KWANONKUTHULA MAIN OUTFALL SEWER & PUMPING MAIN UPGRADE PLETTENBERG BAY

19118 CGAC
ADDITIONAL TESTING

SOIL INVESTIGATION

APRIL 2025

Author:

Llewelyn Heathcote

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T0347

28 May 2025

Neil Lyners
GEORGE

Attn: F van Eck

CONTRACT NO 19118CGAC : KWANOKUTHULA MAIN OUTFALL SEWER & PUMPING MAIN

Term of reference
Outeniqua Lab (Pty) Ltd was requested by Neil Lyners on behalf of the Bitou Municipality to excavate 27 trial pits to a maximum depth of 2.5m or refusal along the proposed pipeline route and comment on the findings.

Scope of work
The site investigation included a series of trial pits labelled TP1 to TP27, as indicated on the layout plan, as well as insitu DCP penetration tests at each trial pit, excluding TP20 due to coarse aggregate, with laboratory testing carried out on soil samples taken.

Results from the site investigation
The site is located on the southern side of the N2 near the Kwanokuthula intersection, moving along though the settlement in a south westerly direction and then in an east to west direction on the southern boundary along the edge break of the settlement. The site also included a section on the southern side of the N2 from the Kwanokuthula intersection to the Schoongezigt development.

The topography of the site is generally flat with gently sloped plains to very steep slopes on the southern boundary of the settlement. All areas along the pipeline were accessible with a TLB, however there are areas that could require a tracked excavator.

The underlying geology of the area consists of Table Mountain series weathered quartz sandstone of the Peninsula formation as well as some Enon conglomerates, sandstones, silt stones and clays and soil derived from the weathering of these rocks. This formation is typically deeply weathered in the area, forming fine gravels to silt/silty clays soil profiles, as well as rock outcrops on surface near the settlement boundary.

The test pits conducted indicate that the soil profiles are dominated by silty sands, Ferricrete, silt/silty clays and coarse gravels, this correlates with the local geology of the area.

The silty sands with and without Ferricrete and silt/silty clays could not be classified according to TRH14, indicating that the material is less that a G10 quality, with only the well developed Ferricrete and the Sandy Gravel with Boulders providing a TRH14 classification of G6 quality.

The silt/silty clay as well as the Sandy Claycsamples range between ML (silt) and MH (elastic silt) classification with low potential expansiveness.

None of the silty sands could meet the requirements of SABS 1200LB for bedding sands.

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Assessment of data

The slope stability of the site appears suitable, however if moisture is allowed into any open trenches the stability of the slopes could be affected.

The trench side walls are also stable under dry conditions, however the Ferricrete layer could form a perched water table which could lead to the sided wall failure of the trench. This is evident in TP25 with water seepage in the Ferricrete layer.

The insitu materials are not considered useful as a potential source of bedding, blanket or engineering filling material, due to the high fines content and classification, but if required can be used as general low quality filling material where compaction is not crucial.

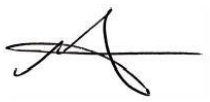
Trial pit excavations to a depth of 2.3m are classified as “soft” and can be excavated with light plant such as a TLB. There are also areas along the pipe route with exposed rock outcrops.

Conclusion

The investigation indicated that the site is suitable for the pipeline upgrade with the material being easily excavatable with a TLB in most areas and rock out crops alone the line. The site is stable under dry conditions and care must be taken to shore the walls of the trenches where any possible perched water table could be encountered.
Consideration must be taken when selection the backfill material from the site and bedding material should be imported from commercial sources.

Please contact me should you have any queries.

Yours Sincerely



Llewelyn Heathcote B-Tech. (Civil Eng.) & BSc Hons (Transport)
For Outeniqua Lab (Pty) Ltd

Figure 1:

Locality Plan

Scale:NTS

OUTENIQUA LAB

Outeniqua Lab (Pty) Ltd
Civil Engineering Laboratory

OUTENIQUA LAB (Pty) Ltd.

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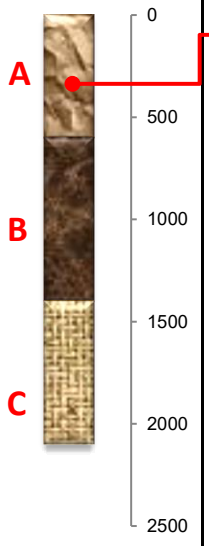
R-PROF-1-5
Jan-22

Customer :	Neil Lyners P O Box 757 George 6530
Project :	19118CGAC Kwanokuthula Main Outfall Sewer & Pumping Main
Date Reported :	24/04/25

TP21

Datum: @NGL | Co-ordinates:

Key to symbols: ● Sample taken ▼ Water seepage



(0 to 600)	Dry to slightly moist, light brown, medium dense, intact, SILTY SAND, transported. (● Sample Taken: California Bearing Ratio & Moisture Content)
(600 to 1400)	Slightly moist to moist, light yellowish orange, firm, slickensided, SILT/SILTY CLAY, residual.
(1400 to 2100)	Moist to very moist, dark red mottled light grey, firm, slickensided, SILT/SILTY CLAY, residual.

Dynamic Cone Penetrometer (DCP)

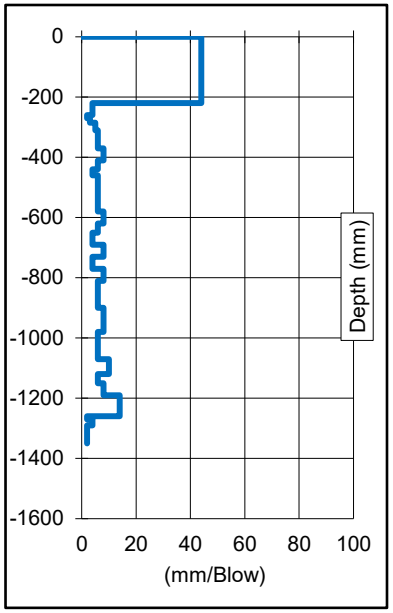
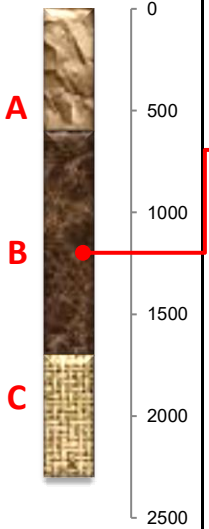


Photo of Test Pit

TP22

Datum: @NGL | Co-ordinates:

Key to symbols: ● Sample taken ▼ Water seepage



(0 to 600)	Dry to slightly moist, light brown, medium dense, intact, SILTY SAND, transported.
(600 to 1700)	Slightly moist to moist, light yellowish orange, firm, slickensided, SANDY CLAY , residual. (● Sample Taken: Foundation Indicator & Moisture Content)
(1700 to 2300)	Moist to very moist, dark red mottled light grey, firm to stiff, slickensided, SILT/SILTY CLAY , residual.

Dynamic Cone Penetrometer (DCP)

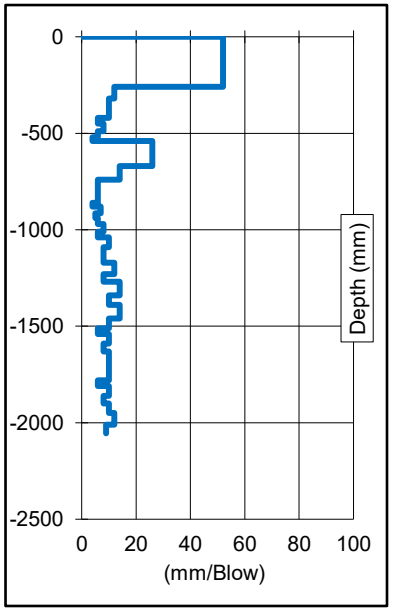


Photo of Test Pit

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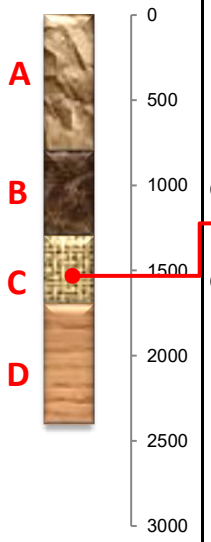
Date Reported :	24/04/25

TP23

Datum: @NGL | Co-ordinates:

Key to symbols: ● Sample taken ▼ Water seepage



(0 to 800)	Slightly moist to moist, light yellowish orange, firm, intact, SILT/SILTY CLAY, residual.
(800 to 1300)	Slightly moist to moist, dark brown, medium dense, intact, SILTY SAND, transported.
(1300 to 1700)	Moist to very moist, dark brown, firm, slickensided, SANDY CLAY, residual. (● Sample Taken: Foundation Indicator & Moisture Content)
(1700 to 2400)	Moist to very moist, light yellowish orange, firm, slickensided, SILT/SILTY CLAY, residual.

Dynamic Cone Penetrometer (DCP)

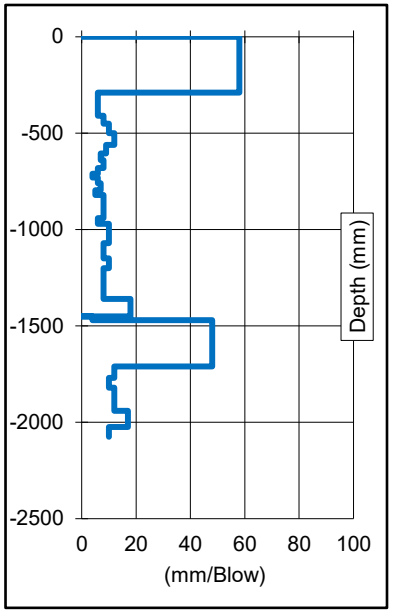
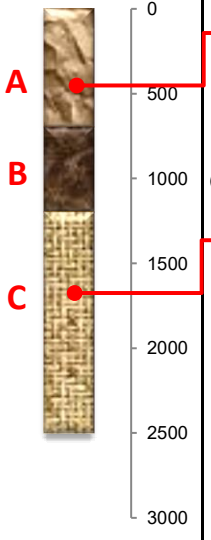


Photo of Test Pit

TP24

Datum: @NGL | Co-ordinates:

Key to symbols: ● Sample taken ▼ Water seepage



(0 to 700)	Slightly moist to moist, dark brown, medium dense, intact, SILTY SAND, transported. (● Sample Taken: California Bearing Ratio & Moisture Content)
(700 to 1200)	Slightly moist, light brown, medium dense, intact, SILTY SAND & , transported.
(1200 to 2500)	Moist to very moist, light yellowish orange, firm, slickensided, SILT/SILTY CLAY , residual. (● Sample Taken: California Bearing Ratio & Moisture Content)

Dynamic Cone Penetrometer (DCP)

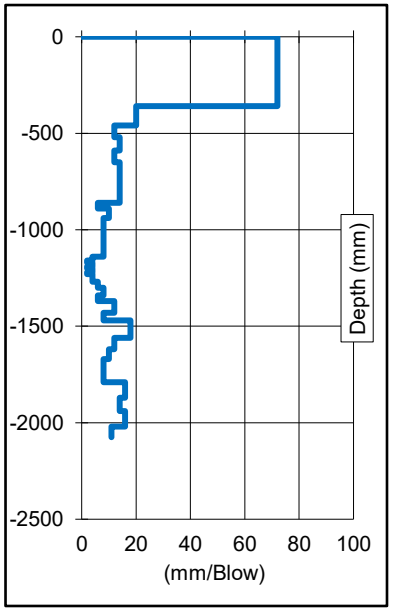


Photo of Test Pit

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R-PROF-1-5
Jan-22

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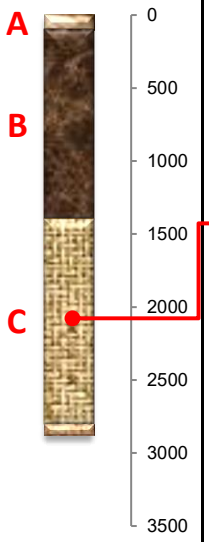
Project :	19118CGAC Kwanokuthula Main Outfall Sewer & Pumping Main
Date Reported :	24/04/25

TP25

Datum: @NGL | Co-ordinates:

Key to symbols: ● Sample taken ▼ Water seepage



(0 to 100)	Slightly moist, dark brown, medium dense, intact, SILTY SAND, transported.
(100 to 1400)	Very moist to wet, dark red, medium dense, intact, FERRICRETE, pedogenic.
(1400 to 2800)	Very moist to wet, light yellow, firm, slickensided, SANDY CLAY, residual.

(● Sample Taken: Foundation Indicator & Moisture Content)(□ Water Table @ 2400mm)

Dynamic Cone Penetrometer (DCP)

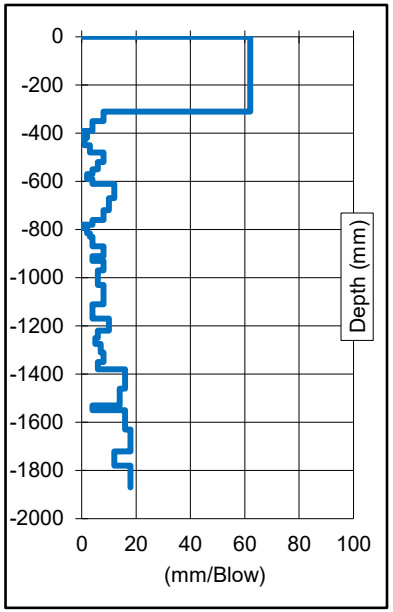
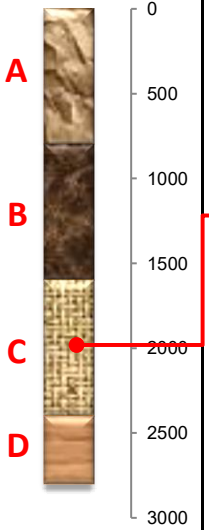


Photo of Test Pit

TP26

Datum: @NGL | Co-ordinates:

Key to symbols: ● Sample taken ▼ Water seepage



(0 to 800)	Dry to slightly moist, light brown, medium dense, intact, SILTY SAND, imported.
(800 to 1600)	Slightly moist to moist, dark brown, medium dense, intact, SILTY SAND , imported.
(1600 to 2400)	Moist, light brown, firm, intact, SANDY CLAY , transported.

(● Sample Taken: California Bearing Ratio & Moisture Content)

(2400 to 2800)	Moist to very moist, light brown, firm, intact, SILTY/CLAYEY SAND, transported.

Dynamic Cone Penetrometer (DCP)

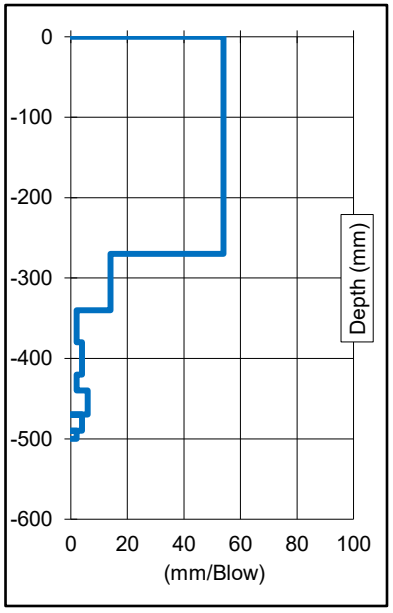


Photo of Test Pit

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R-PROF-1-5
Jan-22

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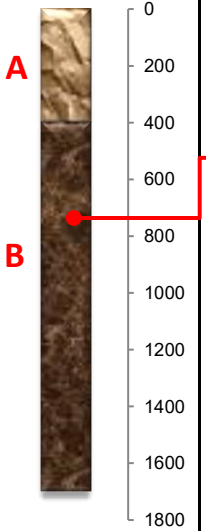
Date Reported :	24/04/25

TP27

Datum: @NGL | Co-ordinates:

Key to symbols: ● Sample taken ▼ Water seepage



(0 to 400)	Dry to slightly moist, light brown, medium dense, intact, SILTY SAND, transported.
(400 to 1700)	Slightly moist to moist, light yellow, medium dense, intact, SILTY GRAVEL WITH BOULDERS, transported. (● Sample Taken: California Bearing Ratio & Moisture Content)

Dynamic Cone Penetrometer (DCP)

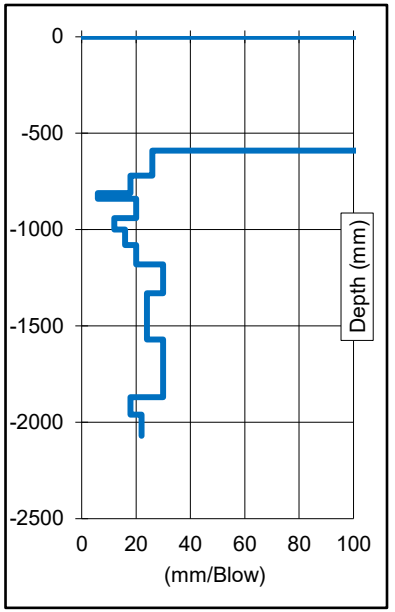


Photo of Test Pit

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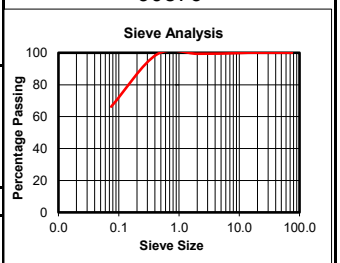
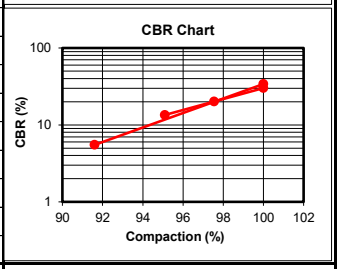
		Date Received :	28/03/25
		Date Reported :	24/04/25
		Req. Number :	1829/25
Attention :	Francois van Eck	No. of Pages :	1 of 4

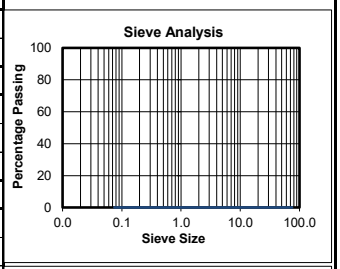
TEST REPORT
CALIFORNIA BEARING RATIO

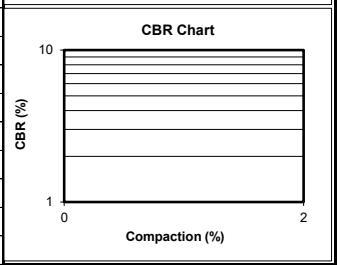
Sample Position (SV)		TP 21	COTO DS:				
Depth (mm)		0 - 600	Not				
Sample No		**90876**	Classified				
Materials Description	Source	In-Situ					
	Colour	Light Brown					
	Soil Type	Silty Sand					
	Classification	Trail Pit					
Material Indicators - (SANS 3001 Method GR1)							
Percentage Passing	75 mm	100		Opinion			
	63 mm	100					
	50 mm	100					
	37.5 mm	100					
	28 mm	100					
	20 mm	100					
	14 mm	100					
	5 mm	99					
	2 mm	99					
	0.425 mm	99					
	0.075 mm	66.2					
Material Indicators - (SANS 3001 Method PR5)							
Grading Modulus *		0.36					
Coarse Sand Soil-Mortar (%)		1					
Atterberg Limits - (SANS 3001 Method GR10)							
Liquid Limit (%)		19					
Plasticity Index (%)		4					
Linear Shrinkage (%)		2.0					
Material Strength - (SANS 3001 Method GR30,GR40 - SCALPED)							
MDD	Max Dry Density (kg/m^3)	1945					
	Optimum Moisture Content (%)	9.1					
	Mould Moisture Content (%)	9.0					
A	Relative Compaction (%)	100.0					
	Swell (%)	0.2					
B	Relative Compaction (%)	95.1					
	Swell (%)	0.4					
C	Relative Compaction (%)	91.6					
	Swell (%)	0.6					
CBR	@100% Max Dry Density	34					
	@98% Max Dry Density	22					
	@95% Max Dry Density	12					
	@93% Max Dry Density	7					
	@90% Max Dry Density	4					
Material Condition - (SANS 3001 Method GR20)							
Insitu Moisture Content (%)		5.5					
Soil Classification Of The Material Based Only On The Tests Results Above							
COTO DS Specification:		Not Classified					
AASHTO System		A-4					
Unified System		CL-ML					

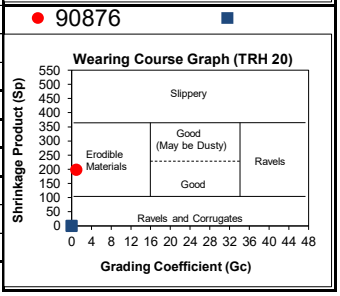
90876











- **Tests marked with a (*) are NOT SANAS Accredited results.**
- **Specimens delivered to Outeniqua Lab in good order.**

Ruaan Lesch
Technical Signatory
For Outeniqua Lab (Pty) Ltd.

1. The opinion column is an interpretation of the direct comparison between the quoted specification and the single test sample results obtained. The compliant (✓), non compliant (×) and uncertain (∗) opinion indicators are based on an approximate 95% level of confidence with reference to SAMM GUIDANCE 1, Issue 2 : 20 June 2007 Section 2.
2. The uncertain (∗) indicates that the test result is either equal to or is above / below the specified limit by a margin less than the measurement uncertainty; it is therefore not possible to state compliant (✓) or non compliant (×) based on a 95% level of confidence with reference to SAMM GUIDANCE 1, Issue 2 : 20 June 2007 Section 2.
3. This report (with attachments) is the correct record of all measurements made, and may not be reproduced other than with full written approval from the Director of Outeniqua Lab (Pty) Ltd.
4. Measuring Equipment, traceable to National Standards is used where applicable. Results reported in this Test Report relate only to the items tested and are an indication only of the sample provided and/or taken.
5. While every care is taken to ensure the correctness of all tests and reports, neither Outeniqua Lab (Pty) Ltd nor its employees shall be liable in any way whatever for any error made in the execution or reporting of tests or any erroneous conclusions drawn therefrom or for any consequence thereof.

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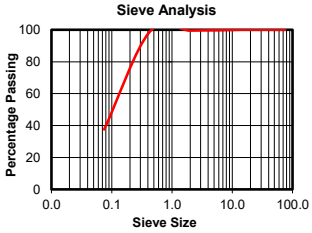
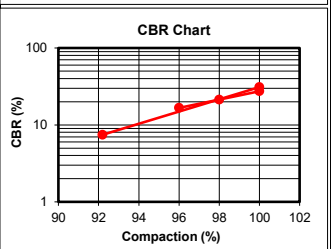
Attention :	Francois van Eck	No. of Pages :	2 of 4

TEST REPORT
CALIFORNIA BEARING RATIO

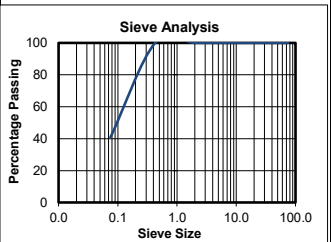
Sample Position (SV)		TP 24	COTO DS: Not Classified		TP 24	COTO DS: No Spec	
Depth (mm)		0 - 700			1200 - 2500		
Sample No		**90879**			**90880**		
Materials Description	Source	Trial Pit			Trial Pit		
	Colour	Dark Brown			Light Yellowish Orange		
	Soil Type	Silty Sand			Silty /Silty Clay		
	Classification	Insitu			Insitu		
Material Indicators - (SANS 3001 Method GR1)							
Percentage Passing	75 mm	100		Opinion	100		
	63 mm	100			100		
	50 mm	100			100		
	37.5 mm	100			100		
	28 mm	100			100		
	20 mm	100			100		
	14 mm	100			100		
	5 mm	100			100		
	2 mm	99			100		
	0.425 mm	99			100		
	0.075 mm	37.6			40.7		
Material Indicators - (SANS 3001 Method PR5)							
Grading Modulus *		0.64			0.59		
Coarse Sand Soil-Mortar (%)		1			0		
Atterberg Limits - (SANS 3001 Method GR10)							
Liquid Limit (%)		15			29		
Plasticity Index (%)		2			10		
Linear Shrinkage (%)		1.0			5.0		
Material Strength - (SANS 3001 Method GR30,GR40 - SCALPED)							
MDD	Max Dry Density (kg/m^3)	1967			1894		
	Optimum Moisture Content (%)	8.6			11.9		
	Mould Moisture Content (%)	8.6			11.6		
A	Relative Compaction (%)	100.0			100.0		
	Swell (%)	0.0			2.4		
B	Relative Compaction (%)	96.0			95.5		
	Swell (%)	0.0			2.7		
C	Relative Compaction (%)	92.2			92.9		
	Swell (%)	0.0			2.9		
CBR	@100% Max Dry Density	31			4		
	@98% Max Dry Density	21			3		
	@95% Max Dry Density	12			2		
	@93% Max Dry Density	9			1		
	@90% Max Dry Density	5			1		
Material Condition - (SANS 3001 Method GR20)							
Insitu Moisture Content (%)		7.6			13.9		
Soil Classification Of The Material Based Only On The Tests Results Above							
COTO DS Specification:		Not Classified			Not Classified		
AASHTO System		A-4			A-4		
Unified System		SM			SC		

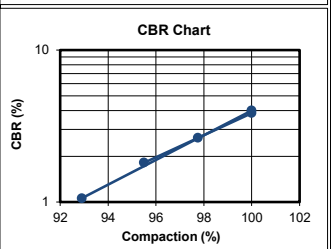
90879

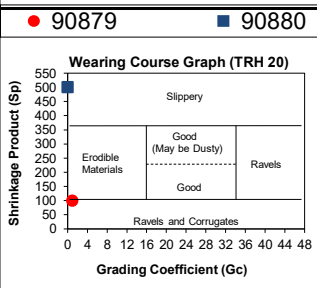




90880







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- **Specimens sampled by Boss Sangwe**
- **The weather conditions were such that there was no detrimental effect on the sample/s taken.**

Llewelyn Heathcote
Technical Signatory
For Outeniqua Lab (Pty) Ltd.

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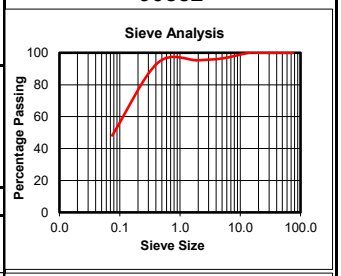
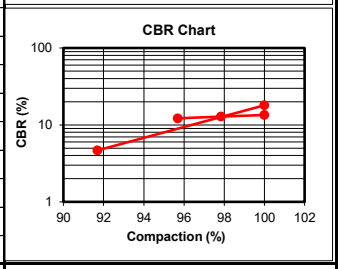
		Req. Number :	1829/25
Attention :	Francois van Eck	No. of Pages :	3 of 4

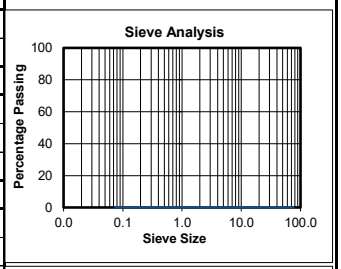
TEST REPORT
CALIFORNIA BEARING RATIO

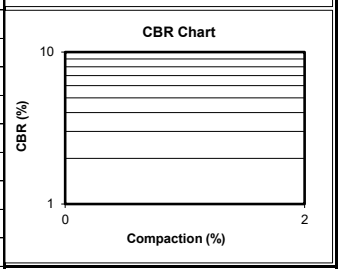
Sample Position (SV)		TP 26	COTO DS:				
Depth (mm)		1600 - 2400	Not				
Sample No		**90882**	Classified				
Materials Description	Source	Trial Pit					
	Colour	Light Brown					
	Soil Type	Sandy Clay					
	Classification	Insitu					
Material Indicators - (SANS 3001 Method GR1)							
Percentage Passing	75 mm	100		Opinion			
	63 mm	100					
	50 mm	100					
	37.5 mm	100					
	28 mm	100					
	20 mm	100					
	14 mm	100					
	5 mm	96					
	2 mm	95					
	0.425 mm	94					
	0.075 mm	48.2					
Material Indicators - (SANS 3001 Method PR5)							
Grading Modulus *		0.63					
Coarse Sand Soil-Mortar (%)		2					
Atterberg Limits - (SANS 3001 Method GR10)							
Liquid Limit (%)		16					
Plasticity Index (%)		4					
Linear Shrinkage (%)		2.0					
Material Strength - (SANS 3001 Method GR30,GR40 - SCALPED)							
MDD	Max Dry Density (kg/m^3)	1988					
	Optimum Moisture Content (%)	10.2					
	Mould Moisture Content (%)	10.2					
A	Relative Compaction (%)	100.0					
	Swell (%)	0.2					
B	Relative Compaction (%)	95.7					
	Swell (%)	0.3					
C	Relative Compaction (%)	91.7					
	Swell (%)	0.5					
CBR	@100% Max Dry Density	18					
	@98% Max Dry Density	13					
	@95% Max Dry Density	8					
	@93% Max Dry Density	6					
	@90% Max Dry Density	4					
Material Condition - (SANS 3001 Method GR20)							
Insitu Moisture Content (%)		10.5					
Soil Classification Of The Material Based Only On The Tests Results Above							
COTO DS Specification:		Not Classified					
AASHTO System		A-4					
Unified System		SM-SC					

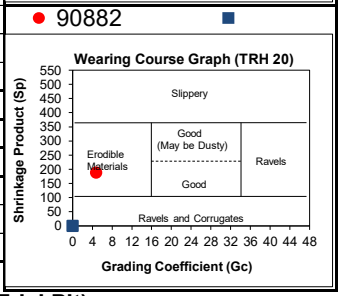
90882











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Llewelyn Heathcote
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For Outeniqua Lab (Pty) Ltd.

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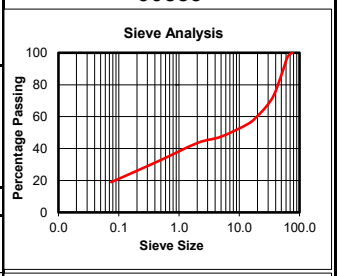
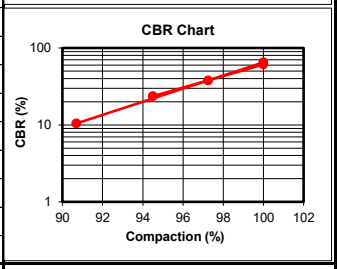
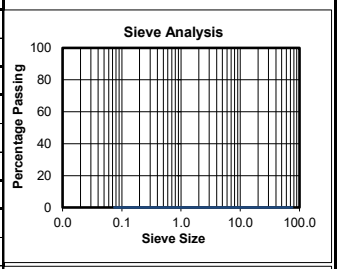
TEST REPORT
CALIFORNIA BEARING RATIO

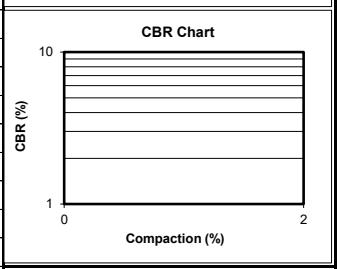
Sample Position (SV)		TP 27	COTO DS:				
Depth (mm)		400 - 1700	G6 Subbase				
Sample No		**90883**					
Materials Description	Source	Trial Pit					
	Colour	Light Yellow					
	Soil Type	Sandy Gravel with Boulders					
	Classification	Insitu					
Material Indicators - (SANS 3001 Method GR1)							
Percentage Passing	75 mm	100		Opinion			
	63 mm	97					
	50 mm	86					
	37.5 mm	73					
	28 mm	66					
	20 mm	60					
	14 mm	55					
	5 mm	47					
	2 mm	43					
	0.425 mm	32					
	0.075 mm	19.0					
Material Indicators - (SANS 3001 Method PR5)							
Grading Modulus *		2.06	1.50 - 2.50	✓			
Coarse Sand Soil-Mortar (%)		27					
Atterberg Limits - (SANS 3001 Method GR10)							
Liquid Limit (%)		24					
Plasticity Index (%)		7	≤ 14	✓			
Linear Shrinkage (%)		3.5	≤ 7	✓			
Material Strength - (SANS 3001 Method GR30,GR40 - SCALPED)							
MDD	Max Dry Density (kg/m³)	1934					
	Optimum Moisture Content (%)	11.4					
	Mould Moisture Content (%)	11.3					
A	Relative Compaction (%)	100.0					
	Swell (%)	0.0	≤ 0.5	✓			
B	Relative Compaction (%)	94.5					
	Swell (%)	0.0					
C	Relative Compaction (%)	90.7					
	Swell (%)	0.0					
CBR	@100% Max Dry Density	65					
	@98% Max Dry Density	44					
	@95% Max Dry Density	24	≥ 25	✳			
	@93% Max Dry Density	16					
	@90% Max Dry Density	9					
Material Condition - (SANS 3001 Method GR20)							
Insitu Moisture Content (%)		5.6					
Soil Classification Of The Material Based Only On The Tests Results Above							
COTO DS Specification:		G6 Subbase					
AASHTO System		A-2-4					
Unified System		GM-GC					

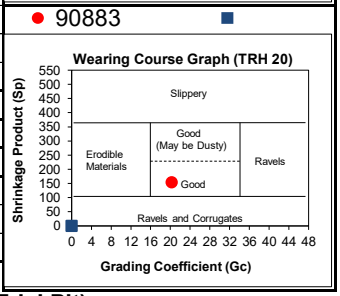
90883











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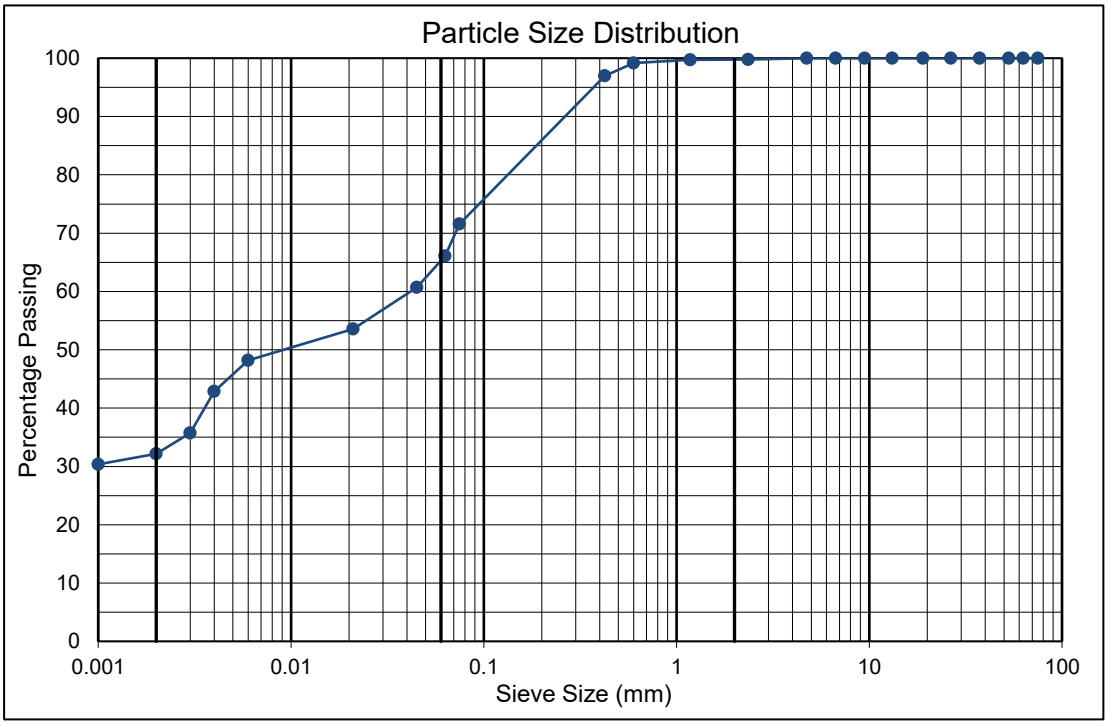
Attention :	Francois van Eck	No. of Pages :	1 of 3

TEST REPORT

FOUNDATION INDICATOR - (ASTM Method D422)

Sample Position (SV)		TP 22
Depth (mm):		600 - 1700
Sample No.:		90877
Materials Description	Source	Trial Pit
	Colour	Light Yellowish Orange
	Soil Type	Sandy Clay
	Classification	Insitu

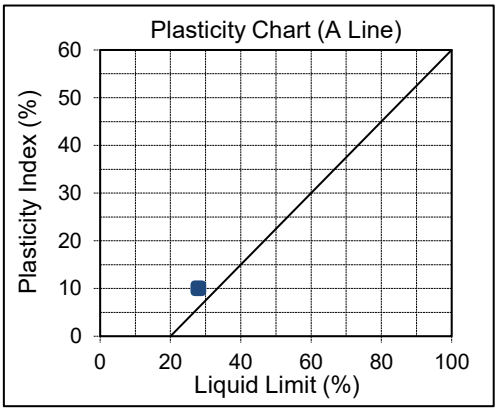
75.0mm	100
63.0mm	100
53.0mm	100
37.5mm	100
26.5mm	100
19mm	100
13.2mm	100
9.5mm	100
6.7mm	100
4.75mm	100
2.36mm	100
1.18mm	100
0.6mm	99
0.425mm	97
0.075mm	72
0.063mm	66
0.045mm	61
0.021mm	54
0.006mm	48
0.004mm	43
0.003mm	36
0.002mm	32
0.001mm	30

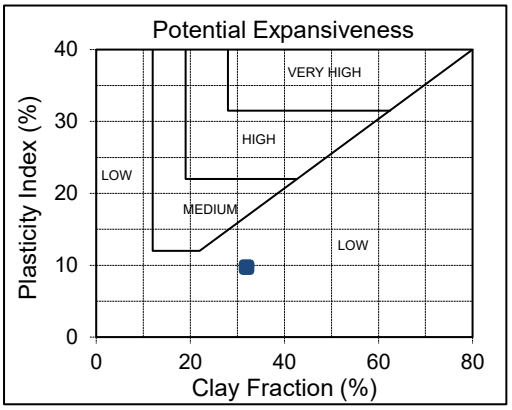


Liquid Limit (%)	28
Plasticity Index (%)	10
Linear Shrinkage (%)	5
Moisture Content (%)	20.1

% Clay	32
% Silt	33
% Sand	35
% Gravel	0

Unified Soil Classification	CL
AASHTO Soil Classification	A-4





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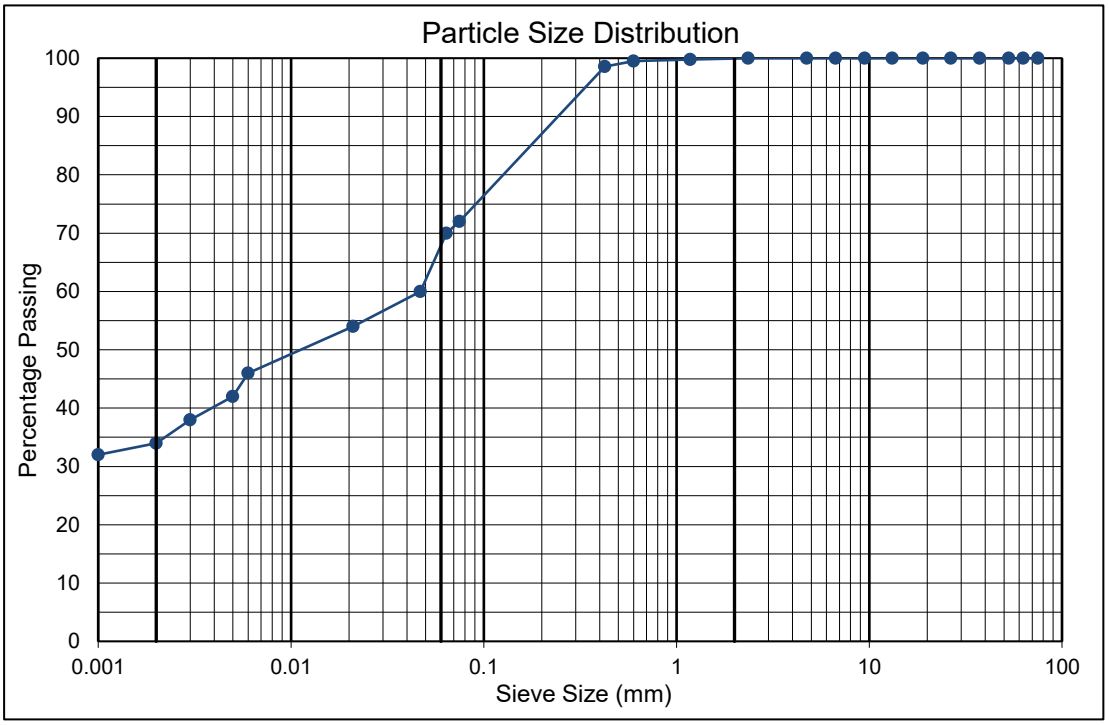
TEST REPORT

FOUNDATION INDICATOR - (ASTM Method D422)

Sample Position (SV)		TP 23
Depth (mm):		1300 - 1700
Sample No.:		90878
Materials Description	Source	Trial Pit
	Colour	Dark Brown
	Soil Type	Sandy Clay
	Classification	Insitu

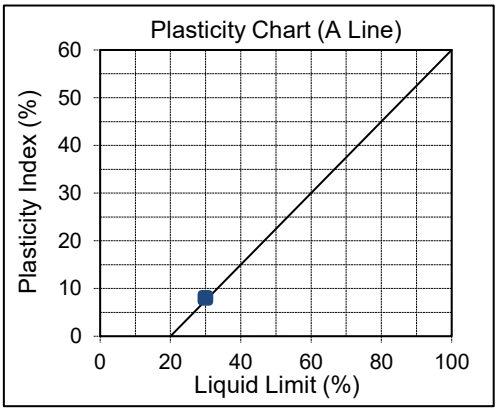
Percentage Passing	
75.0mm	100
63.0mm	100
53.0mm	100
37.5mm	100
26.5mm	100
19mm	100
13.2mm	100
9.5mm	100
6.7mm	100
4.75mm	100
2.36mm	100
1.18mm	100
0.6mm	100
0.425mm	99
0.075mm	72
0.064mm	70
0.047mm	60
0.021mm	54
0.006mm	46
0.005mm	42
0.003mm	38
0.002mm	34
0.001mm	32

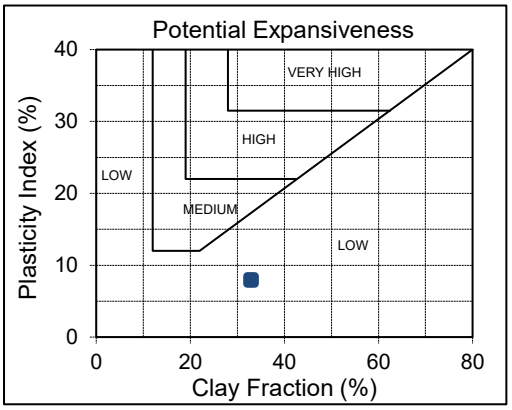


Liquid Limit (%)	30
Plasticity Index (%)	8
Linear Shrinkage (%)	4
Moisture Content (%)	22.0

% Clay	33
% Silt	35
% Sand	32
% Gravel	0

Unified Soil Classification	CL
AASHTO Soil Classification	A-4





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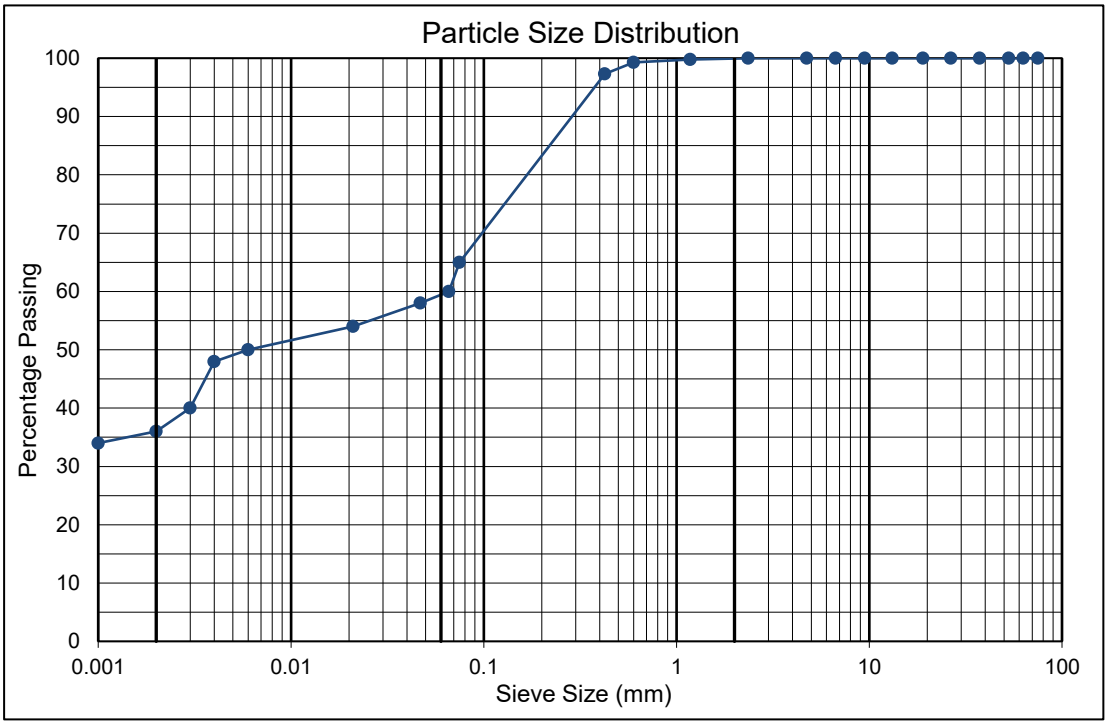
TEST REPORT

FOUNDATION INDICATOR - (ASTM Method D422)

Sample Position (SV)		TP 25
Depth (mm):		1400 - 2800
Sample No.:		90881
Materials Description	Source	Trial Pit
	Colour	Light Yellow
	Soil Type	Sandy Clay
	Classification	Insitu

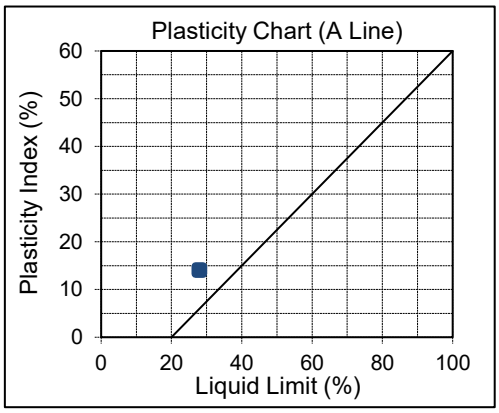
75.0mm	100
63.0mm	100
53.0mm	100
37.5mm	100
26.5mm	100
19mm	100
13.2mm	100
9.5mm	100
6.7mm	100
4.75mm	100
2.36mm	100
1.18mm	100
0.6mm	99
0.425mm	97
0.075mm	65
0.066mm	60
0.047mm	58
0.021mm	54
0.006mm	50
0.004mm	48
0.003mm	40
0.002mm	36
0.001mm	34

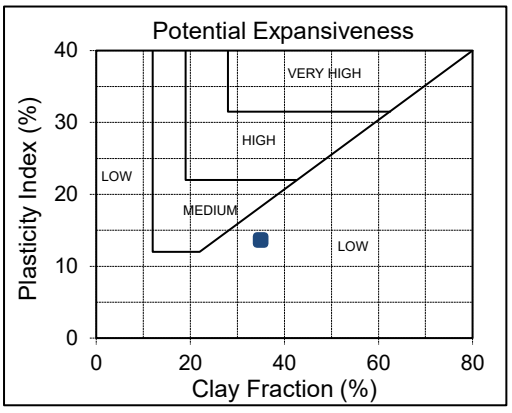


Liquid Limit (%)	28
Plasticity Index (%)	14
Linear Shrinkage (%)	7
Moisture Content (%)	26.8

% Clay	35
% Silt	24
% Sand	41
% Gravel	0

Unified Soil Classification	CL
AASHTO Soil Classification	A-6





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- **Specimens sampled by Boss Sangwe**
- **The weather conditions were such that there was no detrimental effect on the sample/s taken.**

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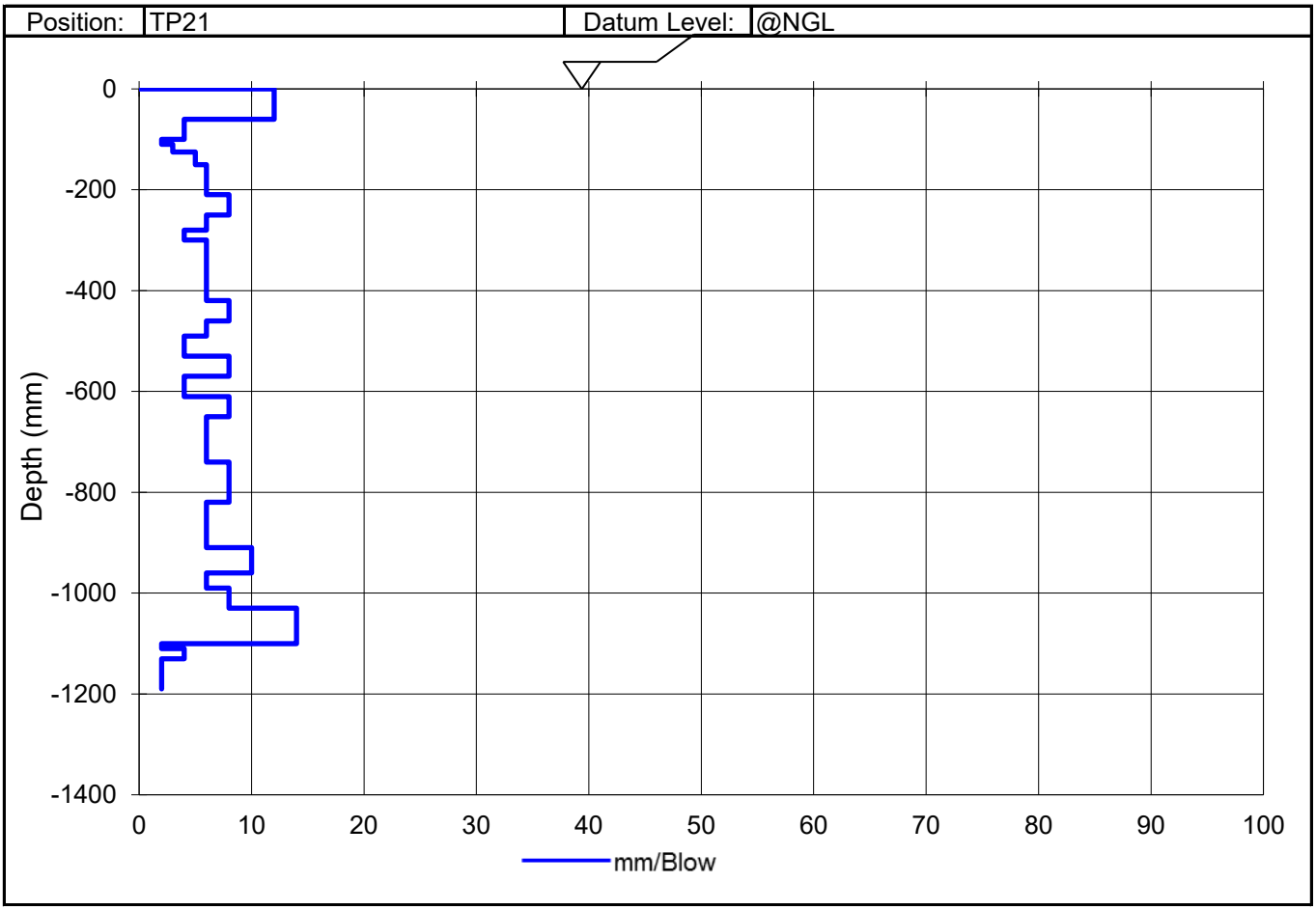
TEST REPORT

DYNAMIC CONE PENETROMETER (DCP) - (SANS 3001 - Method Pending)

Position: TP21 Datum Level: @NGL



Notes:

Llewelyn Heathcote
Technical Signatory
For Outeniqua Lab (Pty) Ltd.

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Registration No. 95/07742/07

Materials Testing Laboratory

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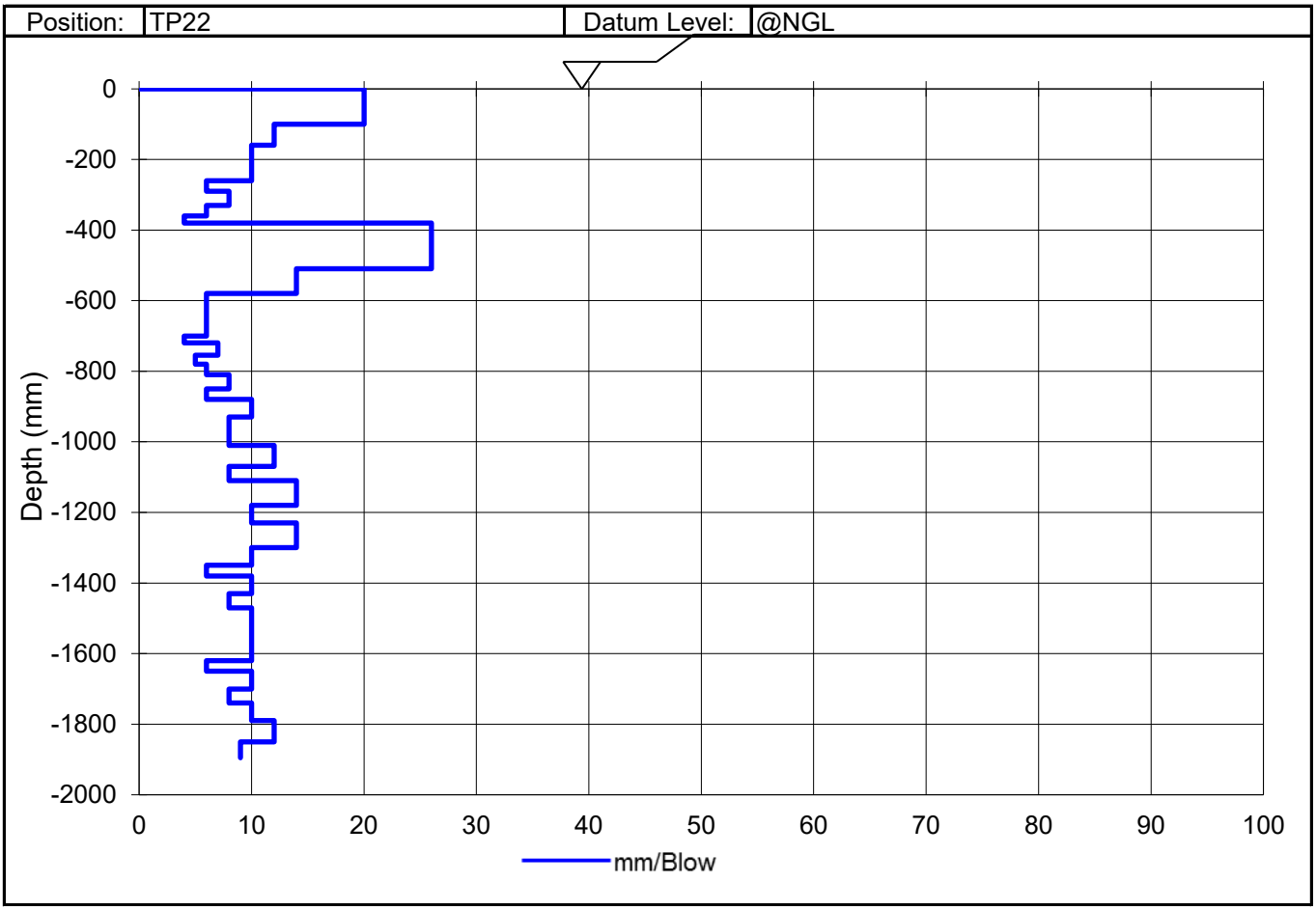
Customer :	Neil Lyners P O Box 757 George 6530	Project :	19118CGAC Kwanokuthula Main Outfall Sewer & Pumping Main
		Date Received :	28/03/25
		Date Reported :	24/04/25
		Req. Number :	1829/25
Attention :	Francois van Eck	No. of Pages :	2 of 7

TEST REPORT

DYNAMIC CONE PENETROMETER (DCP) - (SANS 3001 - Method Pending)

Position: TP22 Datum Level: @NGL



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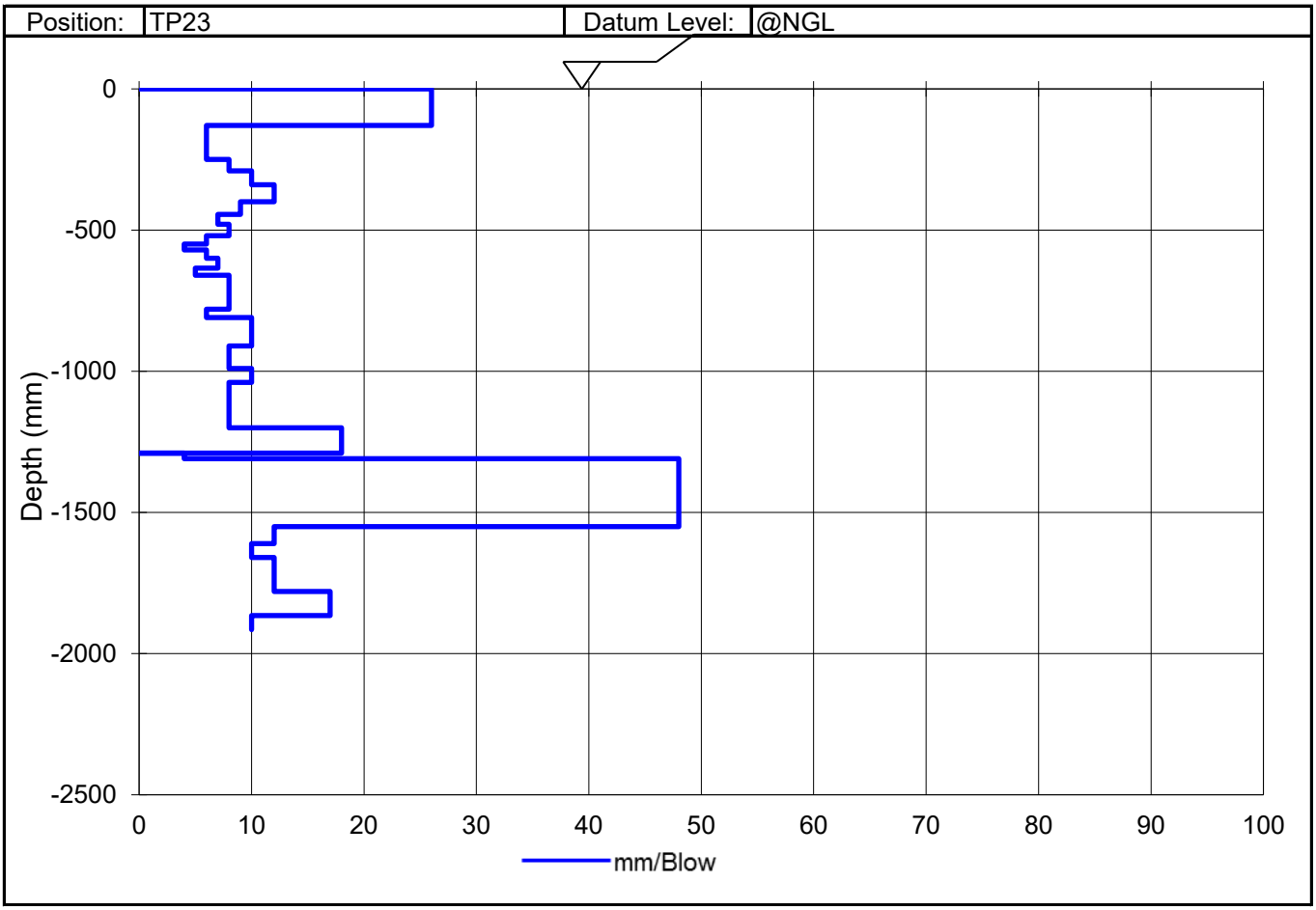
TEST REPORT

DYNAMIC CONE PENETROMETER (DCP) - (SANS 3001 - Method Pending)

Position: TP23 Datum Level: @NGL



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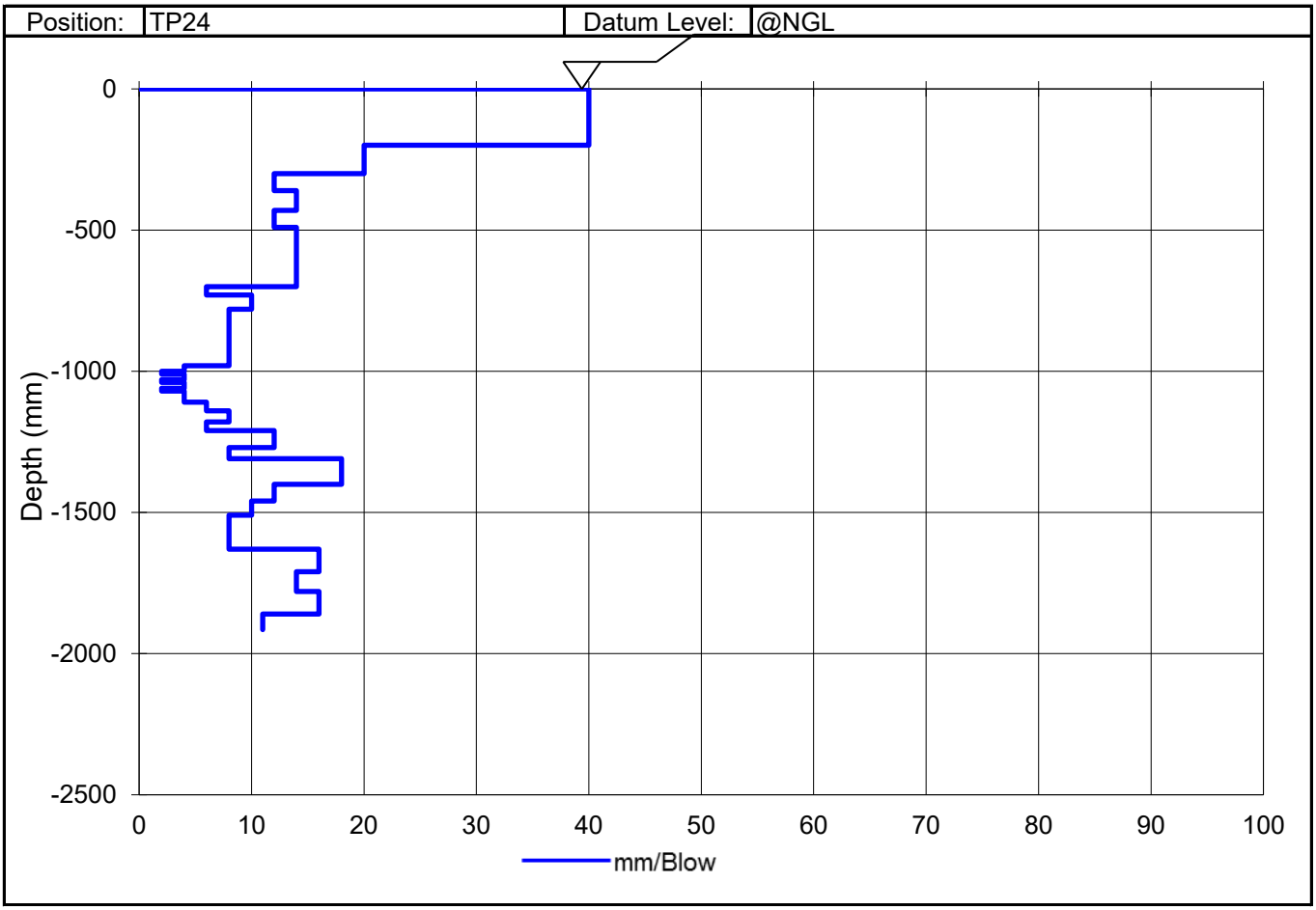
TEST REPORT

DYNAMIC CONE PENETROMETER (DCP) - (SANS 3001 - Method Pending)

Position: TP24 Datum Level: @NGL



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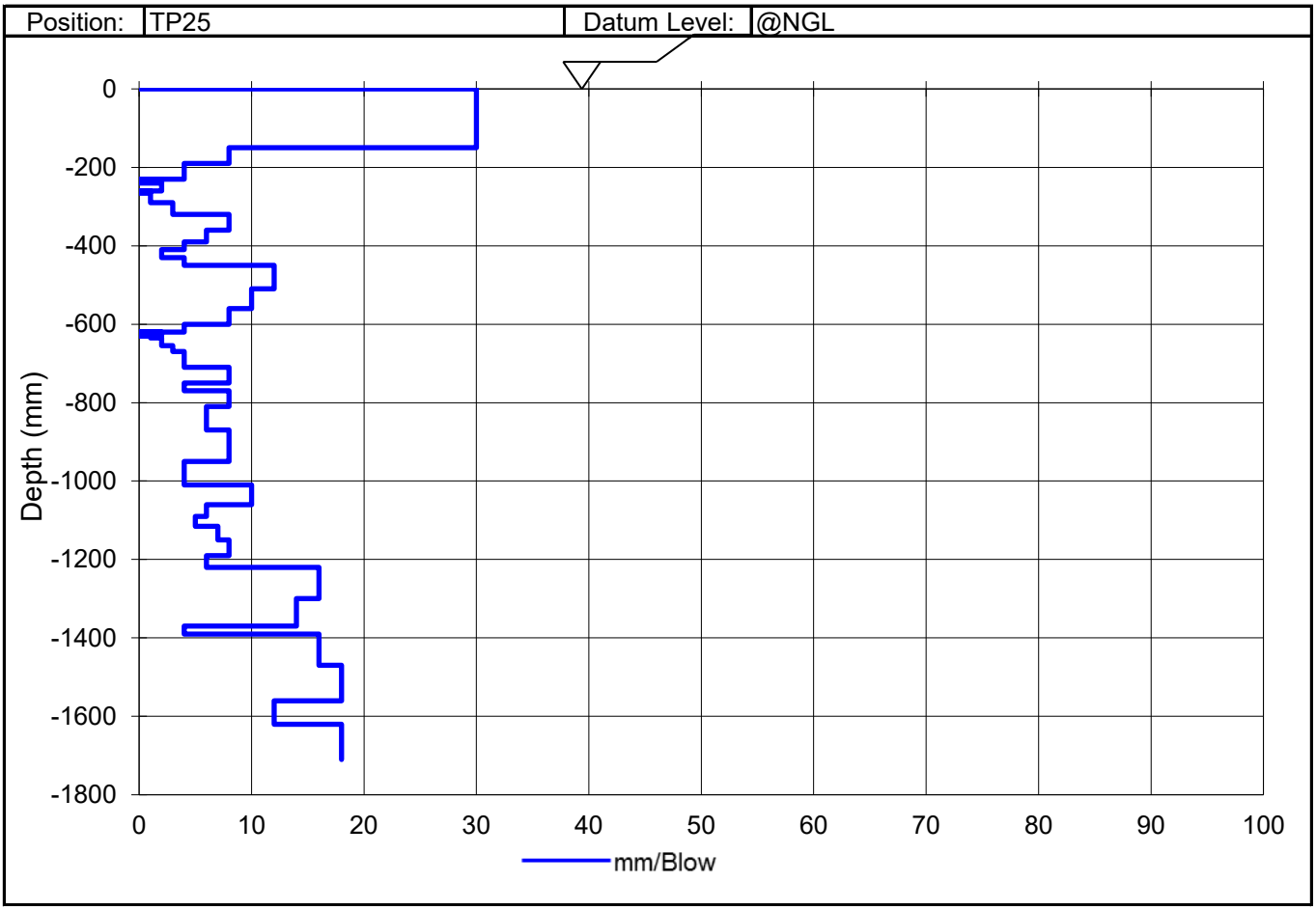
Attention :	Francois van Eck	No. of Pages :	5 of 7

TEST REPORT

DYNAMIC CONE PENETROMETER (DCP) - (SANS 3001 - Method Pending)

Position: TP25 Datum Level: @NGL



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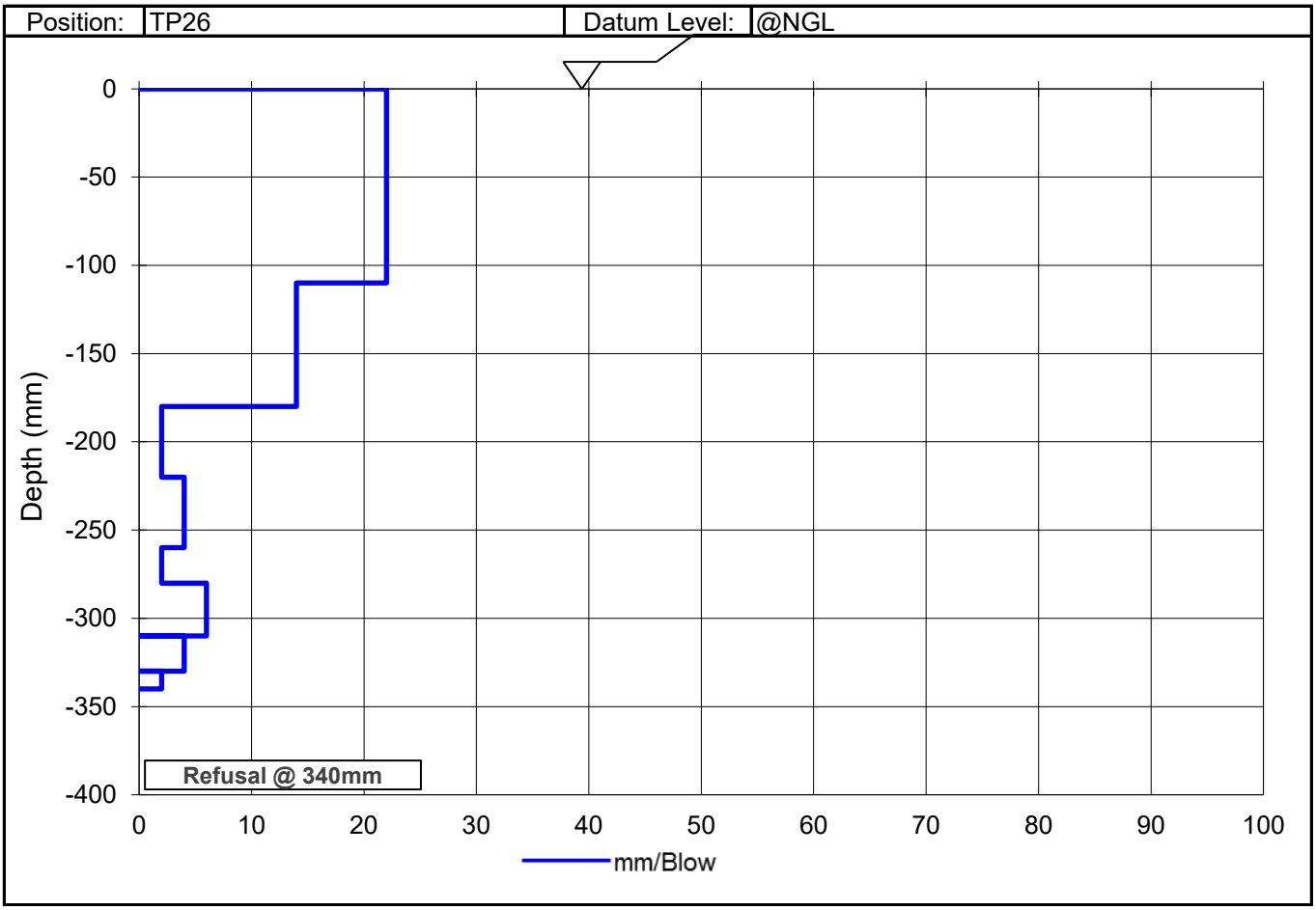
Attention :	Francois van Eck	No. of Pages :	6 of 7

TEST REPORT

DYNAMIC CONE PENETROMETER (DCP) - (SANS 3001 - Method Pending)

Position: TP26 Datum Level: @NGL



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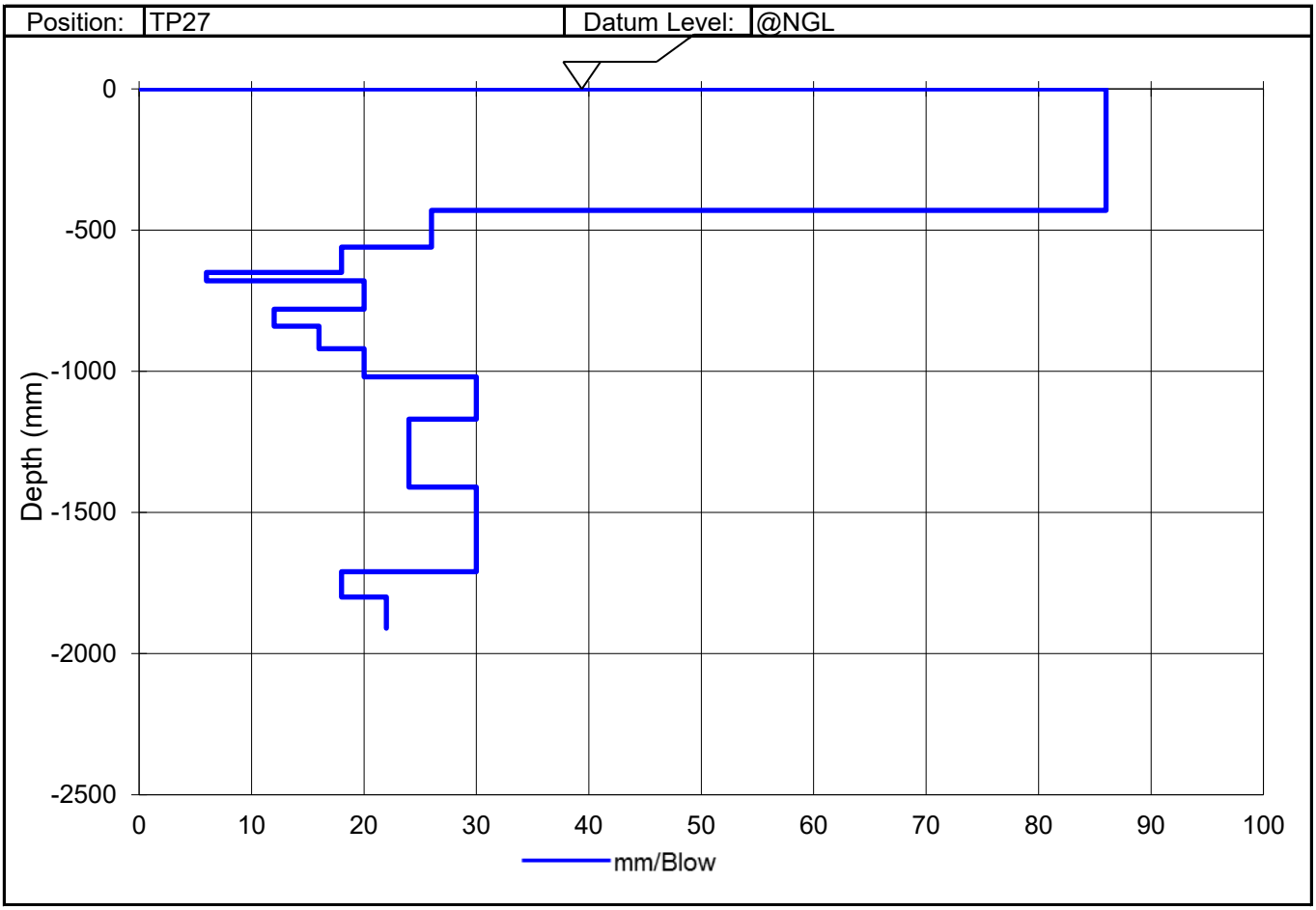
TEST REPORT

DYNAMIC CONE PENETROMETER (DCP) - (SANS 3001 - Method Pending)

Position:	TP27	Datum Level:	@NGL



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