and GRAVEL (FILL)

The asphalt surface is underlain by sand to sand and gravel fill. At all test hole locations, the stratum extends up to depths of approximately 0.7 m below current site grades. The sediments are compact to very dense, fine to coarse grained, dry, grey to brown.

ORGANIC SILT, TRACE SAND and GRAVEL

Organic silt was present at TH25-02 and TH25-04 extending approximately 0.6 m to 2.0 m below the sand to sand and gravel. The organic silt is brown, consisting of trace fine sand, gravel and woody debris. The woody debris decreased with depth.

SILTY SAND, GRAVELLY

Till-like sediments were observed at all test hole locations, extending to approximately 2.4 m to 3.0 m depth underlying the sand to sand and gravel. The material was observed to be moist, brown to grey consisting of coarse to fine silty sand, and containing varying sizes of gravel and trace silt.

4.2 Groundwater Conditions

The static groundwater was not encountered during our investigation and is expected to be below proposed utility depths. However, perched groundwater may be encountered in the surficial fills overlying the less permeable material. Seepage into excavations, if encountered, is likely to be relatively light and may be controlled using conventional sumps and sump pumps.

5.0 DISCUSSION

Based on the civil drawings provided by Sunshine Coast Regional District, the water main will be installed to depths of approximately 1.5 m. Our test holes indicate the presence of soft to firm organic silt at test holes TH25-02 and TH25-04, extending to depths of 2.0 m below site grades. The organic silt stratum was not encountered at test holes TH25-01, TH25-03 and TH25-05, suggesting the noted organic silt may be localized to locations TH25-02 and TH25-04. At TH25-05, the silty sand and gravel stratum was observed to be loose according DCPT blow counts at the proposed pipe depth.

At this time, a detailed road assessment of Reed Road has not been undertaken by GeoPacific. We understand that the Sunshine Coast Regional District intends to complete a mill and overlay along all lanes of Reed Road as full road re-construction may not meet current budget considerations. However, a pavement design has been requested by the District for future considerations.

The silt has a moisture content of 44.1% and an organic content of 10.9% based on laboratory testing, indicating the silt is moderately compressible. As these soils are anticipated to be localized, we expect they will be removed/over excavated during construction. Furthermore, settlement may occur if the remaining native soils are left in place and settlements associated with the gradual and ongoing decay of the organic material over time are unavoidable.

6.0 PAVEMENT DESIGN METHODLOGY

6.1 Methodology

The pavement design was completed in general accordance with the BC Ministry of Transportation and Transit's *Standard Specifications for Highway Construction Feb. 1, 2025,* AASHTO's *Guide for Design of Pavement Structures (1993),* and the BC Ministry of Transportation and Infrastructure's *Pavement Structure Design Guidelines Jan. 26, 2015.* The following sections outline the parameters used and the resulting pavement structure thicknesses for the above noted roadways.

6.2 Traffic Analysis

Table 1 below outlines the traffic volume parameters that were used in our design and the resulting Design Equivalency Single Axle Load (ESAL) values used to determine the pavement structure thickness. Annual Average Daily Traffic (AADT) was provided by the BC Ministry of Transportation and Infrastructure, Daily Volume from September, 2016. The table below corresponds to Pavement Structure Type B – Medium to High Volume Roads, in accordance with Table 1 of MOTT's Pavement Structure Design Guidelines, Technical Circular T-01/15

Table 1 – Traffic Volume Parameters

City Road Classification:	Medium to High Volume Road
AADT:	7046
Heavy Trucks (%):	5
Standard Vehicles (%):	95
Lane Distribution Factor:	1
Design Period (years):	20
Growth Factor (%):	2
Design ESALs ($\times 10^6$)	2.35

6.3 Road Design Parameters

The following design parameters were utilized for the determination of the structural number in the flexible pave equation outlined in AASHTO's Guide for *Design Pavement Structures (1993)*, supplemented with recommendations in the BC Ministry of Transportation and Infrastructure's *Pavement Structure Design Guidelines Jan. 26, 2015.*

Table 2 - Road Design Parameters

Reliability, R (%):	85
Initial Design Serviceability, p_0:	4.2
Design Terminal Serviceability, p_t:	2.5
Standard Deviation, S_0:	0.45
Resilient Modules, M_R (MPa):	54.3

A structural number (SN) of 2.50 was determined using the AASHTO flexible pavement equation shown below:

$$\log_{10}(W_{18}) = Z_R \times S_o + 9.36 \times \log_{10}(SN+1) - 0.20 + \frac{\log_{10}\left(\frac{\Delta PSI}{4.2-1.5}\right)}{0.40 + \frac{1094}{(SN+1)^{5.19}}} + 2.32 \times \log_{10}(M_R) - 8.07$$

Subgrade strength was evaluated based on the DCPT data collected during our offsite investigation. Blow counts within the upper 2 m were generally at least 9 blows/300 mm. Using the DCPT to CBR correlation by Humboldt ($CBR = 292/DCP^{1.12}$) where the DCP index is the penetration ratio in millimeter per blow, and the CBR to resilient modulus correlation recommended by AASHTO ($M_R = 17.6CBR^{0.64}$), a CBR value of 5.8 and, subsequently, a resilient modulus value of 54.3 MPa was used in our pavement design.

7.0 RECOMMENDATIONS

7.1 Site Stripping

Prior to any new construction/utility works, all vegetation, topsoil, organic material, debris and loose or otherwise deleterious material must be removed from the constructure areas to expose a subgrade of compact sand to sand and gravel or dense silty sand and gravel.

Any grade reinstatement can be completed using "engineered fill". For the context of this report, engineered fill is defined as clean sand or sand and gravel containing less than 5% by weight of particles less than 75 µm diameter (silts and clays), placed in loose lifts no greater than 300 mm thick and compacted to 100% SPDD (ASTM D698) at a moisture content that is within 2% of optimum for compaction.

GeoPacific should be contacted to review stripping of the exposed subgrade before placement of any pavement structure fill material.

7.2 Mill & Overlay

We understand that a 35 mm mill/overlay has been proposed by the District along the subject section of Reed Road. The asphalt was observed to be ranging in thickness from 75 mm to 100 mm and, therefore, we consider the mill/overlay thickness acceptable. The underlying asphalt is to be inspected for any cracks that extend into the underlying asphalt base course, prior to completing the overlay. Any cracking that extends full-depth through the remaining asphalt is to be removed and re-paved prior to the overlay. Repair work is to extend a minimum of 150 mm around the perimeter of the cracking. As mentioned above in Section 5, GeoPacific has not completed a full roadway assessment of this section of Reed Road.

7.3 Backfill Materials and Compaction

Road base shall consist of MOTT 25 mm minus WGB (Well-Graded Base), free from any organics, foreign matter, or deleterious substances. The gravel shall be durable, uniform in quality, and capable of withstanding the deleterious effects of exposure to water, freeze/thaw and design traffic loading. The aggregate shall conform to the British Columbia Ministry of Transportations and Transit – *Standard Specifications for Highway Construction – SS202 (February 2025).*

Road sub-base shall consist of MOTT 75 mm SGSB (Select Granular Sub-Base), free from any organics, foreign matter, or deleterious substances. The gravel shall be durable, uniform in quality, and capable of withstanding the deleterious effects of exposure to water, freeze/thaw and design traffic loading. The aggregate shall conform to the British Columbia Ministry of Transportations and Transit – *Standard Specifications for Highway Construction – SS202 (February 2025).*

General backfill material shall consist of imported granular fill, free from any organics, foreign matter, or deleterious substances. The gravel shall be durable, uniform in quality, and capable of withstanding the deleterious effects of exposure to water, freeze/thaw and design traffic loading. The aggregate shall conform to the British Columbia Ministry of Transportations and Transit – *Standard Specifications for Highway Construction – SS202 (February 2025).*

The observed sand to sand and gravel material observed during our investigation may be re-used as backfill material general subgrade reinstatement. Any soils containing organic materials are not recommended for reuse. We expect some sorting/handling may be required by the contractor to ensure that any suitable soils are not mixed with potential organic soils.

The contractor shall supply a sample of the proposed road base, subbase material, imported granular fill and existing sand to sand and gravel fill at least 2 weeks in advance of the work for sieve, standard and modified proctor testing. The road base, subbase material and imported granular fill shall be placed in loose lifts no greater than 300 mm and compacted to 100% SPDD (ASTM D698).

7.4 Trench Excavations

In accordance with WorkSafe BC regulations, any excavations in excess of 1.2 m must be shored or excavated under the advice and supervision of a professional geotechnical engineer. Based on provided civil information, excavated depths of approximately 2.5 m are expected. We expect conventional, pre-fabricated WCB approved shoring cages may be used for the majority of the alignment for shoring purposes to facilitate the construction of the water main replacement.

The presence of nearby utilities, vaults, and/or other infrastructure should also be taken into consideration prior to construction. Should the alignment be in close proximity to such infrastructure, additional shoring measures may need to be employed. Support measures for possible utility crossings may also be required.

7.5 Pipe Construction & Settlement

We expect that the excavation/open-cut method will result in the pipe being constructed within dense sand to sand and gravel to gravelly sand, trace silt. Localized loose sand layers should be compacted with a vibratory hoe pack mounted on a 20-ton excavator. We expect that these materials will provide adequate support. Pipe bedding, backfill materials and compaction should conform to the relevant Ministry of Transportation and Transit specifications. Settlement due to the consolidation or compression of this stratum is considered to be negligible. We expect minimal settlement (< 5 mm) of the ground provided the work is completed in accordance with our recommendations.

7.6 Soil Corrosion Potential Analysis

Laboratory testing was completed to investigate the corrosion potential of the underlying soils. Testing was completed according to AWWA/ANSI C105/A21.5-05 Standard – Appendix A for Western Canada. This system involves a series of tests, including saturated resistivity, pH, oxidation-reduction potential, sulfide content, moisture content and soil characterization (sieve analysis), whose results are assigned a point value based on their experimentally observed contribution to corrosion potential.

The points are summed to produce an overall corrosion potential for the soil. AWWA/ANSI C105/A21.5-05 – Appendix A recommends that protection be employed to ductile-iron pipe and fittings when the total corrosion potential is +10 or greater. The results of our corrosion potential analysis are summarized in Table 3.

Table 3 – Soil Corrosion Potential (AWWA C105 – Appendix A)

Sample ID	Depth (ft)	Depth (m)	Corrosivity Index	Corrosion Potential
TH25-01	8	2.4	3.0	Low

The tested sample returned a corrosive index of +3.0. As this is less than +10, corrosion protections for ductile-iron fittings and pipe are not required.

The preceding analysis is an estimate based on the soil sample collected at the location and depth reasonably close to the proposed water main. Corrosion potential may vary at the exact utility location if differing soils are encountered at pipe depth. All recommendations are based off specific data from the collected soil sample at the guidelines provided by AWWA/ANSI C105/A21.5-05 – Appendix A.

7.7 Lateral Bearing Capacity

We understand that bearing capacity recommendations are required for the design of thrust blocks. We have assumed that the pipe surround material will consist of competent granular fills (sand to sand and gravel to silty sand and gravel) and will extend a minimum of 0.3 m around the perimeter of the thrust blocks. We recommend an unfactored lateral passive pressure of 65*H* kPa be used for the design of thrust blocks, where *H* is equal to the depth below proposed grade.

7.8 Proposed Pavement Structure

Tables 4 below outline the minimum pavement structure thicknesses. Structural layer coefficients of 0.44, 0.14 and 0.10 were used for asphaltic concrete, granular base and granular sub-base, respectively. A drainage coefficient of 0.95 was used for both base and sub-base materials.

Table 4 - Proposed Pavement Structure Thicknesses (Asphalt)

Thickness (mm)				
Asphalt Surface Course	Asphalt Base Course	Granular Base Course	Granular Sub-base Course	Total Thickness (mm)
40	45	300	300	685

7.9 Proposed Asphalt Concrete

Table 5 below describes the asphalt mix required by the BC Ministry of Transportation and Transit. Asphalt mix designs and trial mixes shall be submitted to GeoPacific for review at least one week prior to paving.

Table 5 – Required Asphalt Mix Designs

Asphalt Mix Design	
Asphalt Surface Course	**Asphalt Base Course**
MOTT 12.5 mm Fine Mix	MOTT 19 mm Medium Mix

We recommend paving of hot mix asphalt should be completed in general accordance with the BC Ministry of Transportation and Transit specifications, including provisions for paving in inclement weather conditions.

7.10 Density Testing Requirements

Nuclear densometer testing shall be conducted on each lift placed to confirm compaction requirements have been achieved as per British Columbia Ministry of Transportations and Transit – *Standard Specifications for Highway Construction – SS202 (February 2025)*. We recommend density testing shall be completed every 20 lineal metres of trench and/or of lane width staggered each side of the center-line per 300 mm lift. The road base and sub-base material to be compacted to 100% SPDD (ASTM D698) and the imported granular fill is to be compacted to not less than 100% SPDD (ASTM D698).

8.0 FIELD REVIEWS

The preceding sections make recommendations for the design and construction of the proposed offsite civil works. We recommend the review of certain aspects of the construction to ensure our intentions have been adequately communicated and the construction is completed in accordance with the required specifications. It is important that any contractors working on the site review this document prior to commencing their work.

It is the responsibility of the contractor to contact GeoPacific a minimum of 48 hours in advance (unless otherwise noted) to notify us that a field review or test is required. In summary, field reviews are required for the following aspects of the work:

- Review of excavations exceeding a depth of 1.2 m.
- Stripping and sub-grade preparation
- Density testing for each lift of engineered fill, granular base or sub-base material
- Collection of base and sub-base materials for sieve, proctor and CBR tests
- Density testing for each lift of asphalt pavement
- Collection of asphalt mixes for Marshall compliance testing

9.0 CLOSURE

This report has been prepared exclusively for our client for the purpose of providing geotechnical recommendations for the design and construction of proposed offsite water main, as described herein. We assume that the Sunshine Coast Regional District will rely on this report during their permitting/approval process. We also expect subcontractors undertaking this work will be given a copy of this report for their review prior to commencing the works. This report remains the property of GeoPacific Consultants Ltd. and the unauthorized use of, or duplication of, this report is prohibited.

We are pleased to be of assistance to you on this project and we trust that our comments and recommendations are both helpful and sufficient for your current purposes. If you would like further details or would like clarification of any of the above, please do not hesitate to call.

For:
GeoPacific Consultants Ltd.

Shinell Deo, B.Sc.
Lab Technician

Jakub Szary, B.Sc., AScT.
Senior Geotechnical Specialist

Mark Andricevic
Senior Engineering Technician

Reviewed By:

M. J. KOKAN
21364

Permit to Practice
EGBC
1000782

SEP 0 9 2025

Matt Kokan, M.A.Sc., P.Eng
Principal

LEGEND:

TH25-00☢ – DENSITY TEST LOCATION

REFERENCE:

GEOPACIFIC
VANCOUVER KAMLOOPS CALGARY

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DATE: JULY 10, 2025		
DRAWN BY: SD	APPROVED BY: JS	REVIEWED BY: JS
SCALE: NOT TO SCALE		

REED ROAD WATERLINE REPLACEMENT
REED RD & HENRY RD, SUNSHINE COAST, BC
APPROXIMATE TEST HOLE LOCATIONS

FILE NO.: 25022
DWG. NO.: 25022-01

REVISIONS:
A.
B.
C.

ORIGINAL PAPER SIZE 8.5"x11"

APPENDIX A – TEST HOLE LOGS

Test Hole Log: TH25-01

File: 25022

Project: Proposed Reed Road Waterline Replacement

Client: Sunshine Coast Regional District

Site Location: Reed Road & Henry Road, SCRD, BC

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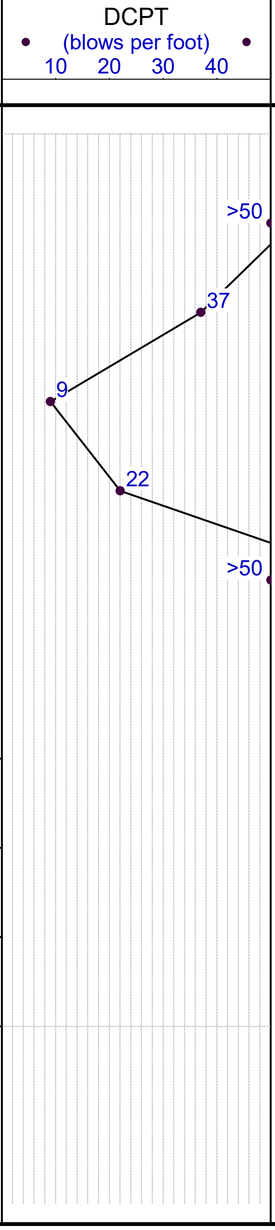
INFERRED PROFILE

Depth (m)/Elev (m)	SOIL DESCRIPTION	Moisture Content (%)	Remarks
	Ground Surface		
0.0	**Asphalt** Approximately 75mm in thickness.		
	Sand to Sand and Gravel Sand to Sand and Gravel, brown, coarse sand, large gravel (50mm or less in diameter), dry.		
0.8	**Silty Sand, Gravelly** Silty Sand with Gravel, brown to grey, moist, fine sand. Dense.		
			DCPT refusal.
	Gravel size decreased with depth.		
			Fines Content 12.2%
		11.4	
		17.1	
3.0	End of Borehole		



Groundwater / Well

Logged: SDeo

Method: Solid Stem Auger

Date: 2025-07-30

Datum: Ground-Surface

Figure Number:

Page: 1 of 1

Test Hole Log: TH25-02

File: 25022
Project: Proposed Reed Road Waterline Replacement
Client: Sunshine Coast Regional District
Site Location: Reed Road & Henry Road, SCRD, BC

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INFERRED PROFILE

Depth: ft 0 1 2 3 4 5 6 7 8 9 10 11 12; m 0 1 2 3

DCPT (blows per foot) 10 20 30 40

Symbol	SOIL DESCRIPTION	Depth (m)/Elev (m)	Moisture Content (%)	DCPT	Groundwater / Well	Remarks
	Ground Surface	0.0				
	Asphalt Approximately 75mm in thickness.					
	Sand to Sand and Gravel Sand to Sand and Gravel, brown, coarse sand, large gravel (50mm or less in diameter), dry. Woody debris present.	0.8				
	Organic Silt, Trace Sand and Gravel. Organic silt, trace sand and gravel. Dark brown, wet, woody debris, sand ranged from coarse to fine. Trace gravel was present.	2.1	44.1			Organic Content at 4'=10.9%
	Silty Sand, Gravelly. Silty sand, gravelly. Light brown to grey in colour, wet, gravel sizes approximately 60mm or less.	3.0	26.1 27.7			
	End of Borehole					

Logged: SDeo
Method: Solid Stem Auger
Date: 2025-07-30

Datum: Ground Surface
Figure Number:
Page: 1 of 1

Test Hole Log: TH25-03

File: 25022

Project: Proposed Reed Road Waterline Replacement

Client: Sunshine Coast Regional District

Site Location: Reed Road & Henry Road, SCRD, BC

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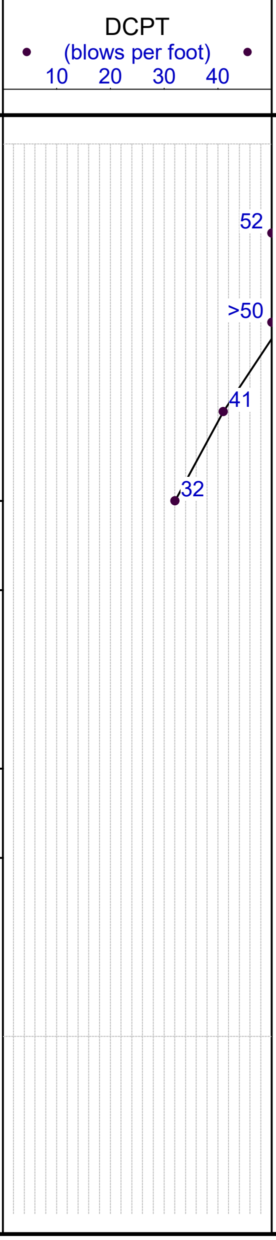
INFERRED PROFILE



Depth	SOIL DESCRIPTION	Depth (m)/Elev (m)	Moisture Content (%)	DCPT (blows per foot)	Groundwater / Well	Remarks
0 ft / 0 m	Ground Surface					
0 ft	**Asphalt** Approximately 75mm in thickness.	0.0				
0–3 ft	**Sand to Sand and Gravel** Sand to Sand and Gravel, brown, coarse sand, large gravel (50mm or less in diameter), dry.			52 (1 ft) >50 (2 ft)		
3–10 ft	**Silty Sand, Gravelly.** Silty Sand, Gravelly. Brown to grey, moist, dense, coarse to fine sand. Gravel size ranging from 19mm to approximately 75mm in diameter. Moisture increased with depth.	0.9	24.7 (4–5 ft) 30.9 (7–8 ft)	41 (3 ft) 32 (4 ft)		DCPT refusal.
10 ft / 3 m	End of Borehole	3.0				

Logged: SDeo
Method: Solid Stem Auger
Date: 2025-07-30

Datum: Ground-Surface
Figure Number:
Page: 1 of 1

Test Hole Log: TH25-04

File: 25022

Project: Proposed Reed Road Waterline Replacement

Client: Sunshine Coast Regional District

Site Location: Reed Road & Henry Road, SCRD, BC

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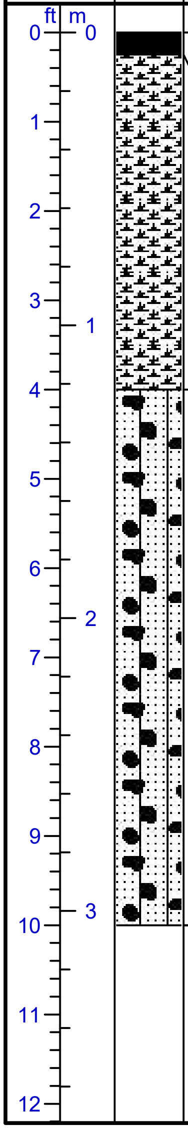
INFERRED PROFILE



SOIL DESCRIPTION	Depth (m)/Elev (m)	Moisture Content (%)	DCPT (blows per foot) 10 20 30 40	Groundwater / Well	Remarks
Ground Surface					
Asphalt Approximately 75mm in thickness.	0.0				
Organic Silt, Trace Sand and Gravel Organic silt, trace sand and gravel, dark brown, woody debris, moist, trace coarse sand and gravel. Gravel sizes approximately 50mm or less in diameter.					
Silty Sand, Gravelly Silty Sand, Gravelly. Brown to grey in colour, moist, coarse to fine sand with depth. Gravel sizes approximately 90mm or less.	1.2				
End of Borehole	3.0				

Logged: SDeo
Method: Solid Stem Auger
Date: 2025-07-30

Datum: Ground-Surface
Figure Number:
Page: 1 of 1

Test Hole Log: TH25-05

File: 25022

Project: Proposed Reed Road Waterline Replacement

Client: Sunshine Coast Regional District

Site Location: Reed Road & Henry Road, SCRD, BC

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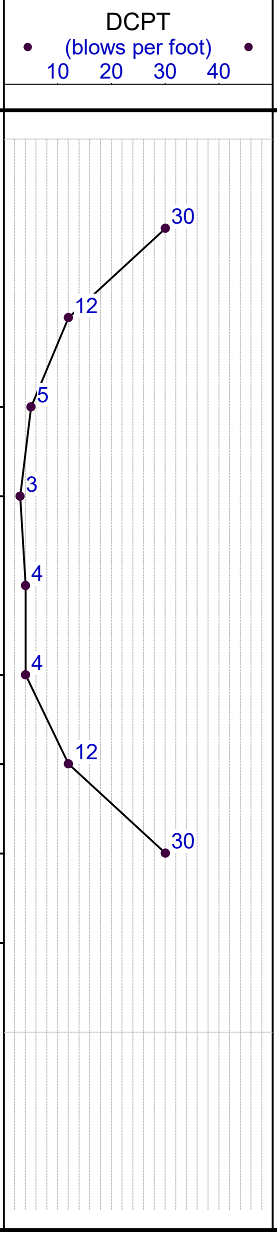
INFERRED PROFILE

Depth (ft)	Depth (m)	SOIL DESCRIPTION	Depth (m)/Elev (m)	Moisture Content (%)	Groundwater / Well	Remarks
0	0	Ground Surface				
0	0	**Asphalt** Approximately 100mm in thickness.	0.0			
0–3	0–0.9	**Sand to Sand and Gravel** Sand to Sand and Gravel, brown, coarse sand, large gravel (50mm or less in diameter), dry.				
3–8	0.9–2.4	**Silty Sand, Gravelly.** Silty Sand, Gravelly. Dark brown to grey in colour. Gravel sizes approximately 75mm or less in diameter. Moist. Loose. Stratum became more gravelly and dense with depth. Moisture increased.	0.9	30.9 12.4		Proposed Pipe Depth Drill & DCPT Refusal on Large Rock.
8	2.4	End of Borehole	2.4	19.4		



Logged: SDeo
Method: Solid Stem Auger
Date: 2025-07-30

Datum: Ground-Surface
Figure Number:
Page: 1 of 1

APPENDIX B – LABORATORY RESULTS

GEOPACIFIC
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Vancouver Lab
1779 West 75 Avenue
Vancouver, BC
V6P 6P2

MOISTURE CONTENT
(ASTM D2216)

CLIENT:	SUNSHINE COAST REGIONAL DISTRICT
PROJECT:	REED ROAD WATERLINE REPLACEMENT
LOCATION:	REED ROAD AND HENRY ROAD, SUNSHINE COAST

JOB #:	25022
RECEIVED:	31-Jul-25
TESTED:	1-Aug-25

REPORT #:	1

HOLE #:	TH25 - 01	TH25 - 01	TH25 - 02	TH25 - 02	TH25 - 03
DEPTH:	7'	9'	7'	9'	4'
M/C:	11.4%	17.1%	26.1%	27.7%	10.9%

HOLE #:	TH25 - 03	TH25 - 05	TH25 - 05	TH25 - 05	
DEPTH:	7'	3'	6'	8'	
M/C:	24.7%	30.9%	12.4%	19.4%	

HOLE #:					
DEPTH:					
M/C:					

HOLE #:					
DEPTH:					
M/C:					

HOLE #:					
DEPTH:					
M/C:					

HOLE #:					
DEPTH:					
M/C:					

COMMENTS:

DISTRIBUTION: deo@geopacific.ca

Per: Darragh Fitzgerald, B.Sc.

Darragh Fitzgerald

Lab Technician

Reviewed By: Austin Lockstidt, B.A.Sc., EIT

Project Engineer

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Vancouver Lab
1779 West 75 Avenue
Vancouver, BC
V6P 6P2

FINES CONTENT REPORT
(ASTM C117)

CLIENT:	SUNSHINE COAST REGIONAL DISTRICT
PROJECT:	REED ROAD WATERLINE REPLACEMENT
LOCATION:	REED ROAD AND HENRY ROAD, SUNSHINE COAST

JOB #:	25022
RECEIVED:	31-Jul-25
TESTED:	5-Aug-25

REPORT #:	1

HOLE #:	TH25 - 01				
DEPTH:	7'				
FINES CONTENT:	12.2%				

HOLE #:					
DEPTH:					
FINES CONTENT:					

HOLE #:					
DEPTH:					
FINES CONTENT:					

HOLE #:					
DEPTH:					
FINES CONTENT:					

HOLE #:					
DEPTH:					
FINES CONTENT:					

HOLE #:					
DEPTH:					
FINES CONTENT:					

COMMENTS:

DISTRIBUTION: deo@geopacific.ca

Per: Darragh Fitzgerald, B.Sc.

Darragh Fitzgerald

Lab Technician

Reviewed By: Austin Lockstidt, B.A.Sc., EIT

Project Engineer

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ORGANIC CONTENT REPORT
(ASTM D2974)

CLIENT:	SUNSHINE COAST REGIONAL DISTRICT
PROJECT:	REED ROAD WATERLINE REPLACEMENT
LOCATION:	REED ROAD AND HENRY ROAD, SUNSHINE COAST

JOB #:	25022
RECEIVED:	1-Aug-25
TESTED:	6-Aug-25

HOLE #:	TH25 - 02				
DEPTH:	4'				
MOISTURE CONTENT:	44.1%				
ORGANIC CONTENT:	10.9%				

HOLE #:					
DEPTH:					
MOISTURE CONTENT:					
ORGANIC CONTENT:					

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HOLE #:					
DEPTH:					
MOISTURE CONTENT:					
ORGANIC CONTENT:					

COMMENTS:

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Per: Darragh Fitzgerald, B.Sc.

Darragh Fitzgerald

Lab Technician

Reviewed By: Austin Lockstidt, B.A.Sc., EIT

Project Engineer

GEOPACIFIC
CONSULTANTS

CORROSION POTENTIAL REPORT
(AWWA C105/A21.5-10 - APPENDIX A)

Vancouver Lab
1779 West 75th Avenue
Vancouver, B.C V6P 6P2

CLIENT:	SUNSHINE COAST REGIONAL DISTRICT	PROJECT #:	25022
PROJECT NAME:	REED ROAD WATERLINE REPLACEMENT		
PROJECT LOCATION:	REED ROAD AND HENRY ROAD, SUNSHINE COAST		
SAMPLED BY:	SD	DATE SAMPLED:	30-Jul-25
TESTED BY:	CM	DATE TESTED:	1-Aug-25

HOLE / SAMPLE ID:	TH25-01
DEPTH / LOCATION:	8'

	TEST METHOD	TEST RESULT	CRITERIA	INDEX
SATURATED RESISTIVITY [Ω·cm]:	ASTM G57	17000	≥3000	0.0
OXIDATION REDUCTION POTENTIAL (mV)	ASTM G200	123.5	> 100 mV	0.0
pH	ASTM G51	5.93	4 - 6.5	0.0
SULFIDE CONTENT		TRACE	TRACE	2.0
MOISTURE CONTENT	ASTM D2216	19.5%	FAIR DRAINAGE, GENERALLY MOIST	1
SOIL DESCRIPTION	ASTM C136 & C117	GRAVEL AND SAND, SOME SILT		

TOTAL (SATURATED)	ANSI C105 APPENDIX A	3.0	**CORROSION POTENTIAL (SATURATED)**	**LOW**

Comments: THE OVERALL CORROSION POTENTIAL OF THE SAMPLE IS LOW

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Lab Technician

Lab Manager

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V6P 6P2

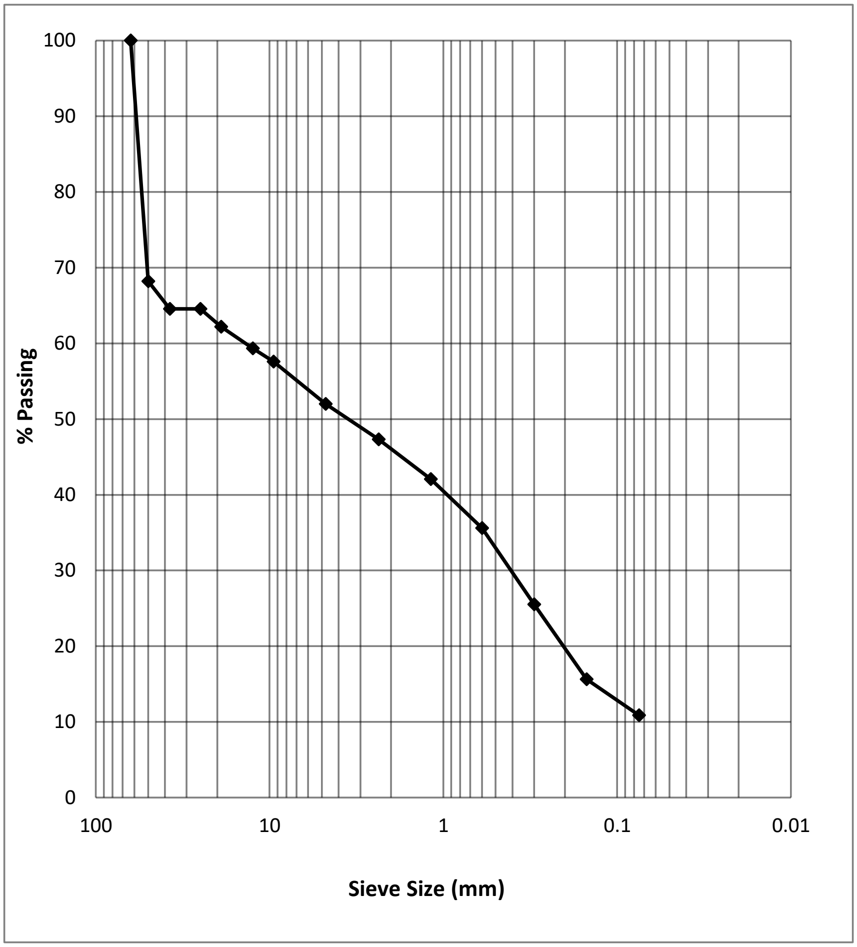
SIEVE ANALYSIS
(ASTM C117/C136)

CLIENT:	SUNSHINE COAST REGIONAL DISTRICT	JOB #:	25022
PROJECT:	REED ROAD WATERLINE REPLACEMENT	RECEIVED:	30-Jul-25
LOCATION:	REED ROAD AND HENRY ROAD, SUNSHINE COAST	TESTED:	1-Aug-25

SAMPLE INFORMATION

MATERIAL TYPE:	GRAVEL AND SAND, SOME SILT - BROWN	SAMPLE ID:	1
SOURCE:	TH25-05 @ 8'	METHOD:	WASHED
SPECIFICATION:	NOT SPECIFIED	REQUESTED BY:	SD

SIEVE SIZES		% PASSING	GRADATION LIMITS
Imperial	(mm)		
6"	150		
5"	125		
4"	100		
3.5"	90		
3"	75		
2.5"	63	100.0	
2"	50	68.2	
1.5"	37.5	64.5	
1"	25	64.5	
3/4"	19	62.2	
1/2"	12.5	59.3	
3/8"	9.5	57.6	
No. 4	4.75	52.0	
No. 8	2.36	47.3	
No. 16	1.18	42.1	
No. 30	0.600	35.6	
No. 50	0.300	25.5	
No. 100	0.150	15.6	
No. 200	0.075	10.9	



COMMENTS:

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Lab Technician

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