

ANNEXURE D: GEOTECHNICAL ASSESSMENT REPORT
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GEOTECHNICAL ASSESSMENT REPORT

LOERIE SPORTS FIELD

FOR

BOSCH PROJECTS (PTY) LTD

TOSCALAB (Pty)
Ltd.

CIVIL ENGINEERING MATERIALS LABORATORY
Reg.No. 2014/263692/07

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Block 1, First Floor, Greenacres Office Park,
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6045

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21 July 2022

TO WHOM IT MAY CONCERN

GEOTECHNICAL ASSESSMENT REPORT

LOERIE SPORTS FIELD

FOR

BOSCH PROJECTS (PTY) LTD

Attached is the Geotechnical Assessment Report for the above contract.
The report was compiled by Tosca Lab (Pty) Ltd Civil Engineering Materials Laboratory.

Should you require any additional information, please do not hesitate to contact us.

Yours faithfully,



DEREK SOUTTER
CIVIL TECHNOLOGIST

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2. EXECUTIVE SUMMARY

Tosca Lab (Pty) Ltd was appointed by Bosch Projects (Pty) Ltd to investigate and prepare a geotechnical assessment report for the Loerie Sports Fields, in Loerieheuwel, Eastern Cape, South Africa.

The proposed site is located at the corner of Nellie Street and Judy Street, Loerieheuwel. Access to the site is obtained via Judy Street. The site co-ordinates are approx. 33°52'39.45"S and 25°01'15.16"E. See Addendum B for locality plans and an aerial photograph.

The site is a derelict sports field located in an semi-urban environment, so there is no natural vegetation on the site, except for a few small plants and trees located around the perimeter of the site.

Three test pits locations were supplied by Bosch Projects (See Addendum B – Aerial Photo). The test pits were excavated by hand, with the intention to excavate all the test pits down to 1.5m depth, to determine the current subsurface conditions, however bedrock was encountered in test pits 2 and 3:

- Test Pit 1: No refusal;
- Test Pit 2: Refusal at 1170mm, and
- Test Pit 3: Refusal at 1300mm.



All the test pits were profiled and 3 DCP's (2m depth) were done at adjacent to the test pits from Natural Ground Level, however all 3 DCP's hit refusal

- DCP 1: Refusal at 1233mm;
- DCP 2: Refusal at 1072mm, and
- DCP 3: Refusal at 1232mm.

Only certain horizons of the three test pits were tested. When deciding which material to test, the selection was done endeavoring to identify the material in order for in-situ founding properties.

The tests carried out on the material are the full range of Foundation Indicators, Modified AASHTO and CBR. The material has been classified by the Unified Soil Classification Sysyem, the TRH14 classification as well as the HRB Classification.

3. INTRODUCTION

3.1 Terms of Reference

This report presents the results of an engineering geological investigation for the proposed Loerie Sports Field development. The aim of the investigation was to establish the surface and the subsurface engineering geological properties of the site.

3.2 Available Information

- a) Profile log's
- b) Foundation Indicator test results
- c) Dynamic Cone Penetrometer readings
- d) 1:250 000 Geological Series 3324 Port Elizabeth (Council for Geosciences, 1995)

4. SITE DESCRIPTION

4.1 Location

The site is situated at the corner of Nellie and Judy Streets, in Loerieheuwel, located just off the R331.

A locality plan is attached in Addendum B. The co-ordinates for the test pits and DCP's are noted on relevant result forms in Addendum D.

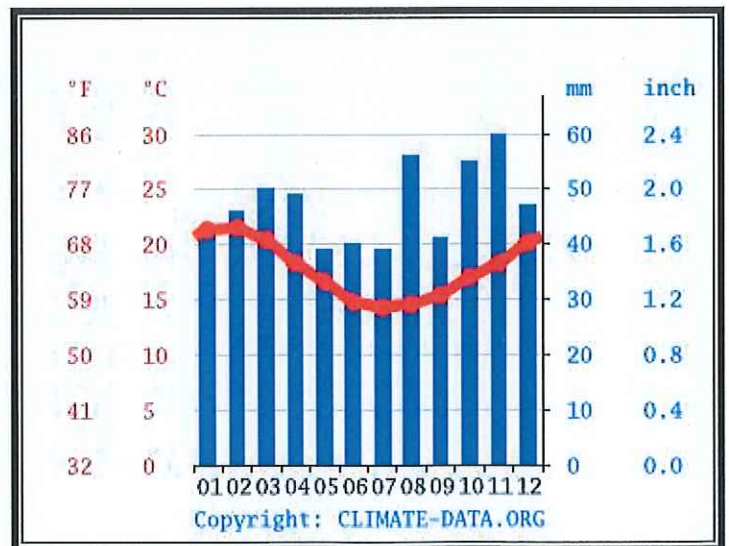
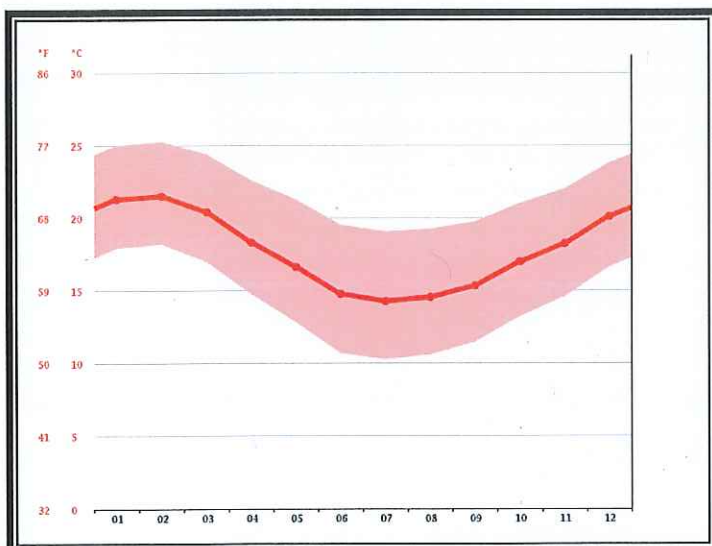
4.2 Vegetation

Due to the nature of the site as an sports field, there is no natural vegetation, except for a few small trees/shrubs on the periphery of the site.

4.3 Climate

Accurate climate information for Loerieheuwel is not available, therefore the climate data for the nearby town of Jeffreys Bay is presented, as it is geographically close enough to be relevant:

- Jeffrey's Bay varies in altitude with an average of 16m above sea level.
- The climate is classified as warm and temperate.
- The Köppen-Geiger climate classification is *Cfb*.
- The average temperature in Jeffrey's Bay, South Africa is 17.7 °C.
- The highest monthly average high temperature is 21.5 °C in February.
- The lowest monthly average low temperature is 14.3 °C in July.
- Jeffrey's Bay's climate receives an average of 565 mm of rainfall per year, or 47 mm per month.
- The driest weather is in May when an average of 39 mm of rainfall (precipitation) occurs across 6 days.
- The wettest weather is in November when an average of 60 mm of rainfall (precipitation) occurs.
- The variation in precipitation (between driest and wettest months) is 21mm and the variation in annual temperature is around 7.2 °C.



AVERAGES

	January	February	March	April	May	June	July	August	September	October	November	December
Avg. Temperature °C (°F)	21.3 °C (70.4) °F	21.5 °C (70.7) °F	20.4 °C (68.8) °F	18.3 °C (65) °F	16.6 °C (61.9) °F	14.8 °C (58.6) °F	14.3 °C (57.7) °F	14.6 °C (58.2) °F	15.4 °C (59.6) °F	17 °C (62.6) °F	18.2 °C (64.8) °F	20.1 °C (68.2) °F
Min. Temperature °C (°F)	17.9 °C (64.3) °F	18.2 °C (64.6) °F	17 °C (62.6) °F	14.8 °C (58.6) °F	12.8 °C (55.1) °F	10.7 °C (51.3) °F	10.3 °C (50.5) °F	10.6 °C (51.1) °F	11.5 °C (52.7) °F	13.2 °C (55.8) °F	14.6 °C (58.3) °F	16.6 °C (61.9) °F
Max. Temperature °C (°F)	25 °C (77) °F	25.3 °C (77.5) °F	24.4 °C (75.9) °F	22.6 °C (72.7) °F	21.3 °C (70.3) °F	19.5 °C (67.2) °F	19.1 °C (66.3) °F	19.3 °C (66.7) °F	19.8 °C (67.6) °F	21 °C (69.9) °F	22 °C (71.7) °F	23.8 °C (74.8) °F
Precipitation / Rainfall	43	46	50	49	39	40	39	58	41	55	60	47
mm (in)	(1.7)	(1.8)	(2)	(1.9)	(1.5)	(1.6)	(1.5)	(2.2)	(1.6)	(2.2)	(2.4)	(1.9)
Humidity(%)	74%	75%	75%	74%	70%	66%	66%	69%	71%	72%	72%	73%
Rainy days (d)	6	6	6	6	5	5	5	6	6	7	7	7

5. GEOLOGY OF THE SITE

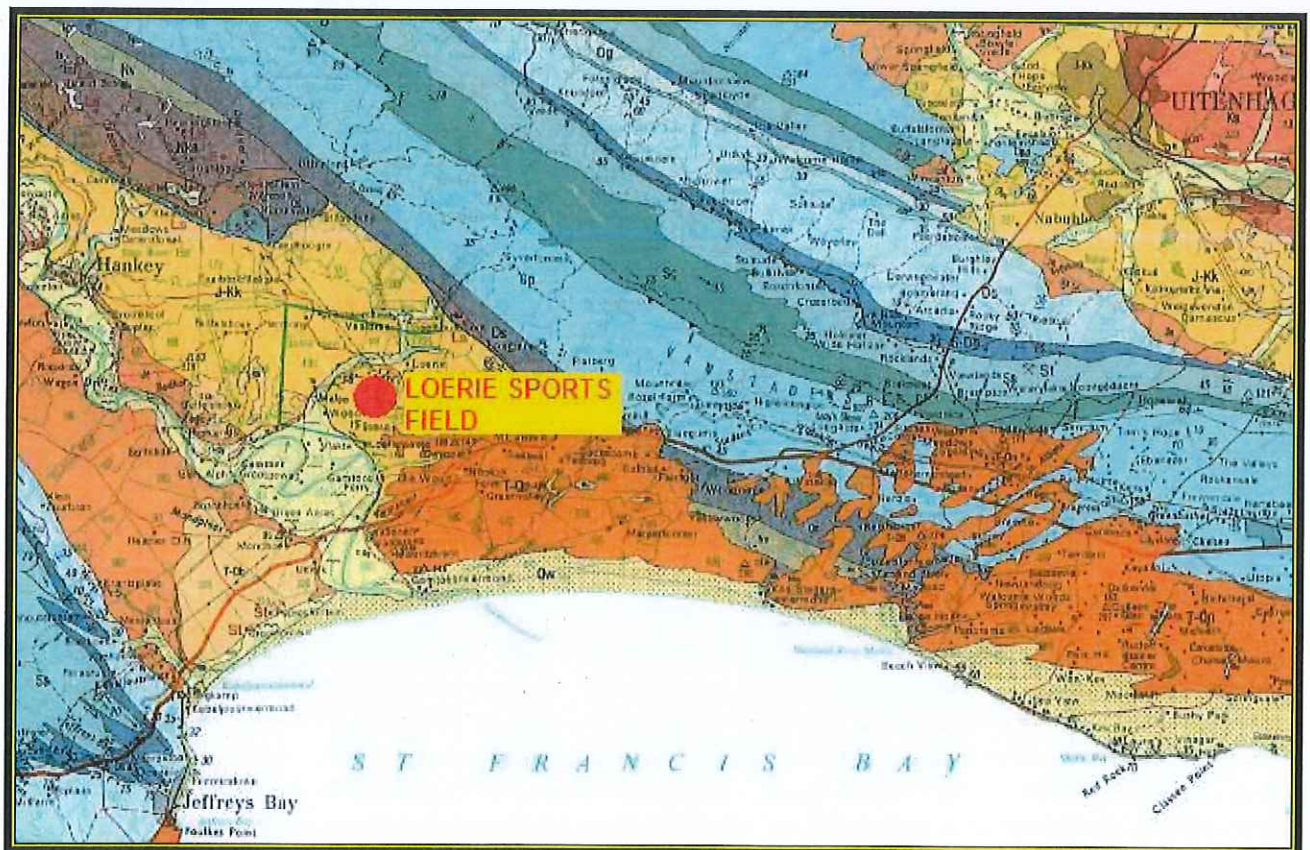


FIGURE 10-1

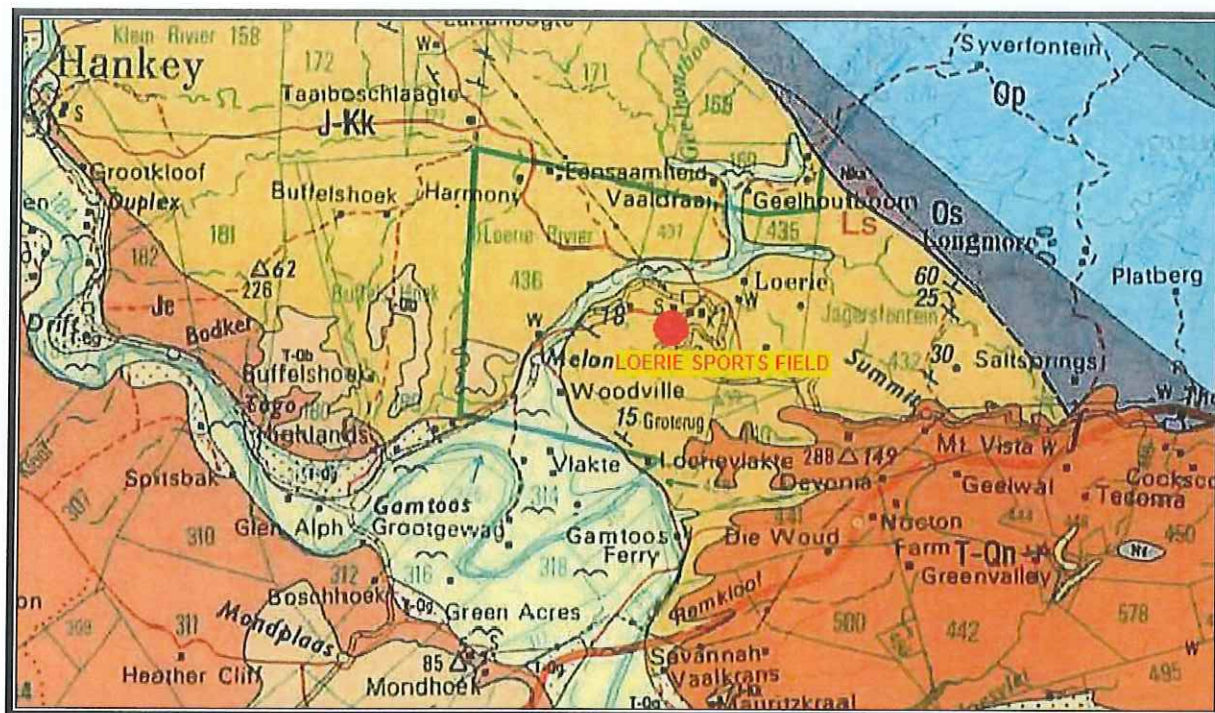


FIGURE 10-2

The geology of the study area is indicated in outline on the 1: 250 000 sheet 3324 Port Elizabeth (Council for Geosciences 1985)(Figure 10-1), the relevant portion of which is shown above in Figure 10-2).

The site falls within the Kirkwood formation of the Uitenhage Group, denoted on Figure 10-2 by "J-Kk".

KRYT CRETACEOUS	UITENHAGE	Sondagsrivier Sundays River	Ks
			J-Kk
JURA JURASSIC	SUURBERG	Enon	Je
		Mimosa	Jm
		Coerney en/and Slagboom	Js

FIGURE 10-3

LITHOLOGY	
J-Kk	Rooierige en groenerige moddersteen, sandsteen Reddish and greenish mudstone, sandstone

5.2 Uitenhage Group, Kirkwood Formation

The Kirkwood Formation of the Uitenhage Group comprises readily-weathered silty mudrocks and subordinate sandstones of fluvial origin and Early Cretaceous (Berriasian / Valanginian) age that crop out along the southwestern slopes of the Coega River Valley. Key geological accounts include those by Rigassi & Dixon (1972), Winter (1973), McLachlan & McMillan (1976), Tankard et al. (1982), Dingle et al., (1983) and Shone (1976, 2006). Early geologists called these rocks the "Variegated Marls" referring to the distinctive reddish-brown, pinkish and greenish-grey colour spectrum shown by the sediments (NB "marl" is a misnomer, technically referring only to calcareous, clay-rich mudrocks). Another older name for the same succession was the "Wood Beds", referring to the abundant petrified wood recorded in the Algoa Basin and elsewhere.

6. LABORATORY TESTING

Test Pit No.	Depth (mm)	Description	Indicator					In-Situ			Unified Soil Classification	TRH14 Classification	HRB Classification
			% PASSING			GM	PI	CBR	UCS	E-Moduli (MPa)			
			2.00	0.425	0.075			(%)	(kPa)				
TP 1	540-970	Light Reddish Brown Clayey Sandy Silt	88	82	38.8	0.91	16	See Addendum D – DCP Reports			SC	G9	A-6(2)
TP 2	440-870	Light Reddish Brownish Olive Clayey Silt with Sandstone Gravel	66	63	48.2	1.23	7	See Addendum D – DCP Reports			SC	<G9	A-4(0)
TP 3	540-1030	Light Yellowish Reddish Brown Clayey Gravelly Sandy Silt	91	87	53.5	0.68	12	See Addendum D – DCP Reports			CL	<G9	A-6(3)

7. DISCUSSION

The material excavated and tested was all slightly moist and a medium density on all profiles. The material is intact and of a clayey silty nature with medium to high plasticity indices.

No ground water tables were encountered in any of the test pits

8. CONCLUSION AND RECOMMENDATIONS

No adverse conditions totally prohibiting the proposed development were observed on site.

The general quality of materials tested was poor (G9 and lower quality). This material may be suitable for use as infills or in-situ layers and for lower layerworks, but not for use in foundations or upper layer works, which should be imported from outside the site.

According to the SAICE Code of practice (Foundations and Superstructures for single story Residential Buildings and Masonry Construction) the site may be classed as between H and H1 and is defined as fine grained soils with moderate to very high plasticity (clays, silty clays, clayey silts and sandy clays)

TYPICAL FOUNDATION MATERIAL	CHARACTER OF FOUNDING MATERIAL	EXPECTED RANGE OF TOTAL SOIL MOVEMENTS (mm)	ASSUMED DIFFERENTIAL MOVEMENT (% OF TOTAL)	SITE CLASS
Rock (excluding mud rocks which may exhibit swelling to some depth)	STABLE	NEGLIGIBLE	-	R
Fine grained soils with moderate to very high plasticity (clays, silty clays, clayey silts and sandy clays)	EXPANSIVE SOILS	<7,5 7,5-15 15-30 >30	50% 50% 50% 50%	H H1 H2 H3
Silty Sands, sands, sandy and gravelly soils	COMPRESSIBLE AND POTENTIALLY COLLAPSABLE SOILS	<5 5-10 >10	75% 75% 75%	C C1 C2
Fine Grained Soils (clayey silts and clayey sands of low plasticity), sands, sandy and gravelly soils	COMPRESSIBLE SOILS	<10 10-20 >20	50% 50% 50%	S S1 S2
Contaminated soils, Controlled fill, Dolomitic areas, Landslip, Landfill, Marshy areas, Mine waist fill, mining subsidence, Reclaimed areas, Uncontrolled fill, Very soft silts/silty clays	VARIABLE	VARIABLE		P

Foundation design, building procedures and precautionary measures

SITE CLASS	ESTIMATED TOTAL HEAVE (mm)	CONSTRUCTION TYPE	FOUNDATION DESIGN AND BUILDING PROCEDURES (Expected damage limited to Category 1)
H	<7,5	Normal	* Normal construction (strip footing or slab-on-the-ground) foundation. * Site drainage and service/plumbing precautions recommended
H1	7,5-15	Modified normal	* Lightly reinforced strip footings. * Articulation joints at all internal/external doors and openings. * Light reinforcement in masonry. * Site drainage and plumbing/service precautions.
H1	7,5-15	Soil raft	* Remove all or necessary parts of expansive horizon to 1,0 m beyond the perimeter of the building and replace with inert backfill compacted to 93% MOD AASHTO density at -1 % to + 2% of optimum moisture content. * Normal construction with lightly reinforced strip footings and light reinforcement in masonry if residual movements are <7,5 mm, or construction type appropriate to residual movements. * Site drainage and plumbing/service precautions.
H2	15-30	Stiffened or cellular raft	* Stiffened or cellular raft of articulated lightly reinforced masonry. * Site drainage and plumbing/service precautions.
H2	15-30	Piled construction	* Piled foundations with suspended floor slabs with or without ground beams. * Site drainage and plumbing/service precautions.
H2	15-30	Split construction	* Combination of reinforced masonry and full movement joints. * Suspended floors or fabric reinforced ground slabs acting independently from the building. * Site drainage and plumbing/service precautions
H2	15-30	Soil raft	* As for H1.
H3	>30	Stiffened or cellular raft	* As for H2.
H3	>30	Piled Construction	* As for H2.
H3	>30	Soil raft	* As FOR H1.

Any foundation excavations should be inspected by a suitably qualified person prior to construction.

9. REFERENCES

- Brink A B A. 1981. Engineering Geology of Southern Africa. Volume 2. Rocks of 2,000 to 300 million years in age.
- Johnson MR, Anhaeusser CR & Thomas RJ. 2006. The Geology of South Africa.
- United States Army Corps of Engineers. 1953
- Jennings JE, Brink, ABA and "revised Guide to Soil Profiling for Civil Engineering Purpose in South Africa" January 1973
- National Institute for transport and Roads Research. " Guidelines for Roads Construction materials" THR14, Pretoria, CSIR, 1987
- National Home Building Manual: Part 1 Section2.

10.ADDENDUM A – TEST PIT PHOTOS

Test Pit 1



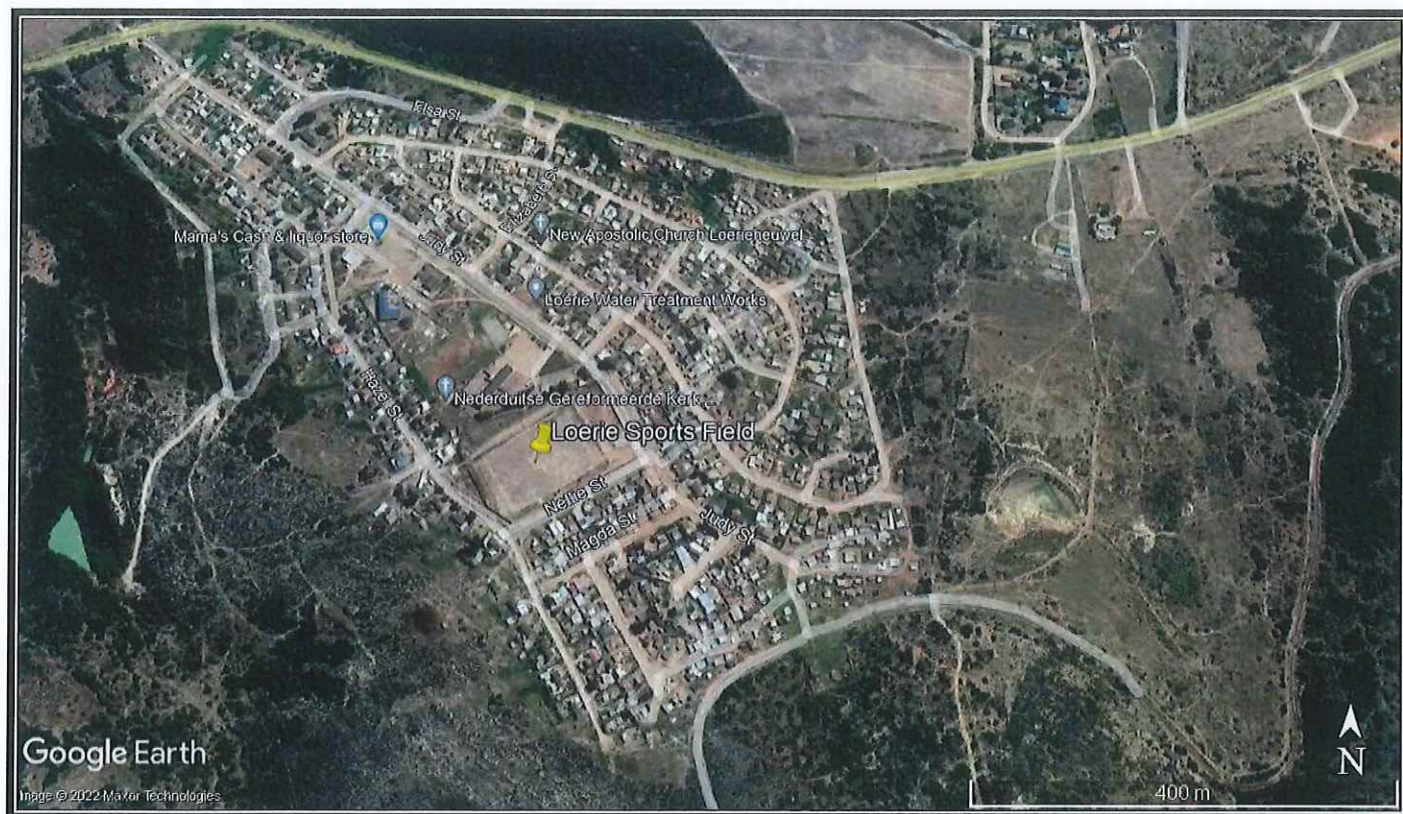
Test Pit 2



Test Pit 3



11.ADDENDUM B – LOCALITY PLAN



AERIAL PHOTO



CUSTOMER : Bosch Projects
P.O.Box 27158
Greenacres
Port Elizabeth
6001
ATTENTION : Mr. L. Streicher

PROJECT : Loerie Sports Field
DATE SAMPLED / RECEIVED: 06.07.2022
DATE : 21.07.2022
POSITION : S33°52'38.0" E25°01'17.9"
JOB CARD NUMBER: C30362
DESCRIPTION :

TEST HOLE 1

INDICATOR / CBR RESULT SUMMARY		Depth (mm)	Profile
SAMPLE NUMBER	S12011		
DEPTH mm	540-970		
HRB CLASSIFICATION	-		
COLTO CLASSIFICATION	G9		
SIEVE ANALYSIS - SANS 3001 Test Method GR1			
106.0 mm			
75.0 mm			
63.0 mm			
50.0 mm			
37.5 mm			
28.0 mm	100		
20.0 mm	99		
14.0 mm	98		
5.00 mm	93		
2.00 mm	88		
0.425 mm	82.0		
0.075 mm	38.8		
0.060 mm	31.7		
0.006 mm	19.0		
0.0018 mm	11.3		
SOIL MORTAR ANALYSIS - SANS 3001 Test Method PR5			
COARSE SAND	7		
COARSE FINE SAND	8		
MEDIUM FINE SAND	23		
FINE FINE SAND	18		
PASSING 0.075mm	44		
GRADING MODULUS	0.91		
ATTERBERG LIMITS : SANS 3001 Test Method GR10			
LIQUID LIMIT	30		
PLASTICITY INDEX	16		
LINEAR SHRINKAGE	8.0		
C.B.R. : SANS 3001 Test Method GR30 - GR40			
MOD AASHTO (Kgf/m ³)	1883		
O.M.C. (%)	16.2		
C.B.R. @ 100%	9		
C.B.R. @ 98 %	8		
C.B.R. @ 95 %	7		
C.B.R. @ 93 %	6		
C.B.R. @ 90 %	5		
SWELL (MASHTO) %	4.6		
REMARKS:			
1. No ground water table.			
2. No refusal.			

06/07/2022
Bosch Projects
Loerie Sports Field
TP1

The above test results are pertinent only to the samples received and tested at the laboratory. This report shall not be reproduced, except in full, without the prior consent of Tosca Lab (Pty) Ltd. * Indicate non-accredited tests

- The highlighted result is an interpretation of the direct comparison between the quoted specification and the single test sample result obtained.
- The results met/not met is based on an approximate 95% level of confidence with reference to ISO/IEC 98 - 4

Environmental Conditions

[Signature]

Name: Frederick Eijbers
Technical Signatory

Revision 4

Tosca Lab TSF 169

13.07.2021

CUSTOMER : Bosch Projects
P.O.Box 27158
Greenacres
Port Elizabeth
6001
ATTENTION : Mr. L. Streicher

PROJECT : Lorie Sports Field
DATE SAMPLED / RECEIVED: 06.07.2022
DATE : 21.07.2022
POSITION : S33°52'40.3" E25°01'16.8"
JOB CARD NUMBER: C30362
DESCRIPTION :

TEST HOLE 2

INDICATOR / CBR RESULT SUMMARY						
SAMPLE NUMBER	S12012				Profile	
DEPTH mm	440-870					
HRB CLASSIFICATION	-				Slightly Moist, Light Brownish Redd, Medium Dense, Intact, Sandy Silt with Roots, Transported	
COLTO CLASSIFICATION	<G9					
SIEVE ANALYSIS - SANS 3001 Test Method GR1						
106.0 mm					0-110	
75.0 mm						
63.0 mm	100					
50.0 mm	95					
37.5 mm	91					
28.0 mm	85					
20.0 mm	76					
14.0 mm	75				110-440	
5.00 mm	68					
2.00 mm	66					
0.425 mm	63.4					
0.075 mm	48.2					
0.060 mm	40.2					
0.006 mm	16.1					
0.0018 mm	8.0					
SOIL MORTAR ANALYSIS - SANS 3001 Test Method PR5						
COARSE SAND					440-870	
3						
COARSE FINE SAND						
3						
MEDIUM FINE SAND						
7						
FINE FINE SAND						
13						
PASSING 0.075mm						
74						
GRADING MODULUS						
1.23						
ATTERBERG LIMITS : SANS 3001 Test Method GR10						
LIQUID LIMIT						
20						
PLASTICITY INDEX						
7						
LINEAR SHRINKAGE						
3.5						
C.B.R. : SANS 3001 Test Method GR30 - GR40						
MOD AASHTO (Kg/m ³)					870-1170	
1957						
O.M.C. (%)						
12.1						
C.B.R. @ 100%						
9						
C.B.R. @ 98 %						
7						
C.B.R. @ 95 %						
5						
C.B.R. @ 93 %						
4						
C.B.R. @ 90 %						
2						
SWELL (MAASHTO) %						
3.5						
Remarks:						
1. No ground water table.						
2. Refusal at 1170mm.						

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2. The highlighted result is an interpretation of the direct comparison between the quoted specification and the single test sample result obtained.

3. The results met/not met is based on an approximate 95% level of confidence with reference to ISO/IEC 98 - 4

Environmental Conditions

CUSTOMER : Bosch Projects
P.O.Box 27158
Greenacres
Port Elizabeth
6001
ATTENTION : Mr. L. Streicher

PROJECT : Loerie Sports Field
DATE SAMPLED / RECEIVED: 06.07.2022
DATE : 21.07.2022
POSITION : S33°52'38.1" E25°01'13.4"
JOB CARD NUMBER: C30362
DESCRIPTION :

TEST HOLE 3

INDICATOR / CBR RESULT SUMMARY			
SAMPLE NUMBER	S12013	Depth (mm)	Profile
DEPTH mm	540-1030		
HRB CLASSIFICATION			
COLTO CLASSIFICATION	<G9		
SIEVE ANALYSIS - SANS 3001 Test Method GR1			
106.0 mm			
75.0 mm			
63.0 mm			
50.0 mm			
37.5 mm	100		
28.0 mm	99		
20.0 mm	98		
14.0 mm	98		
5.00 mm	94		
2.00 mm	91		
0.425 mm	87.0		
0.075 mm	53.5		
0.060 mm	41.6		
0.006 mm	21.4		
0.0018 mm	10.7		
PERCENTAGE PASSING			
SOIL MORTAR ANALYSIS - SANS 3001 Test Method PR5			
COARSE SAND	5		
COARSE FINE SAND	5		
MEDIUM FINE SAND	10		
FINE FINE SAND	22		
PASSING 0.075mm	59		
GRADING MODULUS	0.68		
ATTERBERG LIMITS : SANS 3001 Test Method GR10			
LIQUID LIMIT	23		
PLASTICITY INDEX	12		
LINEAR SHRINKAGE	6.0		
C.B.R. : SANS 3001 Test Method GR30 - GR40			
MOD AASHTO (Kg/m ²)	1825		
O.M.C. (%)	15.8		
C.B.R. @ 100%	6		
C.B.R. @ 98 %	5		
C.B.R. @ 95 %	4		
C.B.R. @ 93 %	3		
C.B.R. @ 90 %	1		
SWELL (MMASHTO) %	5.0		
Remarks:			
1. No ground water table. 2. Refusal at 1300mm			

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- The results met/not met is based on an approximate 95% level of confidence with reference to ISO/IEC 98 - 4

Environmental Conditions

Name: Frederik Eijbers
Technical Signatory

CLIENT: Bosch Projects

P.O. Box 27158

Greenacres,

Port Elizabeth, 6001

ATT: Mr. L. Streicher

PROJECT : Loerie Sports Field

Lab. Ref.: C30362

S12011

REF : C30362 : Position 1 (TP1) : S33°52'38.0"
E25°01'17.9" @ NGL

DATE : 21.07.2022

DYNAMIC CONE PENETROMETER : METHOD ST6 : TMH 6

Field DATA									
Condition :		Sound		Moisture :		Optimum			
Other :									
Depth (mm)	Cumulative No. Blows	Penetration Rate (mm)	Estimated Insitu CBR	Est. Insitu UCS (Kpa)	Depth (mm)	Cumulative No. Blows	Penetration Rate (mm)	Estimated Insitu CBR	Est. Insitu UCS (Kpa)
10									
110	5	20.0	9	108					
220	10	22.0	8	97					
340	15	24.0	7	88					
439	20	19.8	10	109					
488	25	9.8	23	239					
519	30	6.2	41	397					
540	35	4.2	68	613					
565	40	5.0	54	505					
586	45	4.2	68	613					
607	50	4.2	68	613					
638	55	6.2	41	397					
670	60	6.4	40	384					
704	65	6.8	37	359					
733	70	5.8	45	428					
764	75	6.2	41	397					
790	80	5.2	52	483					
814	85	4.8	57	528					
836	90	4.4	64	582					
854	95	3.6	82	727					
870	100	3.2	95	829					
889	105	3.8	77	685					
907	110	3.6	82	727					
929	115	4.4	64	582					
945	120	3.2	95	829					
963	125	3.6	82	727					
979	130	3.2	95	829					
1009	135	6.0	43	412					
1032	140	4.6	60	554					
1059	145	5.4	49	463					
1090	150	6.2	41	397					
1119	155	5.8	45	428					
1145	160	5.2	52	483					
1178	165	6.6	38	371					
1206	170	5.6	47	445					
1233	175	5.4	49	463					
1233	180	Refusal							

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Name : Frederik Eijbers
Position : Technical Signatory

CLIENT: Bosch Projects

P.O. Box 27158

Greenacres,

Port Elizabeth, 6001

ATT: Mr. L. Streicher

PROJECT : Loerie Sports Field

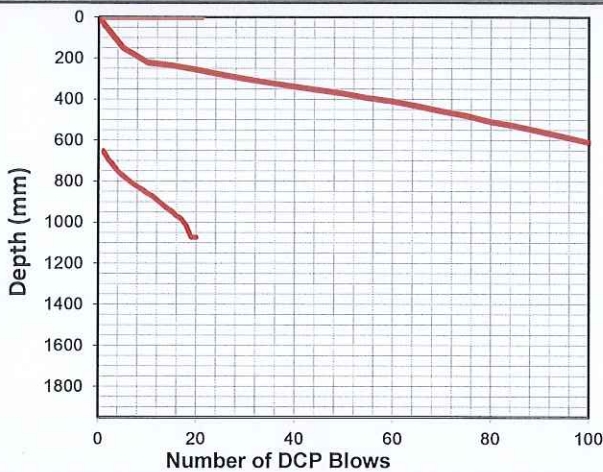
Lab. Ref.: C30362

S12012

REF : C30362 : Position 2 (TP2) : S33°52'40.3"
E25°01'16.8" @ NGL

DATE : 21.07.2022

DYNAMIC CONE PENETROMETER : METHOD ST6 : TMH 6

Field DATA										DCP Field Curve Profile
Condition :		Sound			Moisture :		Optimum			
Other :										
Depth (mm)	Cumulative No. Blows	Penetration Rate (mm)	Estimated Insitu CBR	Est. Insitu UCS (Kpa)	Depth (mm)	Cumulative No. Blows	Penetration Rate (mm)	Estimated Insitu CBR	Est. Insitu UCS (Kpa)	
10										
158	5	29.6	6	70						
230	10	14.4	14	156						
245	15	3.0	104	890						
266	20	4.2	68	613						
289	25	4.6	60	554						
310	30	4.2	68	613						
330	35	4.0	72	647						
349	40	3.8	77	685						
365	45	3.2	95	829						
384	50	3.8	77	685						
405	55	4.2	68	613						
420	60	3.0	104	890						
444	65	4.8	57	528						
468	70	4.8	57	528						
490	75	4.4	64	582						
519	80	5.8	45	428						
540	85	4.2	68	613						
566	90	5.2	52	483						
593	95	5.4	49	463						
620	100	5.4	49	463						
652	105	6.4	40	384						
690	110	7.6	32	317						
720	115	6.0	43	412						
750	120	6.0	43	412						
771	125	4.2	68	613						
790	130	3.8	77	685						
810	135	4.0	72	647						
825	140	3.0	104	890						
840	145	3.0	104	890						
858	150	3.6	82	727						
870	155	2.4	137	1141						
890	160	4.0	72	647						
910	165	4.0	72	647						
929	170	3.8	77	685						
946	175	3.4	88	775						
968	180	4.4	64	582						
984	185	3.2	95	829						
1017	190	6.6	38	371						
1072	195	11.0	20	210						
1072	200	Refusal								

The above test results are pertinent only to the samples received and tested by the laboratory. This report may not be reproduced, except in full, without the prior consent of Tosca Lab (Pty) Ltd. * Indicate non-accredited tests

Name : Frederik Eijbers
Position : Technical Signatory

CLIENT: Bosch Projects

P.O. Box 27158

Greenacres,

Port Elizabeth, 6001

ATT: Mr. L. Streicher

PROJECT : Loerie Sports Field

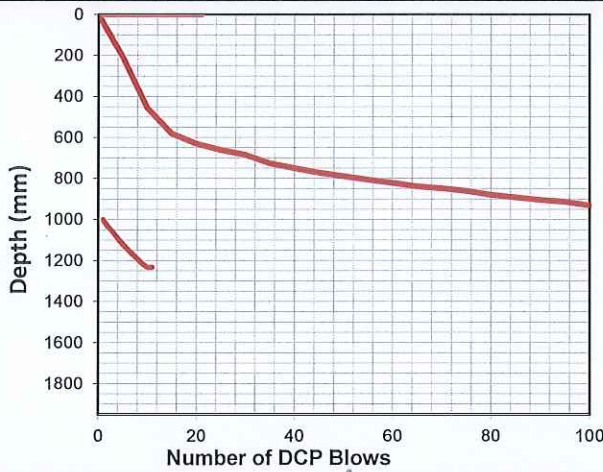
Lab. Ref.: C30362

S12013

REF : C30362 : Position 3 (TP3) : S33°52'38.1"
E25°01'13.4" @ NGL

DATE : 21.07.2022

DYNAMIC CONE PENETROMETER : METHOD ST6 : TMH 6

Field DATA										DCP Field Curve Profile
Condition :		Sound			Moisture :		Optimum			
Other :										
Depth (mm)	Cumulative No. Blows	Penetration Rate (mm)	Estimated Insitu CBR	Est. Insitu UCS (Kpa)	Depth (mm)	Cumulative No. Blows	Penetration Rate (mm)	Estimated Insitu CBR	Est. Insitu UCS (Kpa)	
30										
235	5	41.0	4	49						
485	10	50.0	3	39						
610	15	25.0	7	84						
660	20	10.0	23	234						
690	25	6.0	43	412						
715	30	5.0	54	505						
756	35	8.2	29	291						
780	40	4.8	57	528						
800	45	4.0	72	647						
819	50	3.8	77	685						
835	55	3.2	95	829						
850	60	3.0	104	890						
869	65	3.8	77	685						
878	70	1.8	197	1571						
890	75	2.4	137	1141						
910	80	4.0	72	647						
922	85	2.4	137	1141						
934	90	2.4	137	1141						
943	95	1.8	197	1571						
960	100	3.4	88	775						
1000	105	8.0	30	299						
1033	110	6.6	38	371						
1059	115	5.2	52	483						
1089	120	6.0	43	412						
1119	125	6.0	43	412						
1144	130	5.0	54	505						
1167	135	4.6	60	554						
1191	140	4.8	57	528						
1214	145	4.6	60	554						
1232	150	3.6	82	727						
1232	155	Refusal								

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Name : Frederik Eijbers
Position : Technical Signatory

