Appendix F.1B

PRELIMINARY GEOTECHNICAL SCOPE

Public

BAV Consulting (Pty) Ltd
T: +27 31 350 3370 | C: 078 764 3935
W: **www.bavconsulting.co.za**
A: 22 Frara Drive, Pinelands, Pinetown, 3610

FINAL REPORT

PRELIMINARY GEOTECHNICAL INVESTIGATIONS SCOPE & SPECIFICATION FOR THE PROPOSED KOMATI REPOWERING & REPURPOSING PROJECT

Report no.: BAV152.12.23 Status: **Final** Date: Feb 2024

Eskom Holdings SOC Limited
T: +27 11 800 6824 | F: +27 11 800 4472
W: **www.eskom.co.za**
A: Eskom Megawatt Park, 2 Maxwell Drive, Sunninghill, Sandton, 2157
P.O. Box 1091 Johannesburg 2000

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CORPORATE INFORMATION	
Client	**Eskom Holdings SOC Ltd**
Consultant	**BAV Consulting (Pty) Ltd**
Contact Person	Melusi Ndluvu
Address	A: 22 Frara Drive, Pinelands, Pinetown, 3610
Contact Details	Email: Info@bav.co.za Tel: +27 31 350 3370 Web: www.bavconsulting.co.za
Contract Number	
Project Team	**Andries Vukeya Cand.Sci.Nat** Geological Science
	Hudson Mabelane Pr.Sci.Nat Geological Science and Earth Science
	Melusi Ndluvu Civil Engineering

TITLE:

PRELIMINARY GEOTECHNICAL INVESTIGATIONS SCOPE & SPECIFICATION FOR THE PROPOSED KOMATI REPOWERING & REPURPOSING PROJECT

REPORT NO.: *BAV152.12.23*				**STATUS:** *Final*
Verification	**Capacity**	**Name**	**Signature**	**Date**
By Author	Senior Geologist	H Mabelane Pr.Sci.Nat		11/Feb/24
Checked by	Civil Engineer	Melusi Ndlovu		
Authorised by	Civil Engineer	Melusi Ndlovu		

EXECUTIVE SUMMARY

BAV Consulting Pty Ltd was appointed by **Eskom Holdings SOC Limted** to conduct a preliminary geotechnical investigation in order to determine and asses the subsurface soil conditions at selected sites for the renewable energy project. The sites of investigation are situated within and/or near Komati Power Station on Eskom owned land within Steve Tswhete Local Municipality.

The proposed Eskom sites are situated adjacent to several operational coal mines currently exploited for coal seams in excess of 45 meters by either board and pillar of open-pit mining. The Blinkpan underground operation located just west of the Komati area which utilises a mechanised bord-and-pillar underground mining method confirmed that there's no past of on-going mining operation underneath the proposed site.

Komati Village and its neighbouring areas are regionally characterized by rocks of the Karoo Supergroup covered by Quaternary deposits. The Karoo Supergroup rocks in the area can be further classified as the Vryheid Formation of the Ecca Group. The rocks of the Vryheid Formation typically include sandstone, siltstone, shale and coal beds. These were later intruded by Jurassic dolerite dykes and sills.

There are no soluble rocks such as dolomite or limestone underlying the sites, therefore, the presence of karst-related subsurface topography leading to the formation of sinkholes and subsidence features is unlikely. However, the area is known to have been previously undermined, therefore further studies should be undertaken to asses possible land-subsidence events resulting from the mobilisation of overburden material into underlying abandoned mines.

Additional percussion drilling is recommended at Solar PV Site 1 and 2 in order to accurately confirm and delineate areas affected by previous mining activities. Furthermore, rotary core drilling and associated strength tests such as SPT, UCS, pile tests, etc. are recommended at the footprint of the proposed structures.

Conditions prevailing on site suggest that no problems are foreseen for the development of agrivoltaics, wind turbines and a BESS system, provided that the contents of this report are acknowledged, and recommendations, as outlined in the report, are adhered to. Note that heavy loaded structures such as the proposed wind turbines are not recommended at Solar PV Site 1 due to the presence of cavities that can manifest into subsidence or sinkholes triggered by continued weathered of overburden material, groundwater level fluctuations, and collapse of underground mine pillars.

1 INTRODUCTION

1.1 Terms of Reference

Komati Power Station is planning to develop and implement a renewable energy project through the use of Solar PV Agrivoltaics, Wind turbines and a BESS system to generate and store power; thus, a geotechnical investigation is required to determine the subsurface soil conditions.

The proposed Solar PV plant, Battery Storages and Wind turbines for Komati Power Station is located within the boundary of Eskom-owned land. The area is in Mpumalanga Province between Middleburg and Bethal. Suitable areas for renewable energy project were identified considering the wetlands, ash dams, existing underground and above ground services (electrical cables and overhead lines).

BAV Consulting Pty Ltd was appointed by **Eskom Holdings SOC Limited** to conduct a preliminary geotechnical investigation in order to determine and asses the subsurface soil conditions at selected sites for the renewable energy project. The sites of investigation are situated within and/or near Komati Power Station on Eskom owned land within Steve Tshwete Local Municipality, Nkangala District Municipality, Mpumalanga Province.

1.2 Proposed Developments

Eskom Generation is planning to implement the BESS in phase 1 of solar PV at the Komati Power Station in Mpumalanga. Suitable areas for renewable energy project were identified considering the wetlands, ash dams, existing underground and above ground services (electrical cables and overhead lines). The proposed development would include the installation of the following typical equipment:

- Solar PV
- Battery Storage (BESS Unit)
- Wind Turbines
- Power Transformers
- Electrical Transformer
- Shunt Reactors
- Low Voltage Switchgear
- Instrument Transformers
- Surge Arrestors
- Control and Ancillary Buildings

1.3 Scope of Work

The geotechnical investigation included the following key components:

- Health, Safety and Environment
- Desktop studies to review of existing regional, site and surface information.
- Services detection by means of Ground Penetration Radar (GPR)
- Resistivity survey for near-surface soil conductivity
- Excavation of test pits, soil profiling and sampling
- Dynamic probing by DPSH Testing
- Geotechnical core drilling including SPT tests at intervals of 1.5 m
- Investigate potential undermined ground at Solar PV site 1 by percussion drilling
- Laboratory testing by a SANAS accredited civil engineering laboratory
- Prepare a factual report
- Compile an interpretive report

1.4 Report Provisions and Exclusions

This report is specifically suitable for use in preliminary design purposes for structures imposing pressures equal to or less than 300 kPa and the planning of additional geotechnical investigations. It is meant solely for use in the above manner. Other infrastructure and service developments on this site, such as high-rise buildings, bridges, underground works etc. fall outside the scope of this report.

Any form of development, outside the boundaries of the investigated areas as per the attached site layout plan, is not covered by this report.

1.5 Approach

The approach in respect of the fieldwork phase is in conformance with the Site Investigation Code of Practice, published by The Geotechnical Division of the South African Institution of Civil Engineering (SAICE), 2008. A systematic approach was followed consisting of:

- Desktop studies and information gathering
- Site visit, area identification and field reconnaissance survey
- Geophysical surveys including GPR and resistivity survey
- Excavation of test pits, soil profiling and sampling
- In-situ testing such as DCP and DPSH tests
- Percussion drilling and sampling
- Core drilling including SPT tests

1.6 Sources of Information

The following were studied prior to the investigation taking place:

- 1: 250 000 Geological map sheet 2628 East Rand, Copyright Geological Survey of South Africa (Council for Geosciences)
- **SANS 633**: Soil profiling and rotary percussion borehole logging on dolomite land in Southern Africa for engineering purposes
- **Site Investigation Code of Practice**, 1st Edition, South African Institution of Civil Engineering - Geotechnical Division, January, 2010.
- **Eskom 2023**: Preliminary geotechnical investigations scope & specification for the proposed Komati Repowering & Repurposing Project
- Satellite Imagery (Esri Satellite Imagery/Google earth, 2023)

2 SITE LOCATION AND DESCRIPTION

2.1 Geographic Description

The sites for the proposed development of agrivoltaics, wind turbines and a BESS system are located on portions 10, 11 and the remainder of the farm Komati Power Station 56 IS, near Komati Village. Komati village is situated in between the towns of Middelburg and Bethal within the Steve Tshwete Local Municipality of the Nkangala District, Mpumalanga Province (refer **Figure 2-3**).

2.2 Topographic and Drainage

The area is generally characterised by near-horizontal natural slopes inclined predominantly towards the north. The average slope gradient ranges between 1.2 to 2.0%, hence it is considered to be naturally stable as far as slope instability is concerned. This topographic assessment was based on Google Earth sourced elevations in conjunction with site walk-over survey. It is worth noting that the topography heights are only for relative height differences and cannot be concluded as standard survey heights. **Figure 2-2** below shows the general aerial view of the area.

Surface run-off from the Eskom sites is generally by means of sheetwash towards the north and ultimately into northwest flowing streams traversing the Komati the region. It is the author's view that flood-lines may affect certain sections of the sites, particularly areas adjacent to streams and wetlands. Calculated flood lines for all nearby watercourses and streams should be available from the Local authority's town planning department or landowner. If not, a hydrologist should undertake this determination.

2.3 Climate and Weathering

The climate of Komati is similar to that of Middelburg. It is classified as subtropical highland climate (Cwb) according to Köppen and Geiger classification and the climate is characterised by long, warm and cloudy summers, while the winters are short, cold and clear. Majority of rain falls within the summer months from October until March. The mean precipitation for the area is approximately 650 mm per year. The long-term average high temperatures are in December with an average high of 28°C. The coldest and driest month is June with an average temperature of 8°C and approximately 5 mm precipitation, while the wettest month is January with approximately 170 mm of rainfall.

The site falls within an area with a climatic N-value of between 2 and 5 (Weinert, 1980). This simply means that chemical weathering processes predominate over mechanical weathering, thus the formation of thick layers of residual soil is anticipated. According to Thornthwaite's moisture index, the area is between -20 and 0, which indicates a sub-humid environment (Schultze, 1958).

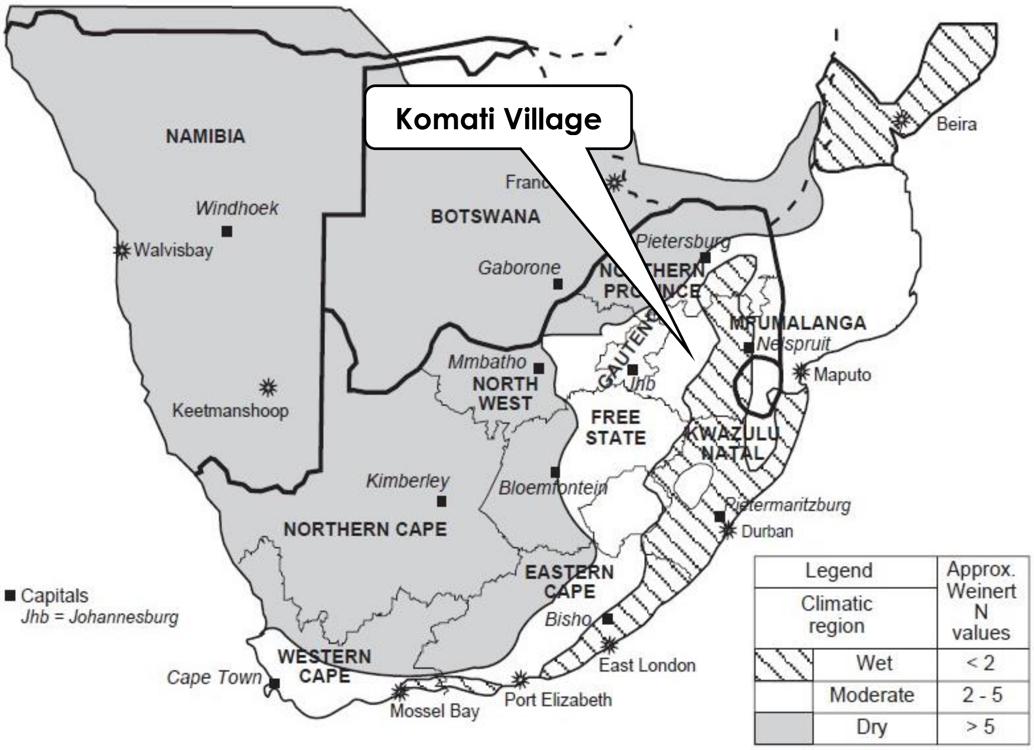

Figure 2-1: Macro Climatic Regions of Southern Africa (Adapt from Weinert, 1980)

2.4 Vegetation

According to Accocs (1980), Komati area falls under the Bankenveld vegetation type. Satellite images and site walkover shows that the area is mainly characterized by grass, weeds, and planted trees. It must be pointed out that this site has been interfered with by anthropogenic activities and therefore, the vegetation noted on site may not represent the genuine site conditions.

2.5 Land-Use

Land use across the project area is predominantly for farming and mining purposes. In terms of this study, it therefore, presents a brownfields type of study necessitating alterations and modification, particularly areas within the main power station.

2.6 Mining Activities

The proposed Eskom sites are situated adjacent to several operational coal mines currently exploited for coal seams in excess of 45 meters by either board and pillar of open-pit mining. The Blinkpan underground operation located just west of the Komati area which utilises a mechanised bord-and-pillar underground mining method confirmed that there's no past of on-going mining operation underneath the proposed site. No credible information was received from the Koornfontein operation located in the north. Nonetheless, the presence of undermined ground at the proposed site cannot be discounted with certainty. Therefore, further studies focusing on undermining are necessary.

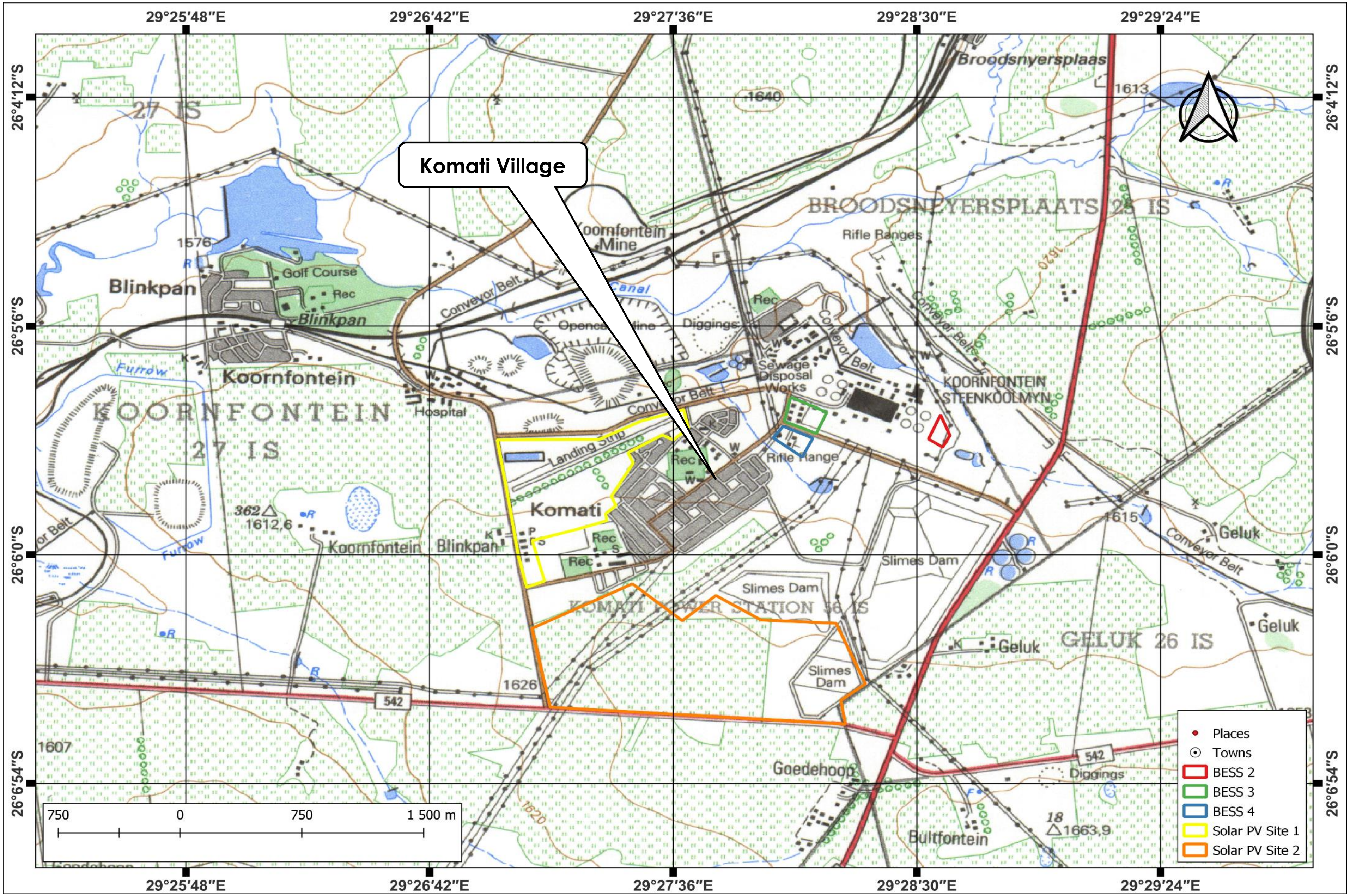

Figure 2-2: Topographic map showing the location of project sites in the vicinity of Komati Village.

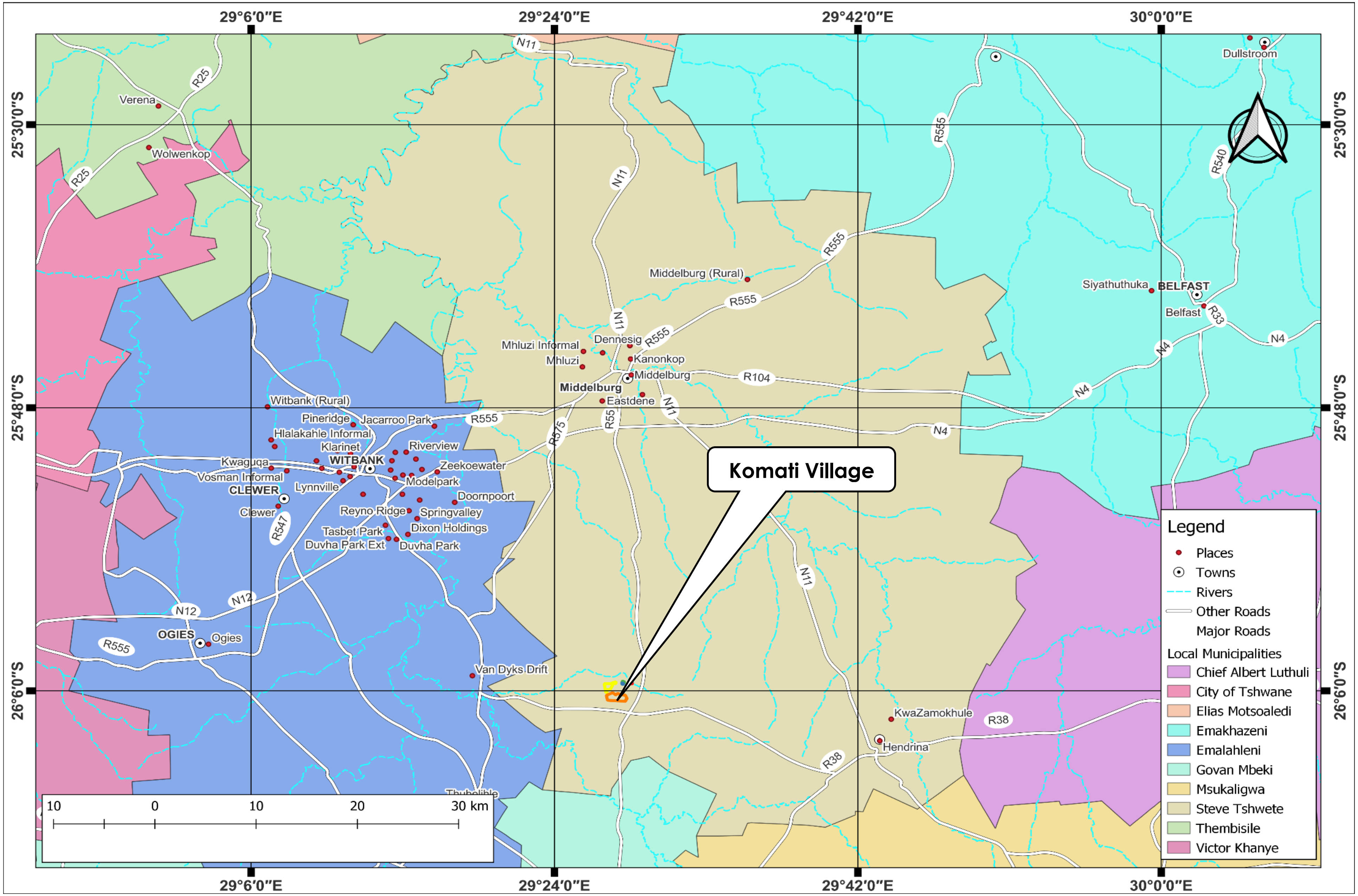

Figure 2-3: Site locality map showing the location of Komati within Steve Tshwete Local Municipality.

3 GEOLOGY SETTING

3.1 Regional Geology

According to the 1:250 000-scale regional geological map sheet 2628 East Rand, Komati Village and its neighbouring areas are regionally characterized by rocks of the Karoo Supergroup covered by Quaternary deposits (refer **Figure 3-3**). The Karoo Supergroup rocks in the area can be further classified as the Vryheid Formation of the Ecca Group. The rocks of the Vryheid Formation typically include sandstone, siltstone, shale and coal beds. These were later intruded by Jurassic dolerite dykes and sills.

There are no soluble rocks such as dolomite or limestone underlying the sites, therefore, the presence of karst-related subsurface topography leading to the formation of sinkholes and subsidence features is unlikely. However, the area is known to have been previously undermined, therefore further studies should be undertaken to asses possible land-subsidence events resulting from the mobilisation of overburden material into underlying abandoned mines.

3.2 Local Geology

The local geological conditions of the Komati area may be interpreted from fieldwork results. The area is generally covered by transported soils, underlain by pedogenic material, residual soils and weathered sedimentary rocks of the Vryheid Formation, respectively (refer ***Figure 3-2***).

- **Transported soils** - These are soils that have been transported by a natural agent (imported fill, wind-blown sand, colluvium, hillwash, etc.) during relatively recent geological times and which have not undergone lithification into sedimentary rocks or cementation into a pedogenic material.
- **Residual soils** – Soils derived from the weathering of the underlying rock and have not moved from the place of origin as with transported soils.
- **Weathered rock** – Rock that is/has been altered from its original state through the process of weathering by natural agents.
- **Pedogenic rock** – Weathered rock that is/has been cemented by chemical agent(s).

3.3 Geological Structures

As could further be seen on the geological map and satellite images, there are no geological structures such faults traversing the sites. However, a northeast-southwest trending lineament, possibly a dyke is indicted on the regional geological map. Furthermore, intrusive material interpreted as dolerite was encountered in some of the boreholes drilled as shown in **Figure 3-2** below.

3.4 Regional Geohydrology

The site is located within the Upper Olifants Groundwater Management Unit (GMU) in the B12 Quaternary Catchment Region. According to the regional hydrogeological map Sheet 2526 Johannesburg at a scale of 1: 500 000 published by the Department of Water Affairs (DWA, 1998), the inferred geohydrology of the site is characterized by an intergranular and fractured aquifer system with predominant arenaceous rocks. This aquifer type is characterised by deep weathering of sedimentary rocks imparting intergranular properties of the weathered zones.

The average borehole yield is expected to range from 0.1 to 0.5 l/s indicating that the site is located within a moderate yielding aquifer. The groundwater quality from the contoured geohydrological map suggest that the Electrical Conductivity (EC) range from 0 to 70 mS/m. The mean annual precipitation of the site area ranges from 600 to 800 mm while the groundwater level is expected to range between 10 and 50 mbgl.

Figure 3-1 below shows the local groundwater levels obtained from percussion drilling at Solar PV Site 1.

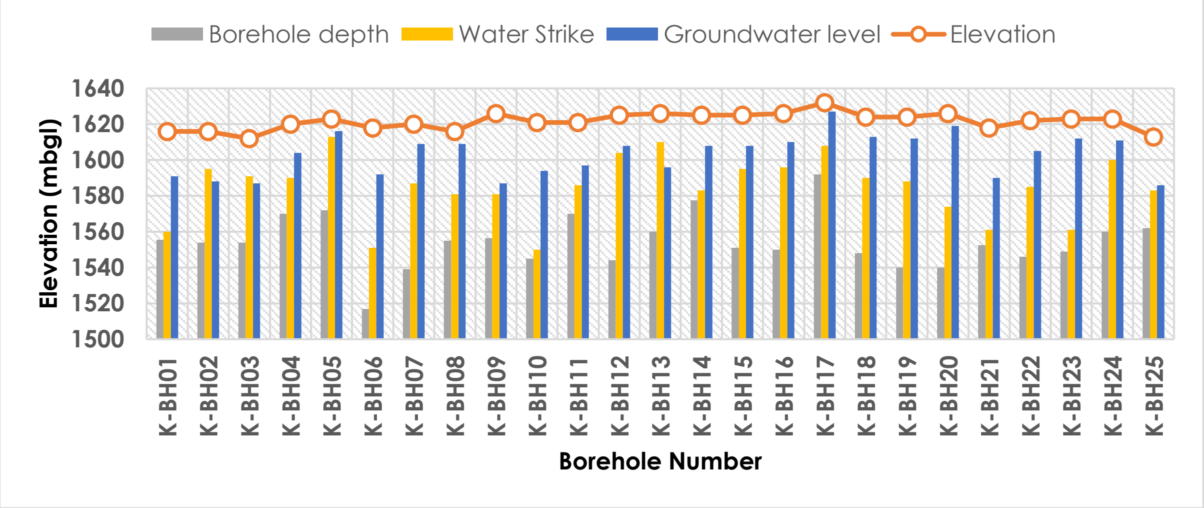

Figure 3-1: Groundwater conditions obtained from boreholes drilled on site.

Table 3-1: The geology of Komati and neighbouring areas

Era/Period	Stratigraphy	Group	Formation	Lithology
Quaternary	-	-	-	(Q) Alluvium
Jurassic	-	-	-	(Jd) Dolerite
Permian	Karoo Supergroup	Ecca Group	Vryheid Formation	(Pv) Sandstone, shale, coal beds
Vaalian	-	-	-	(Vdi) Diabase
	Transvaal Supergroup	Pretoria Group	Selons River Formation	Porphyritic rhyolite, with interbedded mudstone & sandstone

 **Transported soil, underlain by residual soil and weathered sandstone**	 **Highly weathered sandstone**
 **Highly weathered sandstone**	 **Weathered sandstone with dolorite intrusive**
 **Slightly weathered dolerite**	

Figure 3-2: The general geology of the sites interpreted from BH6.

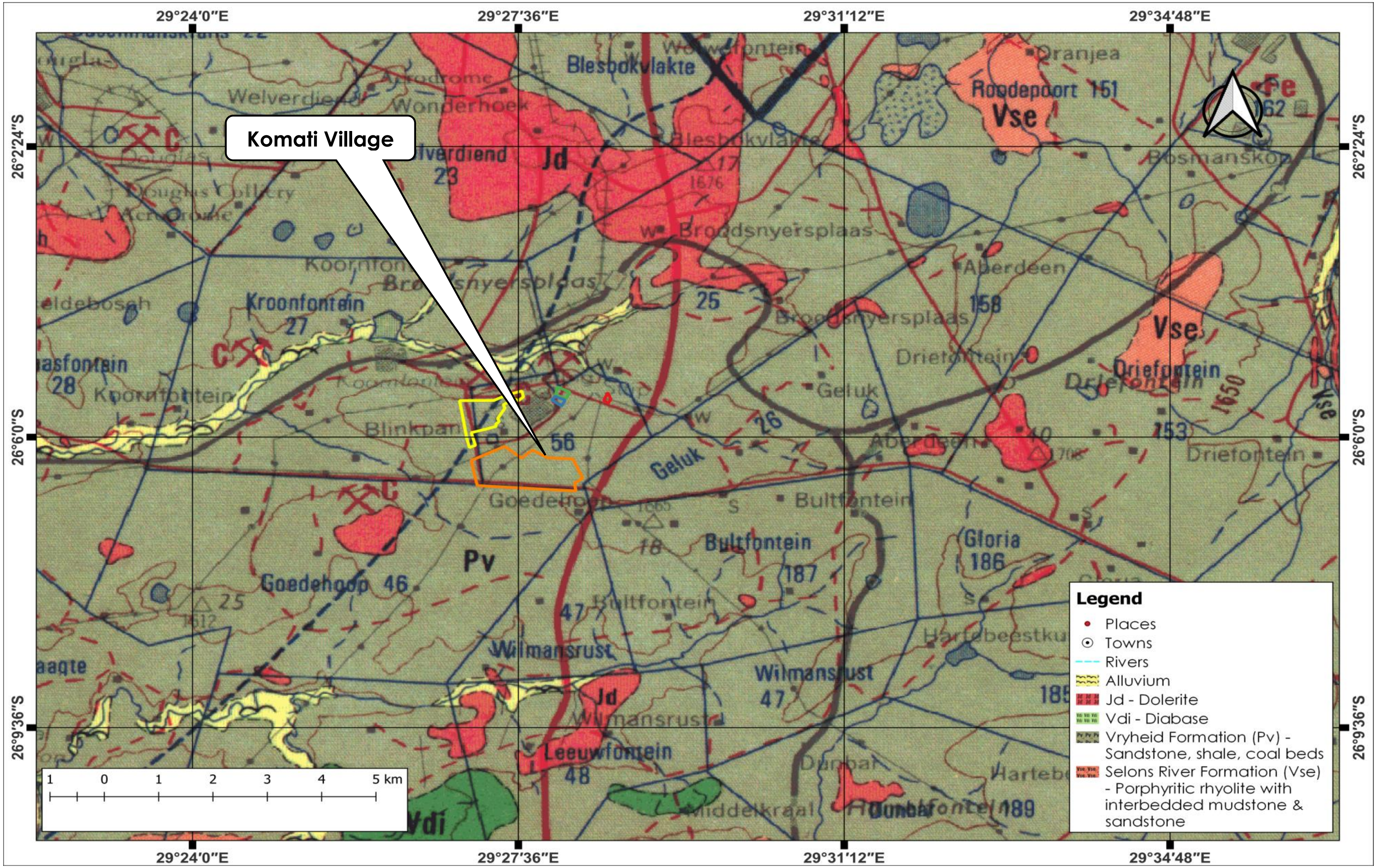

Figure 3-3: Map showing the regional geology of Komati and surrounding areas.

4 GEOPHYSICAL SURVEY

4.1 Resistivity Method

Soil resistivity surveys were carried out in accordance with the 240-96393507: Soil Resistivity Testing Guidelines provided by Eskom as part of the scope. The resistivity survey was undertaken by the ABEM Terrameter SAS1000 system using the Werner protocol (refer **Figure 4-1**). The apparent resistivity data acquired in the field were inverted using the RES2DINV software to provide a true-depth resistivity section.

The resistivity method was used to locate lateral and vertical changes in electrical properties of the sub-surface that may be related to changes in formation properties. The resistivity tomography method provides pseudo-sections of change in electrical properties in the subsurface along a specified line.

The resistivity of a material describes how difficult it is for electrical current to flow through the material. It is a property of the material, independent of the shape (geometry) of the object consisting of the material. This method is extensively used in the exploration of groundwater resources and mineral exploration.

The following geophysical traverses were undertaken with ABEM Terrameter SAS1000 along nine (9) traverse lines at Solar PV Site 1, Solar PV Site 2 and Bess Unit 4 and summarised below. The inverted resistivity data profiles for traverse lines undertaken at the various sites are shown in the figures below. The resistivity values can be interpreted as follows:

- Dark blue to light blue contours is likely indicative of highly saturated sandy material.
- Green to yellow is likely indicative of highly weathered material above bedrock which comprises weathered sedimentary rocks.
- Red to purple or dark red is likely indicative of a fractured to competent bedrock.

The sites are generally blanketed by a laterally persistent layer of sandy clay/clayey sand with low resistivity values and inversely moderate to high conductivity as a result of the moisture content for the upper unconsolidated soils. This is underlain by highly weathered layers of siltstone interlayered with fine sandstone, carbonaceous shale, and shaly coal, all showing moderate to high resistivity values. The weathered layers above were possibly underlain and intruded by slightly weathered to unweathered sandstone and dolerite with high resistivity values. The figures below show resistivity models obtained from field measurements.

Figure 4-1: Geophysical survey for soil resistivity by means of ABEM terrameter SAS1000.

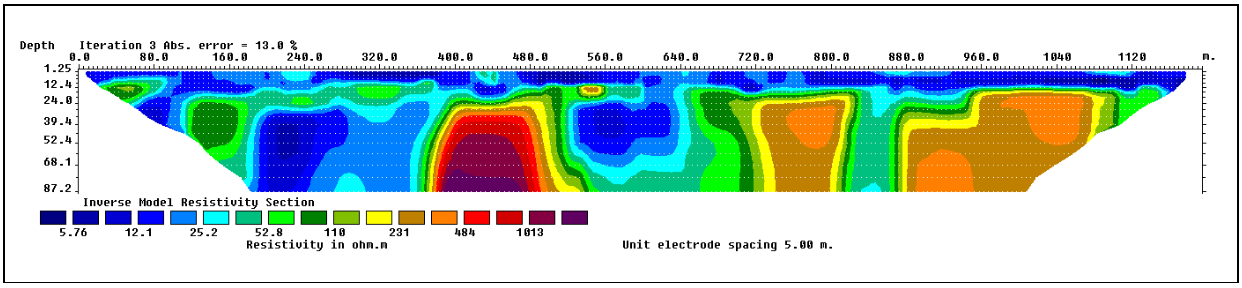

Figure 4-2: Resistivity survey profile at Solar PV Site 1 along a 1.2 km traverse line trending east-west (KOM Line 1).

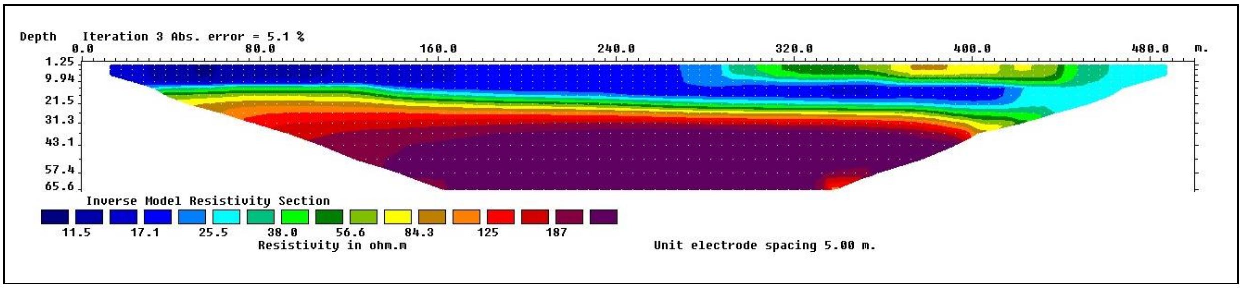

Figure 4-3: Resistivity survey profile at Solar PV Site 1 along a 500 m traverse line trending northwest-southeast (KOM Line 2).

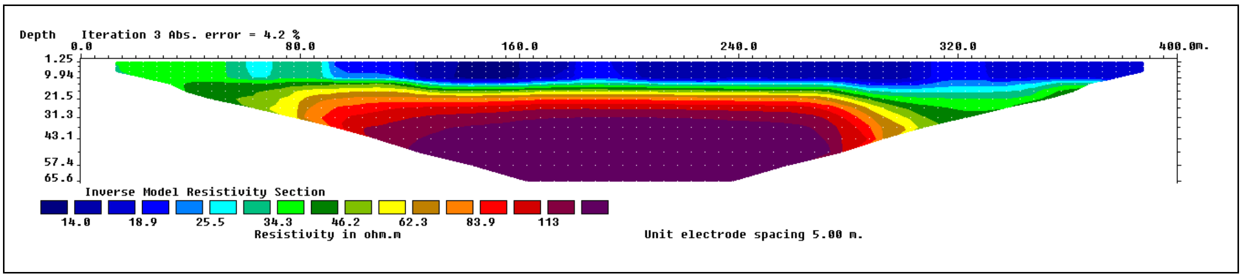

Figure 4-4: Resistivity survey profile at Solar PV Site 1 along a 400 m traverse line trending northwest-southeast (KOM Line 3).

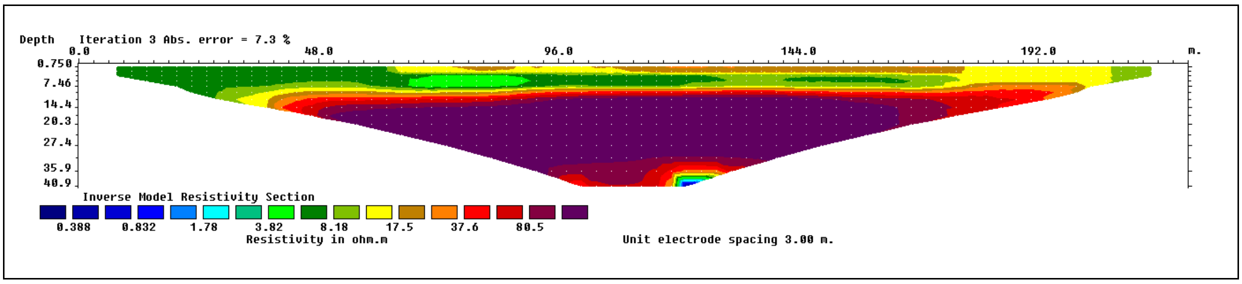

Figure 4-5: Resistivity survey profile at BESS 4 along a 215 m traverse line trending east-west (KOM Line 5).

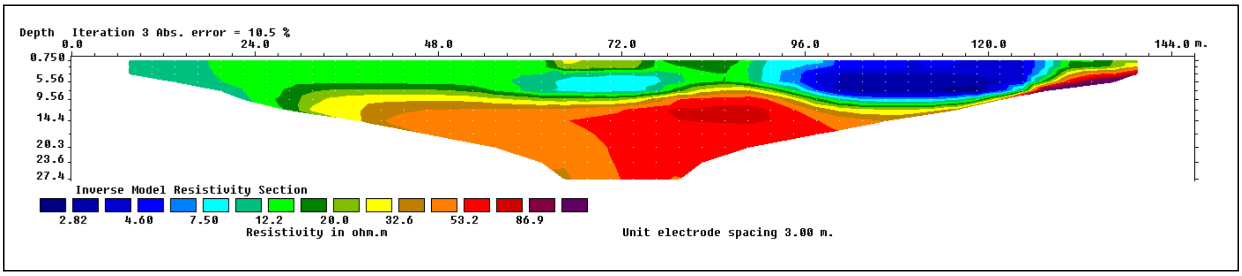

Figure 4-6 Resistivity survey profile at BESS 4 along a 144 m traverse line trending north-south (KOM Line 6).

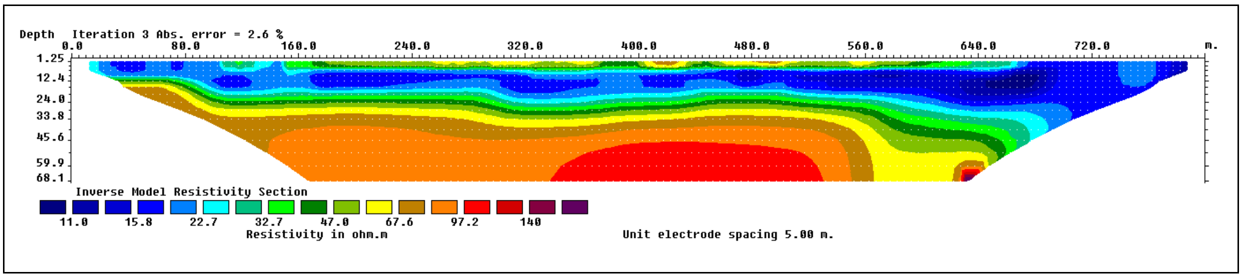

Figure 4-7: Resistivity survey profile at Solar PV Site 2 along an 800 m traverse line trending east-west (KOM Line 7).

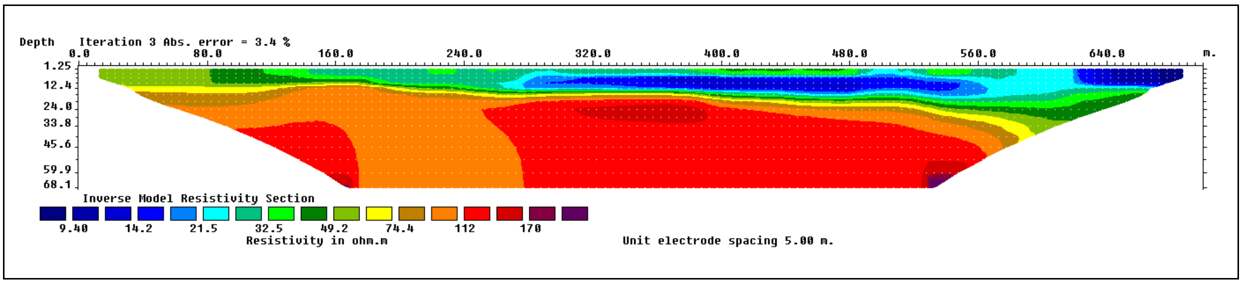

Figure 4-8: Resistivity survey profile at Solar PV Site 2 along a 700 m traverse line trending north-south (KOM Line 8).

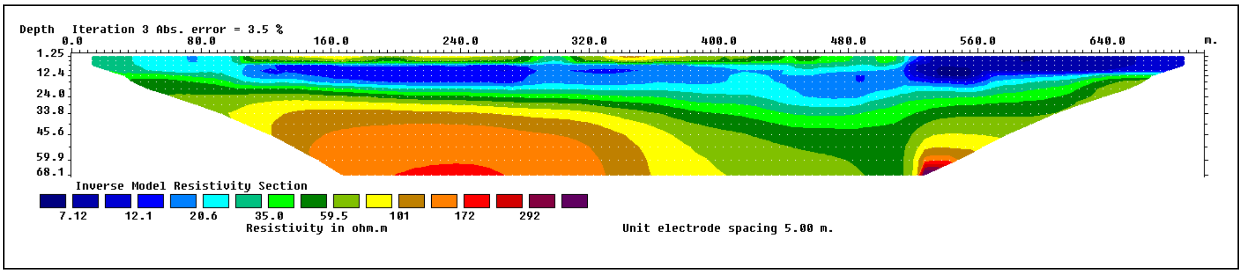

Figure 4-9: Resistivity survey profile at Solar PV Site 2 along a 700 m traverse line trending north-south (KOM Line 9).

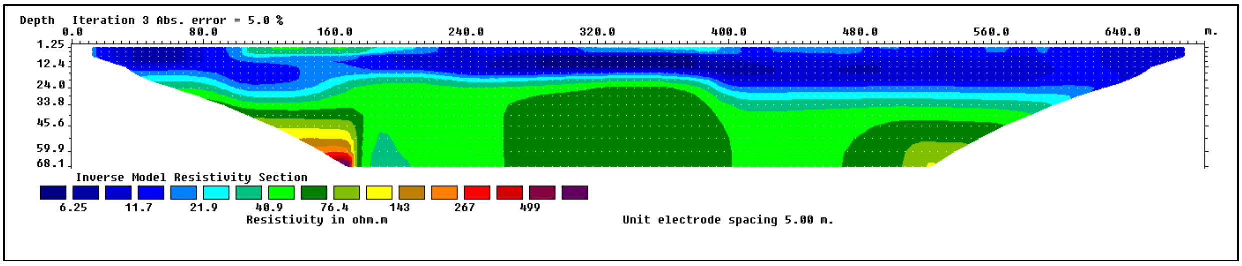

Figure 4-10: Resistivity survey profile at Solar PV Site 2 along a 690 m traverse line trending north-south (KOM Line 10).

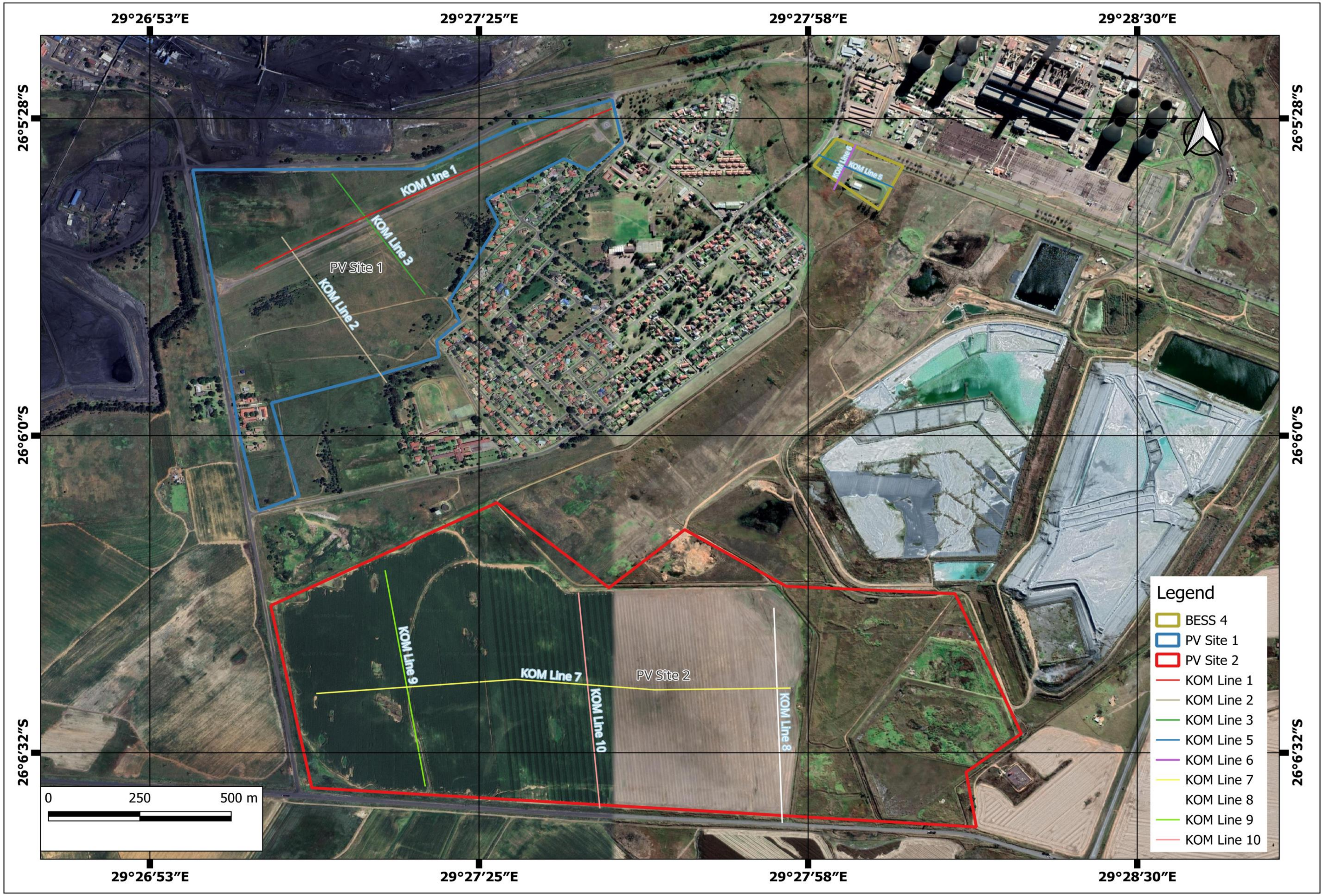

Figure 4-11: Geophysical map showing resistivity survey lines

5 FIELDWORK RESULTS

5.1 Test Pitting Results

Fieldwork was conducted on the 22nd until 25th August 2023. A total of forty-seven (47) shallow test pits were excavated by means of a BELL TLB (named KTP1 to KTP47). Soil horizons in each of the pits were identified and described comprehensively applying the MCCSSO technique as advocated by Jennings *et al* (1973). The acronym – MCCSSO – stands for Moisture, Colour, Consistency, Structure, Texture and Origin. Note that due to erratic GPS satellite signal reception, the coordinates and elevations recorded will have an accuracy of only +/- 5 m. Disturbed soil samples were collected from the excavated test pits in the project area, for identification and analysis.

Their layout across the site is shown in **Figure 5-3**, while the detailed profile descriptions are presented in **APPENDIX A: SOIL PROFILES**.

The excavation of several test pits revealed material consistent with the regional geology of the area. The area is covered by transported soils underlain by pedogenic soils, residual soil and weathered sedimentary rocks, respectively. The profiles were encountered at the various site:

Soil Profile A: Solar PV Site 1

- Moist to very moist, brown, medium dense, intact, silty SAND. Hillwash.
- Moist to very moist, brown, medium dense, intact, clayey SAND with minor ferricrete. Residual soil.

Soil Profile B: Solar PV Site 2

- Fine to medium, sub-angular, closely packed GRAVEL of quartzite in a matrix of moist, brown, silty SAND. The overall consistency is very dense. Imported.
- Very moist, brown, medium dense, intact, clayey SAND. Hillwash.
- Moist to Very moist, orangey brown, firm to stiff, intact, CLAY. Hillwash.

Soil Profile C: BESS Unit 2

- Moist, brown, medium dense, intact, gravelly SAND. Hillwash.
- Moist to very moist, reddish brown, stiff, intact, clayey silty SAND. Hillwash.
- Moist to very moist, reddish brown, medium dense, intact, clayey silty SAND. Hillwash.

Soil Profile D: BESS Unit 3

- Moist to very moist, brown, medium dense, intact, clayey SAND with minor ferricrete. Residual soil.

Soil Profile E: BESS Unit 4

- Moist, brown, medium dense, intact, silty SAND. Hillwash.
- Moist to very moist, brown, medium dense, intact, clayey SAND with minor ferricrete. Residual soil.

Table 5-1: Summary of soil layers encountered in test pits

Site	Test Pit positions		Layer thickness (m)			Seepage
	Test Pit	**Coordinates**	**Hillwash**	**Pedogenic**	**Residual**	
Solar PV Site 1	KTP1	26.09103°S, 29.46031°E	0.0-0.7	-	0.7-2.2	-
	KTP2	26.09147°S, 29.45981°E	0.0-0.8	-	0.8-2.4	2.4 m
	KTP3	26.09211°S, 29.45872°E	0.0-0.4	-	0.4-1.8	-
	KTP4	26.09249°S, 29.45752°E	0.0-0.3	-	0.3-2.3	-
	KTP5	26.09342°S, 29.45654°E	0.0-0.4	-	0.4-2.5	-
	KTP6	26.09348°S, 29.45528°E	0.0-0.1	-	0.1-2.4	-
	KTP7	26.09448°S, 29.45366°E	-	0.0-1.9	-	-
	KTP8	22.09541°S, 29.45200°E	0.0-0.4	-	0.4-2.3	-
	KTP9	26.09517°S, 29.45013°E	0.0-0.5	1.0-1.5	0.5-1.0	-
	KTP10	26.09451°S, 29.45136°E	0.0-0.6	-	0.6-2.2	2.1 m
	KTP11	26.09395°S, 29.45266°E	0.0-0.7	-	0.7-2.4	-
	KTP12	26.09299°S, 29.45473°E	0.0-0.6	-	0.6-1.0	2.2 m
	KTP13	26.09207°S, 29.45693°E	0.0-0.3	-	0.3-1.8	-
	KTP14	26.09101°S, 29.45912°E	0.0-0.3	-	0.3-1.8	-
	KTP15	26.09648°S, 29.45065°E	0.0-0.6	-	0.6-2.5	-
	KTP16	26.09714°S, 29.45249°E	0.0-0.3	-	0.3-2.1	-
	KTP17	26.09634°S, 29.45518°E	0.0-0.2	-	0.2-2.2	-
	KTP18	26.09752°S, 29.45380°E	0.0-0.2	0.2-2.3		-
	KTP19	26.09809°S, 29.45230°E	0.0-0.6	-	0.6-2.3	-
	KTP20	26.10502°S, 29.45183°E	0.0-0.1	0.1-2.7		-
Solar PV Site 2	KTP21	26.10459°S, 29.45453°E	0.0-0.1	0.1-2.4		-
	KTP22	26.10280°S, 29.45677°E	0.0-0.2	-	0.2-2.3	-
	KTP23	26.10463°S, 29.45968°E	0.0-0.3	0.3-2.4		-
	KTP24	26.10455°S, 29.46198°E	0.0-0.2	0.2-2.4		-
	KTP25	26.10464°S, 29.46486°E	0.0-0.4	-	0.4-2.3	2.1 m
	KTP26	26.10768°S, 29.46568°E	0.0-0.6	-	0.6-2.1	1.9 m
	KTP27	26.11053°S, 29.46493°E	0.0-0.2	-	0.2-2.5	-
	KTP28	26.10930°S, 29.46242°E	0.0-0.2	-	0.2-2.2	-
	KTP29	26.10974°S, 29.45976°E	0.0-0.5	-	0.5-2.8	2.7 m
	KTP30	26.10929°S, 29.45623°E	0.0-0.2	-	0.2-2.4	-
	KTP31	26.10831°S, 29.45309°E	0.0-0.2	-	0.2-2.1	-

Site	Test Pit positions		Layer thickness (m)			Seepage
	Test Pit	Coordinates	Hillwash	Pedogenic	Residual	
	KTP32	26.10666°S, 29.45509°E	0.0-0.2	-	0.2-2.2	-
	KTP33	26.10634°S, 29.45810°E	0.0-0.2	-	0.2-2.4	-
	KTP34	26.10734°S, 29.46017°E	0.0-0.4	-	0.4-2.1	-
	KTP35	26.10676°S, 29.46280°E	0.0-0.2	-	0.2-2.6	-
	KTP36	26.10323°S, 29.46236°E	-	-	0.0-1.9	-
	KTP37	26.10548°S, 29.45538°E	0.0-0.3	-	0.3-2.4	-
	KTP38	26.10744°S, 29.45743°E	0.0-0.4	-	0.4-2.7	-
BESS Unit 2	KTP39	26.09237°S, 29.47603°E	0.0-3.2	-	-	-
	KTP40	26.09259°S, 29.47676°E	0.0-2.8	-	-	1.1 m
	KTP41	26.09168°S, 29.47651°E	0.0-1.4	-	1.2-2.0	-
BESS Unit 3	KTP42	26.09134°S, 29.46811°E	0.0-2.5	-	-	-
	KTP43	26.09128°S, 29.46880°E	0.0-2.4	-	-	-
	KTP44	26.09124°S, 29.46712°E	0.0-1.0	-	0.1-2.6	2.4 m
BESS Unit 4	KTP45	26.09263°S, 29.46832°E	0.0-0.1	-	0.1-2.2	-
	KTP46	26.09255°S, 29.46762°E	0.0-1.0	-	1.0-2.3	-
	KTP47	26.09230°S, 29.46650°E	0.0-2.2	-	-	1.4 m

5.2 Dynamic Cone Penetrometer Results (DCP)

A total of forty-seven (47) DCP tests were undertaken in order to estimate the in-situ material strength. Medium dense to very dense conditions best describe material consistency as tested on site. In terms of bearing the capacity of soils, the DCP tests conducted across the site revealed that the site soils can accommodate 80 - 100 kPa loads at an average depth of 1.0 m for low-rise masonry structures such as office buildings, control room, etc. The detailed DCP reports are presented in **APPENDIX B: DYNAMIC CONE PENETROMETER TEST RESULTS.**

5.3 Dynamic Probing Results (DPSH)

A total of twenty-three (23) DPSH tests were conducted to give an indication on soil strength and depth to competent bedrock where possible. Generally, the tests indicated medium dense to very dense material consistencies with refusal reached at a maximum depth of 7.2 meters, possibly on weathered sandstone and siltstone, thus indicating intermediate to hard rock conditions. The detailed DCP reports are presented in **APPENDIX D: DYNAMIC PROBING TEST RESULTS (DPSH)**.

The bearing capacity of soils encountered on site was evaluated based on Meyerhof (1956, 1974) expressions. **Figure 5-1** shows the estimated bearing capacity (q_a) vs the width of foundation (B). In terms of the above, the tested materials can accommodate a bearing capacity of between kPa loads at or below the recommended founding depth of 1.0 m for low-rise masonry structures below the surface (Applied FOS=1.5).

Dynamic probing tests DPSH1 – DPSH10 were undertaken at Solar PV Site 1. These indicated dense to very dense material consistency within a profile depth 0 – 7.5 meters. The material can accommodate a bearing capacity of 180 – 300 kPa between 0.3 and 4.5 m; whereas a bearing capacity in excess of 300 kPa can be achieved between 4.5 and 7.5 m.

Dynamic probing tests DPSH11 – DPSH20 were undertaken at Solar PV Site 2. These indicated medium dense to very dense material consistency within a profile depth 0 – 6.9 meters. The material can accommodate a bearing capacity of 80 – 300 kPa between 0.3 and 1.5 m; whereas a bearing capacity in excess of 300 kPa can be achieved between 1.5 and 6.9 m.

Dynamic probing test DPSH21 was undertaken at BESS Unit 2. The test indicated medium dense to very dense material consistency within a profile depth 0 – 2.7 meters. The material can accommodate a bearing capacity in excess 300 kPa from 1.8 to 2.7 m.

Dynamic probing test DPSH22 was undertaken at BESS Unit 3. The test indicated medium dense to very dense material consistency within a profile depth 0 – 6.3 meters. The material can accommodate a bearing capacity of between 80 and 180 kPa from 0.3 to 1.2 m; whereas a bearing capacity in excess of 300 kPa can be achieved between 3.9 m. A section of very loose material consistency was encountered 1.5 to 2.7 m.

Dynamic probing test DPSH22 was undertaken at BESS Unit 4. The test medium dense to very dense material consistency within a profile depth 0 – 6.0 meters. The material can accommodate a bearing capacity of 100 – 300 kPa between 0.6 and 2.4 m; whereas a bearing capacity in excess of 300 kPa can be achieved between 2.4 and 6.0 m.

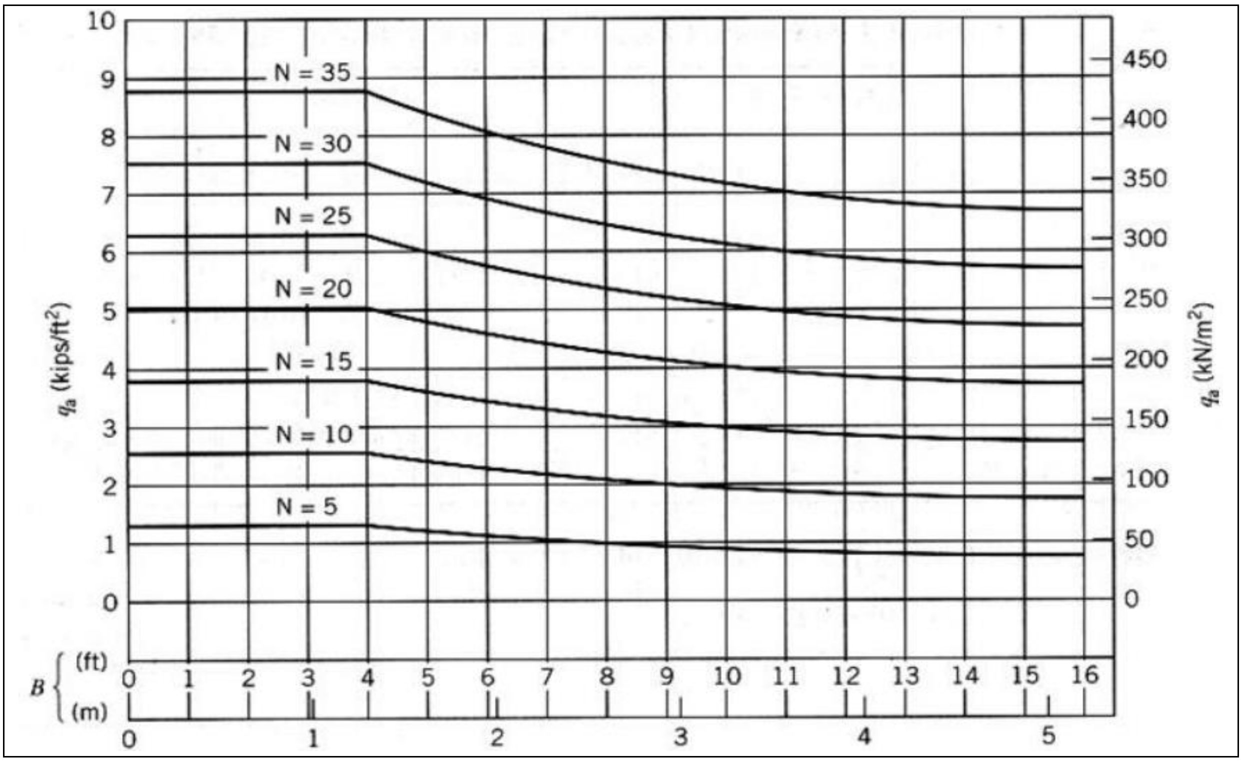

Figure 5-1: Estimation of bearing capacity based on Meyerhof's, where kd=1.0 and n=Average DPSH/SPT value, note that 1 kN/m² =1kPa

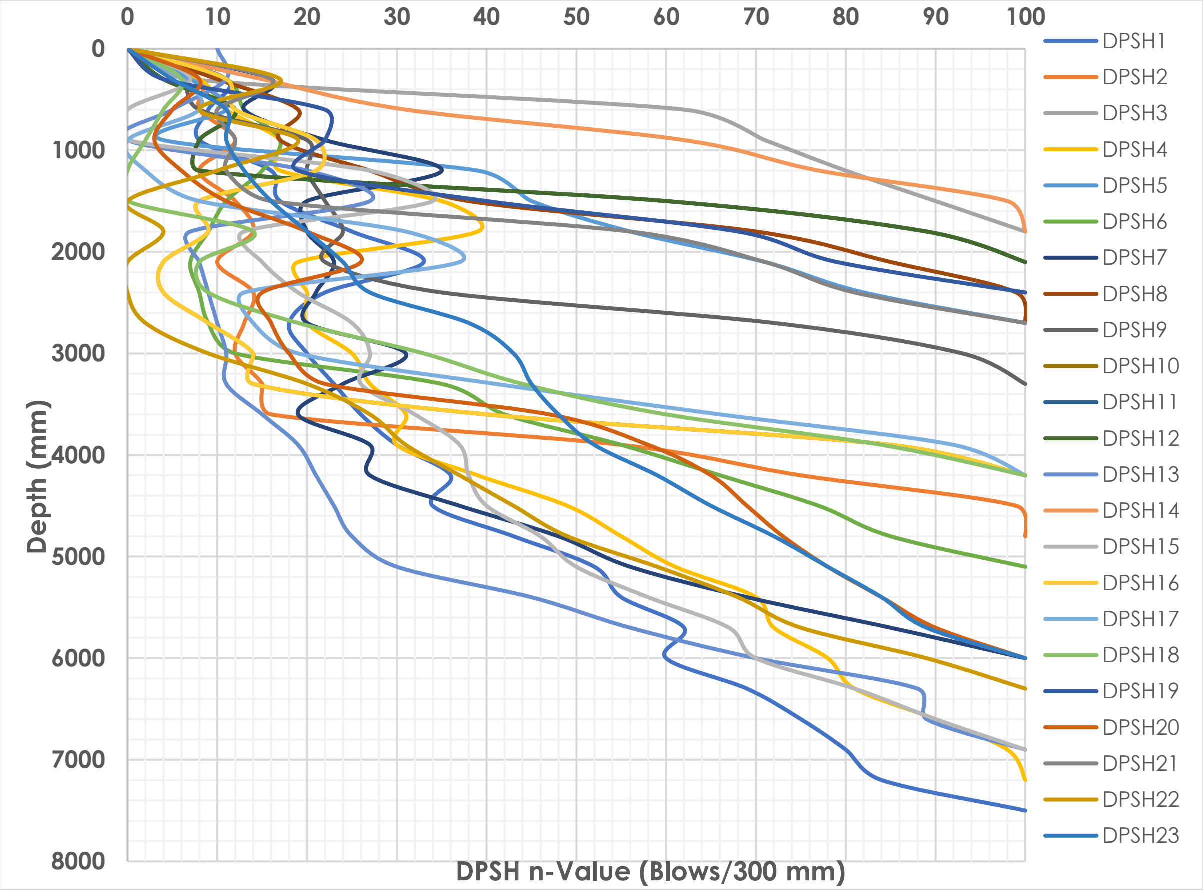

Figure 5-2: Summary of dynamic probing results

5.4 Percussion Borehole Results

A total of twenty-five (25) boreholes (named K-BH01 to K-BH25) were drilled at selected positions using a percussion drilling rig equipped with a compressor capable of reaching 21-bar. Chip samples were collected per meter drilled on-site and described according to the current industry standards as described in SANS 633. The main purpose of the percussion drilling at Solar PV site 1 (airstrip), was to investigate possible undermined ground and the depth thereof.

The drilling at Solar PV Site 1 generally revealed transported soils, underlain by residual sandstone, sandstone interlayered with siltstone, carbonaceous shale, shaly coal, and thin layers of coal, and diamictite, respectively. Some intrusive material interpreted as dolerite were encountered in places, particularly within the Vryheid Formation. Drilling results can be summarised as follows:

5.4.1 Material Description

The site is covered by a layer of transported soil (hillwash). This layer was generally dark brown to brown, clayey sand. The average thickness of this layer is 2.0 meters. The transported layer was encountered in all boreholes from surface up to 2.0 meter.

The transported soil is mostly underlain by a residual sandstone layer. The residual soil underlying the hillwash was generally greyish brown mottled orange, clayey sand of completely to highly weathered sandstone. The average thickness of this material is 4.0 meters and attains a maximum of 5.0 meters in other boreholes.

Greyish brown, highly to moderately weathered sandstone was encountered in all boreholes interlayered with siltstone. The combined thickness of the sandstone-siltstone interlayers can be in excess of 30 meters.

Layers of shale, shaly coal, and coal were encountered underneath the sandstone-siltstone interlayers. These were generally described as dark grey to black, moderate to highly weathered, soft rock carbonaceous shale of the Vryheid Formation with interlayered coal. The combined thickness of this layers is about 40 meters.

A layer of greyish pink, slightly weathered diamictite of the Dwyka Group was encountered in six (6) boreholes viz. K-BH6, K-BH7, K-BH8, K-BH10, K-BH20, and K-BH22 mainly at depths 65 meters underneath the coal layers.

Table *5-2* below summary of layers encountered, whereas detailed percussion borehole profiles are presented in **APPENDIX E: PERCUSSION DRILLING LOGS**.

Table 5-2: Summary of percussion borehole results

Hole No.	Quaternary Soils		Vryheid Formation					Intrusive	Dwyka Group	Cavity	Water Strike	Water Level
	Transported Soils	Residual Soils	Sandstone	Siltstone	Shale	Shaly coal	Coal	Dolerite	Diamictite			
K-BH01	0.0 - 2.0	2.0 - 4.0	4.0 - 15	15 - 20	52 - 57	28 - 29	26 - 27			58 - 60.5	56	25
			20 - 23	23 - 26			57 - 58					
			27 - 28	29 - 31								
			31 - 41	41 - 52								
K-BH02	0.0 - 2.0	2.0 - 7.0	7.0 - 22	36 - 40	22 - 25		25 - 26			60 - 62	21	28
			26 - 27	43 - 46	46 - 49		27 - 29					
			29 - 36	49 - 58			58 - 60					
			40 - 43									
K-BH03	0.0 - 1.0	1.0 - 3.0	3.0 - 16	16 - 20						55 - 58	21	25
			20 - 21	21 - 26								
			26 - 34	34 - 55								
K-BH04	0.0 - 2.0	2.0 - 5.0	5.0 - 20			20 - 29	29 - 30	30 - 50			30	16
K-BH05	0.0 - 2.0	2.0 - 5.0	5.0 - 11	31 - 41	11 - 28	28 - 31		41 - 51			10	6.8
K-BH06	0.0 - 2.0	2.0 - 5.0	24 - 27	41 - 70	5.0 - 24	70 - 72	30 - 31		89 - 101		67	26
			33 - 41	76 - 89	27 - 30		32 - 33					
					31 - 32		72 - 76					
K-BH07	0.0 - 2.0	2.0 - 6.0	33 - 40	26 -28	6.0 - 9.0	60 - 62	28 - 29	9.0 - 12	66 - 81		33	11
				29 - 30	12 - 26		30 - 32					
				32 - 33			43 - 45					
				40 - 43			62 - 66					
				45 - 60								
K-BH08	0.0 - 2.0	2.0 - 6.0	9.0 - 12	33 - 42	6.0 - 9.0		45277		48 - 61		35	7
			21 - 33		17 - 21		42 - 48					
K-BH09	0.0 - 2.0	2.0 - 7.0	28 - 33	33 - 35	7.0 - 13	35 - 36	36 - 38	13 - 28		68 - 69.5	45	39
			40 - 48	38 - 40			48 - 52					
				52 - 66			66 - 68					
K-BH10	0.0 - 2.0	2.0 - 5.0	25 - 28	31 - 33	5.0 - 13	66 - 71	33 - 36	13 - 16	71 - 76		71	27
			37 - 46	36 - 37	16 - 20		46 - 49	20 - 25				
				49 - 63	28 - 31		63 - 66					

Hole No.	Quaternary Soils		Vryheid Formation					Intrusive	Dwyka Group	Cavity	Water Strike	Water Level
	Transported Soils	Residual Soils	Sandstone	Siltstone	Shale	Shaly coal	Coal	Dolerite	Diamictite			
K-BH11	0.0 - 2.0	2.0 -6.0	18 - 21	21 - 26	6.0 - 18	37 - 38	26 - 30				35	24
			31 - 37	30 - 31		41 - 46	38 - 41					
			46 - 51									
K-BH12	0.0 - 5.0	2.0 - 5.0	5.0 - 19	44 - 47	56 - 70	36 - 44	53 - 56	19 - 33			21	17
			33 - 36	76 - 77	78 - 81	77 - 78	70 - 76					
			47 - 53									
K-BH13	0.0 - 5.0	2.0 - 5.0	25 - 28	7.0 - 25	5.0 - 7.0	28 - 32	32 - 36			65 - 66	16	30
			36 - 45	51 - 63		45 - 51	64 - 65					
						63 - 64						
K-BH14	0.0 - 1.0	1.0 - 4.0	4.0 - 15	32 - 34	30 - 32	34 - 38	46 - 47	15 - 26		46 - 47	42	17
			26 - 30	38 - 39								
			39 - 46									
K-BH15	0.0 - 1.0	1.0 - 3.0	3.0 - 15	35 - 38	15 - 17	38 - 39	52 - 55	17 - 29		71 - 74	30	17
			29 - 35	35 - 38			70 - 71					
			44 - 52	39 - 44								
				55 - 70								
K-BH16	0.0 - 1.0	1.0 - 3.0	3.0 - 15	59 - 69			33 - 36	15 - 25			30	16
			25 - 33									
			36 - 45				45 - 47					
			47 - 50				50 - 51					
			51 - 59				69 - 74					
			74 - 76									
K-BH17	0.0 - 1.0	1.0 - 4.0	4.0 - 30								24	5
K-BH18	0.0 - 1.0	1.0 - 3.0	3.0 - 17	36 - 41	17 - 19		41 - 43	19 - 31			34	11
			31 - 36	53 - 58	66 - 70		51 - 53					
			43 - 51	61 - 66			70 - 75					
			58 - 61									
			75 - 76									
K-BH19	0.0 - 1.0	1.0 - 4.0	4.0 - 17	38 - 41	17 - 19	57 - 58	42 - 44	20 - 34			36	12
			19 - 20	56 - 57	78 - 79		75 - 78					
			34 - 38	58 - 75			79 - 81					

Hole No.	Quaternary Soils		Vryheid Formation					Intrusive	Dwyka Group	Cavity	Water Strike	Water Level
	Transported Soils	Residual Soils	Sandstone	Siltstone	Shale	Shaly coal	Coal	Dolerite	Diamictite			
			41 - 42									
			44 - 56									
			81 - 84									
K-BH20	0.0 - 1.0	1.0 - 4.0	4.0 - 17	17 - 19	76 - 77		42 - 44	19 - 33	82 - 86		52	7
			33 - 38	38 - 42			73 - 76					
			44 - 51	51 - 73			77 - 78					
				78 - 82								
K-BH21	0.0 - 2.0	2.0 - 7.0	36 - 45	46 - 52	7.0 -18	34 - 35	27 - 28	18 - 25		65 - 65.5	57	28
				61 - 62	25 - 27	52 - 61	30 - 31					
					28 - 30		32 - 34					
					31 - 32		45 - 46					
							62 - 65					
K-BH22	0.0 - 2.0	2.0 - 6.0	23 - 25	18 - 23	6.0 - 10	60 - 62	30 - 31	10 - 13	71 - 76		37	17
			31 - 32	33 - 35	13 - 18	66 - 71	32 - 33					
			35 - 43	47 - 57	25 - 30		43 - 47					
					57 - 60		62 - 66					
K-BH23	0.0 - 2.0	2.0 - 5.0	5.0 - 34	35 - 37		50 - 51	34 - 35			71 - 74	62	11
			38 - 39	39 - 42		69 - 70	37 - 38					
			42 - 50	56 - 69			51 - 53					
			53 - 56				70 - 71					
K-BH24	0.0 - 2.0	2.0 - 6.0	20 - 25	57 - 63	6.0 - 8.0		29 - 31	8.0 - 20			23	12
			28 - 29		25 - 27	27 - 28	40 - 41					
			31 - 40		41 - 47							
			47 - 57									
K-BH25	0.0 - 2.0	2.0 - 6.0	6.0 - 14		14 - 26	46 - 47	26 - 29				30	27
			29 - 30	30 - 40			40 - 46					
			47 - 51									

5.5 Rotary Core Drilling Results

A total of fifteen (15) rotary core boreholes (named BH1 to BH15) were planned and drilled to depths between 15 to 20 meters or 6 meters into hard rock, whichever comes first. All fifteen (15) boreholes have been completed. Standard Penetration Tests (SPT) were also conducted at 1.5-meter intervals and where clayey material was encountered.

SPTs, at 1.5 m intervals and commencing at a depth of 1.5 m. Below SPT refusal depths, NWD4 rotary drilling followed in through the underlying gravel/boulder beds and/or bedrock. Temporary steel casings (N-size) were used to stabilise the boreholes during the drilling.

Boreholes were terminated at depths of between 15 – 20 meters within the underlying bedrock. The soil samples obtained from the SPTs and the core recovered from the rotary drilling were profiled and logged in detail according to the Guidelines for Soil and Rock Logging in South Africa. The following parameters were recorded:

- For soil: colour, consistency, structure (where evident), soil type and origin.
- For rock: colour, weathering, structure, hardness, rock type and origin.

In addition to the description of the soil and rock layers, the following drilling attributes were also recorded:

- Depth below ground level and reduced level relative to mean sea level.
- Drilling method.
- Core recovery (%CR).
- Rock quality designation (%RQD).

5.5.1 Material Description

0.0 – 1.0 m	Dark grey, clayey sand. Transported soil.
1.0 – 4.50 m	Grey, clayey sand with ferricrete gravel. Residual soil.
4.50 – 9.0 m	Light grey, moderately weathered, coarse-grained, jointed and medium to thinly layered, medium hardrock, siltstone. Vryheid Formation.
9.0 – 13.0 m	Grey, highly weathered, fine-grained, thinly layered, highly fractured, soft rock, carbonaceous shale. Vryheid Formation.
13.0 – 14.0 m	Shaly Coal: Black, highly weathered, thinly layered, highly fractured, very soft rock, shaly coal. Vryheid Formation.
14.0 - 20.0 m	Grey, moderately weathered, coarse grained, layered, medium hardrock, sandstone. Vryheid Formation
7.0 – 16.0 m	Grey, moderately weathered, coarse grained, hard rock, ~dolerite (intrusive).

5.5.2 Standard Penetration Test

SPT tests were carried out in accordance with the method specifications given in the ASTM using a Raymond Split-spoon sampler. In all cases, the blow count for the advance over a distance of 75mm for a total run length of 450mm (where possible) was recorded, with refusal defined as less than 75mm advance for 25 blows. The SPT-N values were determined by omitting the first two 75mm advance blow count intervals and summing the remaining four intervals (300mm). The correlation between SPT-N value and consistency of the soil horizons, relative density (%) and friction angle (degrees) is given in **Table 5-3**.

Table 5-3: The summary of Standard Penetration tests undertaken at Solar PV Site 1 and 2.

Hole No.	SPT Depth	SPT Test Results				n-Value	Consistency	Relative Density %	Friction Angle (°)
		75	150	225	450				
BH01	1.50 - 2.00 m	17	18	20	22	n = 77	Very dense	> 80	> 45
	3.00 - 3.50 m	1	2	4	5	n = 12	Medium dense	40 - 60	35 - 40
BH02	1.50 - 2.00 m	4	4	4	4	n = 16	Medium dense	40 - 60	35 - 40
	3.00 - 3.50 m	4	4	4	5	n = 17	Medium dense	40 - 60	35 - 40
	4.12 - 4.70 m	Ref				Ref	Very dense	> 80	> 45
BH03	1.50 - 2.00 m	3	3	3	4	n = 13	Medium dense	40 - 60	35 - 40
	3.00 - 3.50 m	1	2	3	4	n = 10	Medium dense	40 - 60	35 - 40
	4.50 - 5.00 m	4	6	6	10	n = 26	Medium dense	40 - 60	35 - 40
BH04	1.50 - 2.00 m	2	2	3	4	n = 11	Medium dense	40 - 60	35 - 40
	3.00 - 3.50 m	1	2	3	4	n = 10	Medium dense	40 - 60	35 - 40
	4.50 - 5.00 m	Ref					Very dense	> 80	> 45
BH05	1.50 - 2.00 m	3	3	4	4	n = 14	Medium dense	40 - 60	35 - 40
	3.00 - 3.50 m	5	7	9	9	n = 30	Dense	60 - 80	40 - 45
	4.50 - 5.00 m	6	6	6	6	n = 24	Medium dense	40 - 60	35 - 40
BH06	1.50 - 2.00 m	3	4	5	6	n = 18	Medium dense	40 - 60	35 - 40
	3.00 - 3.50 m	4	5	5	5	n = 19	Medium dense	40 - 60	35 - 40
	4.50 - 5.00 m	Ref				Ref	Very dense	> 80	> 45
BH07	1.50 - 2.00 m	1	2	2	3	n = 8	Loose	20 - 40	30 - 35
	3.00 - 3.50 m	2	3	6	6	n = 17	Medium dense	40 - 60	35 - 40
BH08	1.50 - 2.00 m	Ref				Ref	Very dense	> 80	> 45
	3.00 - 3.50 m	2	3	6	6	n = 17	Medium dense	40 - 60	35 - 40
	4.50 - 5.00 m	6	7	10	11	n = 34	Dense	60 - 80	40 - 45
BH09	1.50 - 2.00 m	3	4	6	7	n = 20	Medium dense	40 - 60	35 - 40
	3.00 - 3.50 m	4	4	10	10	n = 28	Dense	60 - 80	40 - 45

Hole No.	SPT Depth	SPT Test Results				n-Value	Consistency	Relative Density %	Friction Angle (°)
		75	150	225	450				
	4.50 - 5.00 m	4	5	Ref		n = 9	Medium dense - very dense	40 - 60	35 - 40
BH10	1.50 - 2.00 m	Ref				Ref	Very dense	> 80	> 45
	3.00 - 3.50 m	6	7	9	11	n = 33	Dense	60 - 80	40 - 45
	4.50 - 5.00 m	13	19	23	Ref	n = 55	Very dense	> 80	> 45
BH11	1.50 - 2.00 m	2	3	4	5	n = 14	Medium dense	40 - 60	35 - 40
	3.00 - 4.21 m	Ref					Very dense	> 80	> 45
BH12	1.50 - 2.00 m	7	11	12	14	n = 44	Dense	60 - 80	40 - 45
	3.00 - 3.00 m	Ref				Ref	Very dense	> 80	> 45
BH13	1.50 - 2.00 m	5	6	6	7	n = 24	Medium dense	40 - 60	35 - 40
	3.00 - 3.50 m	4	6	6	7	n = 23	Medium dense	40 - 60	35 - 40
BH14	1.84 - 2.34 m	4	4	5	5	n = 18	Medium dense	40 - 60	35 - 40
	3.00 - 3.50 m	4	5	7	9	n = 25	Medium dense	40 - 60	35 - 40
	4.00 - 4.50 m	Ref				Ref	Very dense	> 80	> 45
BH15	1.80 - 2.30 m	7	25	Ref		n = 32	Dense -very dense	60 - 80	40 - 45
	3.50 - 3.90 m	12	13	20	20	n = 65	Very dense	> 80	> 45

Table 5-4: Summary of rotary core borehole results

Hole No.	Layers encountered (mbgl)						E.O.H (mbgl)
	Transported soils	Residual Soils	Sandstone	Shale	Sandstone interlayered with Siltstone	Shaly coal	
BH01	0.0 - 0.95	0.95 - 3.68		9.25 - 12.85	3.68 - 9.25	12.85 - 14.08	15.07
				14.08 - 15.07	8.11 - 8.80		
BH02	0.0 - 0.86	0.86 - 3.45			3.45 - 12.25	12.25 - 13.00	19.2
					13.00 - 15.35	15.35 - 17.54	
					17.54 - 19.12		
BH03	0.0 - 1.23	1.23 - 5.0	5.0 - 5.39	5.39 - 8.11	8.11 - 8.80		20.30
			8.80 - 20.30				
BH04	0.0 - 0.56	0.56 - 3.50	3.50 - 4.68		4.68 - 14.50		19.98
					14.50 - 18.20		
					18.20 - 19.98		
BH05	0.0 - 0.82	0.82 - 4.02	4.02 - 7.74			7.74 - 15.47	15. 47
BH06	0.0 - 0.80	0.80 - 5.55			5.55 - 14.25	14.25 - 16.21	16.21

Hole No.	Layers encountered (mbgl)						E.O.H (mbgl)
	Transported soils	Residual Soils	Sandstone	Shale	Sandstone interlayered with Siltstone	Shaly coal	
BH07	0.0 - 1.18		1.18 - 11.30	11.30 - 11.42			15.55
			11.42 - 15.55				
BH08	0.0 - 1.50			1.50 - 2.00	2.00 - 15.41		15.41
BH09	0.0 - 1.16	1.16 - 1.5	1.5 - 5.81		5.81 - 14.16		15.38
					14.16 - 15.38		
BH10	0.0 - 0.96	0.96 - 2.58	2.58 - 5.61		5.61 - 15.26		15.26
BH11	0.0 - 8.7	0.87 - 2.73	2.73 - 4.78	4.78 - 11.70	11.70 - 16.21		16.21
BH12	0.0 - 0.5	0.5 - 1.20	1.20 - 8.66		8.66 - 11.88		15.07
					11.88 - 15.07		
BH13	0.0 - 0.45	0.45 - 3.62	3.62 - 4.22		4.22 - 7.11		16.21
			7.11 - 10.21		10.21 - 16.21		
BH14	0.0 - 1.45	1.45 - 4.40			4.40 - 16.21		16.21
BH15	0.0 - 0.94	0.94 - 2.83	12.91 - 16.21		2.83 - 8.71		16.21
					8.71 - 12.91		

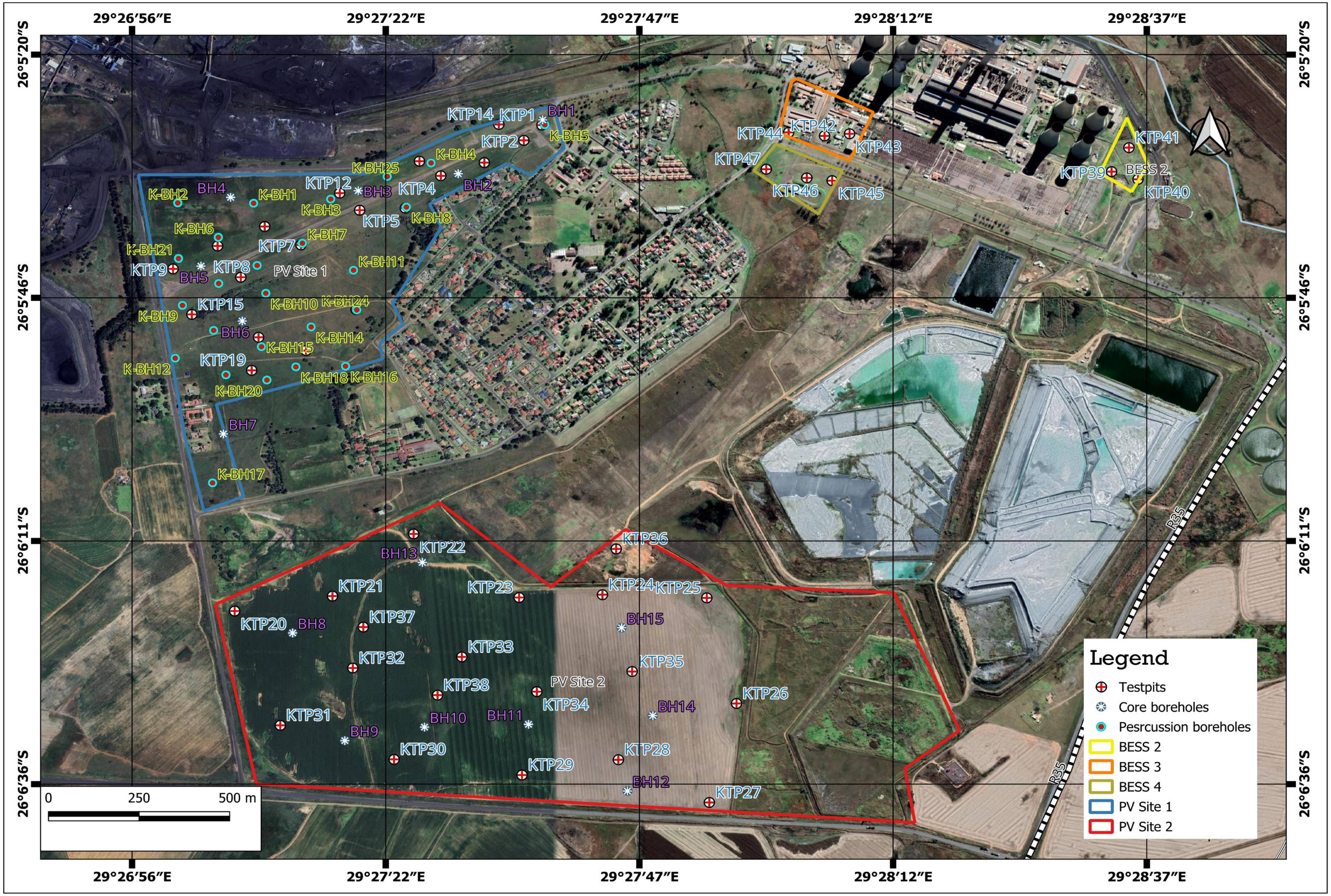

Figure 5-3: Geotechnical map showing all testing and sampling points undertaken with the sites

6 LABORATORY TEST RESULTS

6.1 General

A total of thirty-five (35) disturbed samples were recovered from representative soil horizons in selected test pits across the sites and submitted to Specialised Testing Laboratory Pty Ltd (STLLAB), a SANAS accredited civil engineering laboratory for further classification. These were ordered for foundation indicator tests comprising Atterberg Limits (<0.425mm), Sieve Analysis (<0.075mm), Heave Classification (<0.002 mm), and Particle Size Distribution in order to determine basic engineering properties for soils encountered within the sites. Due to the crumbling nature of the material, no undisturbed sample were taken test pits. Furthermore, twenty-two (22) bulk samples were taken for compaction tests including Moisture Density Relationship (MDR) and California Bearing Ratio (CBR) at Mod. AASTHO density.

The laboratory results are summarized in **Table 6-2** below, while detailed test results are presented in **APPENDIX C: LABORATORY TEST RESULTS**. The following tests were undertaken:

- **Foundation Indicator Tests** (Atterberg Limits, Grading Analysis, etc.) - used to establish the soil type, its potential for heave and give an indication of its suitability for use in pavement layers.
- **Compaction Tests** (CBR & MOD) - used to assess the potential for materials to be used in pavement layers.
- **Chemical Tests** (pH & EC)– to assess the potential for soils to corrode materials and to assess the extent of soil contamination.

6.2 Indicator Testing

The tested soils generally graded as clayey sand and sandy clay within minor gravel. The plasticity index (PI) for the material ranged between 0 and 23%; the Liquid limit ranged from 0 to 40%; the linear shrinkage ranged from 0 to 12.0%; whereas the grading modulus ranged between 0.54 and 1.96, all indicating low to medium potential expansiveness for the material encountered within the site (refer **Figure 6-1**).

6.3 Compaction Test Results

The maximum dry density (MDD) for the tested soil ranged between 1675 and 2095 kg\m^3 at an optimum moisture content (OMC) of between 9.4 and 18.9%. The CBR values for this material ranged between 2.8 and 16 at 93%, 3.3 and 19 at 95%, 5.2 and 24 at 100% Mod AASHTO dry density. In terms of the COLTO, the material tested can be classified as G7 to worse than G9 quality soil mixtures.

6.4 Aggressiveness Towards Concrete

The aggressiveness of the soils encountered on site was analysed based on the method developed by JJ Basson (1989). **Table 6-1** below shows the determined chemical indices used to evaluate the corrosivity and aggressiveness of soil towards concrete.

The pH and conductivity of soil were determined to get an indication of the potential corrosiveness of the soil towards metals. Corrosion on metals may take place in acidic soils with a pH-value of less than 6. It is, however, dependent on various factors, including; soil resistivity, pH, chloride content, sulphate content, sulphide ion content, soil moisture and oxygen content.

The tested soil samples indicated a general pH-value of between 5.4 to 7.0, which may be interpreted as corrosive towards metals.

Table 6-1: Summary of the Basson Index test results

Test Pit No.	Depth (m)	Chemical Analysis				Corrosivity Indices	Basson Index
		pH Stability	LI	RI	N_c		
KTP6	0.0 – 1.0	9.5	-3.1	12.5	2607	Corrosive	Aggressive
KTP11	0.7 – 2.4	9.8	-3.1	13.0	2646	Corrosive	Aggressive
KTP17	0.2 – 2.2	10.4	-4.3	14.7	3463	Corrosive	Aggressive
KTP24	0.2 – 2.4	9.9	-3.3	13.2	2744	Corrosive	Aggressive
KTP27	0.2 – 2.5	9.3	-2.9	12.1	2468	Corrosive	Aggressive
KTP34	0.4 – 2.1	9.5	-3.0	12.5	2549	Corrosive	Aggressive
KTP38	0.4 – 2.7	9.9	-3.6	13.5	2978	Corrosive	Aggressive
KTP40	0.1 – 1.1	8.6	-1.1	9.7	1204	Corrosive	Aggressive
KTP45	0.1 – 2.2	10.0	-4.6	14.7	3720	Corrosive	Aggressive

LI = Langelier Index, RI = Ryznar Index, N_c= Aggressiveness Index

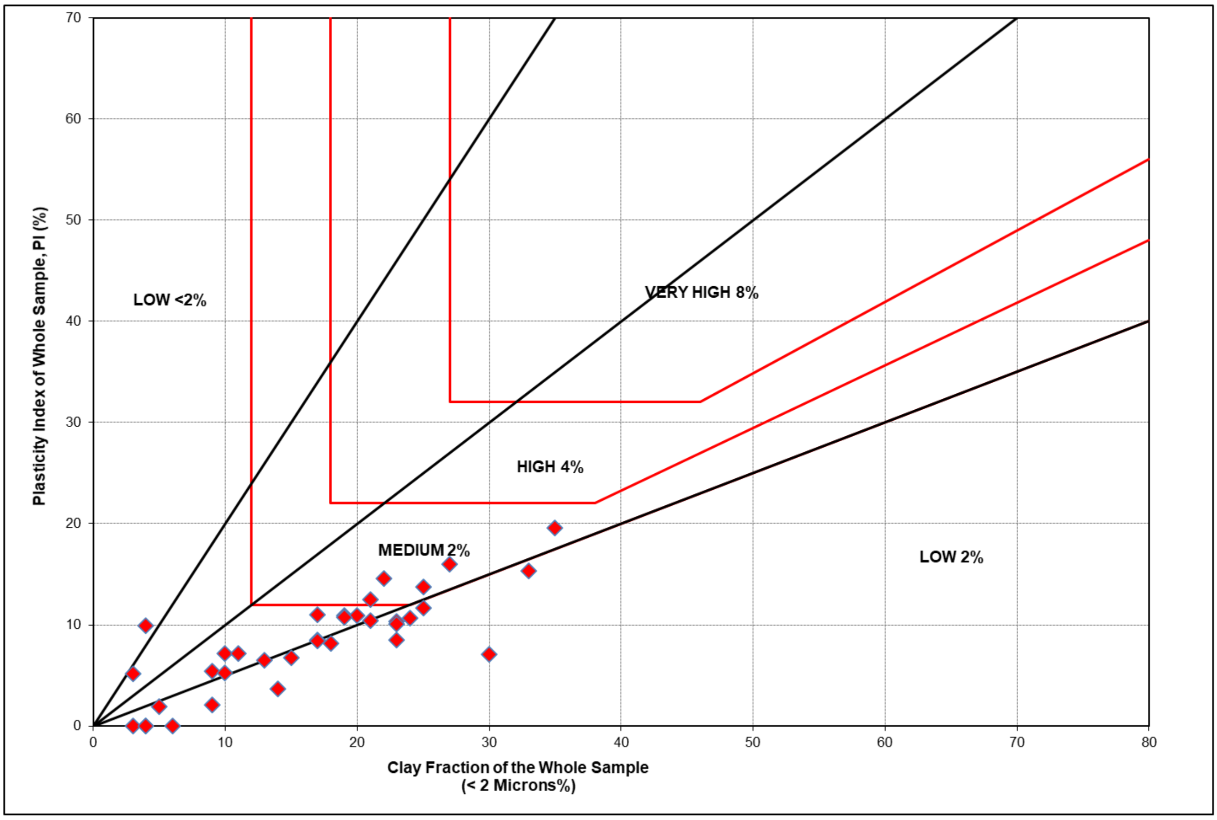

Figure 6-1: The illustrations of the potential expansiveness for materials encountered within the sites.

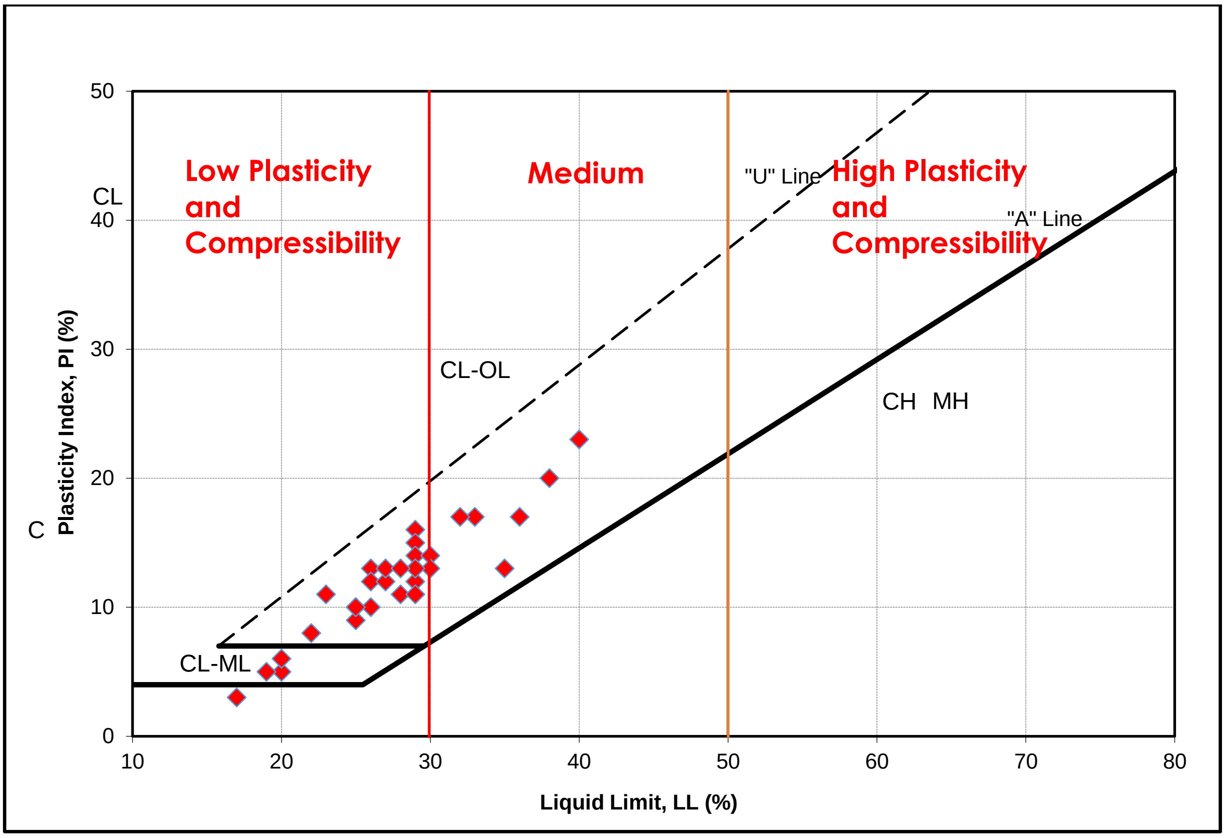

Figure 6-2: The typical illustrations of the plasticity for material encountered within the sites.

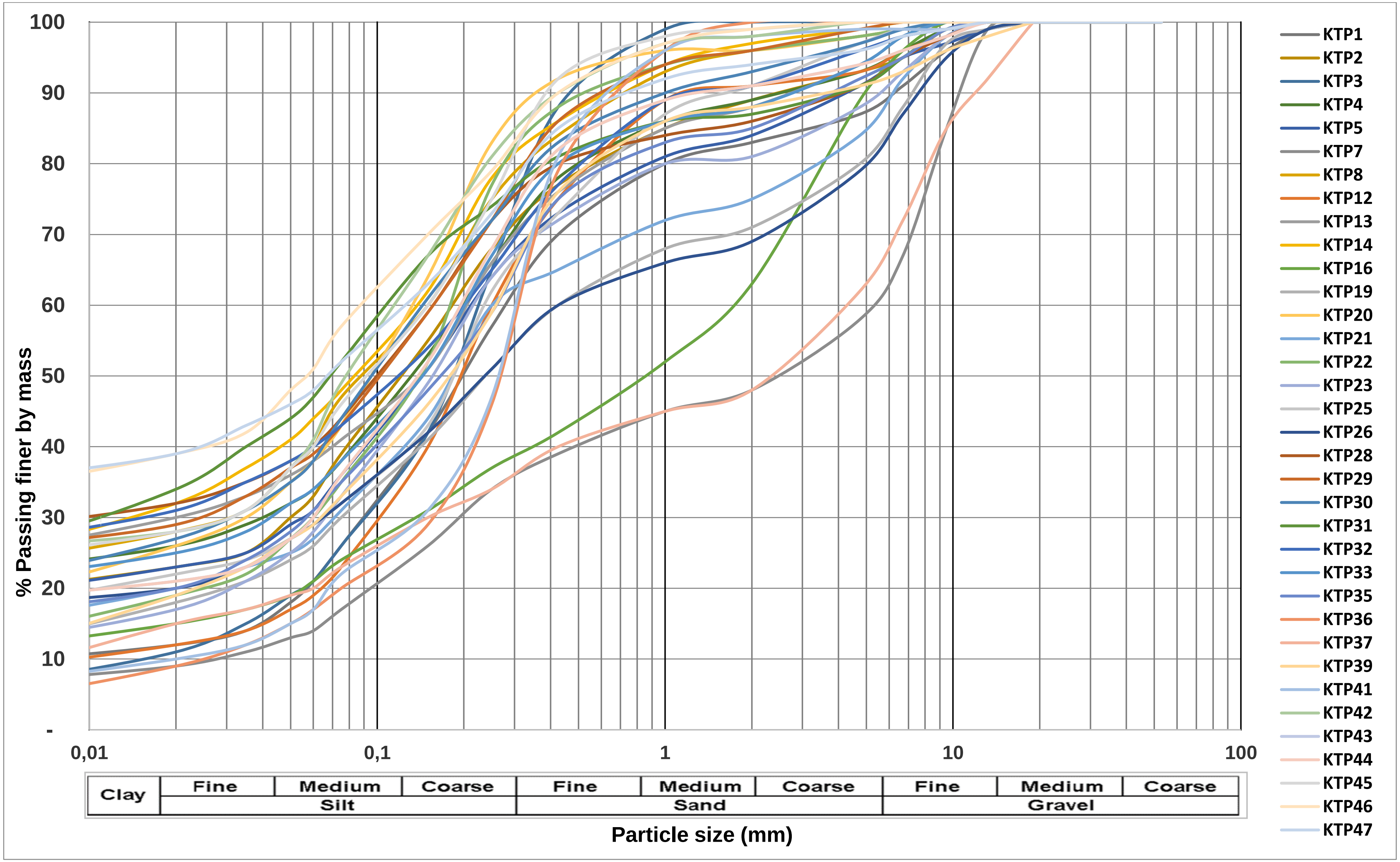

Figure 6-3: Soil gradation curves showing the particle size distribution for materials encountered within the sites

Table 6-2: Summary of Laboratory Test Results

Test Pit	Sample Depth	% Clay	Foundation Indicator Test						Compaction Test					COLTO Class	USCS	pH-Value	EC (S/m)
			Atterberg Limits					GM	MDR		CBR at % Mod, AASHTO						
			wPI	PI (%)	LL (%)	LS (%)	% 0,425		MDD	OMC	100%	95%	93%				
KTP1	0.7 - 2.2	9	2	3	17	2.5	70	1.21	2062	9.4	11.6	9.0	8.1	G9	sc-sm	-	-
KTP2	0.8 - 2.4	17	8	11	23	5.0	77	0.95	1951	11.9	9.0	6.7	5.9	-	SC	-	-
KTP3	0.0 -0.4	4	0	0	0	0.5	88	0.86	-	-	-	-	-	-	SM	6.2	0.014
KTP4	0.3 - 2.3	21	12	16	29	8.0	78	0.95	1835	15.6	5.2	3.3	2.8	-	SC	-	-
KTP5	0.4 - 2.5	19	11	15	29	7.5	73	1.07	1872	13.9	5.5	3.6	3.0	-	SC	-	-
KTP7	0.0 - 1.9	5	2	5	20	2.5	39	1.96	-	-	-	-	-	-	gc-gm	6.1	0.005
KTP8	0.4 - 2.3	20	11	13	26	6.0	84	0.73	-	-	-	-	-	-	SC	-	-
KTP12	0.0 - 0.6	6	0	0	0	0.5	75	1.11	-	-	-	-	-	-	SM	-	-
KTP13	0.3 - 1.8	24	11	14	29	7.0	76	0.95	1883	13.9	8.2	6.9	5.9	-	SC	-	-
KTP14	0.3 - 1.8	22	15	17	33	8.5	86	0.69	-	-	-	-	-	-	SC	6.4	0.018
KTP16	0.3 - 2.1	9	5	13	29	6.5	42	1.71	2017	9.5	22	19	16	G7	SC	-	-
KTP19	0.6 - 2.3	10	7	12	26	5.5	60	1.39	-	-	-	-	-	-	SC	-	-
KTP20	0.1 - 2.7	17	11	12	27	6.0	92	0.69	1843	13.1	5.8	4.1	3.5	-	SC	6.1	0.017
KTP21	0.1 - 2.4	13	7	10	26	5.0	65	1.29	2095	10.7	24	19	16	G7	SC	-	-
KTP22	0.2 - 2.3	10	5	6	20	3.0	88	0.81	-	-	-	-	-	-	sc-sm	7.0	0.007
KTP23	0.3 - 2.4	11	7	10	25	5.0	72	1.14	1991	11.7	10.5	8.2	7.5	G9	SC	-	-
KTP25	0.4 - 2.3	14	4	5	19	2.5	73	1.04	2000	12.5	15	9.0	6.0	-	sc-sm	-	-

Test Pit	Sample Depth	% Clay	Foundation Indicator Test						Compaction Test					COLTO Class	USCS	pH-Value	EC (S/m)
			Atterberg Limits					GM	MDR		CBR at % Mod, AASHTO						
			wPI	PI (%)	LL (%)	LS (%)	% 0,425		MDD	OMC	100%	95%	93%				
KTP26	0.6 - 2.1	17	8	14	30	6.5	60	1.39	1968	11.6	8.2	6.0	5.3	-	SC	-	-
KTP28	0.2 - 2.2	27	16	20	38	9.5	80	0.90	-	-	-	-	-	-	SC	6.1	0.023
KTP29	0.5 - 2.8	23	10	12	29	6.0	86	0.75	1872	13.5	8.7	6.8	5.3	-	SC	-	-
KTP30	0.2 - 2.4	19	11	13	35	7.0	83	0.80	1675	18.9	10.0	8.6	6.1	-	SC	-	-
KTP31	0.2 - 2.1	25	14	17	36	8.5	81	0.80	-	-	-	-	-	-	CL	5.9	0.015
KTP32	0.2 - 2.0	23	8	11	28	5.5	77	0.89	2022	11.1	15	12	10	G8	SC	-	-
KTP33	0.2 - 2.4	21	10	13	30	6.5	80	0.94	1965	11.7	13	10	9.0	-	SC	-	-
KTP35	0.2 - 2.6	15	7	9	25	4.0	75	1.05	2030	10.3	16	12	11	G9	SC	-	-
KTP36	0.9 - 1.9	3	0	0	0	0.0	79	1.01	1914	10.5	13	10	8.0	G9	SM	-	-
KTP37	0.3 - 2.4	3	5	13	29	6.5	40	1.89	-	-	-	-	-	-	SC	5.5	0.007
KTP39	1.1 - 3.2	4	10	13	27	6.5	76	1.03	1910	12.0	7.6	4.9	3.7	-	SC	4.7	0.070
KTP41	1.4 - 2.0	4	0	0	0	0.0	81	0.99	1937	10.0	21	14	12	G8	SM	-	-
KTP42	0.7 - 2.5	25	12	13	28	6.5	90	0.63	1889	13.9	15	11	9.0	-	SC	5.4	0.014
KTP43	0.1 - 2.4	30	7	8	22	4.0	89	0.57	-	-	-	-	-	-	CL	-	-
KTP44	0.1 - 2.6	18	8	10	25	5.0	82	0.91	1942	11.1	17	13	11	G8	SC	-	-
KTP45	0.1 - 2.2	23	10	11	29	6.0	92	0.63	-	-	-	-	-	-	SC	-	-
KTP46	1.0 - 2.3	33	15	17	32	8.5	90	0.54	1911	12.9	11	8	6	-	CL	-	-
KTP47	0.4 - 2.2	35	20	23	40	12.0	85	0.69	-	-	-	-	-	-	CL	6.4	0.027

7 GEOTECHNICAL ASSESSMENT

The purpose of this section is to evaluate the likely geohazards for the project area against the typical geotechnical constraints for urban development as identified by Partridge, Wood & Brink **(Ref.6)**. A geologic hazard is a natural geologic event that can endanger human lives and threaten infrastructure developments. Earthquakes, geomagnetic storms, landslides, sinkholes, tsunamis, volcanoes and even the less dramatic slower, but nevertheless costly problem soils (expansive, shrinking, collapsing, consolidating, dispersive [erosion], acidic), are all types of geologic hazards that can occur.

7.1 Expansive Soil Profile

Damage to structures erected on potentially active soils occurs where the expansiveness has not been determined and necessary remedial measures not employed. The potential expansiveness of a soil depends upon its clay content, the type of clay mineral present, its chemical composition and mechanical character. A material is potentially expansive if it exhibits the following properties:

- *Clay content of more than 12%.*
- *Plasticity index of more than 12.*
- *Liquid limit of more than 30%.*
- *Linear shrinkage of more than 8%.*

Based on fieldwork coupled with laboratory testing, the potential expansiveness for the soils encountered within the sites is generally "Low to Medium" . The possibility of structural distress resulting from cyclic drying shrinkage in dry seasons and swell after wetting is therefore anticipated to be low to moderate.

7.2 Collapsible/Compressible Soil Profile

The site is generally characterised by transported clayey soils underlain residual sandy soils with low potential collapsibility. Furthermore, none of the horizons profiled show any typical characteristics associated with compressible soils.

7.3 Erodibility of Soil

The site is located in a region with the erodibility index of 9-15, thus indicating a Low to medium soil erodibility potential according to the national erodibility potential map presented in the National Housing Code (2009).

7.4 Excavation Classification

The excavatability of materials across the site has been evaluated according to the South African Bureau of Standards' Standardized Specification for Civil Engineering Construction classification for earthworks **(Ref.9)**. Soft excavation conditions in terms of the above standard are expected up to an average depth of 2.5 meters. In terms of this classification and the in-situ soil/rock consistencies as profiled, the relationships given below are generally applicable:

- **Soft Excavation**: Material which can be efficiently removed by a back-acting excavator of flywheel power > 0, 10 kW for each mm of tined-bucket width
- **Intermediate Excavation**: Material which can be removed by a back-acting excavator having flywheel power > 0,10 kW for each mm of tined-bucket width or with the use of pneumatic tools before removal by a machine capable of removing soft material .
- **Hard Excavation**: Material that cannot be removed without blasting or wedging and splitting.

7.5 Undermined Ground

Subsidence in the order of centimetres and even metres, typically occurs in areas with large shallow (i.e.: at<180 m depth) underground cavities typically resulting from spatially extensive, shallow to very shallow mining (e.g.: coal, platinum) and also from dolomite/limestone dissolution over geological time.

The proposed Eskom sites are situated adjacent to several operational coal mines currently exploited for coal seams in excess of 45 meters by board-and-pillar mining. The undertaken percussion drilling revealed several cavities with the average thickness of 3 meters at depths between 45 – 74 meters corresponding to the average depth of the mined coal seams in the area. Although no signs of any on-going or historical subsidence features were observed, such events may be triggered by loss of support from the existing mining pillars, thus resulting in ground subsidence. Further studies focusing on underming in the vicinity of Komati are therefore recommended in order to delineate and quantify the risks associated with undermined ground.

7.6 Areas Subject to Flooding

Surface run-off from the Eskom sites is generally by means of sheetwash towards the north and ultimately into northwest flowing streams traversing the Komati the region. It is the author's view that flood-lines may affect certain sections of the sites, particularly areas adjacent to streams and wetlands.

Due to the risk of flood leading to property damage and life hazards, it is recommended that flood line investigation is undertaken so as to delineate the 1: 50-year and 1: 100-year flood lines.

7.7 Steep Slopes and Unstable Natural Slopes

Slope stability is a function of slope height, slope face angle, soil and rock shear and cohesive properties, presence of unfavourably oriented discontinuities (joints, faults), plus external influences such as seismic accelerations, crest loading, and toe erosion (rivers, sea waves, man-made excavations).

There are no signs of the presence of unstable natural slope observed within the area. Furthermore, consequent shallow slope gradients encountered are insufficient to overcome resisting forces to initiate material movement under the action of gravity.

7.8 Instability of Soluble Rock

The site is not characterised by soluble rocks such as dolomite or limestone, therefore the formation of karst-related subsurface topography leading to sinkholes and subsidences is unlikely.

7.9 Seismic Activity

The seismic hazard map of South Africa indicates that the area generally lies within an area where there is a 10% probability that Peak Ground Accelerations of 0.12 g will be exceeded in 50 years, which corresponds to a seismic intensity of VII on the Modified Mercalli Scale (refer **Figure 7-1**).

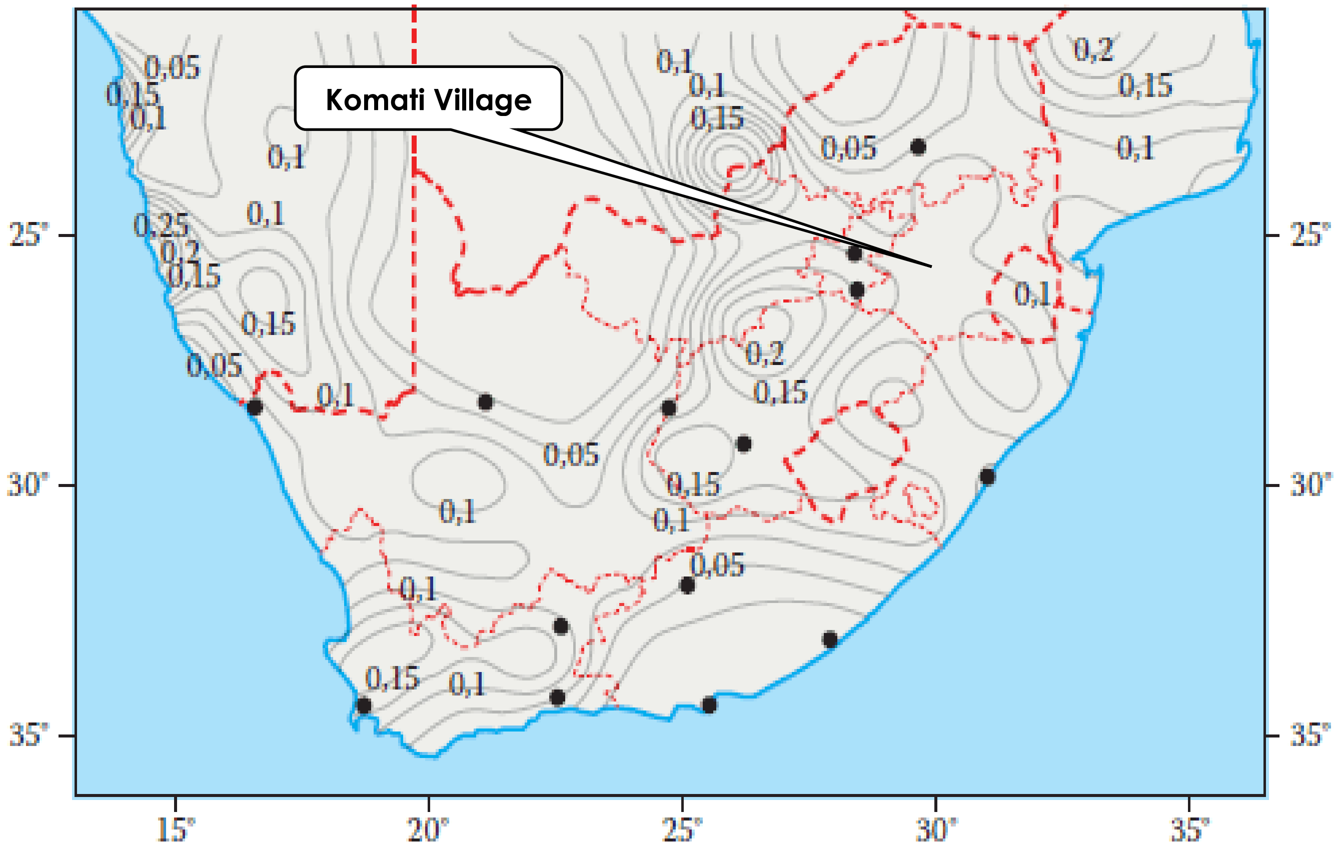

Figure 7-1: Seismic Hazard Map showing the Peak Ground Acceleration with 10% probability of being exceeded in a 50-year period.

Table 7-1: Geotechnical classification for urban development (Partridge et al. 1993).

CONSTRAINT		Most Favorable(1)	Intermediate (2)	Least favorable (3)
A	**Collapsible Soil**	Any collapsible horizon or consecutive horizons totaling depth of less than 750mm in thickness.*	Any collapsible horizon or consecutive horizons with a depth of more than 750 mm in thickness.	A least favorable* situation for this constraint does not occur.
B	**Seepage**	Permanent or perched water table more than 1,5m below ground surface	Permanent or perched water table less than 1,5m below ground surface.	Swamps and marshes
C	**Active Soil**	Low soil-heave potential predicted*	Moderate soil heave potential predicted.	High soil heave potential predicted
D	**Highly compressible Soil**	Low soil compressibility expected *	Moderate soil compressibility expected	High soil compressibility expected
E	**Erodibility of soil**	Low	Intermediate	High
F	**Difficulty of excavation to 1.5m depth**	Scattered or occasional boulders less than 10% of the total volume	Rock or hardpan pedocretes between 10 and 40% of the total volume	Rock or hardpan pedocretes more than 40% of the total volume.
G	**Undermined ground –**	Undermining at a depth greater than 100m below surface	Old undermined areas to a depth of 100m below surface where stope closure has ceased	Mining within less than 100m of surface or where extraction mining total has taken place.
H	**Instability in areas of soluble rock -** **<u>No soluble rocks</u>**	Possibly unstable	Probably unstable	Known sinkholes and dolines
I	**Steep slopes**	Between 2 and 6 degrees (all regions)	Slopes between 6 and 18 degrees and less than 2 degrees (Natal and Western Cape). Slopes between 6 and 12 degrees and less than 2 degrees	More than 18 degrees (Natal and Western Cape) More than 12 degrees (all other regions)
J	**Areas of unstable natural slope**	Low risk	Intermediate risk	High risk (especially in areas subject to seismic activity)
K	**Areas subject to seismic activity**	10% probability of an event less than 100 cm/s² within 50 years	Mining-induced seismic activity more than 100cm/s²	Natural seismic activity more than 100 cm/s²
L	**Areas subject to flooding.**	A "most favorable" situation for this constraint does not occur.	Areas adjacent to a known drainage channel or floodplain with slope less than 1%	Areas within a known drainage channel or floodplain.

8 CONCLUSION AND RECOMMENDATIONS

BAV Consulting Pty Ltd was appointed by **Eskom Holdings SOC Limited** to conduct a preliminary geotechnical investigation in order to determine and asses the subsurface soil conditions at selected sites for the renewable energy project. The sites of investigation are situated within and/or near Komati Power Station on Eskom owned land within Steve Tshwete Local Municipality.

The proposed Eskom sites are situated adjacent to several operational coal mines currently exploited for coal seams in excess of 45 meters by either board and pillar of open-pit mining. The Blinkpan underground operation located just west of the Komati area which utilises a mechanised bord-and-pillar underground mining method confirmed that there's no past of on-going mining operation underneath the proposed site.

Komati Village and its neighbouring areas are regionally characterized by rocks of the Karoo Supergroup covered by Quaternary deposits. The Karoo Supergroup rocks in the area can be further classified as the Vryheid Formation of the Ecca Group. The rocks of the Vryheid Formation typically include sandstone, siltstone, shale and coal beds. These were later intruded by Jurassic dolerite dykes and sills.

There are no soluble rocks such as dolomite or limestone underlying the sites, therefore, the presence of karst-related subsurface topography leading to the formation of sinkholes and subsidence features is unlikely. However, the area is known to have been previously undermined, therefore further studies should be undertaken to asses possible land-subsidence events resulting from the mobilisation of overburden material into underlying abandoned mines.

A total of twenty-five (25) boreholes were drilled at selected positions at Solar PV Site 1. The borehole drilling at generally revealed transported soils, underlain by residual sandstone, sandstone interlayered with siltstone, shale, shaly coal, and coal, and diamictite, respectively. Some intrusive material interpreted as dolerite sills were encountered at variable depths.

Underground cavities were intercepted a various locations at depths in excess of 45 meters corresponding with layers of coal, thus pointing to previous mining activities at that depth. The drilling further revealed that the cavities were filled with groundwater, however, the quantity is unknown. Therefore, groundwater yield testing is recommended in order to estimate the Storativity (S) and Specific yield (Sy) of the underlying cavities. Note that groundwater strikes were generally shallower than the cavities in the majority of boreholes, thus, a leaky aquifer situation may exist at Solar PV Site 1.

The stability of the sites mainly depends on the type and thickness of the overburden material, degree of weathered, and to a certain extent groundwater level drawdown. The overburden material consists of alternating layers of slightly weathered to highly weathered, shale, siltstone, sandstone and dolerite sills with the estimated total thickness in excess of 45 meters. Thus, the likelihood of the formation of sinkhole or subsidence features at Solar PV Site 1 is **low**, owing to the type of overburden and the thickness thereof.

The likelihood of sinkhole and subsidence formations at Solar PV Site 2 was not evaluated. Therefore, additional investigations such as percussion drilling, rotary core drilling, SPT testing are recommended in order to assess the foundation parameters and the long-term stability of the site. The implementation of photovoltaics and battery energy storage systems is provisionally supported at Solar PV Site 1, 2 and all BESS sites, subject to additional investigations.

Additional percussion drilling is recommended at Solar PV Site 1 and 2 in order to accurately confirm and delineate areas affected by previous mining activities. Furthermore, rotary core drilling and associated strength tests such as SPT, UCS, pile tests, etc. are recommended at the footprint of the proposed structures.

The presence of water in the cavities may not necessarily negate the durability and strength of the pillars, but sudden excessive groundwater level drawdown without rehabilitation may induce roof collapse leading to sinkhole and subsidences on surface.

Conditions prevailing on site suggest that no problems are foreseen for the development of agrivoltaics, wind turbines and a BESS system, provided that the contents of this report are acknowledged, and recommendations, as outlined in the report, are adhered to. Note that heavy loaded structures such as the proposed wind turbines are not recommended at Solar PV Site 1 due to the presence of cavities that can manifest into subsidence or sinkholes triggered by continued weathered of overburden material, groundwater level fluctuations, and collapse of underground mine pillars. It recommended that formal mining layouts or documents be sourced from the neighbouring mines.

The comments and recommendations contained in this report are based on a limited number of data points. It is, therefore recommended that all excavations and foundation be inspected by a geotechnical engineer or engineering geologist to verify that the founding conditions are not at variance with those described herein.

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APPENDIX A: SOIL PROFILES

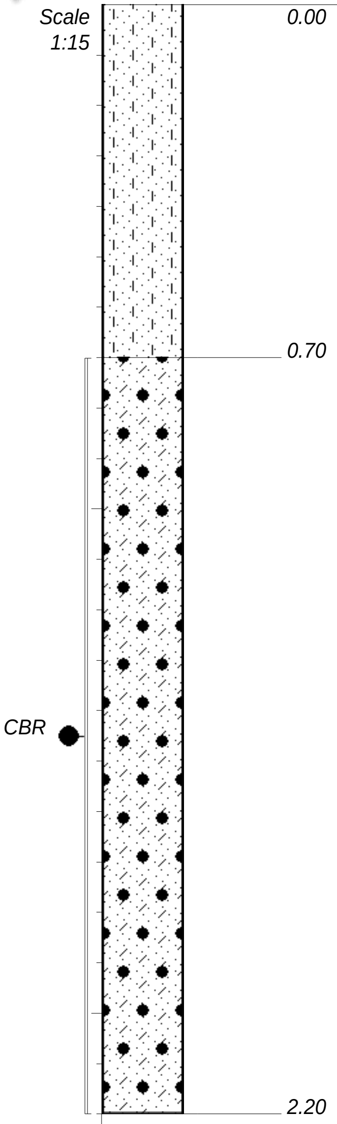
(SANS 633: 2012-Soil Profiling and Rotary percussion borehole drilling on dolomite land in Southern Africa for engineering purposes)

ESKOM

PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: KTP1
Sheet 1 of 1

JOB NUMBER: MAK152.08.23



0.00 Moist to very moist, brown, medium dense, intact, silty SAND. **Hillwash**.

0.70 Moist to very moist, brown, medium dense, intact, clayey SAND with minor ferricrete. **Residual soil**.

2.20

NOTES

1) Excavation stopped at 2.2m due to required depth.

2) No groundwater seepage.

3) Sidewall stable.

4) Disturbed sample at 0.7--2.2m: CBR, F-IND.

CONTRACTOR :
MACHINE : BELL TLB
DRILLED BY : Xolani Shabangu
PROFILED BY : Andries Vukeya

INCLINATION :
DIAM :
DATE : 22-08-2023
DATE : 20-09-2023

ELEVATION : 1614 m
X-COORD : 29.46031°E
Y-COORD : 26.09103°S

HOLE No: KTP1

TYPE SET BY : Andries Vukeya
SETUP FILE : STANDARD.SET

DATE : 06/12/2023 13:50
TEXT : ..ppendixASoilProfiles.txt

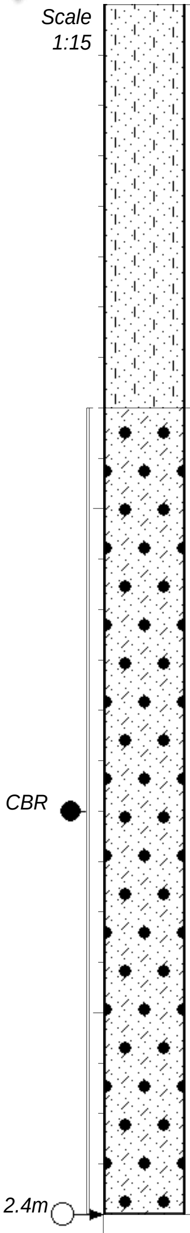
ESKOM

PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: KTP2
Sheet 1 of 1

JOB NUMBER: MAK152.08.23

Scale
1:15



0.00

Moist to very moist, brown, medium dense, intact, silty SAND. **Hillwash**.

0.80

Moist to very moist, brown, medium dense, intact, clayey SAND with minor ferricrete. **Residual soil**.

2.40

NOTES

1) Excavation stopped at 2.4m due to required depth.

2) Groundwater seepage at 2.4m.

3) Sidewall stable.

4) Disturbed sample at 0.8--2.4m: CBR, F-IND.

CONTRACTOR :
MACHINE : BELL TLB
DRILLED BY : Xolani Shabangu
PROFILED BY : Andries Vukeya

TYPE SET BY : Andries Vukeya
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM :
DATE : 22-08-2023
DATE : 20-09-2023

DATE : 06/12/2023 13:50
TEXT : ..ppendixASoilProfiles.txt

ELEVATION : 1614 m
X-COORD : 29.45981°E
Y-COORD : 26.09147°S

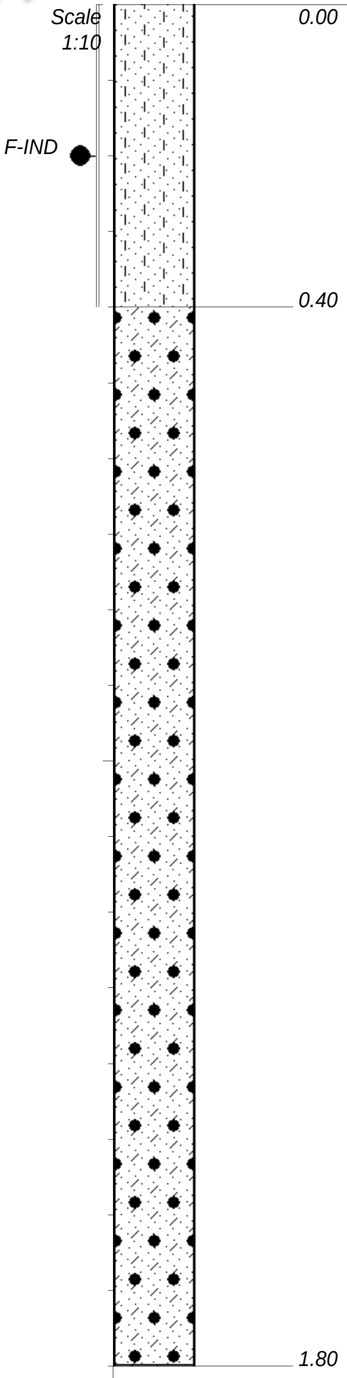
HOLE No: KTP2

ESKOM

PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: KTP3
Sheet 1 of 1

JOB NUMBER: MAK152.08.23



Moist to very moist, brown, medium dense, intact, silty SAND. **Hillwash**.

Moist to very moist, brown, stiff, medium dense, clayey SAND with minor ferricrete. **Residual soil**.

NOTES

1) Excavation stopped at 1.8m due to slow progress.

2) No groundwater seepage.

3) Sidewall stable.

4) Disturbed sample at 0.0--0.4m: F-IND.

CONTRACTOR :
MACHINE : BELL TLB
DRILLED BY : Xolani Shabangu
PROFILED BY : Andries Vukeya

TYPE SET BY : Andries Vukeya
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM :
DATE : 22-08-2023
DATE : 20-09-2023

DATE : 06/12/2023 13:50
TEXT : ..ppendixASoilProfiles.txt

ELEVATION : 1611 m
X-COORD : 29.45872°E
Y-COORD : 26.09211°S

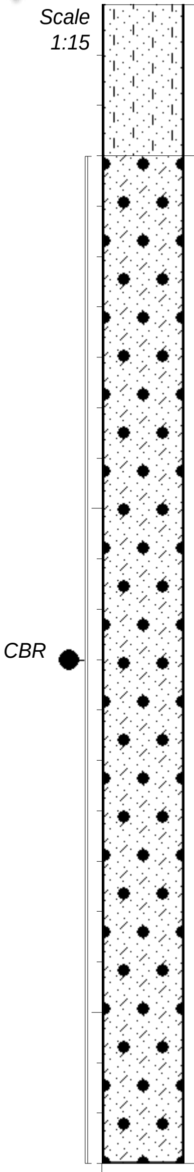
HOLE No: KTP3

ESKOM

PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: KTP4
Sheet 1 of 1

JOB NUMBER: MAK152.08.23



0.00	Moist to very moist, brown, medium dense, intact, silty SAND. **Hillwash**.
0.30	Moist to very moist, brown, medium dense, intact, clayey SAND with minor ferricrete. **Residual soil**.
2.30	

NOTES

1) Excavation stopped at 2.3m due to required depth.

2) No groundwater seepage.

3) Sidewall stable.

4) Disturbed sample at 0.3--2.3m: CBR, F-IND.

CONTRACTOR :
MACHINE : BELL TLB
DRILLED BY : Xolani Shabangu
PROFILED BY : Andries Vukeya

INCLINATION :
DIAM :
DATE : 22-08-2023
DATE : 20-09-2023

ELEVATION : 1607 m
X-COORD : 29.45752°E
Y-COORD : 26.09249°S

HOLE No: KTP4

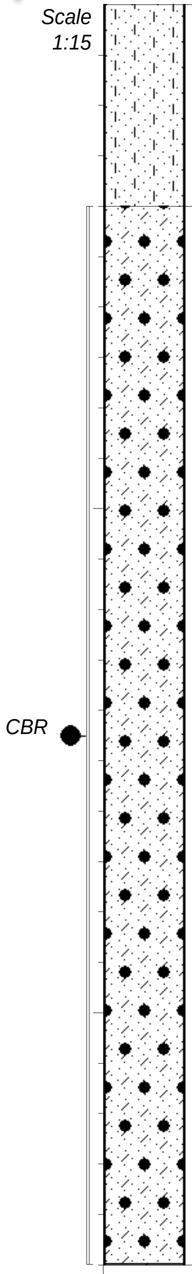
TYPE SET BY : Andries Vukeya
SETUP FILE : STANDARD.SET

DATE : 06/12/2023 13:50
TEXT : ..ppendixASoilProfiles.txt

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: KTP5
Sheet 1 of 1

JOB NUMBER: MAK152.08.23



0.00

Moist to very moist, brown, medium dense, intact, silty SAND. **Hillwash**.

0.40

Moist to very moist, brown, medium dense, intact, clayey SAND with minor ferricrete. **Residual soil**.

2.50

NOTES

1) Excavation stopped at 2.5m due to required depth.
2) No groundwater seepage.
3) Sidewall stable.
4) Disturbed sample at 0.4--2.5m: CBR, F-IND.

CONTRACTOR :
MACHINE : BELL TLB
DRILLED BY : Xolani Shabangu
PROFILED BY : Andries Vukeya

TYPE SET BY : Andries Vukeya
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM :
DATE : 22-08-2023
DATE : 20-09-2023

DATE : 06/12/2023 13:50
TEXT : ..ppendixASoilProfiles.txt

ELEVATION : 1608 m
X-COORD : 29.45654°E
Y-COORD : 26.09342°S

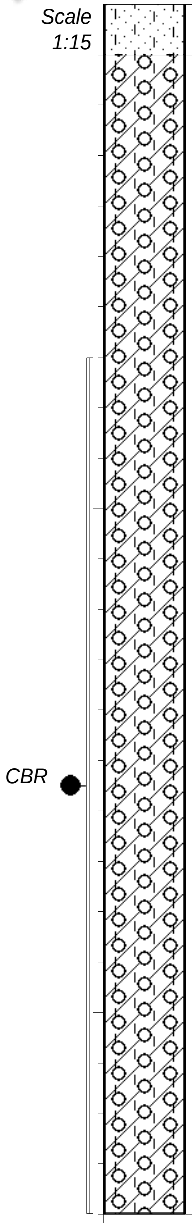
HOLE No: KTP5

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: KTP6
Sheet 1 of 1

JOB NUMBER: MAK152.08.23

Scale
1:15



0.00	Moist to very moist, brown, medium dense, intact, silty SAND. **Hillwash**.
0.10	Fine, sub-rounded to rounded, closely packed GRAVEL of ferricrete in a matrix of moist, yellowish brown, silty CLAY. The overall consistency is medium dense. **Pedogenic**.
2.40	

NOTES

1) Excavation stopped at 2.4m due to required depth.

2) No groundwater seepage.

3) Sidewall stable.

4) Disturbed sample at 0.7--2.4m: CBR, F-IND.

CONTRACTOR :
MACHINE : BELL TLB
DRILLED BY : Xolani Shabangu
PROFILED BY : Andries Vukeya

INCLINATION :
DIAM :
DATE : 22-08-2023
DATE : 20-09-2023

ELEVATION : 1617 m
X-COORD : 29.45528°E
Y-COORD : 26.09348°S

HOLE No: KTP6

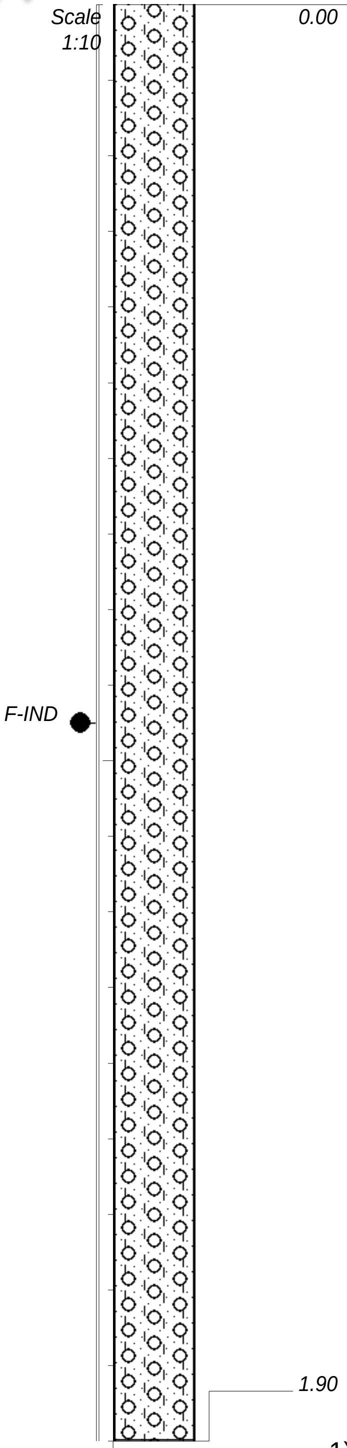
TYPE SET BY : Andries Vukeya
SETUP FILE : STANDARD.SET

DATE : 06/12/2023 13:50
TEXT : ..ppendixASoilProfiles.txt

ESKOM
**PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION**

HOLE No: KTP7
Sheet 1 of 1

JOB NUMBER: MAK152.08.23



Fine, sub-rounded to rounded, closely packed GRAVEL of ferricrete in a matrix of moist, yellowish brown, silty SAND. The overall consistency is medium dense. **Pedogenic**.

NOTES

1) Excavation stopped at 1.9m due to required depth

2) No groundwater seepage.

3) Sidewall stable.

4) Disturbed sample at 0.0--1.9m: F-IND.

CONTRACTOR :
MACHINE : BELL TLB
DRILLED BY : Xolani Shabangu
PROFILED BY : Andries Vukeya

TYPE SET BY : Andries Vukeya
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM :
DATE : 22-08-2023
DATE : 20-09-2023

DATE : 06/12/2023 13:50
TEXT : ..ppendixASoilProfiles.txt

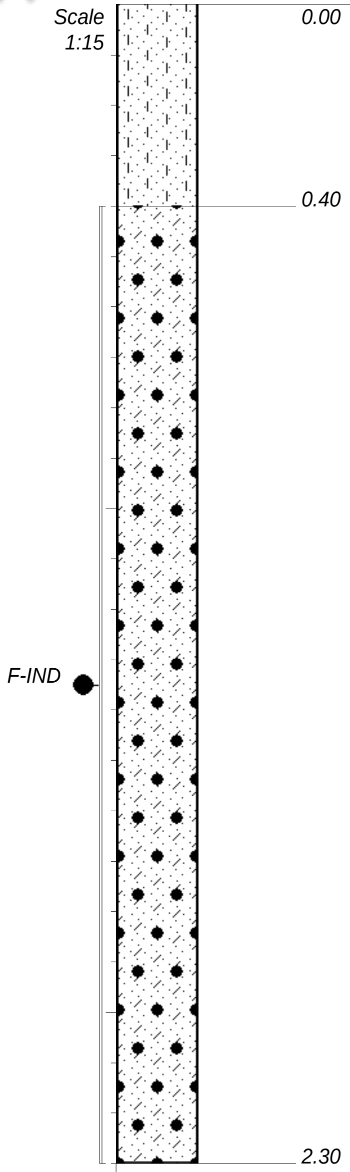
ELEVATION : 1623 m
X-COORD : 29.45366°E
Y-COORD : 26.09448°S

HOLE No: KTP7

ESKOM
**PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION**

HOLE No: KTP8
Sheet 1 of 1

JOB NUMBER: MAK152.08.23



Depth	Description
0.00	Moist to very moist, brown, medium dense, intact, silty SAND. **Hillwash**.
0.40	Moist to very moist, brown, medium dense, intact, clayey SAND with minor ferricrete. **Residual soil**.
2.30	

NOTES

1) Excavation stopped at 2.3m due to required depth.

2) No groundwater seepage.

3) Sidewall stable.

4) Disturbed sample at 0.4--2.3m: F-IND.

CONTRACTOR :
MACHINE : BELL TLB
DRILLED BY : Xolani Shabangu
PROFILED BY : Andries Vukeya

TYPE SET BY : Andries Vukeya
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM :
DATE : 22-08-2023
DATE : 20-09-2023

DATE : 06/12/2023 13:50
TEXT : ..ppendixASoilProfiles.txt

ELEVATION : 1620 m
X-COORD : 29.45200°E
Y-COORD : 22.09541°S

HOLE No: KTP8

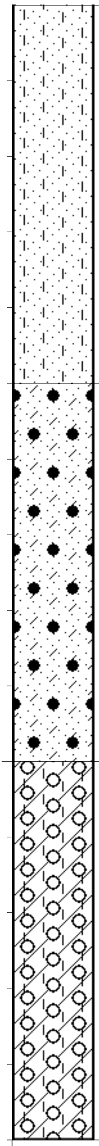
ESKOM

PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: KTP9
Sheet 1 of 1

JOB NUMBER: MAK152.08.23

Scale
1:10



0.00	Moist to very moist, brown, medium dense, intact, silty SAND. **Hillwash**.
0.50	Moist to very moist, brown, medium dense, intact, clayey SAND with minor ferricrete. **Residual soil**.
1.00	Fine, sub-rounded to rounded, closely packed GRAVEL of ferricrete in a matrix of moist, yellowish brown, silty CLAY. The overall consistency is medium dense. **Pedogenic**.
1.50	

NOTES

1) Excavation stopped at 1.5 m due to slow progress.

2) No groundwater seepage.

3) Sidewall stable.

CONTRACTOR :
MACHINE : BELL TLB
DRILLED BY : Xolani Shabangu
PROFILED BY : Andries Vukeya

INCLINATION :
DIAM :
DATE : 22-08-2023
DATE : 20-09-2023

ELEVATION : 1621 m
X-COORD : 29.45013°E
Y-COORD : 26.09517°S

HOLE No: KTP9

TYPE SET BY : Andries Vukeya
SETUP FILE : STANDARD.SET
DATE : 06/12/2023 13:50
TEXT : ..ppendixASoilProfiles.txt

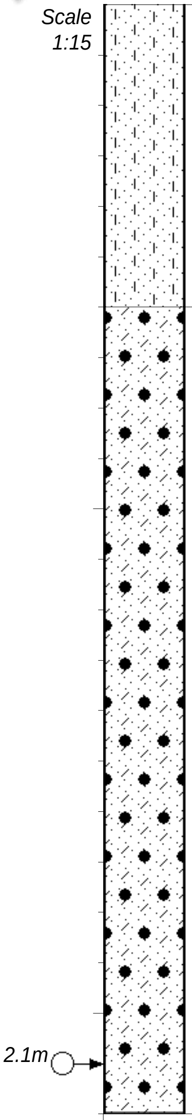
ESKOM

PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: KTP10
Sheet 1 of 1

JOB NUMBER: MAK152.08.23

Scale
1:15



0.00

Moist to very moist, brown, medium dense, intact, silty SAND. **Hillwash**.

0.60

Moist to very moist, brown, medium dense, intact, clayey SAND with minor ferricrete. **Residual soil**.

2.20

NOTES

1) Excavation stopped at 2.2m due to required depth.
2) Groundwater seepage at 2.1m.
3) Sidewall stable.

CONTRACTOR :
MACHINE : BELL TLB
DRILLED BY : Xolani Shabangu
PROFILED BY : Andries Vukeya

INCLINATION :
DIAM :
DATE : 22-08-2023
DATE : 20-09-2023

ELEVATION : 1614 m
X-COORD : 29.45136°E
Y-COORD : 26.09451°S

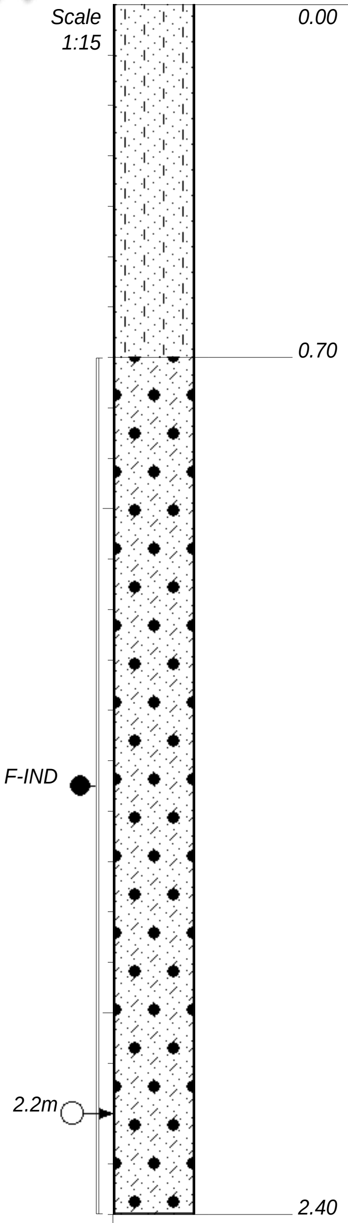
HOLE No: KTP10

TYPE SET BY : Andries Vukeya
SETUP FILE : STANDARD.SET
DATE : 06/12/2023 13:50
TEXT : ..ppendixASoilProfiles.txt

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: KTP11
Sheet 1 of 1

JOB NUMBER: MAK152.08.23



Moist to very moist, brown, medium dense, intact, silty SAND. **Hillwash**.

Moist to very moist, brown, medium dense, intact, clayey SAND with minor ferricrete. **Residual soil**.

NOTES

1) Excavation stopped at 2.4m due required depth.

2) Groundwater seepage at 2.2m.

3) Sidewall stable.

4) Disturbed sample at 0.7--2.4m: F-IND.

CONTRACTOR :
MACHINE : BELL TLB
DRILLED BY : Xolani Shabangu
PROFILED BY : Andries Vukeya

INCLINATION :
DIAM :
DATE : 22-08-2023
DATE : 20-09-2023

ELEVATION : 1617 m
X-COORD : 29.45266°E
Y-COORD : 26.09395°S

HOLE No: KTP11

TYPE SET BY : Andries Vukeya
SETUP FILE : STANDARD.SET

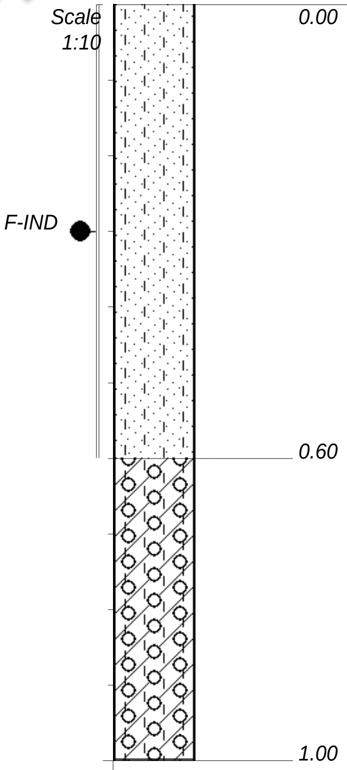
DATE : 06/12/2023 13:50
TEXT : ..ppendixASoilProfiles.txt

ESKOM

PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: KTP12
Sheet 1 of 1

JOB NUMBER: MAK152.08.23



Moist to very moist, brown, medium dense, intact, silty SAND. **Hillwash**.

Fine, sub-rounded to rounded, closely packed GRAVEL of ferricrete in a matrix of moist, yellowish brown, silty CLAY. The overall consistency is medium dense. **Pedogenic**.

NOTES

1) Excavation stopped at 1.0m due to refusal on hardpan ferricrete.
2) No groundwater seepage.
3) Sidewall stable.
4) Disturbed sample at 0.0--0.6m: F-IND.

CONTRACTOR :
MACHINE : BELL TLB
DRILLED BY : Xolani Shabangu
PROFILED BY : Andries Vukeya

INCLINATION :
DIAM :
DATE : 22-08-2023
DATE : 20-09-2023

ELEVATION : 1616 m
X-COORD : 29.45473°E
Y-COORD : 26.09299°S

HOLE No: KTP12

TYPE SET BY : Andries Vukeya
SETUP FILE : STANDARD.SET

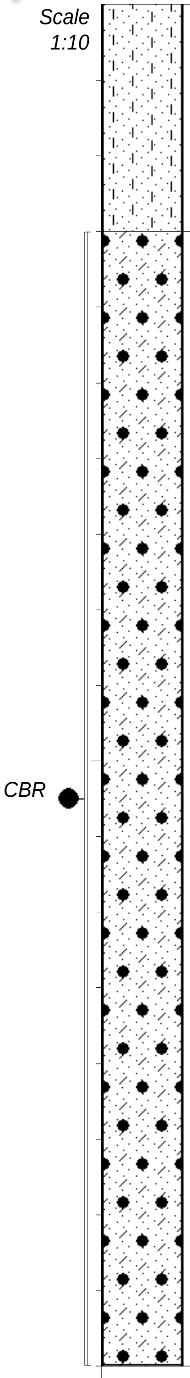
DATE : 06/12/2023 13:50
TEXT : ..ppendixASoilProfiles.txt

MAKHUMA CONSULTING

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: KTP13
Sheet 1 of 1

JOB NUMBER: MAK152.08.23



0.00

Moist to very moist, brown, medium dense, intact, silty SAND. **Hillwash**.

0.30

Moist to very moist, brown, medium dense, intact, clayey SAND with minor ferricrete. **Residual soil**.

1.80

NOTES

1) Excavation stopped at 1.8m due to required depth.
2) No groundwater seepage.
3) Sidewall stable.
4) Disturbed sample at 0.3--1.8m: CBR, F-IND.

CONTRACTOR :
MACHINE : BELL TLB
DRILLED BY : Xolani Shabangu
PROFILED BY : Andries Vukeya

INCLINATION :
DIAM :
DATE : 22-08-2023
DATE : 20-09-2023

ELEVATION : 1612 m
X-COORD : 29.45693°E
Y-COORD : 26.09207°S

HOLE No: KTP13

TYPE SET BY : Andries Vukeya
SETUP FILE : STANDARD.SET

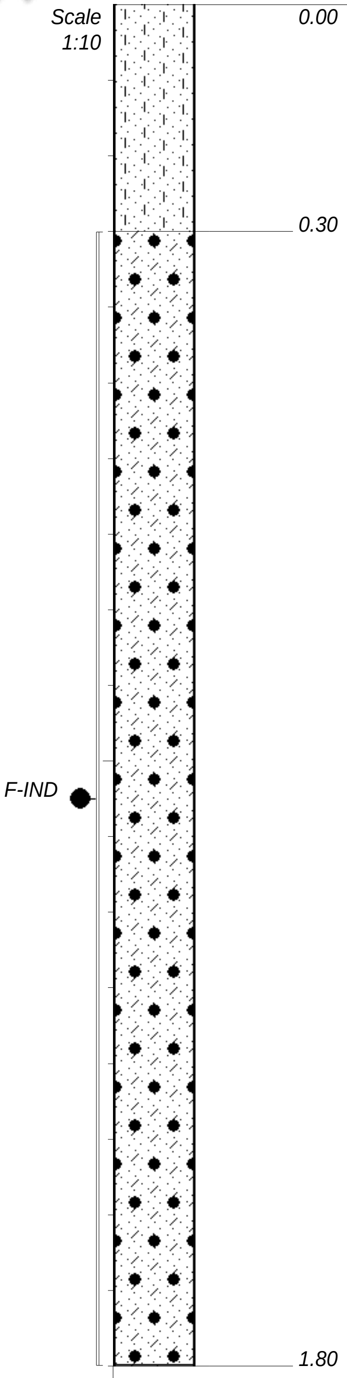
DATE : 06/12/2023 13:50
TEXT : ..ppendixASoilProfiles.txt

ESKOM

PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: KTP14
Sheet 1 of 1

JOB NUMBER: MAK152.08.23



Moist to very moist, brown, medium dense, intact, silty SAND. **Hillwash**.

Moist to very moist, brown, medium dense, intact, clayey SAND with minor ferricrete. **Residual soil**.

NOTES

1) Excavation stopped at 1.8m due to required depth.
2) No groundwater seepage.
3) Sidewall stable.
4) Disturbed sample at 0.3--1.8m: F-IND.

CONTRACTOR :
MACHINE : BELL TLB
DRILLED BY : Xolani Shabangu
PROFILED BY : Andries Vukeya
TYPE SET BY : Andries Vukeya
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM :
DATE : 22-08-2023
DATE : 20-09-2023
DATE : 06/12/2023 13:50
TEXT : ..ppendixASoilProfiles.txt

ELEVATION : 1615 m
X-COORD : 29.45912°E
Y-COORD : 26.09101°S

HOLE No: KTP14

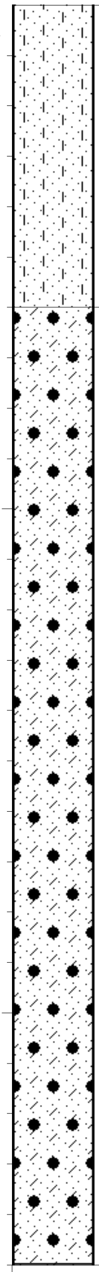
ESKOM

PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: KTP15
Sheet 1 of 1

JOB NUMBER: MAK152.08.23

Scale
1:15



0.00

Moist to very moist, brown, medium dense, intact, silty SAND. **Hillwash**.

0.60

Moist to very moist, brown, medium dense, intact, clayey SAND with minor ferricrete. **Residual soil**.

2.50

NOTES

1) Excavation stopped at 2.5m due to required depth.

2) No groundwater seepage.

3) Sidewall stable.

CONTRACTOR :
MACHINE : BELL TLB
DRILLED BY : Xolani Shabangu
PROFILED BY : Andries Vukeya

INCLINATION :
DIAM :
DATE : 22-08-2023
DATE : 20-09-2023

ELEVATION : 1617 m
X-COORD : 29.45065°E
Y-COORD : 26.09648°S

HOLE No: KTP15

TYPE SET BY : Andries Vukeya
SETUP FILE : STANDARD.SET

DATE : 06/12/2023 13:50
TEXT : ..ppendixASoilProfiles.txt

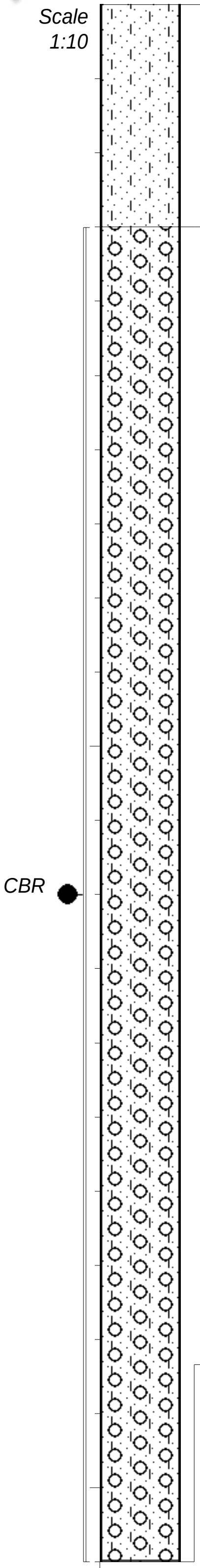
ESKOM

PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: KTP16
Sheet 1 of 1

JOB NUMBER: MAK152.08.23

Scale
1:10



0.00	Moist to very moist, brown, medium dense, intact, silty SAND. **Hillwash**.
0.30	Fine, sub-rounded to rounded, closely packed GRAVEL of ferricrete in a matrix of moist, yellowish brown, silty SAND. The overall consistency is medium dense. **Pedogenic**.
2.10	

NOTES

1) Excavation stopped at 2.1m due to required depth.

2) No groundwater seepage.

3) Sidewall stable.

4) Disturbed sample at 0.3--2.1m: CBR, F-IND.

CONTRACTOR :
MACHINE : BELL TLB
DRILLED BY : Xolani Shabangu
PROFILED BY : Andries Vukeya

TYPE SET BY : Andries Vukeya
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM :
DATE : 22-08-2023
DATE : 20-09-2023

DATE : 06/12/2023 13:50
TEXT : ..ppendixASoilProfiles.txt

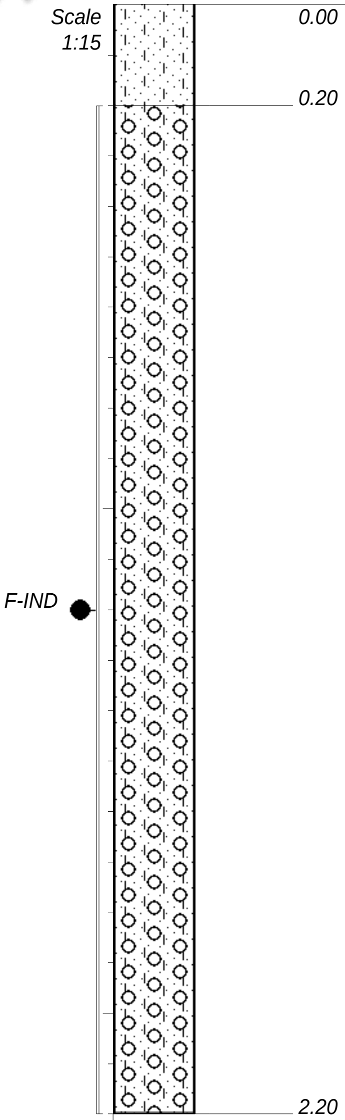
ELEVATION : 1622 m
X-COORD : 29.45249°E
Y-COORD : 26.09714°S

HOLE No: KTP16

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: KTP17
Sheet 1 of 1

JOB NUMBER: MAK152.08.23



0.00 – 0.20: Moist to very moist, brown, medium dense, intact, silty SAND. **Hillwash**.

0.20 – 2.20: Fine, sub-rounded to rounded, closely packed GRAVEL of ferricrete in a matrix of moist, yellowish brown, silty SAND. The overall consistency is medium dense. **Pedogenic**.

NOTES

1) Excavation stopped at 2.2m due to required depth.
2) No groundwater seepage.
3) Sidewall stable.
4) Disturbed sample at 0.2--2.2m: F-IND.

CONTRACTOR :
MACHINE : BELL TLB
DRILLED BY : Xolani Shabangu
PROFILED BY : Andries Vukeya

INCLINATION :
DIAM :
DATE : 22-08-2023
DATE : 20-09-2023

ELEVATION : 1624 m
X-COORD : 29.45518°E
Y-COORD : 26.09634°S

HOLE No: KTP17

TYPE SET BY : Andries Vukeya
SETUP FILE : STANDARD.SET

DATE : 06/12/2023 13:50
TEXT : ..ppendixASoilProfiles.txt

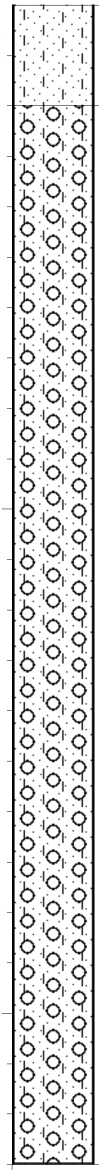
ESKOM

PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: KTP18
Sheet 1 of 1

JOB NUMBER: MAK152.08.23

Scale
1:15



0.00	Moist to very moist, brown, medium dense, intact, silty SAND. **Hillwash**.
0.20	Fine, sub-rounded to rounded, closely packed GRAVEL of ferricrete in a matrix of moist, yellowish brown, silty SAND. The overall consistency is medium dense. **Pedogenic**.
2.30	

NOTES

1) Excavation stopped at 2.3m due to required depth.

2) No groundwater seepage.

3) Sidewall stable.

CONTRACTOR :
MACHINE : BELL TLB
DRILLED BY : Xolani Shabangu
PROFILED BY : Andries Vukeya

INCLINATION :
DIAM :
DATE : 22-08-2023
DATE : 20-09-2023

ELEVATION : 1626 m
X-COORD : 29.45380°E
Y-COORD : 26.09752°S

HOLE No: KTP18

TYPE SET BY : Andries Vukeya
SETUP FILE : STANDARD.SET

DATE : 06/12/2023 13:50
TEXT : ..ppendixASoilProfiles.txt

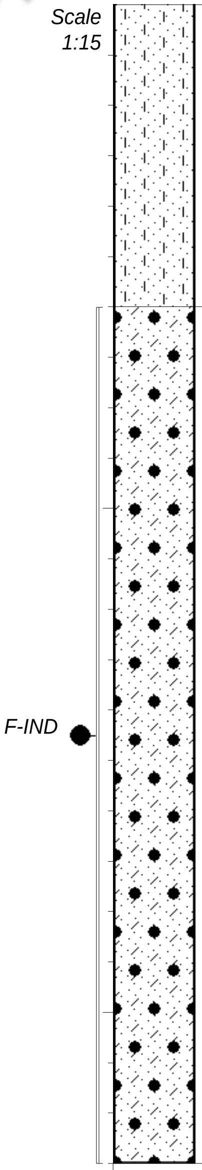
ESKOM

**PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION**

HOLE No: KTP19
Sheet 1 of 1

JOB NUMBER: MAK152.08.23

*Scale
1:15*



0.00 Moist to very moist, brown, medium dense, intact, silty SAND. **Hillwash**.

0.60 Moist to very moist, brown, medium dense, intact, clayey SAND with minor ferricrete. **Residual soil**.

2.30

NOTES

1) Excavation stopped at 2.3m due to required depth.
2) No groundwater seepage.
3) Sidewall stable.
4) Disturbed sample at 0.6--2.3m: F-IND.

CONTRACTOR :
MACHINE : BELL TLB
DRILLED BY : Xolani Shabangu
PROFILED BY : Andries Vukeya

TYPE SET BY : Andries Vukeya
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM :
DATE : 22-08-2023
DATE : 20-09-2023

DATE : 06/12/2023 13:50
TEXT : ..ppendixASoilProfiles.txt

ELEVATION : 1624 m
X-COORD : 29.45230°E
Y-COORD : 26.09809°S

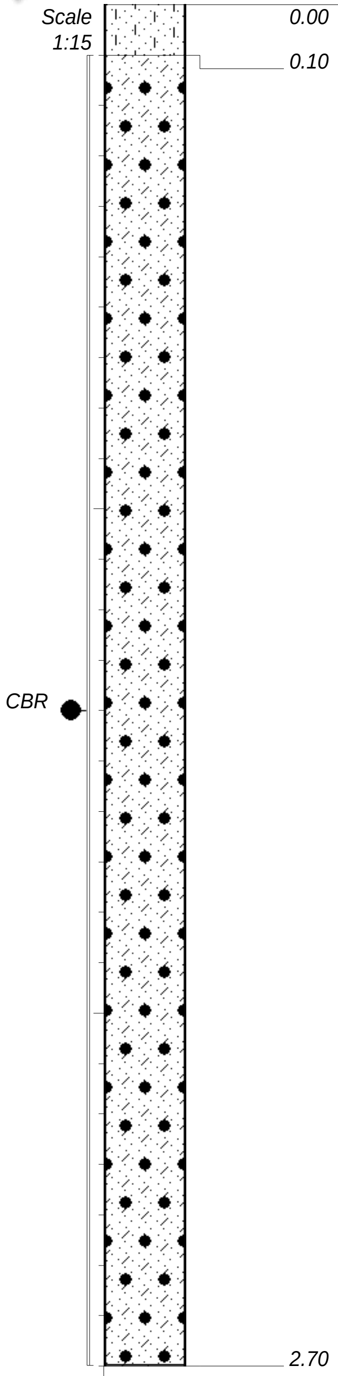
HOLE No: KTP19

ESKOM

PRELIMINARY GEOTECHNICAL INVESTIGATION: KOMATI POWER STATION

HOLE No: KTP20
Sheet 1 of 1

JOB NUMBER: MAK152.08.23



0.00 – 0.10: Moist, brown, medium dense, intact, silty SAND. **Hillwash**.

0.10 – 2.70: Moist to very moist, brown, medium dense, intact, clayey SAND with minor ferricrete. **Residual soil**.

NOTES

1) Excavation stopped at 2.7m due to required depth.

2) No groundwater seepage.

3) Sidewall stable.

4) Disturbed sample at 0.1--2.7m: CBR, F-IND.

CONTRACTOR :
MACHINE : BELL TLB
DRILLED BY : Xolani Shabangu
PROFILED BY : Andries Vukeya

TYPE SET BY : Andries Vukeya
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM :
DATE : 22-08-2023
DATE : 20-09-2023

DATE : 06/12/2023 13:50
TEXT : ..ppendixASoilProfiles.txt

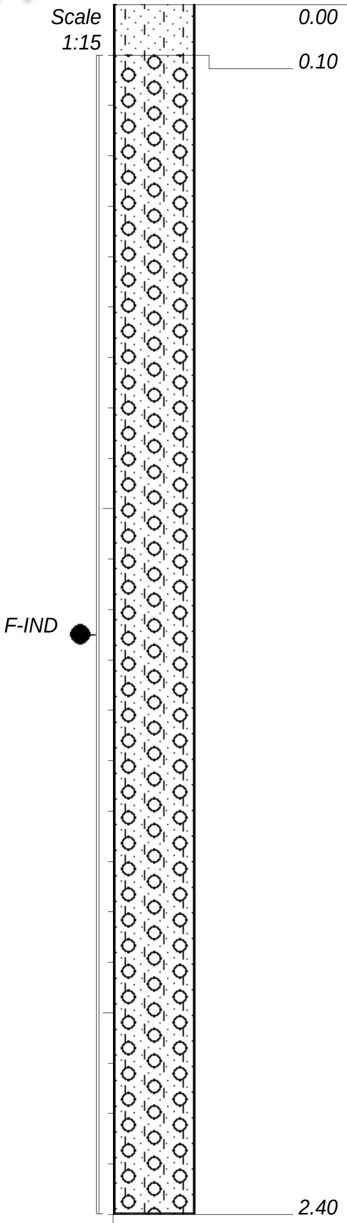
ELEVATION : 1629 m
X-COORD : 29.45183°E
Y-COORD : 26.10502°S

HOLE No: KTP20

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: KTP21
Sheet 1 of 1

JOB NUMBER: MAK152.08.23



Moist, brown, medium dense, intact, silty SAND. **Hillwash**.

Fine, sub-rounded to rounded, closely packed GRAVEL of ferricrete in a matrix of moist, yellowish brown, silty SAND. The overall consistency is medium dense. **Pedogenic**.

NOTES

1) Excavation stopped at 2.4m due to required depth.

2) No groundwater seepage.

3) Sidewall stable.

4) Disturbed sample at 0.1--2.4m: F-IND.

CONTRACTOR :
MACHINE : BELL TLB
DRILLED BY : Xolani Shabangu
PROFILED BY : Andries Vukeya

INCLINATION :
DIAM :
DATE : 22-08-2023
DATE : 20-09-2023

ELEVATION : 1641 m
X-COORD : 29.45453°E
Y-COORD : 26.10459°S

HOLE No: KTP21

TYPE SET BY : Andries Vukeya
SETUP FILE : STANDARD.SET

DATE : 06/12/2023 13:50
TEXT : ..ppendixASoilProfiles.txt

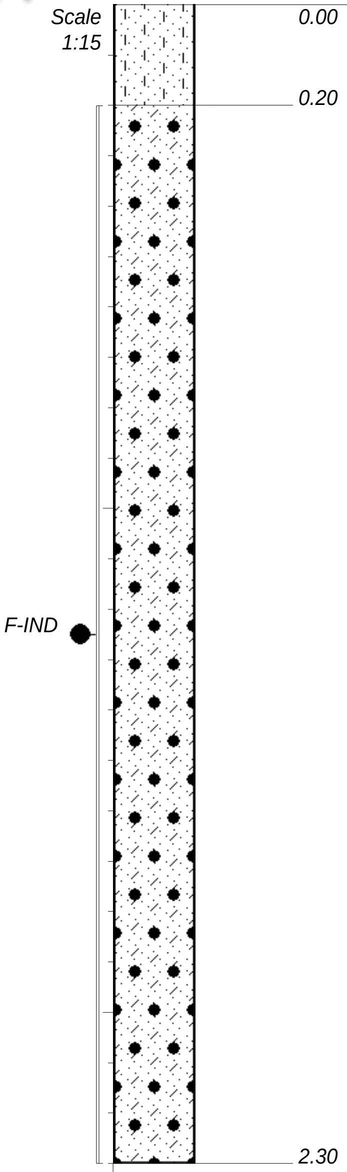
ESKOM

PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: KTP22
Sheet 1 of 1

JOB NUMBER: MAK152.08.23

Scale
1:15



Moist, brown, medium dense, intact, silty SAND. **Hillwash**.

Moist to very moist, brown, medium dense, intact, clayey SAND with minor ferricrete. **Residual soil**.

NOTES

1) Excavation stopped at 2.3m due to required depth.
2) No groundwater seepage.
3) Sidewall stable.
4) Disturbed sample at 0.2--2.3m: F-IND.

CONTRACTOR :
MACHINE : BELL TLB
DRILLED BY : Xolani Shabangu
PROFILED BY : Andries Vukeya

TYPE SET BY : Andries Vukeya
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM :
DATE : 22-08-2023
DATE : 20-09-2023

DATE : 06/12/2023 13:50
TEXT : ..ppendixASoilProfiles.txt

ELEVATION : 1641 m
X-COORD : 29.45677°E
Y-COORD : 26.10280°S

HOLE No: KTP22

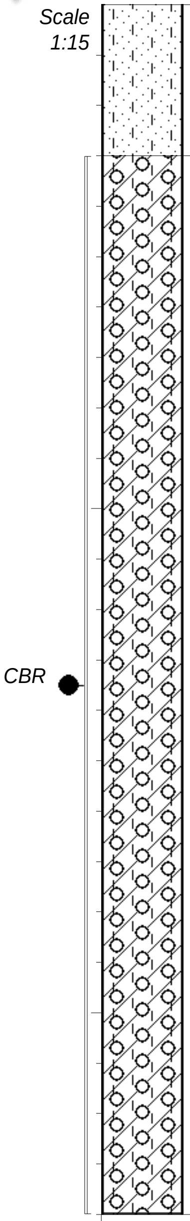
ESKOM

PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: KTP23
Sheet 1 of 1

JOB NUMBER: MAK152.08.23

Scale
1:15



0.00

Moist, brown, medium dense, intact, silty SAND. **Hillwash**.

0.30

Fine, sub-rounded to rounded, closely packed GRAVEL of ferricrete in a matrix of moist, yellowish brown, silty CLAY. The overall consistency is medium dense. **Pedogenic**.

2.40

NOTES

1) Excavation stopped at 2.4m due to required depth.

2) No groundwater seepage.

3) Sidewall stable.

4) Disturbed sample at 0.3--2.4m: CBR, F-IND.

CONTRACTOR :
MACHINE : BELL TLB
DRILLED BY : Xolani Shabangu
PROFILED BY : Andries Vukeya

TYPE SET BY : Andries Vukeya
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM :
DATE : 22-08-2023
DATE : 20-09-2023

DATE : 06/12/2023 13:50
TEXT : ..ppendixASoilProfiles.txt

ELEVATION : 1646 m
X-COORD : 29.45968°E
Y-COORD : 26.10463°S

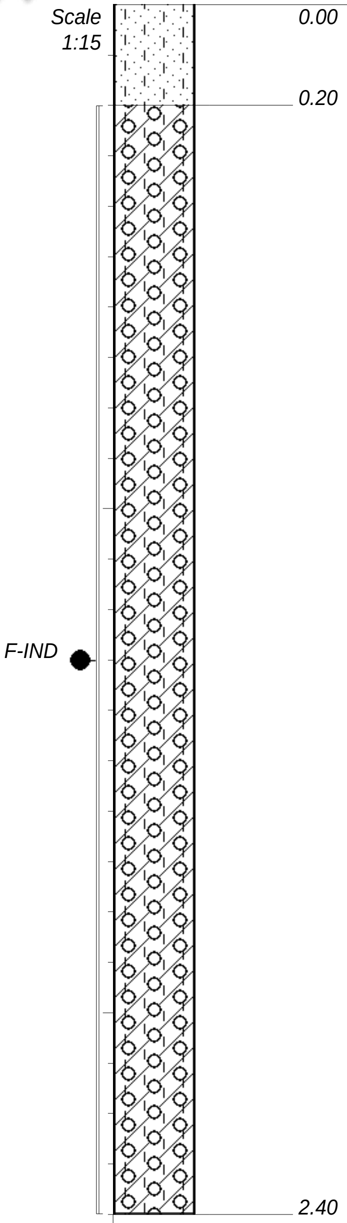
HOLE No: KTP23

ESKOM

PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: KTP24
Sheet 1 of 1

JOB NUMBER: MAK152.08.23



0.00–0.20: Moist, brown, medium dense, intact, silty SAND. **Hillwash**.

0.20–2.40: Fine, sub-rounded to rounded, closely packed GRAVEL of ferricrete in a matrix of moist, yellowish brown, silty CLAY. The overall consistency is medium dense. **Pedogenic**.

NOTES

1) Excavation stopped at 2.4m due to required depth.

2) No groundwater seepage.

3) Sidewall stable.

4) Disturbed sample at 0.2--2.4m: F-IND.

CONTRACTOR :
MACHINE : BELL TLB
DRILLED BY : Xolani Shabangu
PROFILED BY : Andries Vukeya

TYPE SET BY : Andries Vukeya
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM :
DATE : 22-08-2023
DATE : 20-09-2023

DATE : 06/12/2023 13:50
TEXT : ..ppendixASoilProfiles.txt

ELEVATION : 1644 m
X-COORD : 29.46198°E
Y-COORD : 26.10455°S

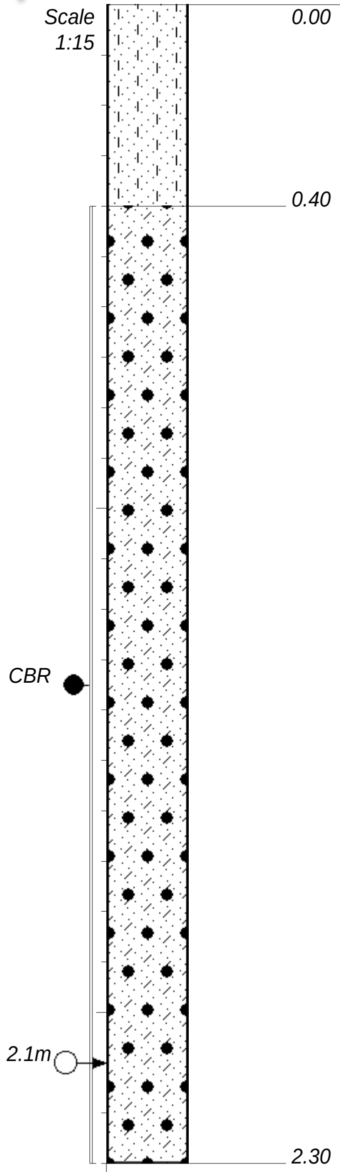
HOLE No: KTP24

ESKOM

PRELIMINARY GEOTECHNICAL INVESTIGATION: KOMATI POWER STATION

HOLE No: KTP25
Sheet 1 of 1

JOB NUMBER: MAK152.08.23



Moist, brown, medium dense, intact, silty SAND. **Hillwash**.

Moist to very moist, brown, medium dense, intact, clayey SAND with minor ferricrete. **Residual soil**.

NOTES

1) Excavation stopped at 2.3m due to required depth.

2) Groundwater seepage at 2.1m.

3) Sidewall stable.

4) Disturbed sample at 0.4--2.3m: CBR, F-IND.

CONTRACTOR :
MACHINE : BELL TLB
DRILLED BY : Xolani Shabangu
PROFILED BY : Andries Vukeya

INCLINATION :
DIAM :
DATE : 22-08-2023
DATE : 20-09-2023

ELEVATION : 1647 m
X-COORD : 29.46486°E
Y-COORD : 26.10464°S

HOLE No: KTP25

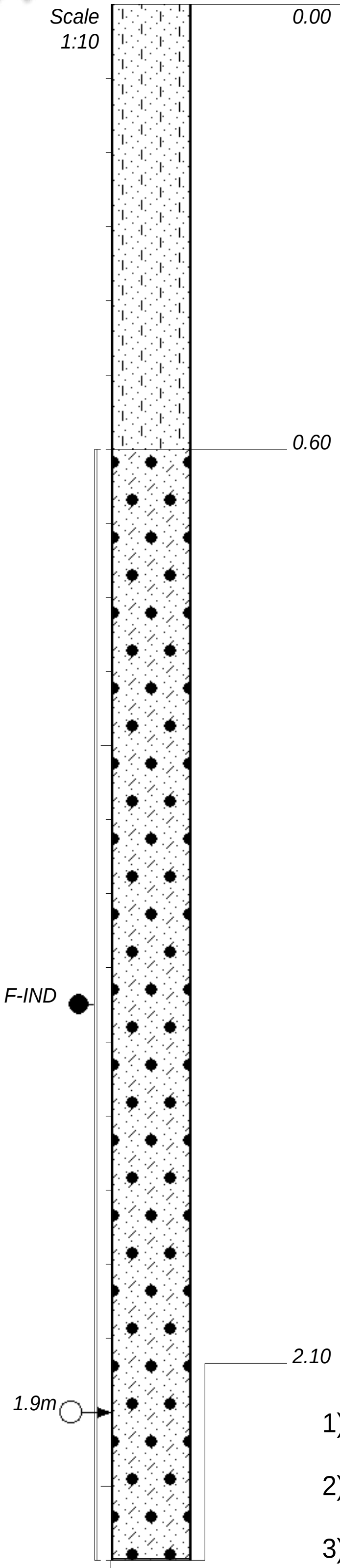
TYPE SET BY : Andries Vukeya
SETUP FILE : STANDARD.SET

DATE : 06/12/2023 13:50
TEXT : ..ppendixASoilProfiles.txt

ESKOM
**PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION**

HOLE No: KTP26
Sheet 1 of 1

JOB NUMBER: MAK152.08.23



0.00 Moist, brown, medium dense, intact, silty SAND. **Hillwash**.

0.60 Wet, reddish brown, medium dense, intact, clayey SAND with minor ferricrete. **Residual soil**.

2.10

NOTES
1) Excavation stopped at 2.1m due to required depth.

2) Groundwater seepage at 1.9m.

3) Sidewall stable.

4) Disturbed sample at 0.6--2.1m: F-IND.

CONTRACTOR :
MACHINE : BELL TLB
DRILLED BY : Xolani Shabangu
PROFILED BY : Andries Vukeya

INCLINATION :
DIAM :
DATE : 22-08-2023
DATE : 20-09-2023

ELEVATION : 1652 m
X-COORD : 29.46568°E
Y-COORD : 26.10768°S

HOLE No: KTP26

TYPE SET BY : Andries Vukeya
SETUP FILE : STANDARD.SET

DATE : 06/12/2023 13:50
TEXT : ..ppendixASoilProfiles.txt

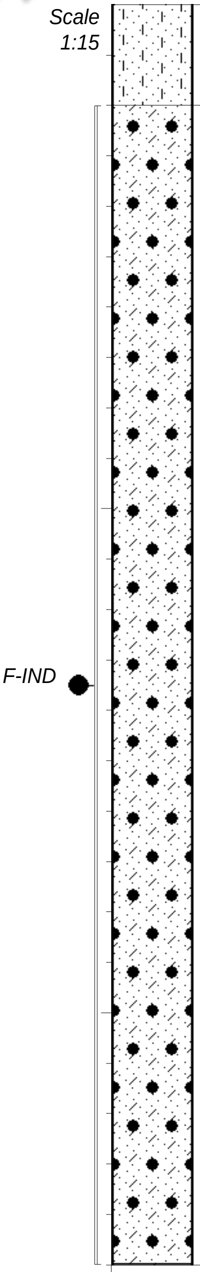
ESKOM

PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: KTP27
Sheet 1 of 1

JOB NUMBER: MAK152.08.23

Scale
1:15



0.00	Moist, brown, medium dense, intact, silty SAND. **Hillwash**.
0.20	Very moist, reddish brown, medium dense, intact, clayey SAND with minor ferricrete. **Residual soil**.
2.50	

NOTES

1) Excavation stopped at 2.5m due to required depth.
2) No groundwater seepage.
3) Sidewall stable.
4) Disturbed sample at 0.2--2.5m: F-IND.

CONTRACTOR :
MACHINE : BELL TLB
DRILLED BY : Xolani Shabangu
PROFILED BY : Andries Vukeya

INCLINATION :
DIAM :
DATE : 22-08-2023
DATE : 20-09-2023

ELEVATION : 1658 m
X-COORD : 29.46493°E
Y-COORD : 26.11053°S

HOLE No: KTP27

TYPE SET BY : Andries Vukeya
SETUP FILE : STANDARD.SET

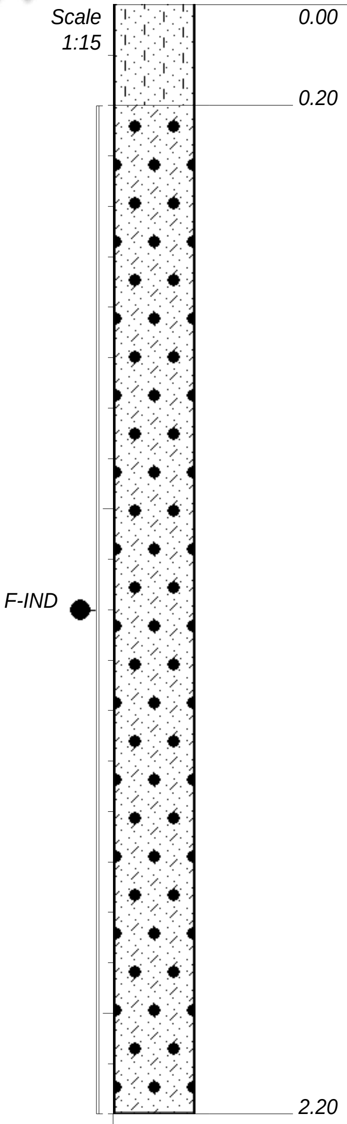
DATE : 06/12/2023 13:50
TEXT : ..ppendixASoilProfiles.txt

ESKOM

PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: KTP28
Sheet 1 of 1

JOB NUMBER: MAK152.08.23



Moist, brown, medium dense, intact, silty SAND. **Hillwash**.

Very moist, reddish brown, medium dense, intact, clayey SAND with minor ferricrete. **Residual soil**.

NOTES

1) Excavation stopped at 2.2m due to required depth.

2) No groundwater seepage.

3) Sidewall stable.

4) Disturbed sample at 0.2--2.2m: F-IND.

CONTRACTOR :
MACHINE : BELL TLB
DRILLED BY : Xolani Shabangu
PROFILED BY : Andries Vukeya

INCLINATION :
DIAM :
DATE : 22-08-2023
DATE : 20-09-2023

ELEVATION : 1660 m
X-COORD : 29.46242°E
Y-COORD : 26.10930°S

HOLE No: KTP28

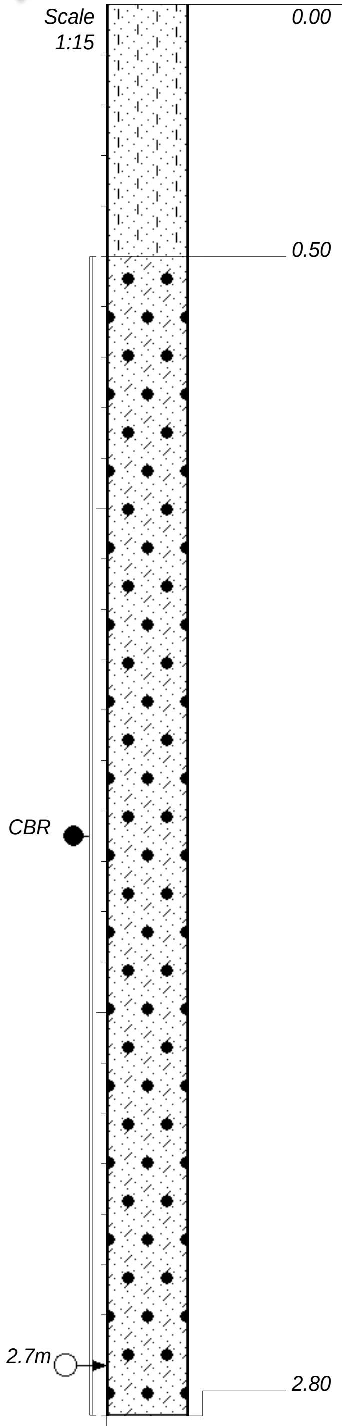
TYPE SET BY : Andries Vukeya
SETUP FILE : STANDARD.SET

DATE : 06/12/2023 13:50
TEXT : ..ppendixASoilProfiles.txt

ESKOM
**PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION**

HOLE No: KTP29
Sheet 1 of 1

JOB NUMBER: MAK152.08.23



Moist, brown, medium dense, intact, silty SAND. **Hillwash**.

Very moist, reddish brown, medium dense, intact, clayey SAND with minor ferricrete. **Residual soil**.

NOTES

1) Excavation stopped at 2.8m due to required depth.
2) Groundwater seepage at 2.7m.
3) Sidewall stable.
4) Disturbed sample at 0.5--2.8m: CBR, F-IND.

CONTRACTOR :
MACHINE : BELL TLB
DRILLED BY : Xolani Shabangu
PROFILED BY : Andries Vukeya
TYPE SET BY : Andries Vukeya
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM :
DATE : 22-08-2023
DATE : 20-09-2023
DATE : 06/12/2023 13:50
TEXT : ..ppendixASoilProfiles.txt

ELEVATION : 1657 m
X-COORD : 29.45976°E
Y-COORD : 26.10974°S

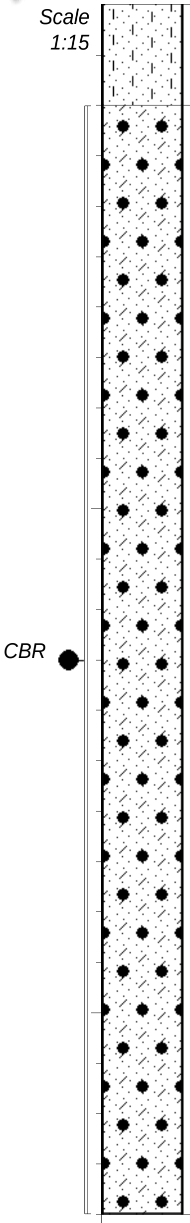
HOLE No: KTP29

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: KTP30
Sheet 1 of 1

JOB NUMBER: MAK152.08.23

Scale
1:15



0.00

Moist, brown, medium dense, intact, silty SAND. **Hillwash**.

0.20

Very moist, reddish brown, medium dense, intact, clayey SAND with minor ferricrete. **Residual soil**.

2.40

NOTES

1) Excavation stopped at 2.4m due to required depth.

2) No groundwater seepage.

3) Sidewall stable.

4) Disturbed sample at 0.2--2.4m: CBR, F-IND.

CONTRACTOR :
MACHINE : BELL TLB
DRILLED BY : Xolani Shabangu
PROFILED BY : Andries Vukeya

INCLINATION :
DIAM :
DATE : 22-08-2023
DATE : 20-09-2023

ELEVATION : 1649 m
X-COORD : 29.45623°E
Y-COORD : 26.10929°S

TYPE SET BY : Andries Vukeya
SETUP FILE : STANDARD.SET

DATE : 06/12/2023 13:50
TEXT : ..ppendixASoilProfiles.txt

HOLE No: KTP30

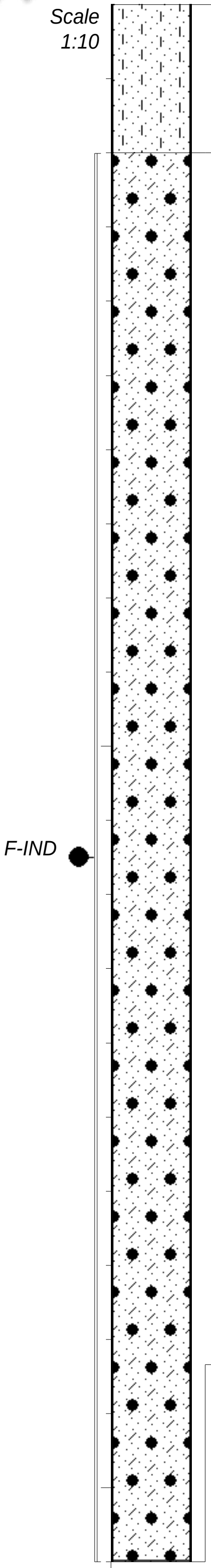
ESKOM

**PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION**

HOLE No: KTP31
Sheet 1 of 1

JOB NUMBER: MAK152.08.23

*Scale
1:10*



0.00

Moist, brown, medium dense, intact, silty SAND. **Hillwash**.

0.20

Very moist, reddish brown, medium dense, intact, clayey SAND with minor ferricrete. **Residual soil**.

2.10

NOTES

1) Excavation stopped at 2.1m due to required depth.

2) No groundwater seepage.

3) Sidewall stable.

4) Disturbed sample at 0.2--2.1m: F-IND.

CONTRACTOR :
MACHINE : BELL TLB
DRILLED BY : Xolani Shabangu
PROFILED BY : Andries Vukeya

TYPE SET BY : Andries Vukeya
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM :
DATE : 22-08-2023
DATE : 20-09-2023

DATE : 06/12/2023 13:50
TEXT : ..ppendixASoilProfiles.txt

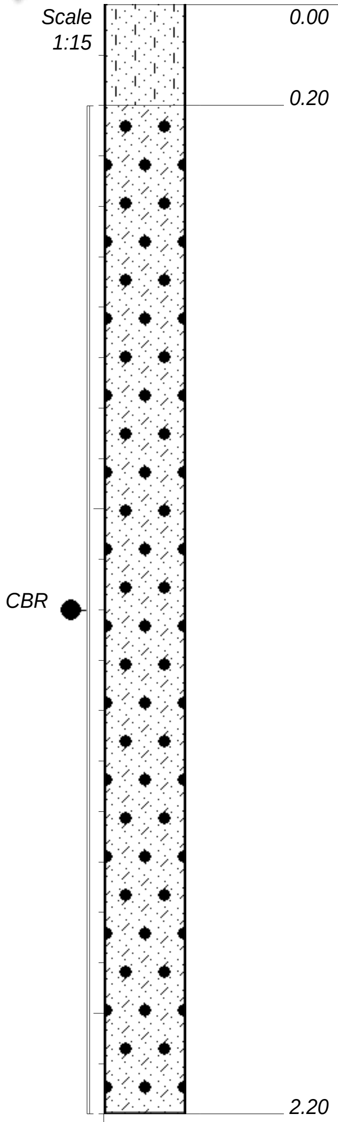
ELEVATION : 1641 m
X-COORD : 29.45309°E
Y-COORD : 26.10831°S

HOLE No: KTP31

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: KTP32
Sheet 1 of 1

JOB NUMBER: MAK152.08.23



Moist, brown, medium dense, intact, silty SAND. **Hillwash**.

Very moist, reddish brown, medium dense, intact, clayey SAND with minor ferricrete. **Residual soil**.

NOTES

1) Excavation stopped at 2.2m due to required depth.
2) No groundwater seepage.
3) Sidewall stable.
4) Disturbed sample at 0.2--2.2m: CBR, F-IND.

CONTRACTOR :		*INCLINATION :*		*ELEVATION :*	1646 m
MACHINE :	BELL TLB	*DIAM :*		*X-COORD :*	29.45509°E
DRILLED BY :	Xolani Shabangu	*DATE :*	22-08-2023	*Y-COORD :*	26.10666°S
PROFILED BY :	Andries Vukeya	*DATE :*	20-09-2023		

HOLE No: KTP32

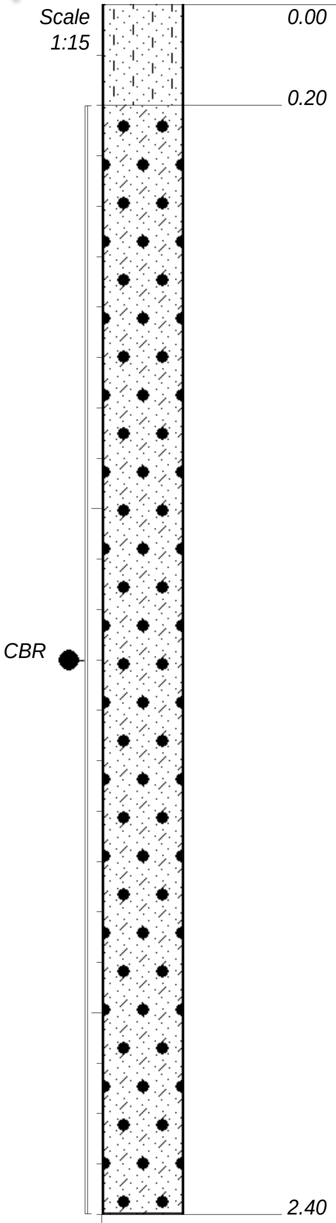
TYPE SET BY : Andries Vukeya *DATE : 06/12/2023 13:50*
SETUP FILE : STANDARD.SET *TEXT : ..ppendixASoilProfiles.txt*

ESKOM

PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: KTP33
Sheet 1 of 1

JOB NUMBER: MAK152.08.23



Moist, brown, medium dense, intact, silty SAND. **Hillwash**.

Very moist, reddish brown, medium dense, intact, clayey SAND with minor ferricrete. **Residual soil**.

NOTES

1) Excavation stopped at 2.4m due to required depth.

2) No groundwater seepage.

3) Sidewall stable.

4) Disturbed sample at 0.2--2.4m: CBR, F-IND.

CONTRACTOR :
MACHINE : BELL TLB
DRILLED BY : Xolani Shabangu
PROFILED BY : Andries Vukeya

TYPE SET BY : Andries Vukeya
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM :
DATE : 22-08-2023
DATE : 20-09-2023

DATE : 06/12/2023 13:50
TEXT : ..ppendixASoilProfiles.txt

ELEVATION : 1654 m
X-COORD : 29.45810°E
Y-COORD : 26.10634°S

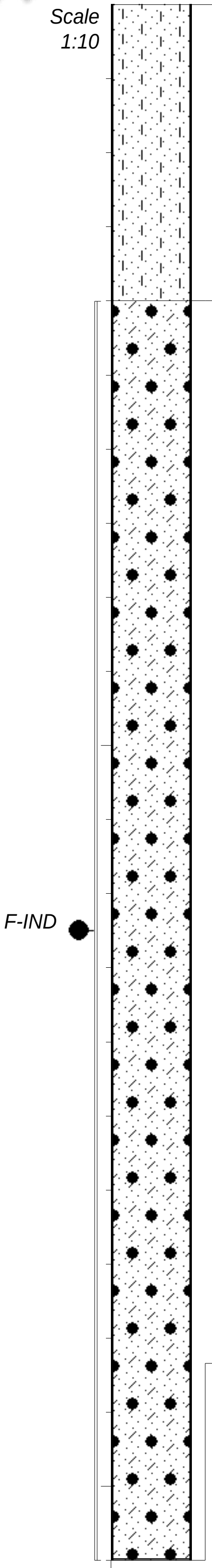
HOLE No: KTP33

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION: KOMATI POWER STATION

HOLE No: KTP34
Sheet 1 of 1

JOB NUMBER: MAK152.08.23

Scale 1:10



0.00

Moist, brown, medium dense, intact, silty SAND. **Hillwash**.

0.40

Very moist, reddish brown, medium dense, intact, clayey SAND with minor ferricrete. **Residual soil**.

2.10

NOTES

1) Excavation stopped at 2.1m due to required depth.

2) No groundwater seepage.

3) Sidewall stable.

4) Disturbed sample at 0.4--2.1m: F-IND.

CONTRACTOR :
MACHINE : BELL TLB
DRILLED BY : Xolani Shabangu
PROFILED BY : Andries Vukeya

TYPE SET BY : Andries Vukeya
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM :
DATE : 22-08-2023
DATE : 20-09-2023

DATE : 06/12/2023 13:50
TEXT : ..ppendixASoilProfiles.txt

ELEVATION : 1659 m
X-COORD : 29.46017°E
Y-COORD : 26.10734°S

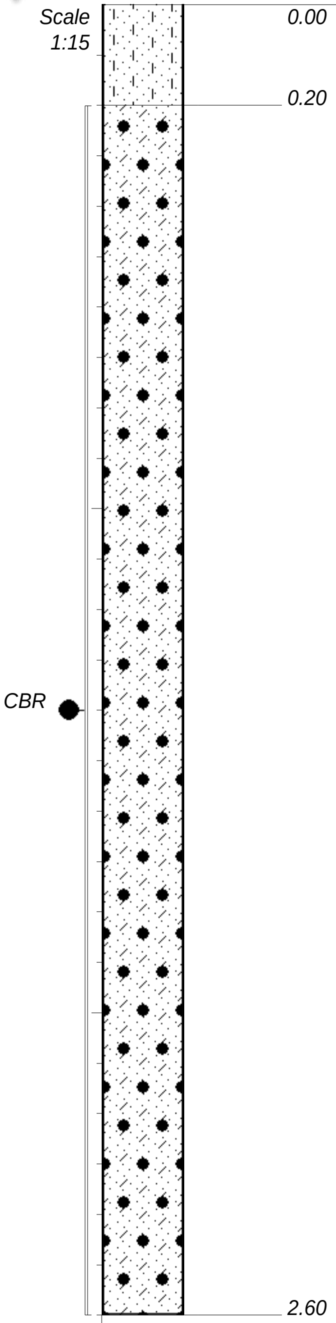
HOLE No: KTP34

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: KTP35
Sheet 1 of 1

JOB NUMBER: MAK152.08.23

Scale
1:15



Depth	Description
0.00 – 0.20	Moist, brown, medium dense, intact, silty SAND. **Hillwash**.
0.20 – 2.60	Very moist, reddish brown, medium dense, intact, clayey SAND with minor ferricrete. **Residual soil**.

NOTES

1) Excavation stopped at 2.6m due to required depth.
2) No groundwater seepage.
3) Sidewall stable.
4) Disturbed sample at 0.2--2.6m: CBR, F-IND.

CONTRACTOR :		*INCLINATION :*		*ELEVATION :*	1656 m
MACHINE :	BELL TLB	*DIAM :*		*X-COORD :*	29.46280°E
DRILLED BY :	Xolani Shabangu	*DATE :*	22-08-2023	*Y-COORD :*	26.10676°S
PROFILED BY :	Andries Vukeya	*DATE :*	20-09-2023		
TYPE SET BY :	*Andries Vukeya*	*DATE :*	*06/12/2023 13:50*		
SETUP FILE :	*STANDARD.SET*	*TEXT :*	*..ppendixASoilProfiles.txt*		

HOLE No: KTP35

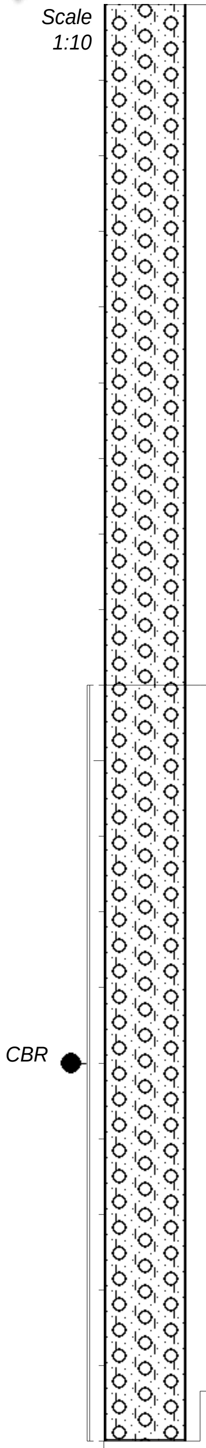
ESKOM

PRELIMINARY GEOTECHNICAL INVESTIGATION: KOMATI POWER STATION

HOLE No: KTP36
Sheet 1 of 1

JOB NUMBER: MAK152.08.23

Scale 1:10



0.00

Fine to medium, angular, closely packed GRAVEL of weathered sandstone in a matrix of moist, brown, silty SAND. The overall consistency is dense. **Residual sandstone**.

0.90

Medium to coarse, angular, tightly packed GRAVEL of sandstone in a matrix of moist, yellowish brown, silty SAND. The overall consistency is dense. **Residual sandstone**.

1.90

NOTES

1) Excavation stopped at 1.9m due to required depth.

2) No groundwater seepage.

3) Sidewall stable.

4) Disturbed sample at 0.9--1.9m: CBR, F-IND.

CONTRACTOR :
MACHINE : BELL TLB
DRILLED BY : Xolani Shabangu
PROFILED BY : Andries Vukeya
TYPE SET BY : Andries Vukeya
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM :
DATE : 22-08-2023
DATE : 20-09-2023
DATE : 06/12/2023 13:50
TEXT : ..ppendixASoilProfiles.txt

ELEVATION : 1638 m
X-COORD : 29.46236°E
Y-COORD : 26.10323°S

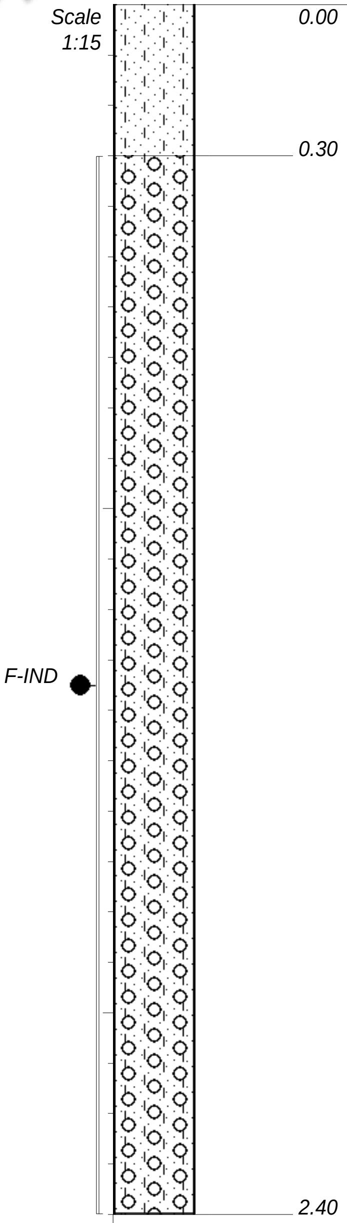
HOLE No: KTP36

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: KTP37
Sheet 1 of 1

JOB NUMBER: MAK152.08.23

Scale
1:15



Moist, brown, medium dense, intact, silty SAND. **Hillwash**.

Fine, rounded, slightly cemented GRAVEL of ferricrete in a matrix of moist, yellowish brown, silty SAND. The overall consistency is dense. **Pedogenic**.

NOTES

1) Excavation stopped at 2.4m due to required depth.
2) No groundwater seepage.
3) Sidewall stable.
4) Disturbed sample at 0.3--2.4m: F-IND.

CONTRACTOR :
MACHINE : BELL TLB
DRILLED BY : Xolani Shabangu
PROFILED BY : Andries Vukeya

TYPE SET BY : Andries Vukeya
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM :
DATE : 22-08-2023
DATE : 20-09-2023

DATE : 06/12/2023 13:50
TEXT : ..ppendixASoilProfiles.txt

ELEVATION : 1648 m
X-COORD : 29.45538°E
Y-COORD : 26.10548°S

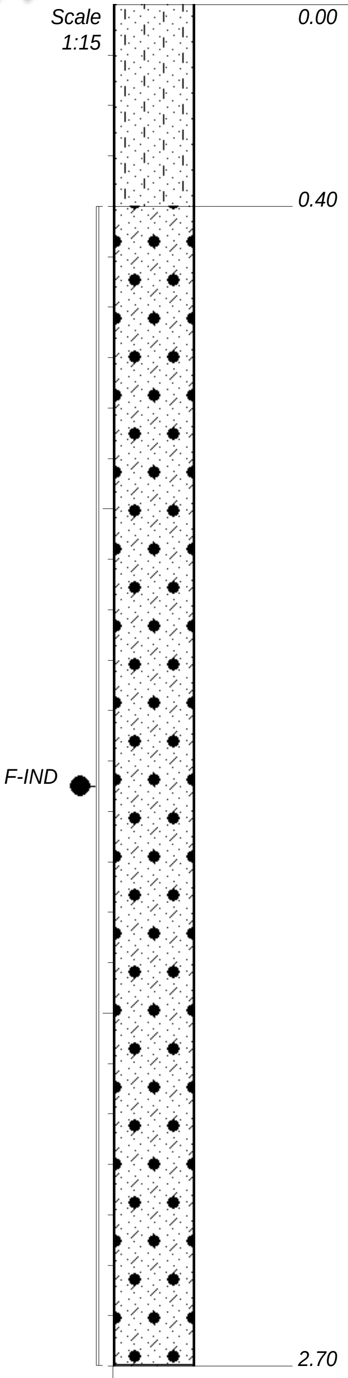
HOLE No: KTP37

ESKOM

PRELIMINARY GEOTECHNICAL INVESTIGATION: KOMATI POWER STATION

HOLE No: KTP38
Sheet 1 of 1

JOB NUMBER: MAK152.08.23



Moist, brown, medium dense, intact, silty SAND. **Hillwash**.

Moist to very moist, brown, medium dense, intact, clayey SAND with minor ferricrete. **Residual soil**.

NOTES

1) Excavation stopped at 2.7m due to required depth.
2) No groundwater seepage.
3) Sidewall stable.
4) Disturbed sample at 0.4--2.7m: F-IND.

CONTRACTOR :
MACHINE : BELL TLB
DRILLED BY : Xolani Shabangu
PROFILED BY : Andries Vukeya

INCLINATION :
DIAM :
DATE : 22-08-2023
DATE : 20-09-2023

ELEVATION : 1656 m
X-COORD : 29.45743°E
Y-COORD : 26.10744°S

HOLE No: KTP38

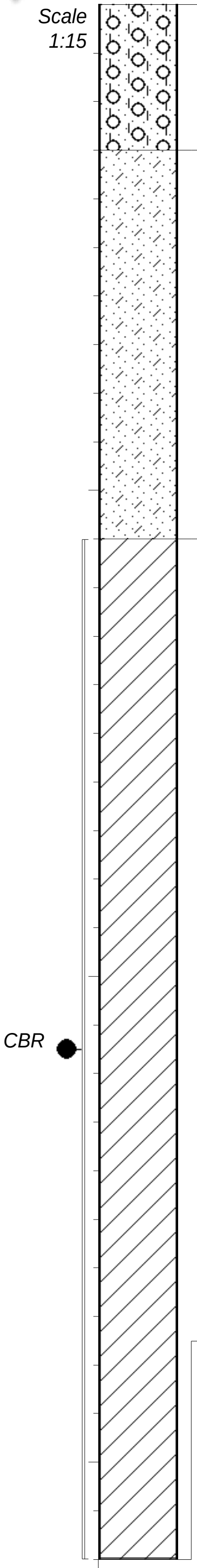
TYPE SET BY : Andries Vukeya
SETUP FILE : STANDARD.SET

DATE : 06/12/2023 13:50
TEXT : ..ppendixASoilProfiles.txt

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: KTP39
Sheet 1 of 1

JOB NUMBER: MAK152.08.23



0.00

Fine to medium, sub-angular, closely packed GRAVEL of quartzite in a matrix of moist, brown, silty SAND. The overall consistency is very dense. **Imported**.

0.30

Moist to very moist, brown, medium dense, intact, clayey SAND. **Hillwash**.

1.10

Very moist, orangey brown, firm to stiff, intact, CLAY. **Hillwash**.

3.20

NOTES

1) Excavation stopped at 3.2m due to required depth.
2) No groundwater seepage.
3) Sidewall stable.
4) Disturbed sample at 1.1--3.2m: CBR, F-IND.

CONTRACTOR :
MACHINE : BELL TLB
DRILLED BY : Xolani Shabangu
PROFILED BY : Andries Vukeya

INCLINATION :
DIAM :
DATE : 22-08-2023
DATE : 20-09-2023

ELEVATION : 1619 m
X-COORD : 29.47603°E
Y-COORD : 26.09237°S

HOLE No: KTP39

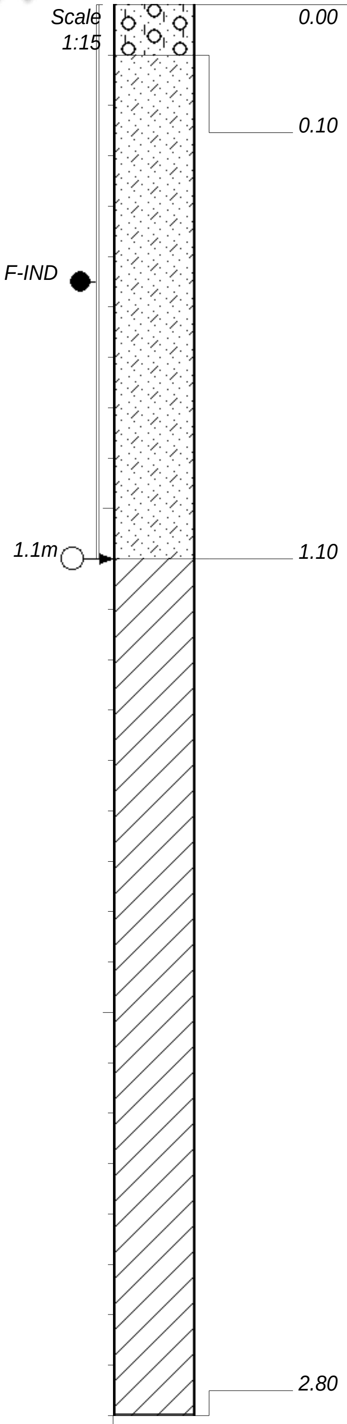
TYPE SET BY : Andries Vukeya
SETUP FILE : STANDARD.SET

DATE : 06/12/2023 13:50
TEXT : ..ppendixASoilProfiles.txt

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: KTP40
Sheet 1 of 1

JOB NUMBER: MAK152.08.23



Fine to medium, sub-angular, closely packed GRAVEL of quartzite in a matrix of moist, brown, silty SAND. The overall consistency is very dense. **Imported**.

Wet, brown, medium dense, intact, clayey SAND. **Hillwash**.

Wet, orangey brown, firm to stiff, intact, CLAY. **Hillwash**.

NOTES

1) Excavation stopped at 2.8m due to required depth.

2) Groundwater seepage at 1.1m.

3) Sidewall stable.

4) Disturbed sample at 0.0--1.1m: F-IND.

CONTRACTOR :
MACHINE : BELL TLB
DRILLED BY : Xolani Shabangu
PROFILED BY : Andries Vukeya

INCLINATION :
DIAM :
DATE : 22-08-2023
DATE : 20-09-2023

ELEVATION : 1623 m
X-COORD : 29.47676°E
Y-COORD : 26.09259°S

HOLE No: KTP40

TYPE SET BY : Andries Vukeya
SETUP FILE : STANDARD.SET

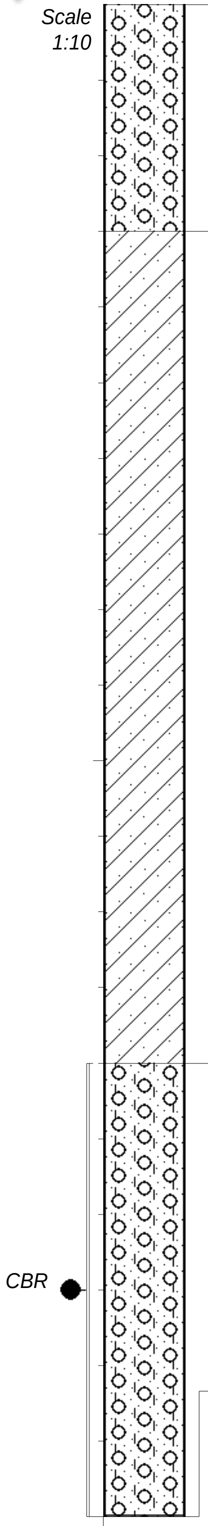
DATE : 06/12/2023 13:50
TEXT : ..ppendixASoilProfiles.txt

ESKOM
**PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION**

HOLE No: KTP41
Sheet 1 of 1

JOB NUMBER: MAK152.08.23

*Scale
1:10*



0.00	Fine to medium, sub-angular, closely packed GRAVEL of quartzite in a matrix of moist, brown, silty SAND. The overall consistency is very dense. **Imported**.
0.30	Moist to very moist, brown, firm to stiff, intact, sandy CLAY. **Hillwash**.
1.40	Fine, angular, tightly packed GRAVEL of sandstone in a matrix of moist, reddish brown, silty SAND. The overall consistency is dense. **Residual sandstone**.
2.00	

NOTES

1) Excavation stopped at 2.0m due to slow progress.

2) No groundwater seepage.

3) Sidewall stable.

4) Disturbed sample at 1.4--2.0m: CBR, F-IND.

CONTRACTOR :
MACHINE : BELL TLB
DRILLED BY : Xolani Shabangu
PROFILED BY : Andries Vukeya

INCLINATION :
DIAM :
DATE : 22-08-2023
DATE : 20-09-2023

ELEVATION : 1617 m
X-COORD : 29.47651°E
Y-COORD : 26.09168°S

HOLE No: KTP41

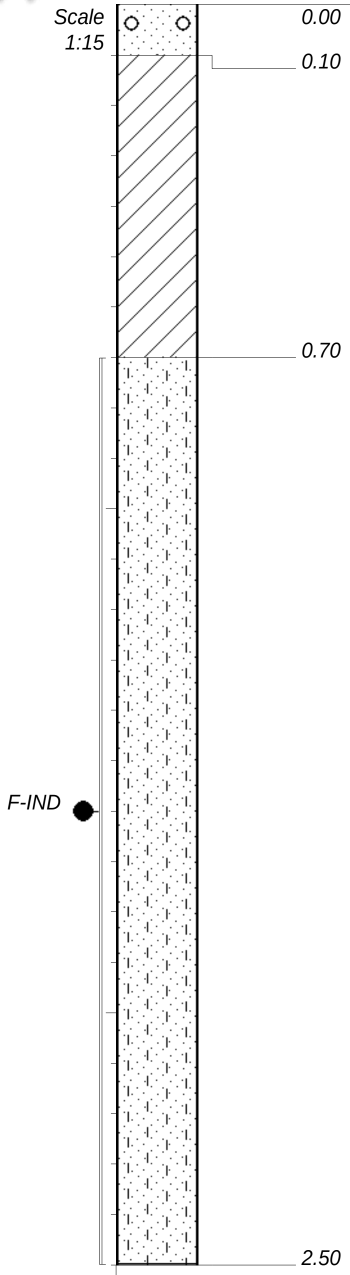
TYPE SET BY : Andries Vukeya
SETUP FILE : STANDARD.SET

DATE : 06/12/2023 13:50
TEXT : ..ppendixASoilProfiles.txt

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: KTP42
Sheet 1 of 1

JOB NUMBER: MAK152.08.23



0.00	Moist, brown, medium dense, intact, gravelly SAND. **Hillwash**.
0.10	Moist to very moist, reddish brown, stiff, intact, CLAY. **Hillwash**.
0.70	Moist to very moist, reddish brown, medium dense, intact, silty SAND. **Hillwash**.
2.50	

NOTES

1) Excavation stopped at 2.5m due to required depth.

2) No groundwater seepage.

3) Sidewall stable.

4) Disturbed sample at 0.7--2.5m: F-IND.

CONTRACTOR :
MACHINE : BELL TLB
DRILLED BY : Xolani Shabangu
PROFILED BY : Andries Vukeya

INCLINATION :
DIAM :
DATE : 22-08-2023
DATE : 20-09-2023

ELEVATION : 1616 m
X-COORD : 29.46811°E
Y-COORD : 26.09134°S

HOLE No: KTP42

TYPE SET BY : Andries Vukeya
SETUP FILE : STANDARD.SET

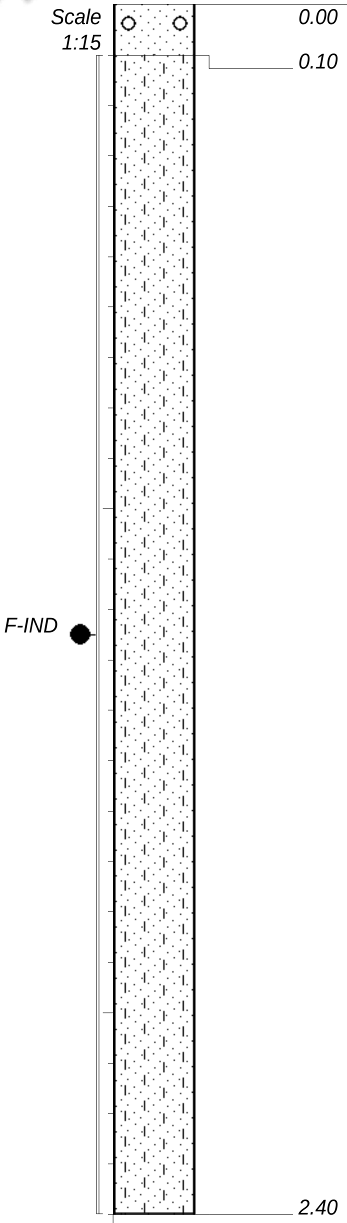
DATE : 06/12/2023 13:50
TEXT : ..ppendixASoilProfiles.txt

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: KTP43
Sheet 1 of 1

JOB NUMBER: MAK152.08.23

Scale
1:15



Moist, brown, medium dense, intact, gravelly SAND. **Hillwash**.

Moist to very moist, reddish brown, medium dense, intact, silty SAND. **Hillwash**.

NOTES

1) Excavation stopped at 2.4m due to required depth.

2) No groundwater seepage.

3) Sidewall stable.

4) Disturbed sample at 0.1--2.4m: F-IND.

CONTRACTOR :		*INCLINATION :*		*ELEVATION :*	1617 m
MACHINE :	BELL TLB	*DIAM :*		*X-COORD :*	29.46880°E
DRILLED BY :	Xolani Shabangu	*DATE :*	22-08-2023	*Y-COORD :*	26.09128°S
PROFILED BY :	Andries Vukeya	*DATE :*	20-09-2023		
TYPE SET BY :	*Andries Vukeya*	*DATE :*	*06/12/2023 13:50*		
SETUP FILE :	*STANDARD.SET*	*TEXT :*	*..ppendixASoilProfiles.txt*		

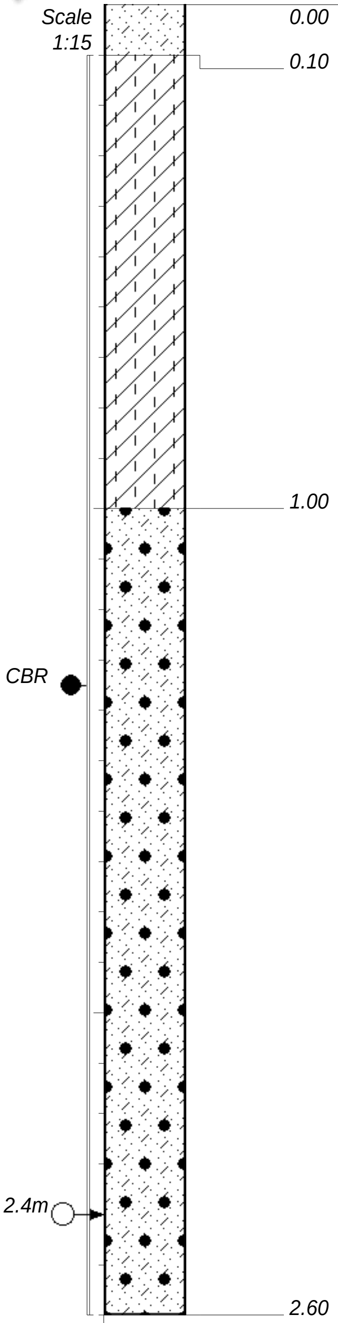
HOLE No: KTP43

ESKOM

PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: KTP44
Sheet 1 of 1

JOB NUMBER: MAK152.08.23



Moist, brown, medium dense, intact, clayey SAND. **Hillwash**.

Moist to very moist, brown, stiff, intact, silty CLAY. **Hillwash**.

Moist to very moist, brown, medium dense, intact, clayey SAND with minor ferricrete. **Residual soil**.

NOTES

1) Excavation stopped at 2.4m due to required depth.
2) Groundwater seepage at 2.4m.
3) Sidewall stable.
4) Disturbed sample at 0.1--2.6m: CBR, F-IND.

CONTRACTOR :
MACHINE : BELL TLB
DRILLED BY : Xolani Shabangu
PROFILED BY : Andries Vukeya
TYPE SET BY : Andries Vukeya
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM :
DATE : 22-08-2023
DATE : 20-09-2023
DATE : 06/12/2023 13:50
TEXT : ..ppendixASoilProfiles.txt

ELEVATION : 1609 m
X-COORD : 29.46712°E
Y-COORD : 26.09124°S

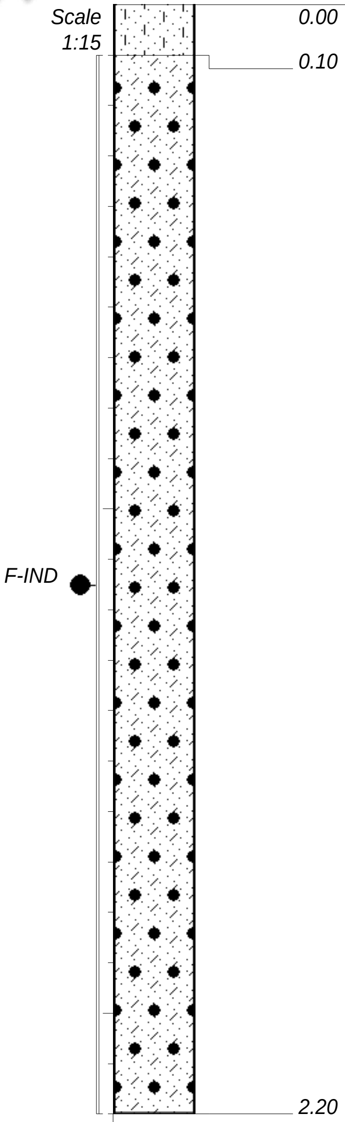
HOLE No: KTP44

ESKOM
**PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION**

HOLE No: KTP45
Sheet 1 of 1

JOB NUMBER: MAK152.08.23

Scale
1:15



0.00 – 0.10: Moist, brown, medium dense, intact, silty SAND. **Hillwash**.

0.10 – 2.20: Moist to very moist, brown, medium dense, intact, clayey SAND with minor ferricrete. **Residual soil**.

NOTES

1) Excavation stopped at 2.2m due to required depth.
2) No groundwater seepage.
3) Sidewall stable.
4) Disturbed sample at 0.1--2.2m: F-IND.

CONTRACTOR :
MACHINE : BELL TLB
DRILLED BY : Xolani Shabangu
PROFILED BY : Andries Vukeya

INCLINATION :
DIAM :
DATE : 22-08-2023
DATE : 20-09-2023

ELEVATION : 1622 m
X-COORD : 29.46832°E
Y-COORD : 26.09263°S

HOLE No: KTP45

TYPE SET BY : Andries Vukeya
SETUP FILE : STANDARD.SET

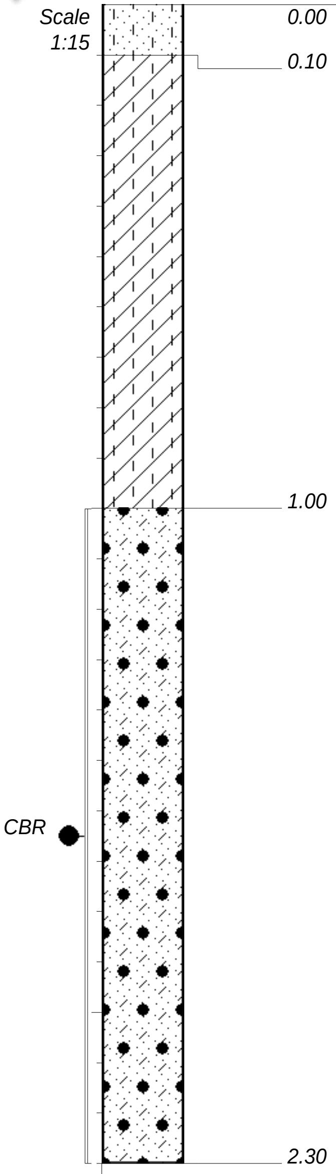
DATE : 06/12/2023 13:50
TEXT : ..ppendixASoilProfiles.txt

ESKOM

PRELIMINARY GEOTECHNICAL INVESTIGATION: KOMATI POWER STATION

HOLE No: KTP46
Sheet 1 of 1

JOB NUMBER: MAK152.08.23



Moist, brown, medium dense, intact, silty SAND. **Hillwash**.

Moist, brown, stiff, intact, silty CLAY. **Hillwash**.

Moist to very moist, brown, medium dense, intact, clayey SAND with minor ferricrete. **Residual soil**.

NOTES

1) Excavation stopped at 2.3m due to required depth.

2) No groundwater seepage.

3) Sidewall stable.

4) Disturbed sample at 1.0--2.3m: CBR, F-IND.

CONTRACTOR :
MACHINE : BELL TLB
DRILLED BY : Xolani Shabangu
PROFILED BY : Andries Vukeya

INCLINATION :
DIAM :
DATE : 22-08-2023
DATE : 20-09-2023

ELEVATION : 1617 m
X-COORD : 29.46762°E
Y-COORD : 26.09255°S

HOLE No: KTP46

TYPE SET BY : Andries Vukeya
SETUP FILE : STANDARD.SET

DATE : 06/12/2023 13:50
TEXT : ..ppendixASoilProfiles.txt

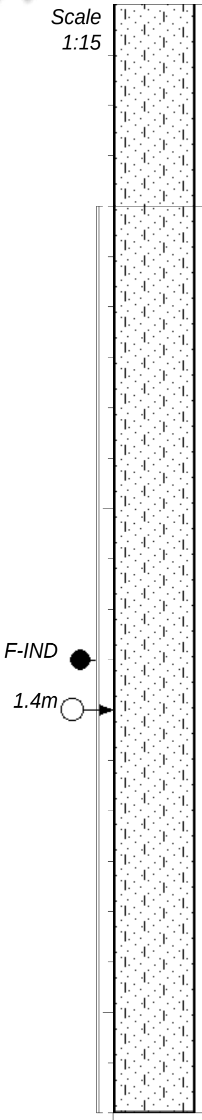
ESKOM

PRELIMINARY GEOTECHNICAL INVESTIGATION: KOMATI POWER STATION

HOLE No: KTP47
Sheet 1 of 1

JOB NUMBER: MAK152.08.23

Scale 1:15



0.00	Moist, brown, medium dense, intact, silty SAND. **Hillwash**.
0.40	Very moist to wet, yellowish brown, medium dense, intact, silty SAND. **Hillwash**.
2.20	

NOTES

1) Excavation stopped at 2.2m due to required depth.

2) Groundwater seepage at 1.4m.

3) Sidewall stable.

4) Disturbed sample at 0.4--2.2m: F-IND.

CONTRACTOR :
MACHINE : BELL TLB
DRILLED BY : Xolani Shabangu
PROFILED BY : Andries Vukeya

INCLINATION :
DIAM :
DATE : 22-08-2023
DATE : 20-09-2023

ELEVATION : 1610 m
X-COORD : 29.46650°E
Y-COORD : 26.09230°S

HOLE No: KTP47

TYPE SET BY : Andries Vukeya
SETUP FILE : STANDARD.SET
DATE : 06/12/2023 13:50
TEXT : ..ppendixASoilProfiles.txt

APPENDIX B: DYNAMIC CONE PENETROMETER TEST RESULTS

(Use and interpretation of the dynamic cone penetrometer test (DCP), Paige-Green et al (2009)

22 Frara Drive, Pinelands, Pinetown, 3610
Cell: 031 350 3370
Email: info@bavconsulting.co.za
Reg: 2017/499605/07

BAV CONSULTING

TEST REPORT FOR DYNAMIC CONE PENETROMETER *BY TEST METHOD TMH6-ST6*

CLIENT: ESKOM
DATE REPORTED: 22/08/2023
OUR REF: MAK1520823

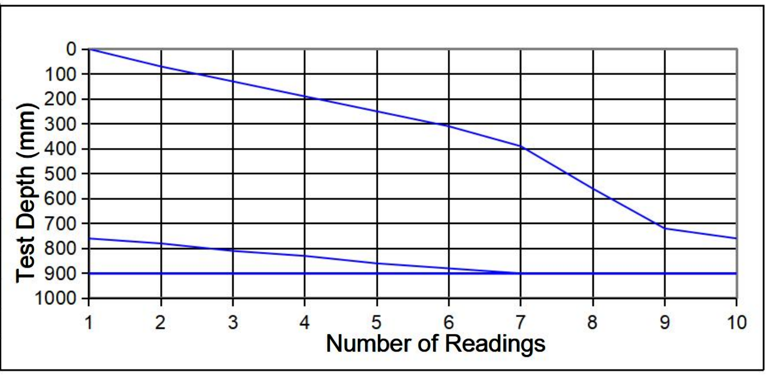
PROJECT: Geotechnical Investigation: Komati Power Station
ATTENTION: Eskom
Tel/Email: 031 350 3370

DESCRIPTION: DCP test was done from existing ground level
DATE TESTED: 22/08/2023
DCP No: DCP1 at TP1

DCP Readings

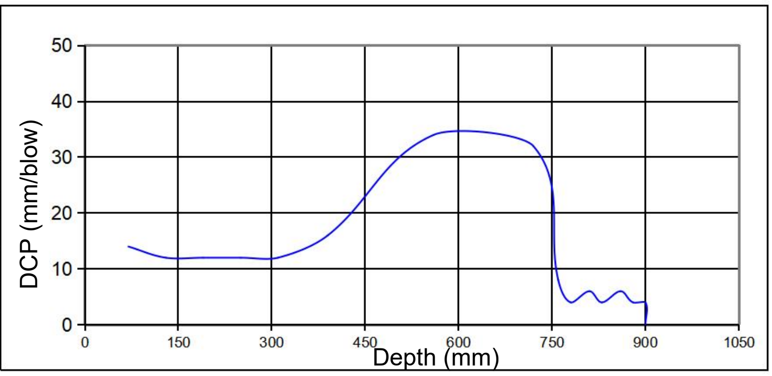
Blows per reading: **5**

no.	*mm*	*no.*	*mm*	*no.*	*mm*	*no.*	*mm*	*no.*	*mm*
1	**70**	11	**810**	21		31		41	
2	**130**	12	**830**	22		32		42	
3	**190**	13	**860**	23		33		43	
4	**250**	14	**880**	24		34		44	
5	**310**	15	**900**	25		35		45	
6	**390**	16		26		36		46	
7	**560**	17		27		37		47	
8	**720**	18		28		38		48	
9	**760**	19		29		39		49	
10	**780**	20		30		40		50	

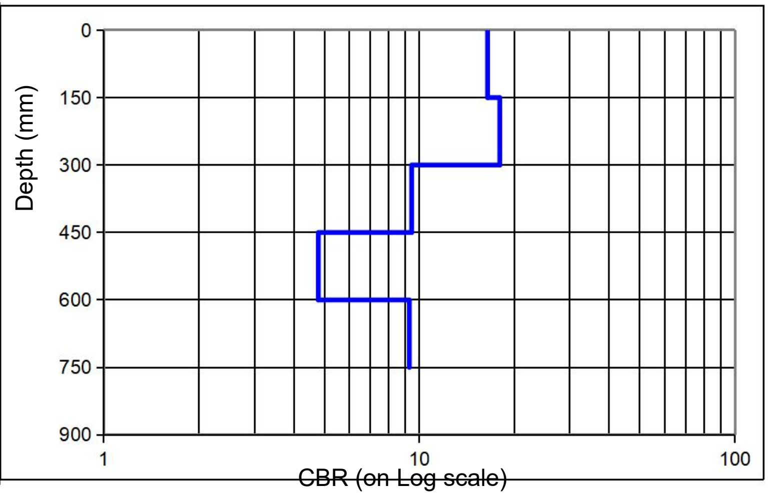


DCP number (mm / Blow) DN

DN	*mm*	*DN*	*mm*	*DN*	*mm*	*DN*	*mm*	*DN*	*mm*
14	70	6	810						
12	130	4	830						
12	190	6	860						
12	250	4	880						
12	310	4	900						
16	390								
34	560								
32	720								
8	760								
4	780								



	Depth (mm)				*In situ*	*Blows/mm*	
no.	*From*	-	*To*	*DN*	*CBR*	150mm	300mm
1	1	-	150	12,9	**16**	12	**12,1**
2	151	-	300	12,0	**18**	13	
3	301	-	450	19,7	**9**	8	**6,0**
4	451	-	600	33,4	**5**	4	
5	601	-	750	20,0	**9**	8	
6	751	-	900				
8	901	-	1050				
9	1051	-	1200				
10	1201	-	1350				
11	1351	-	1500				
12	1501	-	1650				
13	1651	-	1800				
14	1801	-	1950				
15	1951	-	2100				



REMARKS: Max penetration depth 900 mm

Where values are presented as continued "cont", refer to the adjacent graphs where DN values vs depth and penetration vs depths can be read.

Signature

22 Frara Drive, Pinelands, Pinetown, 3610
Cell: 031 350 3370
Email: info@bavconsulting.co.za
Reg: 2017/499605/07

BAV CONSULTING

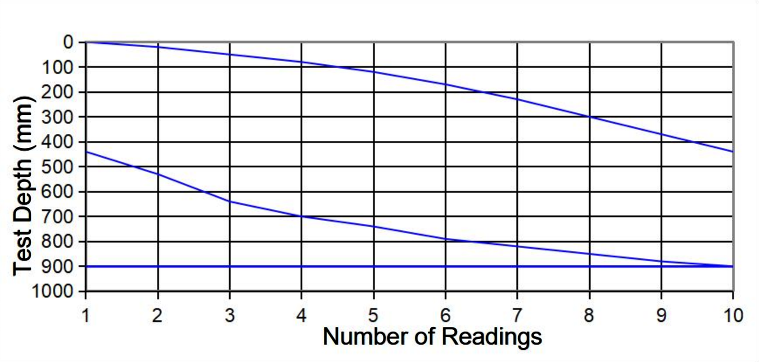
TEST REPORT FOR DYNAMIC CONE PENETROMETER *BY TEST METHOD TMH6-ST6*

CLIENT: ESKOM
DATE REPORTED: 22/08/2023
OUR REF: MAK1520823

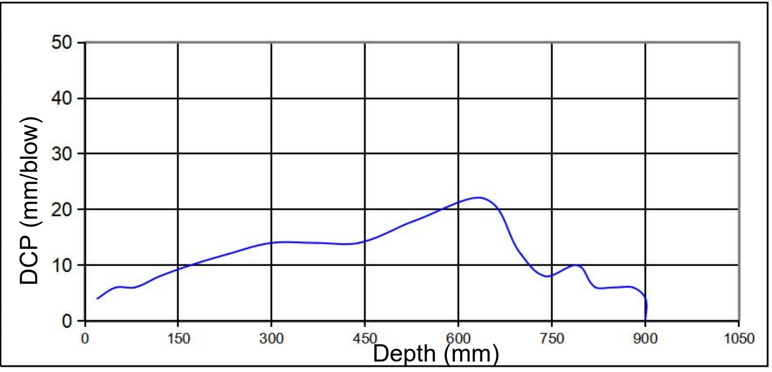
PROJECT: Geotechnical Investigation: Komati Power Station
ATTENTION: Eskom
Tel/Email: 031 350 3370

DESCRIPTION: DCP test was done from existing ground level
DATE TESTED: 22/08/2023
DCP No: DCP2 at TP2

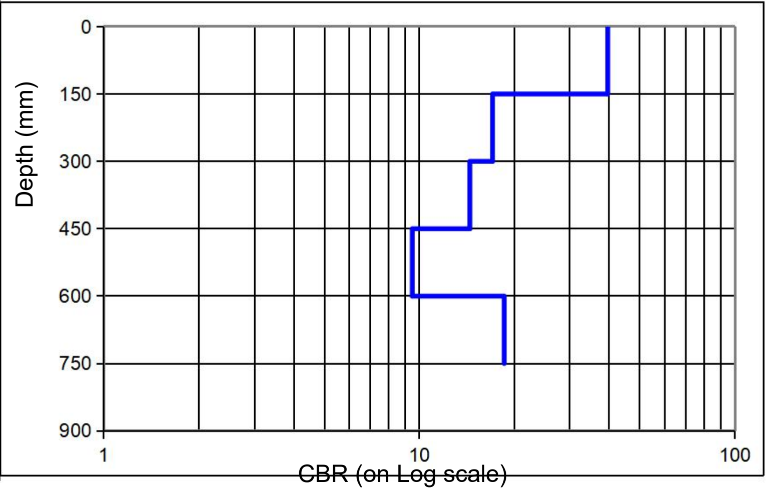
DCP Readings		*Blows per reading:* **5**							
no.	*mm*	*no.*	*mm*	*no.*	*mm*	*no.*	*mm*	*no.*	*mm*
1	**20**	11	**640**	21		31		41	
2	**50**	12	**700**	22		32		42	
3	**80**	13	**740**	23		33		43	
4	**120**	14	**790**	24		34		44	
5	**170**	15	**820**	25		35		45	
6	**230**	16	**850**	26		36		46	
7	**300**	17	**880**	27		37		47	
8	**370**	18	**900**	28		38		48	
9	**440**	19		29		39		49	
10	**530**	20		30		40		50	



DCP number (mm / Blow) DN									
DN	*mm*	*DN*	*mm*	*DN*	*mm*	*DN*	*mm*	*DN*	*mm*
4	20	22	640						
6	50	12	700						
6	80	8	740						
8	120	10	790						
10	170	6	820						
12	230	6	850						
14	300	6	880						
14	370	4	900						
14	440								
18	530								



	Depth (mm)				*In situ*	*Blows/mm*	
no.	*From*	-	*To*	*DN*	*CBR*	150mm	300mm
1	1	-	150	6,5	**40**	23	**17,5**
2	151	-	300	12,5	**17**	12	
3	301	-	450	14,2	**14**	11	**9,1**
4	451	-	600	19,7	**9**	8	
5	601	-	750	11,7	**19**	13	
6	751	-	900				
8	901	-	1050				
9	1051	-	1200				
10	1201	-	1350				
11	1351	-	1500				
12	1501	-	1650				
13	1651	-	1800				
14	1801	-	1950				
15	1951	-	2100				



REMARKS: Max penetration depth 900 mm

Where values are presented as continued "cont", refer to the adjacent graphs where DN values vs depth and penetration vs depths can be read.

Signature

22 Frara Drive, Pinelands, Pinetown, 3610
Cell: 031 350 3370
Email: info@bavconsulting.co.za
Reg: 2017/499605/07

BAV CONSULTING

TEST REPORT FOR DYNAMIC CONE PENETROMETER *BY TEST METHOD TMH6-ST6*

CLIENT: **ESKOM**
DATE REPORTED: **22/08/2023**
OUR REF: **MAK1520823**

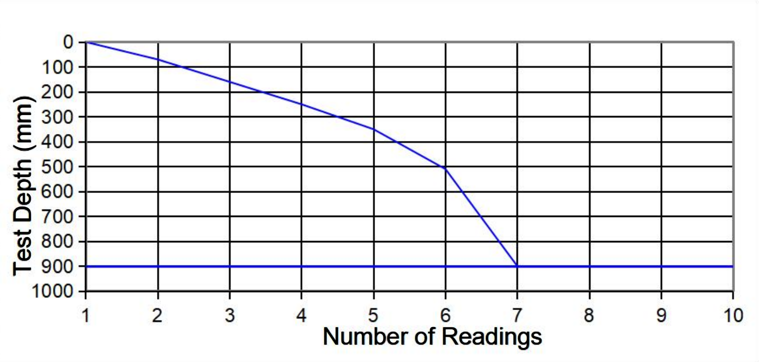
PROJECT: **Geotechnical Investigation: Komati Power Station**
ATTENTION: **Eskom**
Tel/Email: **031 350 3370**

DESCRIPTION: **DCP test was done from existing ground level**
DATE TESTED: **22/08/2023**
DCP No: **DCP3 at TP3**

DCP Readings

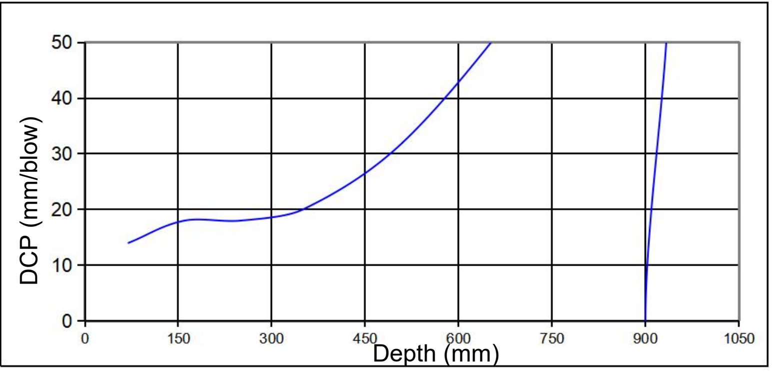
Blows per reading: **5**

no.	*mm*	*no.*	*mm*	*no.*	*mm*	*no.*	*mm*	*no.*	*mm*
1	**70**	11		21		31		41	
2	**160**	12		22		32		42	
3	**250**	13		23		33		43	
4	**350**	14		24		34		44	
5	**510**	15		25		35		45	
6	**900**	16		26		36		46	
7		17		27		37		47	
8		18		28		38		48	
9		19		29		39		49	
10		20		30		40		50	

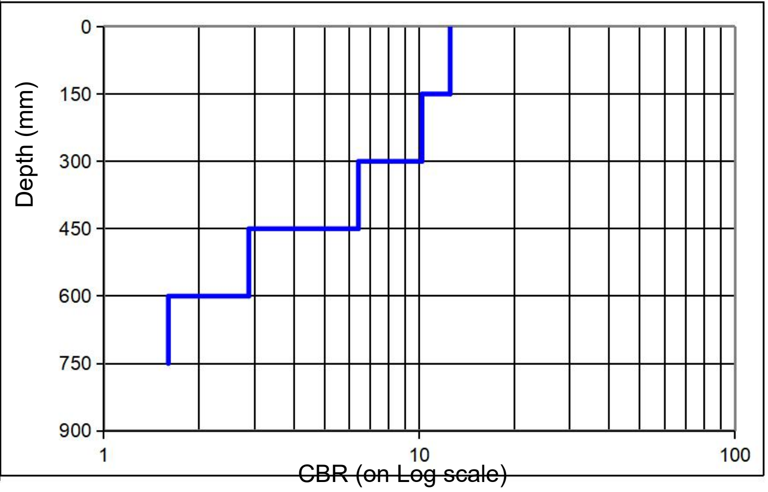


DCP number (mm / Blow) DN

DN	*mm*	*DN*	*mm*	*DN*	*mm*	*DN*	*mm*	*DN*	*mm*
14	70								
18	160								
18	250								
20	350								
32	510								
78	900								



	Depth (mm)				*In situ*	*Blows/mm*	
no.	*From*	-	*To*	*DN*	*CBR*	150mm	300mm
1	1	-	150	15,9	**13**	9	**8,8**
2	151	-	300	18,6	**10**	8	
3	301	-	450	26,7	**6**	6	**4,3**
4	451	-	600	49,5	**3**	3	
5	601	-	750	78,0	**2**	2	
6	751	-	900				
8	901	-	1050				
9	1051	-	1200				
10	1201	-	1350				
11	1351	-	1500				
12	1501	-	1650				
13	1651	-	1800				
14	1801	-	1950				
15	1951	-	2100				



REMARKS: Max penetration depth 900 mm

Where values are presented as continued "cont", refer to the adjacent graphs where DN values vs depth and penetration vs depths can be read.

Signature

22 Frara Drive, Pinelands, Pinetown, 3610
Cell: 031 350 3370
Email: info@bavconsulting.co.za
Reg: 2017/499605/07

BAV CONSULTING

TEST REPORT FOR DYNAMIC CONE PENETROMETER *BY TEST METHOD TMH6-ST6*

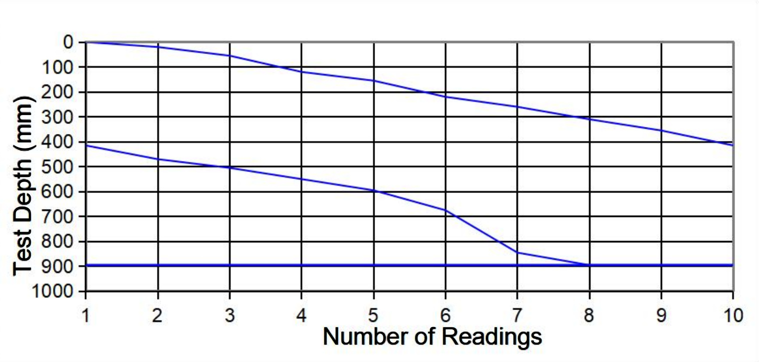
CLIENT: **ESKOM**
DATE REPORTED: **22/08/2023**
OUR REF: **MAK1520823**

PROJECT: **Geotechnical Investigation: Komati Power Station**
ATTENTION: **Eskom**
Tel/Email: **031 350 3370**

DESCRIPTION: **DCP test was done from existing ground level**
DATE TESTED: **22/08/2023**
DCP No: **DCP4 at TP4**

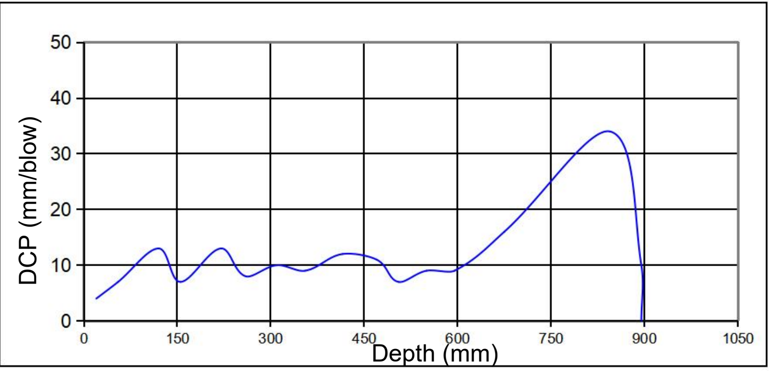
DCP Readings *Blows per reading:* **5**

no.	*mm*	*no.*	*mm*	*no.*	*mm*	*no.*	*mm*	*no.*	*mm*
1	**20**	11	**505**	21		31		41	
2	**55**	12	**550**	22		32		42	
3	**120**	13	**595**	23		33		43	
4	**155**	14	**675**	24		34		44	
5	**220**	15	**845**	25		35		45	
6	**260**	16	**895**	26		36		46	
7	**310**	17		27		37		47	
8	**355**	18		28		38		48	
9	**415**	19		29		39		49	
10	**470**	20		30		40		50	

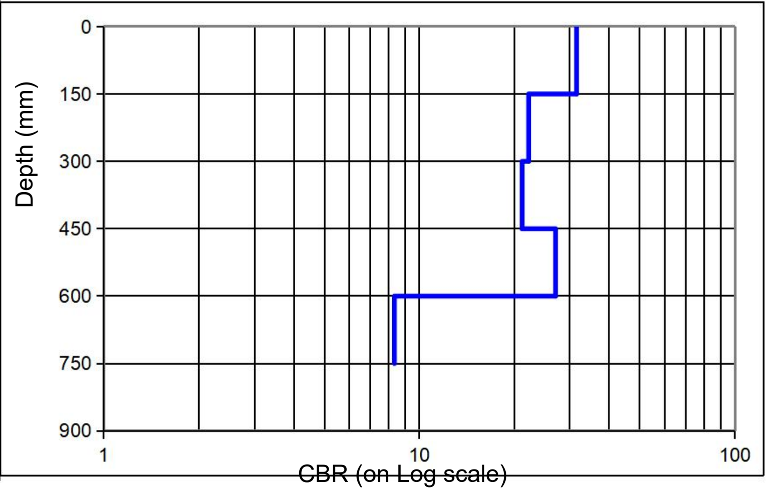


DCP number (mm / Blow) DN

DN	*mm*	*DN*	*mm*	*DN*	*mm*	*DN*	*mm*	*DN*	*mm*
4	20	7	505						
7	55	9	550						
13	120	9	595						
7	155	16	675						
13	220	34	845						
8	260	10	895						
10	310								
9	355								
12	415								
11	470								



	Depth (mm)				*In situ*	*Blows/mm*	
no.	*From*	-	*To*	*DN*	*CBR*	150mm	300mm
1	1	-	150	7,8	**32**	19	**17,0**
2	151	-	300	10,2	**22**	15	
3	301	-	450	10,6	**21**	14	**15,7**
4	451	-	600	8,8	**27**	17	
5	601	-	750	21,8	**8**	7	
6	751	-	900				
8	901	-	1050				
9	1051	-	1200				
10	1201	-	1350				
11	1351	-	1500				
12	1501	-	1650				
13	1651	-	1800				
14	1801	-	1950				
15	1951	-	2100				



REMARKS: Max penetration depth **895** **mm**

Where values are presented as continued "cont", refer to the adjacent graphs where DN values vs depth and penetration vs depths can be read.

Signature

22 Frara Drive, Pinelands, Pinetown, 3610
Cell: 031 350 3370
Email: info@bavconsulting.co.za
Reg: 2017/499605/07

BAV CONSULTING

TEST REPORT FOR DYNAMIC CONE PENETROMETER *BY TEST METHOD TMH6-ST6*

CLIENT: ESKOM

DATE REPORTED: 22/08/2023
OUR REF: MAK1520823

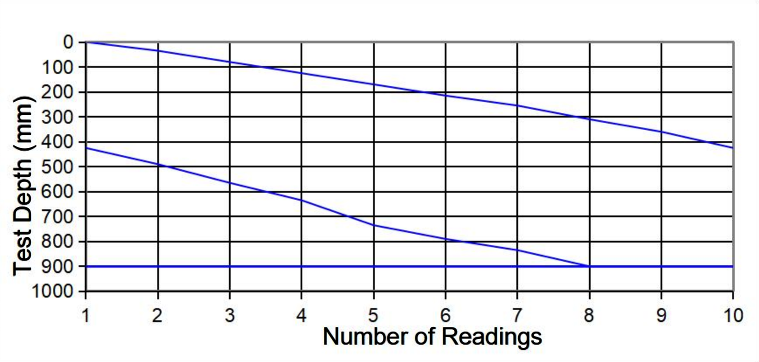
PROJECT: Geotechnical Investigation: Komati Power Station
ATTENTION: Eskom
Tel/Email: 031 350 3370

DESCRIPTION: DCP test was done from existing ground level
DCP No: DCP5 at TP5

DATE TESTED: 22/08/2023

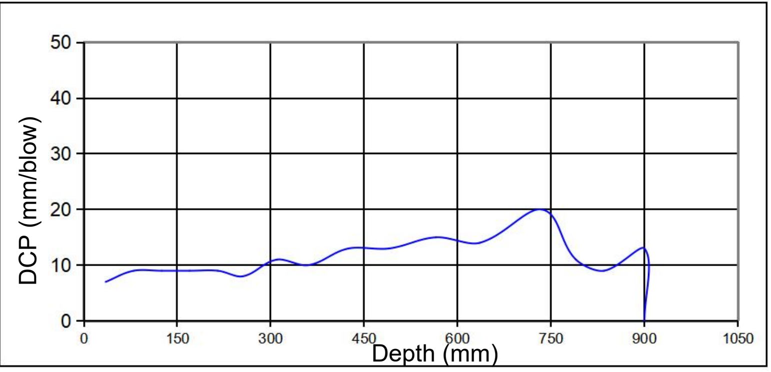
DCP Readings *Blows per reading:* **5**

no.	*mm*	*no.*	*mm*	*no.*	*mm*	*no.*	*mm*	*no.*	*mm*
1	**35**	11	**565**	21		31		41	
2	**80**	12	**635**	22		32		42	
3	**125**	13	**735**	23		33		43	
4	**170**	14	**790**	24		34		44	
5	**215**	15	**835**	25		35		45	
6	**255**	16	**900**	26		36		46	
7	**310**	17		27		37		47	
8	**360**	18		28		38		48	
9	**425**	19		29		39		49	
10	**490**	20		30		40		50	

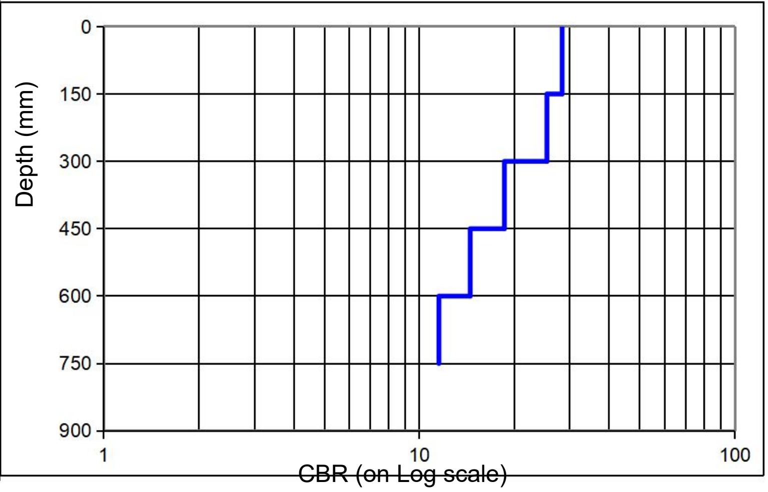


DCP number (mm / Blow) DN

DN	*mm*	*DN*	*mm*	*DN*	*mm*	*DN*	*mm*	*DN*	*mm*
7	35	15	565						
9	80	14	635						
9	125	20	735						
9	170	11	790						
9	215	9	835						
8	255	13	900						
11	310								
10	360								
13	425								
13	490								



	Depth (mm)				*In situ*	*Blows/mm*	
no.	*From*	-	*To*	*DN*	*CBR*	150mm	300mm
1	1	-	150	8,4	**28**	18	**17,0**
2	151	-	300	9,2	**25**	16	
3	301	-	450	11,7	**19**	13	**11,7**
4	451	-	600	14,2	**14**	11	
5	601	-	750	16,9	**12**	9	
6	751	-	900				
8	901	-	1050				
9	1051	-	1200				
10	1201	-	1350				
11	1351	-	1500				
12	1501	-	1650				
13	1651	-	1800				
14	1801	-	1950				
15	1951	-	2100				



REMARKS: Max penetration depth 900 mm

Where values are presented as continued "cont", refer to the adjacent graphs where DN values vs depth and penetration vs depths can be read.

Signature

22 Frara Drive, Pinelands, Pinetown, 3610
Cell: 031 350 3370
Email: info@bavconsulting.co.za
Reg: 2017/499605/07

TEST REPORT FOR DYNAMIC CONE PENETROMETER *BY TEST METHOD TMH6-ST6*

CLIENT: ESKOM

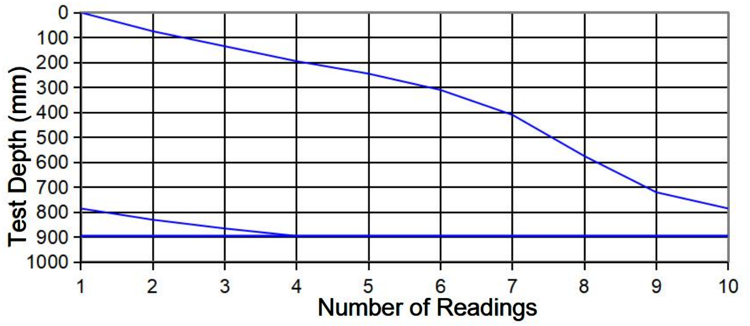
DATE REPORTED: 22/08/2023
OUR REF: MAK1520823

PROJECT: Geotechnical Investigation: Komati Power Station
ATTENTION: Eskom
Tel/Email: 031 350 3370

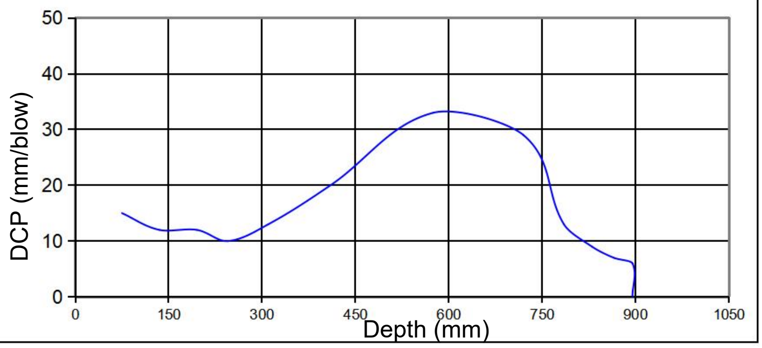
DESCRIPTION: DCP test was done from existing ground level
DCP No: DCP6 at TP6

DATE TESTED: 22/08/2023

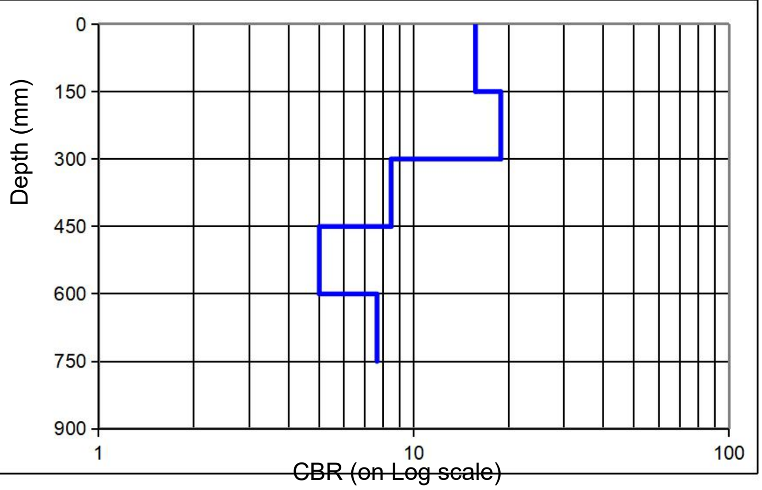
DCP Readings		*Blows per reading:* **5**							
no.	*mm*	*no.*	*mm*	*no.*	*mm*	*no.*	*mm*	*no.*	*mm*
1	**75**	11	**865**	21		31		41	
2	**135**	12	**895**	22		32		42	
3	**195**	13		23		33		43	
4	**245**	14		24		34		44	
5	**310**	15		25		35		45	
6	**410**	16		26		36		46	
7	**575**	17		27		37		47	
8	**720**	18		28		38		48	
9	**785**	19		29		39		49	
10	**830**	20		30		40		50	



DCP number (mm / Blow) DN									
DN	*mm*	*DN*	*mm*	*DN*	*mm*	*DN*	*mm*	*DN*	*mm*
15	75	7	865						
12	135	6	895						
12	195								
10	245								
13	310								
20	410								
33	575								
29	720								
13	785								
9	830								



	Depth (mm)				*In situ*	*Blows/mm*	
no.	*From*	-	*To*	*DN*	*CBR*	150mm	300mm
1	1	-	150	13,3	**16**	11	**12,1**
2	151	-	300	11,6	**19**	13	
3	301	-	450	21,5	**8**	7	**5,8**
4	451	-	600	32,3	**5**	5	
5	601	-	750	23,3	**8**	6	
6	751	-	900				
8	901	-	1050				
9	1051	-	1200				
10	1201	-	1350				
11	1351	-	1500				
12	1501	-	1650				
13	1651	-	1800				
14	1801	-	1950				
15	1951	-	2100				



REMARKS: Max penetration depth **895** **mm**

Where values are presented as continued "cont", refer to the adjacent graphs where DN values vs depth and penetration vs depths can be read.

Signature

22 Frara Drive, Pinelands, Pinetown, 3610
Cell: 031 350 3370
Email: info@bavconsulting.co.za
Reg: 2017/499605/07

BAV CONSULTING

TEST REPORT FOR DYNAMIC CONE PENETROMETER *BY TEST METHOD TMH6-ST6*

CLIENT: **ESKOM**

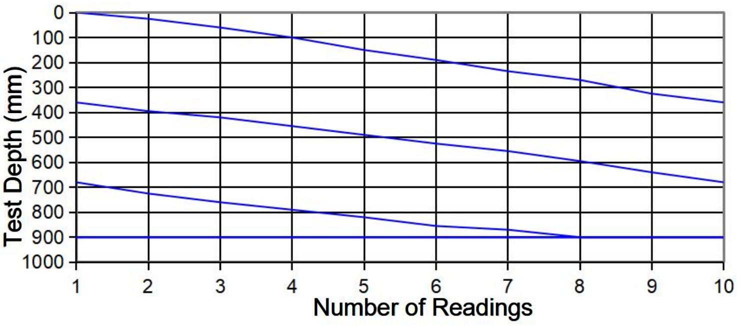
DATE REPORTED: **22/08/2023**
OUR REF: **MAK1520823**

PROJECT: **Geotechnical Investigation: Komati Power Station**
ATTENTION: **Eskom**
Tel/Email: **031 350 3370**

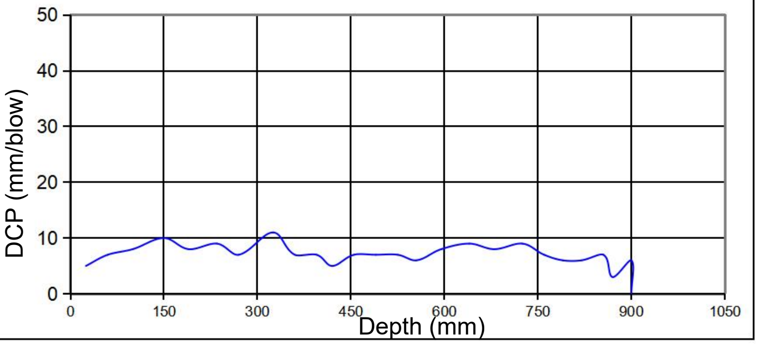
DESCRIPTION: **DCP test was done from existing ground level**
DCP No: **DCP7 at TP7**

DATE TESTED: **22/08/2023**

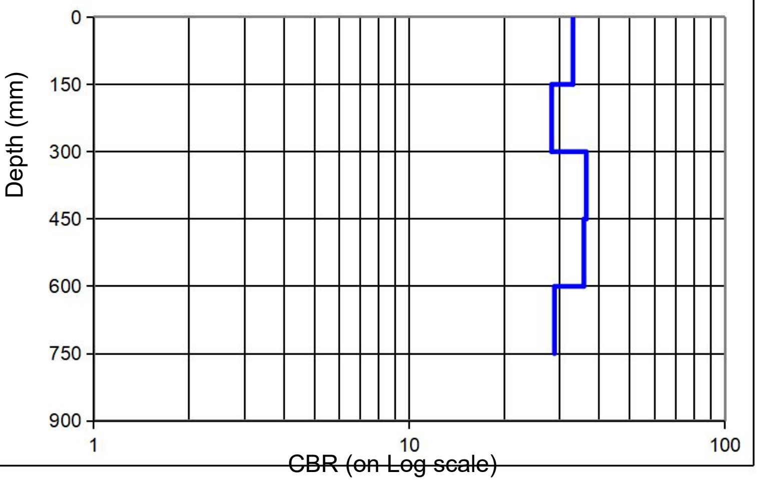
DCP Readings		*Blows per reading:*	**5**						
no.	*mm*	*no.*	*mm*	*no.*	*mm*	*no.*	*mm*	*no.*	*mm*
1	**25**	11	**420**	21	**790**	31		41	
2	**60**	12	**455**	22	**820**	32		42	
3	**100**	13	**490**	23	**855**	33		43	
4	**150**	14	**525**	24	**870**	34		44	
5	**190**	15	**555**	25	**900**	35		45	
6	**235**	16	**595**	26		36		46	
7	**270**	17	**640**	27		37		47	
8	**325**	18	**680**	28		38		48	
9	**360**	19	**725**	29		39		49	
10	**395**	20	**760**	30		40		50	



DCP number (mm / Blow) DN									
DN	*mm*	*DN*	*mm*	*DN*	*mm*	*DN*	*mm*	*DN*	*mm*
5	25	5	420	6	790				
7	60	7	455	6	820				
8	100	7	490	7	855				
10	150	7	525	3	870				
8	190	6	555	6	900				
9	235	8	595						
7	270	9	640						
11	325	8	680						
7	360	9	725						
7	395	7	760						



	Depth (mm)				*In situ*	*Blows/mm*	
no.	*From*	-	*To*	*DN*	*CBR*	150mm	300mm
1	1	-	150	7,5	**33**	20	**18,9**
2	151	-	300	8,5	**28**	18	
3	301	-	450	7,0	**36**	22	**21,4**
4	451	-	600	7,1	**36**	21	
5	601	-	750	8,3	**29**	18	
6	751	-	900				
8	901	-	1050				
9	1051	-	1200				
10	1201	-	1350				
11	1351	-	1500				
12	1501	-	1650				
13	1651	-	1800				
14	1801	-	1950				
15	1951	-	2100				



REMARKS: Max penetration depth 900 mm

Where values are presented as continued "cont", refer to the adjacent graphs where DN values vs depth and penetration vs depths can be read.

Signature

22 Frara Drive, Pinelands, Pinetown, 3610
Cell: 031 350 3370
Email: info@bavconsulting.co.za
Reg: 2017/499605/07

BAV CONSULTING

TEST REPORT FOR DYNAMIC CONE PENETROMETER *BY TEST METHOD TMH6-ST6*

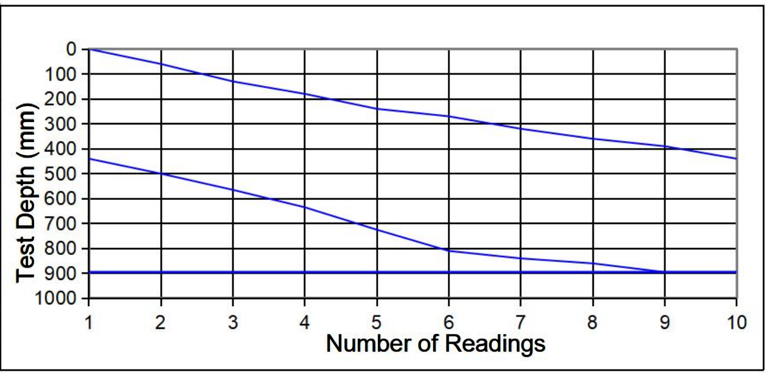
CLIENT: **ESKOM**
DATE REPORTED: **22/08/2023**
OUR REF: **MAK1520823**

PROJECT: **Geotechnical Investigation: Komati Power Station**
ATTENTION: **Eskom**
Tel/Email: **031 350 3370**

DESCRIPTION: **DCP test was done from existing ground level**
DATE TESTED: **22/08/2023**
DCP No: **DCP8 at TP8**

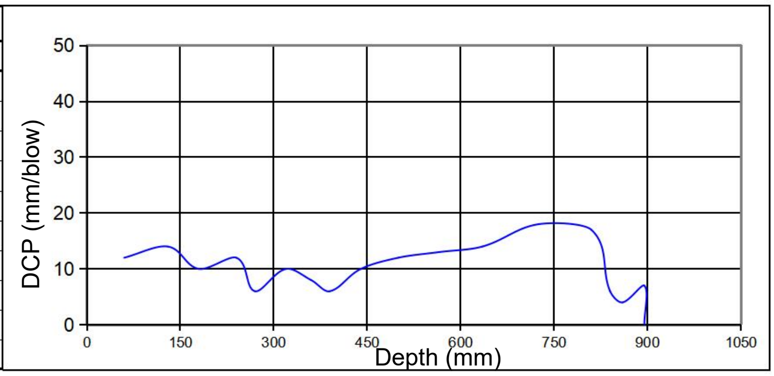
DCP Readings *Blows per reading:* **5**

no.	*mm*	*no.*	*mm*	*no.*	*mm*	*no.*	*mm*	*no.*	*mm*
1	**60**	11	**565**	21		31		41	
2	**130**	12	**635**	22		32		42	
3	**180**	13	**725**	23		33		43	
4	**240**	14	**810**	24		34		44	
5	**270**	15	**840**	25		35		45	
6	**320**	16	**860**	26		36		46	
7	**360**	17	**895**	27		37		47	
8	**390**	18		28		38		48	
9	**440**	19		29		39		49	
10	**500**	20		30		40		50	

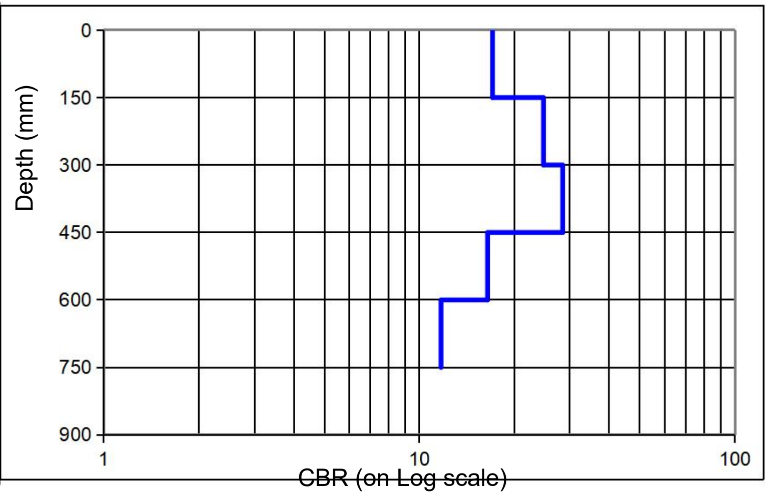


DCP number (mm / Blow) DN

DN	*mm*	*DN*	*mm*	*DN*	*mm*	*DN*	*mm*	*DN*	*mm*
12	60	13	565						
14	130	14	635						
10	180	18	725						
12	240	17	810						
6	270	6	840						
10	320	4	860						
8	360	7	895						
6	390								
10	440								
12	500								



	Depth (mm)				*In situ*	*Blows/mm*	
no.	*From*	-	*To*	*DN*	*CBR*	150mm	300mm
1	1	-	150	12,5	**17**	12	**14,0**
2	151	-	300	9,4	**25**	16	
3	301	-	450	8,4	**28**	18	**14,8**
4	451	-	600	12,9	**16**	12	
5	601	-	750	16,7	**12**	9	
6	751	-	900				
8	901	-	1050				
9	1051	-	1200				
10	1201	-	1350				
11	1351	-	1500				
12	1501	-	1650				
13	1651	-	1800				
14	1801	-	1950				
15	1951	-	2100				



REMARKS: Max penetration depth **895** **mm**

Where values are presented as continued "cont", refer to the adjacent graphs where DN values vs depth and penetration vs depths can be read.

Signature

22 Frara Drive, Pinelands, Pinetown, 3610
Cell: 031 350 3370
Email: info@bavconsulting.co.za
Reg: 2017/499605/07

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TEST REPORT FOR DYNAMIC CONE PENETROMETER *BY TEST METHOD TMH6-ST6*

CLIENT: **ESKOM**

DATE REPORTED: **22/08/2023**
OUR REF: **MAK1520823**

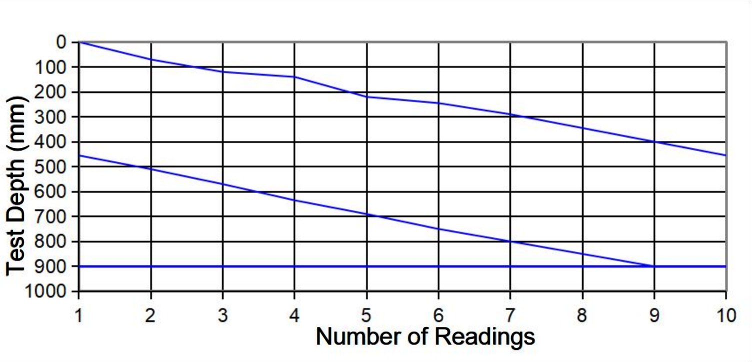
PROJECT: **Geotechnical Investigation: Komati Power Station**
ATTENTION: **Eskom**
Tel/Email: **031 350 3370**

DESCRIPTION: **DCP test was done from existing ground level**
DCP No: **DCP9 at TP9**

DATE TESTED: **22/08/2023**

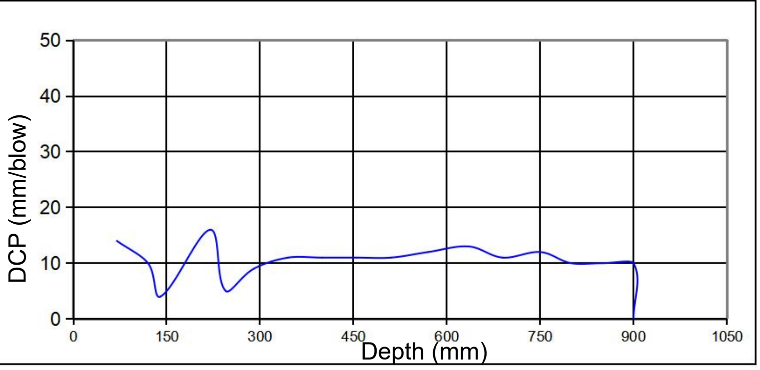
DCP Readings *Blows per reading:* **5**

no.	*mm*	*no.*	*mm*	*no.*	*mm*	*no.*	*mm*	*no.*	*mm*
1	**70**	11	**570**	21		31		41	
2	**120**	12	**635**	22		32		42	
3	**140**	13	**690**	23		33		43	
4	**220**	14	**750**	24		34		44	
5	**245**	15	**800**	25		35		45	
6	**290**	16	**850**	26		36		46	
7	**345**	17	**900**	27		37		47	
8	**400**	18		28		38		48	
9	**455**	19		29		39		49	
10	**510**	20		30		40		50	

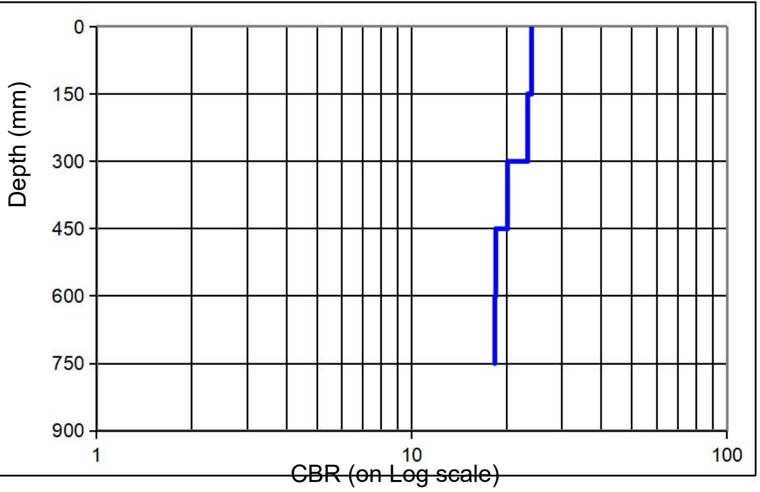


DCP number (mm / Blow) DN

DN	*mm*	*DN*	*mm*	*DN*	*mm*	*DN*	*mm*	*DN*	*mm*
14	70	12	570						
10	120	13	635						
4	140	11	690						
16	220	12	750						
5	245	10	800						
9	290	10	850						
11	345	10	900						
11	400								
11	455								
11	510								



	Depth (mm)				*In situ*	*Blows/mm*	
no.	*From*	-	*To*	*DN*	*CBR*	150mm	300mm
1	1	-	150	9,6	**24**	16	**15,5**
2	151	-	300	9,8	**23**	15	
3	301	-	450	11,0	**20**	14	**13,2**
4	451	-	600	11,8	**18**	13	
5	601	-	750	11,8	**18**	13	
6	751	-	900				
8	901	-	1050				
9	1051	-	1200				
10	1201	-	1350				
11	1351	-	1500				
12	1501	-	1650				
13	1651	-	1800				
14	1801	-	1950				
15	1951	-	2100				



REMARKS: Max penetration depth 900 mm

Where values are presented as continued "cont", refer to the adjacent graphs where DN values vs depth and penetration vs depths can be read.

Signature

22 Frara Drive, Pinelands, Pinetown, 3610
Cell: 031 350 3370
Email: info@bavconsulting.co.za
Reg: 2017/499605/07

BAV CONSULTING

TEST REPORT FOR DYNAMIC CONE PENETROMETER *BY TEST METHOD TMH6-ST6*

CLIENT: **ESKOM**

DATE REPORTED: **22/08/2023**
OUR REF: **MAK1520823**

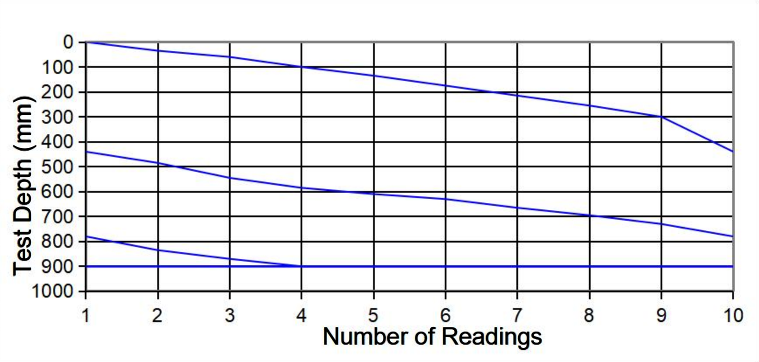
PROJECT: **Geotechnical Investigation: Komati Power Station**
ATTENTION: **Eskom**
Tel/Email: **031 350 3370**

DESCRIPTION: **DCP test was done from existing ground level**
DATE TESTED: **22/08/2023**
DCP No: **DCP10 at TP10**

DCP Readings

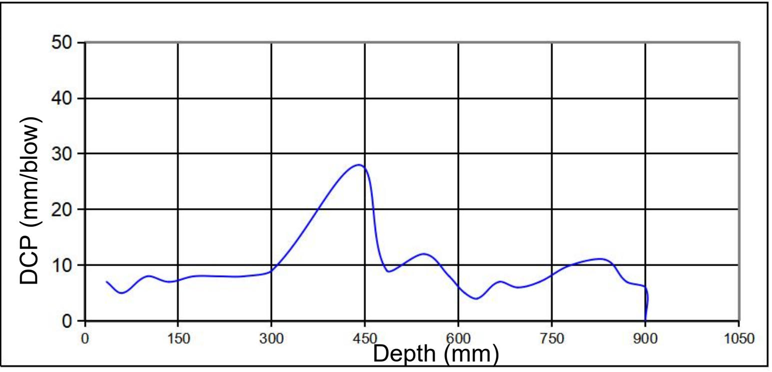
Blows per reading: **5**

no.	*mm*	*no.*	*mm*	*no.*	*mm*	*no.*	*mm*	*no.*	*mm*
1	**35**	11	**545**	21	**900**	31		41	
2	**60**	12	**585**	22		32		42	
3	**100**	13	**610**	23		33		43	
4	**135**	14	**630**	24		34		44	
5	**175**	15	**665**	25		35		45	
6	**215**	16	**695**	26		36		46	
7	**255**	17	**730**	27		37		47	
8	**300**	18	**780**	28		38		48	
9	**440**	19	**835**	29		39		49	
10	**485**	20	**870**	30		40		50	

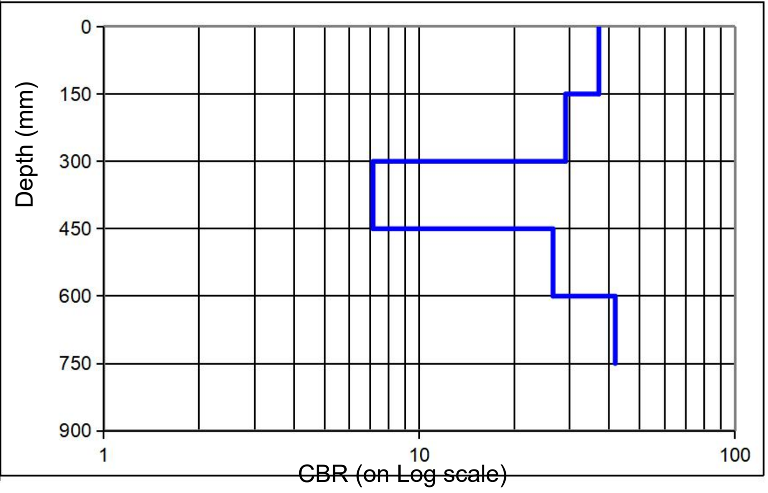


DCP number (mm / Blow) DN

DN	*mm*	*DN*	*mm*	*DN*	*mm*	*DN*	*mm*	*DN*	*mm*
7	35	12	545	6	900				
5	60	8	585						
8	100	5	610						
7	135	4	630						
8	175	7	665						
8	215	6	695						
8	255	7	730						
9	300	10	780						
28	440	11	835						
9	485	7	870						



	Depth (mm)				*In situ*	*Blows/mm*	
no.	*From*	-	*To*	*DN*	*CBR*	150mm	300mm
1	1	-	150	6,9	**37**	22	**20,0**
2	151	-	300	8,3	**29**	18	
3	301	-	450	24,5	**7**	6	**11,5**
4	451	-	600	8,9	**27**	17	
5	601	-	750	6,3	**42**	24	
6	751	-	900				
8	901	-	1050				
9	1051	-	1200				
10	1201	-	1350				
11	1351	-	1500				
12	1501	-	1650				
13	1651	-	1800				
14	1801	-	1950				
15	1951	-	2100				



REMARKS: Max penetration depth 900 mm

Where values are presented as continued "cont", refer to the adjacent graphs where DN values vs depth and penetration vs depths can be read.

Signature

22 Frara Drive, Pinelands, Pinetown, 3610
Cell: 031 350 3370
Email: info@bavconsulting.co.za
Reg: 2017/499605/07

BAV CONSULTING

TEST REPORT FOR DYNAMIC CONE PENETROMETER *BY TEST METHOD TMH6-ST6*

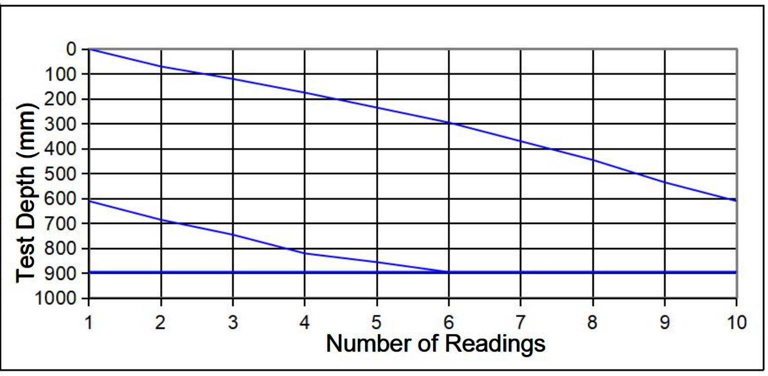
CLIENT: ESKOM
DATE REPORTED: 22/08/2023
OUR REF: MAK1520823

PROJECT: Geotechnical Investigation: Komati Power Station
ATTENTION: Eskom
Tel/Email: 031 350 3370

DESCRIPTION: DCP test was done from existing ground level
DATE TESTED: 22/08/2023
DCP No: DCP11 at TP11

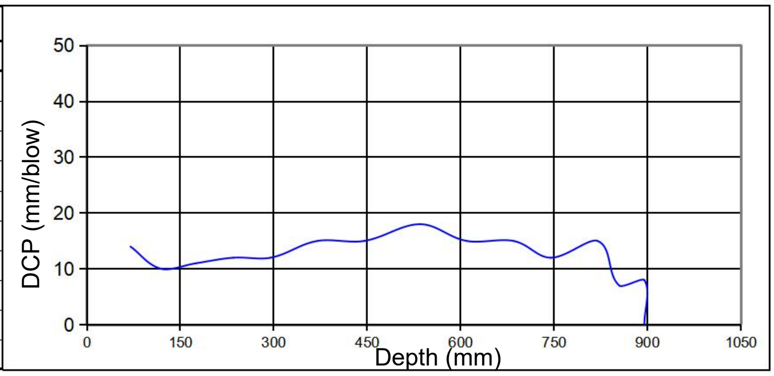
DCP Readings *Blows per reading:* **5**

no.	*mm*	*no.*	*mm*	*no.*	*mm*	*no.*	*mm*	*no.*	*mm*
1	**70**	11	**745**	21		31		41	
2	**120**	12	**820**	22		32		42	
3	**175**	13	**855**	23		33		43	
4	**235**	14	**895**	24		34		44	
5	**295**	15		25		35		45	
6	**370**	16		26		36		46	
7	**445**	17		27		37		47	
8	**535**	18		28		38		48	
9	**610**	19		29		39		49	
10	**685**	20		30		40		50	

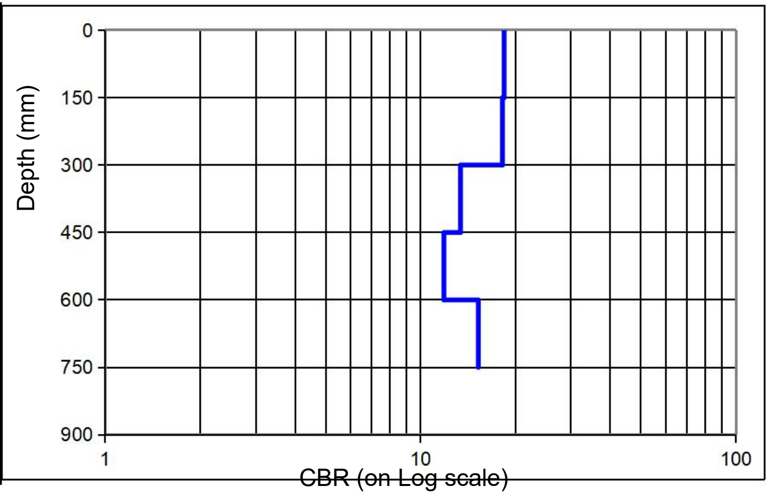


DCP number (mm / Blow) DN

DN	*mm*	*DN*	*mm*	*DN*	*mm*	*DN*	*mm*	*DN*	*mm*
14	70	12	745						
10	120	15	820						
11	175	7	855						
12	235	8	895						
12	295								
15	370								
15	445								
18	535								
15	610								
15	685								



	Depth (mm)				*In situ*	*Blows/mm*	
no.	*From*	-	*To*	*DN*	*CBR*	150mm	300mm
1	1	-	150	11,8	**18**	13	**12,7**
2	151	-	300	11,9	**18**	13	
3	301	-	450	15,1	**13**	10	**9,5**
4	451	-	600	16,6	**12**	9	
5	601	-	750	13,6	**15**	11	
6	751	-	900				
8	901	-	1050				
9	1051	-	1200				
10	1201	-	1350				
11	1351	-	1500				
12	1501	-	1650				
13	1651	-	1800				
14	1801	-	1950				
15	1951	-	2100				



REMARKS: Max penetration depth 895 mm

Where values are presented as continued "cont", refer to the adjacent graphs where DN values vs depth and penetration vs depths can be read.

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22 Frara Drive, Pinelands, Pinetown, 3610
Cell: 031 350 3370
Email: info@bavconsulting.co.za
Reg: 2017/499605/07

BAV CONSULTING

TEST REPORT FOR DYNAMIC CONE PENETROMETER *BY TEST METHOD TMH6-ST6*

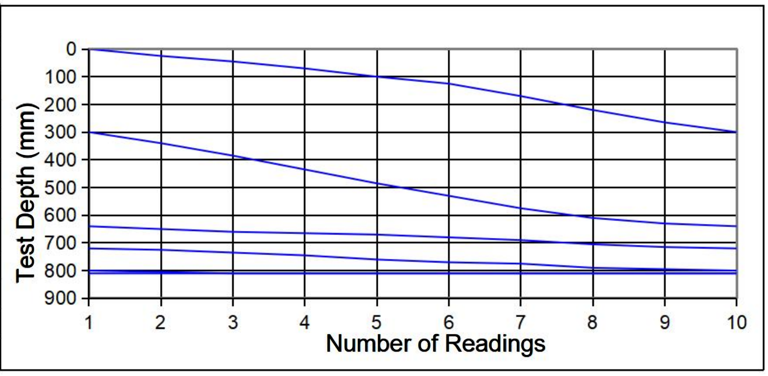
CLIENT: ESKOM
DATE REPORTED: 22/08/2023
OUR REF: MAK1520823

PROJECT: Geotechnical Investigation: Komati Power Station
ATTENTION: Eskom
Tel/Email: 031 350 3370

DESCRIPTION: DCP test was done from existing ground level
DATE TESTED: 22/08/2023
DCP No: DCP12 at TP12

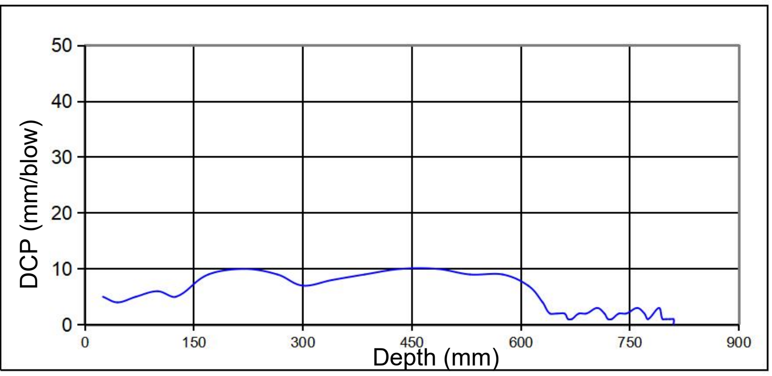
DCP Readings *Blows per reading:* **5**

no.	*mm*	*no.*	*mm*	*no.*	*mm*	*no.*	*mm*	*no.*	*mm*
1	**25**	11	**385**	21	**665**	31	**760**	41	
2	**45**	12	**435**	22	**670**	32	**770**	42	
3	**70**	13	**485**	23	**680**	33	**775**	43	
4	**100**	14	**530**	24	**690**	34	**790**	44	
5	**125**	15	**575**	25	**705**	35	**795**	45	
6	**170**	16	**610**	26	**715**	36	**800**	46	
7	**220**	17	**630**	27	**720**	37	**805**	47	
8	**265**	18	**640**	28	**725**	38	**810**	48	
9	**300**	19	**650**	29	**735**	39		49	
10	**340**	20	**660**	30	**745**	40		50	

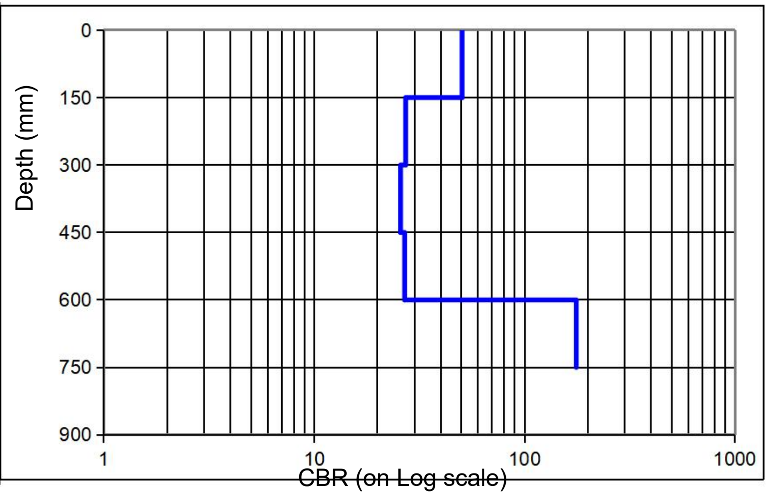


DCP number (mm / Blow) DN

DN	*mm*	*DN*	*mm*	*DN*	*mm*	*DN*	*mm*	*DN*	*mm*
5	25	9	385	1	665	3	760		
4	45	10	435	1	670	2	770		
5	70	10	485	2	680	1	775		
6	100	9	530	2	690	3	790		
5	125	9	575	3	705	1	795		
9	170	7	610	2	715	1	800		
10	220	4	630	1	720	1	805		
9	265	2	640	1	725	1	810		
7	300	2	650	2	735				
8	340	2	660	2	745				



	Depth (mm)				*In situ*	*Blows/mm*	
no.	*From*	-	*To*	*DN*	*CBR*	150mm	300mm
1	1	-	150	5,4	**50**	28	**22,5**
2	151	-	300	8,7	**27**	17	
3	301	-	450	9,1	**26**	17	**16,8**
4	451	-	600	8,8	**27**	17	
5	601	-	750	2,1	**176**	73	
6	751	-	900				
8	901	-	1050				
9	1051	-	1200				
10	1201	-	1350				
11	1351	-	1500				
12	1501	-	1650				
13	1651	-	1800				
14	1801	-	1950				
15	1951	-	2100				



REMARKS: Max penetration depth **810** **mm**

Where values are presented as continued "cont", refer to the adjacent graphs where DN values vs depth and penetration vs depths can be read.

Signature

22 Frara Drive, Pinelands, Pinetown, 3610
Cell: 031 350 3370
Email: info@bavconsulting.co.za
Reg: 2017/499605/07

BAV CONSULTING

TEST REPORT FOR DYNAMIC CONE PENETROMETER *BY TEST METHOD TMH6-ST6*

CLIENT: ESKOM

DATE REPORTED: 22/08/2023
OUR REF: MAK1520823

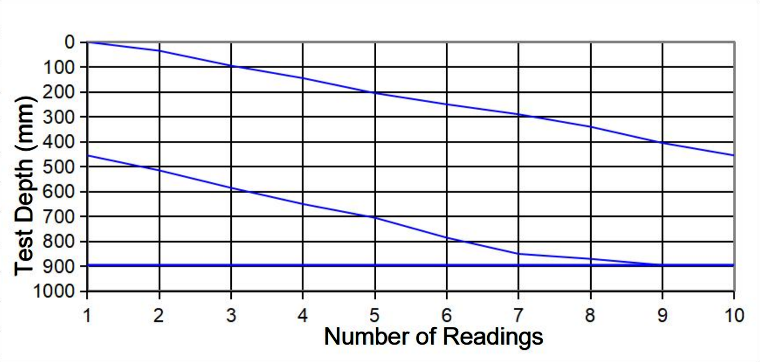
PROJECT: Geotechnical Investigation: Komati Power Station
ATTENTION: Eskom
Tel/Email: 031 350 3370

DESCRIPTION: DCP test was done from existing ground level
DCP No: DCP13 at TP13

DATE TESTED: 22/08/2023

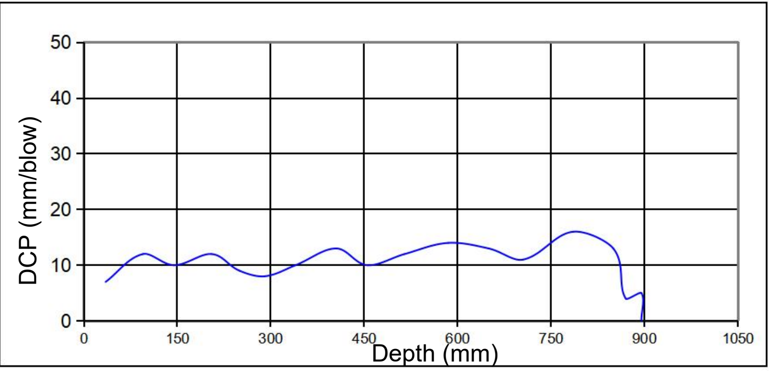
DCP Readings — *Blows per reading:* **5**

no.	*mm*	*no.*	*mm*	*no.*	*mm*	*no.*	*mm*	*no.*	*mm*
1	**35**	11	**585**	21		31		41	
2	**95**	12	**650**	22		32		42	
3	**145**	13	**705**	23		33		43	
4	**205**	14	**785**	24		34		44	
5	**250**	15	**850**	25		35		45	
6	**290**	16	**870**	26		36		46	
7	**340**	17	**895**	27		37		47	
8	**405**	18		28		38		48	
9	**455**	19		29		39		49	
10	**515**	20		30		40		50	

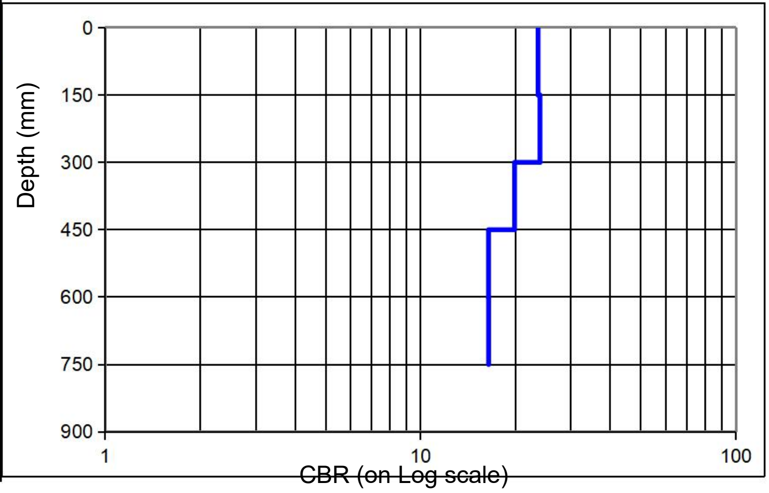


DCP number (mm / Blow) DN

DN	*mm*	*DN*	*mm*	*DN*	*mm*	*DN*	*mm*	*DN*	*mm*
7	35	14	585						
12	95	13	650						
10	145	11	705						
12	205	16	785						
9	250	13	850						
8	290	4	870						
10	340	5	895						
13	405								
10	455								
12	515								



	Depth (mm)				*In situ*	*Blows/mm*	
no.	*From*	-	*To*	*DN*	*CBR*	150mm	300mm
1	1	-	150	9,7	**24**	15	**15,5**
2	151	-	300	9,6	**24**	16	
3	301	-	450	11,1	**20**	14	**12,6**
4	451	-	600	12,9	**16**	12	
5	601	-	750	12,9	**16**	12	
6	751	-	900				
8	901	-	1050				
9	1051	-	1200				
10	1201	-	1350				
11	1351	-	1500				
12	1501	-	1650				
13	1651	-	1800				
14	1801	-	1950				
15	1951	-	2100				



REMARKS: Max penetration depth **895** **mm**

Where values are presented as continued "cont", refer to the adjacent graphs where DN values vs depth and penetration vs depths can be read.

Signature

22 Frara Drive, Pinelands, Pinetown, 3610
Cell: 031 350 3370
Email: info@bavconsulting.co.za
Reg: 2017/499605/07

BAV CONSULTING

TEST REPORT FOR DYNAMIC CONE PENETROMETER *BY TEST METHOD TMH6-ST6*

CLIENT: **ESKOM**

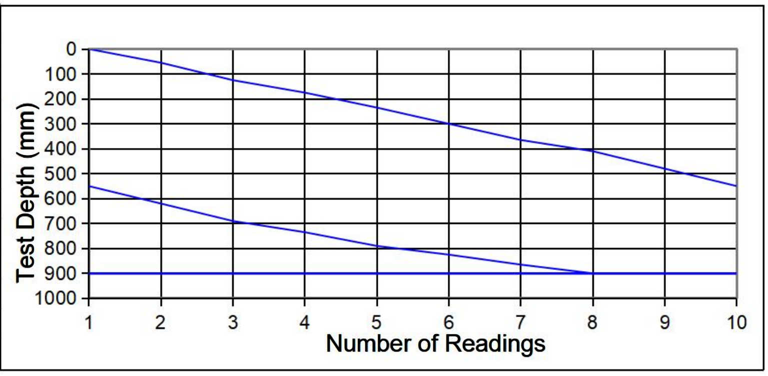
DATE REPORTED: **22/08/2023**
OUR REF: **MAK1520823**

PROJECT: **Geotechnical Investigation: Komati Power Station**
ATTENTION: **Eskom**
Tel/Email: **031 350 3370**

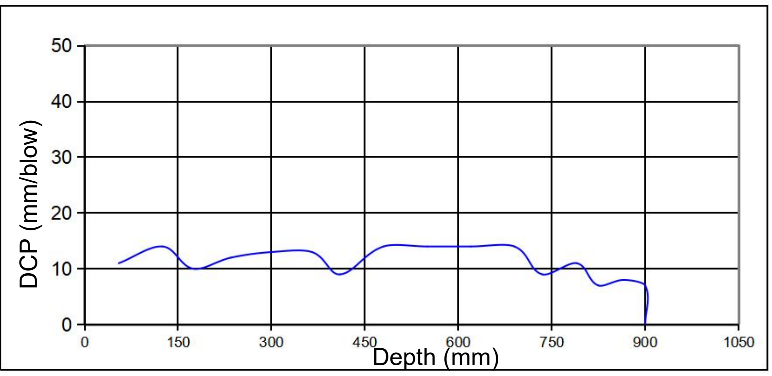
DESCRIPTION: **DCP test was done from existing ground level**
DCP No: **DCP14 at TP14**

DATE TESTED: **22/08/2023**

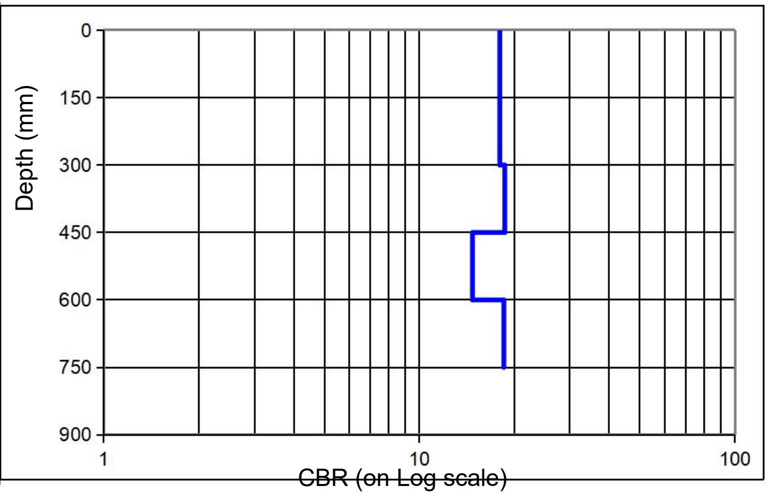
DCP Readings		*Blows per reading:* **5**							
no.	*mm*	*no.*	*mm*	*no.*	*mm*	*no.*	*mm*	*no.*	*mm*
1	**55**	11	**690**	21		31		41	
2	**125**	12	**735**	22		32		42	
3	**175**	13	**790**	23		33		43	
4	**235**	14	**825**	24		34		44	
5	**300**	15	**865**	25		35		45	
6	**365**	16	**900**	26		36		46	
7	**410**	17		27		37		47	
8	**480**	18		28		38		48	
9	**550**	19		29		39		49	
10	**620**	20		30		40		50	



DCP number (mm / Blow) DN									
DN	*mm*	*DN*	*mm*	*DN*	*mm*	*DN*	*mm*	*DN*	*mm*
11	55	14	690						
14	125	9	735						
10	175	11	790						
12	235	7	825						
13	300	8	865						
13	365	7	900						
9	410								
14	480								
14	550								
14	620								



	Depth (mm)				*In situ*	*Blows/mm*	
no.	*From*	-	*To*	*DN*	*CBR*	150mm	300mm
1	1	-	150	12,0	**18**	13	**12,5**
2	151	-	300	12,0	**18**	13	
3	301	-	450	11,7	**19**	13	**11,8**
4	451	-	600	14,0	**15**	11	
5	601	-	750	11,7	**19**	13	
6	751	-	900				
8	901	-	1050				
9	1051	-	1200				
10	1201	-	1350				
11	1351	-	1500				
12	1501	-	1650				
13	1651	-	1800				
14	1801	-	1950				
15	1951	-	2100				



REMARKS: Max penetration depth 900 mm

Where values are presented as continued "cont", refer to the adjacent graphs where DN values vs depth and penetration vs depths can be read.

Signature

22 Frara Drive, Pinelands, Pinetown, 3610
Cell: 031 350 3370
Email: info@bavconsulting.co.za
Reg: 2017/499605/07

TEST REPORT FOR DYNAMIC CONE PENETROMETER *BY TEST METHOD TMH6-ST6*

CLIENT: **ESKOM**

DATE REPORTED: **22/08/2023**
OUR REF: **MAK1520823**

PROJECT: **Geotechnical Investigation: Komati Power Station**
ATTENTION: **Eskom**
Tel/Email: **031 350 3370**

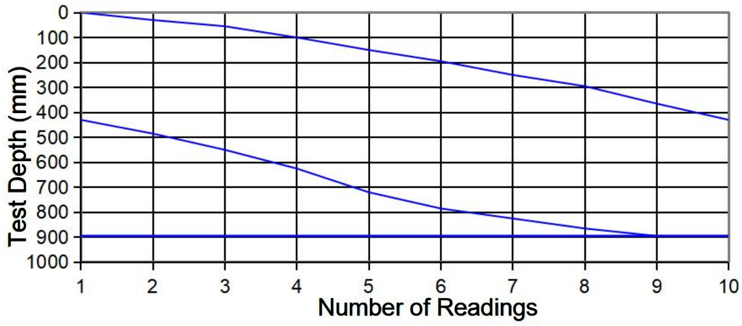
DESCRIPTION: **DCP test was done from existing ground level**
DCP No: **DCP15 at TP15**

DATE TESTED: **22/08/2023**

DCP Readings

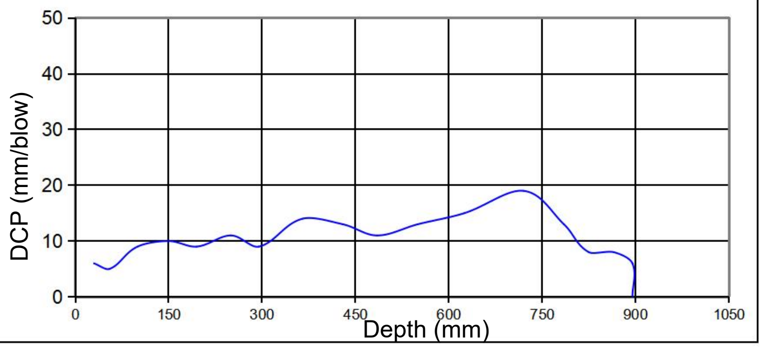
Blows per reading: **5**

no.	*mm*	*no.*	*mm*	*no.*	*mm*	*no.*	*mm*	*no.*	*mm*
1	**30**	11	**550**	21		31		41	
2	**55**	12	**625**	22		32		42	
3	**100**	13	**720**	23		33		43	
4	**150**	14	**785**	24		34		44	
5	**195**	15	**825**	25		35		45	
6	**250**	16	**865**	26		36		46	
7	**295**	17	**895**	27		37		47	
8	**365**	18		28		38		48	
9	**430**	19		29		39		49	
10	**485**	20		30		40		50	

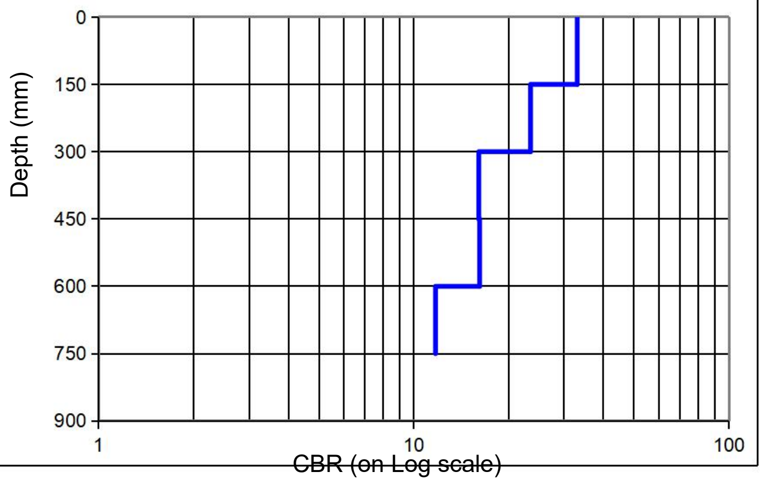


DCP number (mm / Blow) DN

DN	*mm*	*DN*	*mm*	*DN*	*mm*	*DN*	*mm*	*DN*	*mm*
6	30	13	550						
5	55	15	625						
9	100	19	720						
10	150	13	785						
9	195	8	825						
11	250	8	865						
9	295	6	895						
14	365								
13	430								
11	485								



	Depth (mm)				*In situ*	*Blows/mm*	
no.	*From*	-	*To*	*DN*	*CBR*	150mm	300mm
1	1	-	150	7,5	**33**	20	**17,7**
2	151	-	300	9,8	**23**	15	
3	301	-	450	13,1	**16**	11	**11,5**
4	451	-	600	13,0	**16**	12	
5	601	-	750	16,7	**12**	9	
6	751	-	900				
8	901	-	1050				
9	1051	-	1200				
10	1201	-	1350				
11	1351	-	1500				
12	1501	-	1650				
13	1651	-	1800				
14	1801	-	1950				
15	1951	-	2100				



REMARKS: Max penetration depth **895** **mm**

Where values are presented as continued "cont", refer to the adjacent graphs where DN values vs depth and penetration vs depths can be read.

Signature

22 Frara Drive, Pinelands, Pinetown, 3610
Cell: 031 350 3370
Email: info@bavconsulting.co.za
Reg: 2017/499605/07

BAV CONSULTING

TEST REPORT FOR DYNAMIC CONE PENETROMETER *BY TEST METHOD TMH6-ST6*

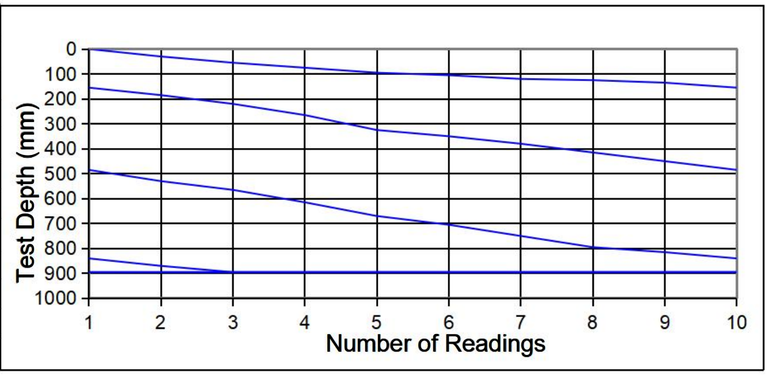
CLIENT: ESKOM **DATE REPORTED: 22/08/2023**
OUR REF: MAK1520823

PROJECT: Geotechnical Investigation: Komati Power Station
ATTENTION: Eskom
Tel/Email: 031 350 3370

DESCRIPTION: DCP test was done from existing ground level **DATE TESTED: 22/08/2023**
DCP No: DCP16 at TP16

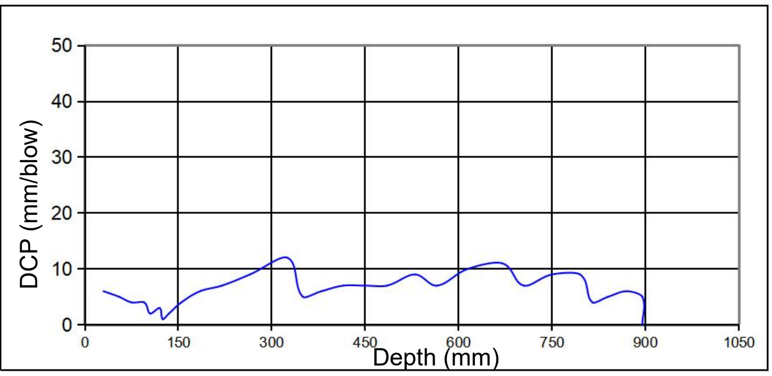
DCP Readings *Blows per reading:* **5**

no.	*mm*	*no.*	*mm*	*no.*	*mm*	*no.*	*mm*	*no.*	*mm*
1	**30**	11	**220**	21	**615**	31		41	
2	**55**	12	**265**	22	**670**	32		42	
3	**75**	13	**325**	23	**705**	33		43	
4	**95**	14	**350**	24	**750**	34		44	
5	**105**	15	**380**	25	**795**	35		45	
6	**120**	16	**415**	26	**815**	36		46	
7	**125**	17	**450**	27	**840**	37		47	
8	**135**	18	**485**	28	**870**	38		48	
9	**155**	19	**530**	29	**895**	39		49	
10	**185**	20	**565**	30		40		50	

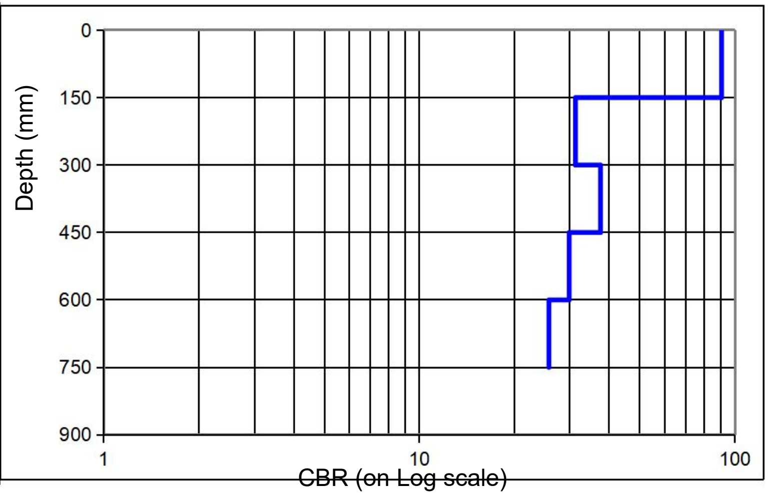


DCP number (mm / Blow) DN

DN	*mm*	*DN*	*mm*	*DN*	*mm*	*DN*	*mm*	*DN*	*mm*
6	30	7	220	10	615				
5	55	9	265	11	670				
4	75	12	325	7	705				
4	95	5	350	9	750				
2	105	6	380	9	795				
3	120	7	415	4	815				
1	125	7	450	5	840				
2	135	7	485	6	870				
4	155	9	530	5	895				
6	185	7	565						



	Depth (mm)				*In situ*	*Blows/mm*	
no.	*From*	-	*To*	*DN*	*CBR*	150mm	300mm
1	1	-	150	3,4	**91**	44	**31,5**
2	151	-	300	7,8	**31**	19	
3	301	-	450	6,8	**38**	22	**20,3**
4	451	-	600	8,1	**30**	19	
5	601	-	750	9,1	**26**	17	
6	751	-	900				
8	901	-	1050				
9	1051	-	1200				
10	1201	-	1350				
11	1351	-	1500				
12	1501	-	1650				
13	1651	-	1800				
14	1801	-	1950				
15	1951	-	2100				



REMARKS: Max penetration depth **895** **mm**

Where values are presented as continued "cont", refer to the adjacent graphs where DN values vs depth and penetration vs depths can be read.

Signature

22 Frara Drive, Pinelands, Pinetown, 3610
Cell: 031 350 3370
Email: info@bavconsulting.co.za
Reg: 2017/499605/07

BAV CONSULTING

TEST REPORT FOR DYNAMIC CONE PENETROMETER *BY TEST METHOD TMH6-ST6*

CLIENT: **ESKOM**

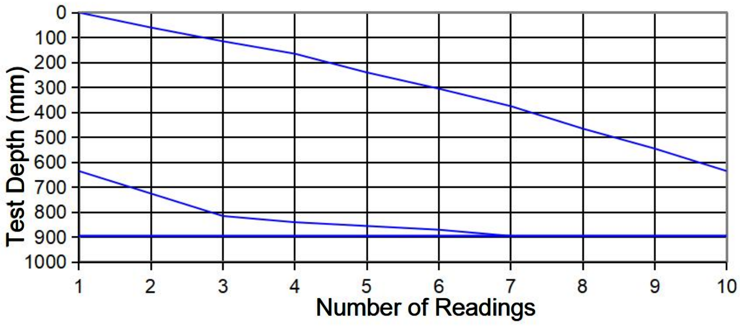
DATE REPORTED: **22/08/2023**
OUR REF: **MAK1520823**

PROJECT: **Geotechnical Investigation: Komati Power Station**
ATTENTION: **Eskom**
Tel/Email: **031 350 3370**

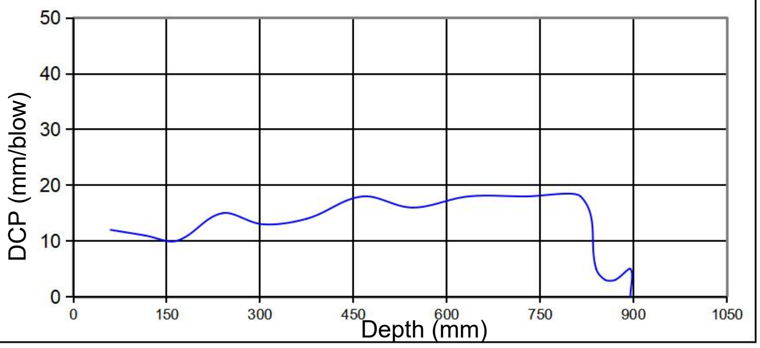
DESCRIPTION: **DCP test was done from existing ground level**
DCP No: **DCP17 at TP17**

DATE TESTED: **22/08/2023**

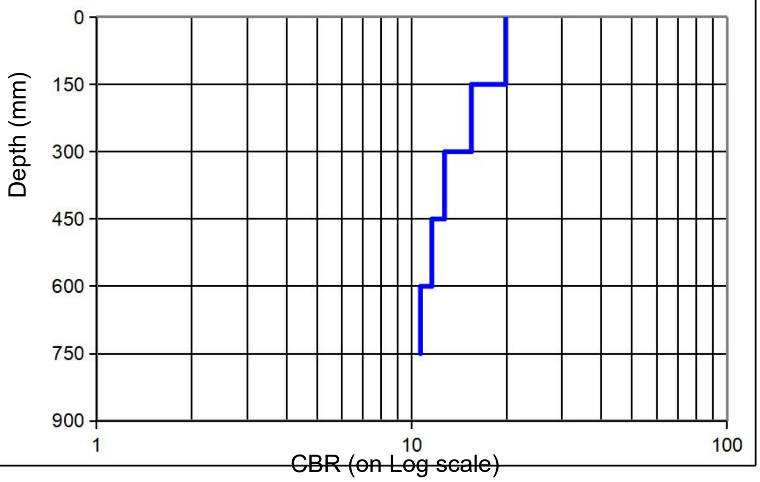
DCP Readings		*Blows per reading:* **5**							
no.	*mm*	*no.*	*mm*	*no.*	*mm*	*no.*	*mm*	*no.*	*mm*
1	**60**	11	**815**	21		31		41	
2	**115**	12	**840**	22		32		42	
3	**165**	13	**855**	23		33		43	
4	**240**	14	**870**	24		34		44	
5	**305**	15	**895**	25		35		45	
6	**375**	16		26		36		46	
7	**465**	17		27		37		47	
8	**545**	18		28		38		48	
9	**635**	19		29		39		49	
10	**725**	20		30		40		50	



DCP number (mm / Blow) DN									
DN	*mm*	*DN*	*mm*	*DN*	*mm*	*DN*	*mm*	*DN*	*mm*
12	60	18	815						
11	115	5	840						
10	165	3	855						
15	240	3	870						
13	305	5	895						
14	375								
18	465								
16	545								
18	635								
18	725								



	Depth (mm)				*In situ*	*Blows/mm*	
no.	*From*	-	*To*	*DN*	*CBR*	150mm	300mm
1	1	-	150	11,1	**20**	14	**12,3**
2	151	-	300	13,5	**15**	11	
3	301	-	450	15,7	**13**	10	**9,2**
4	451	-	600	16,9	**12**	9	
5	601	-	750	18,0	**11**	8	
6	751	-	900				
8	901	-	1050				
9	1051	-	1200				
10	1201	-	1350				
11	1351	-	1500				
12	1501	-	1650				
13	1651	-	1800				
14	1801	-	1950				
15	1951	-	2100				



REMARKS: Max penetration depth 895 mm

Where values are presented as continued "cont", refer to the adjacent graphs where DN values vs depth and penetration vs depths can be read.

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22 Frara Drive, Pinelands, Pinetown, 3610
Cell: 031 350 3370
Email: info@bavconsulting.co.za
Reg: 2017/499605/07

BAV CONSULTING

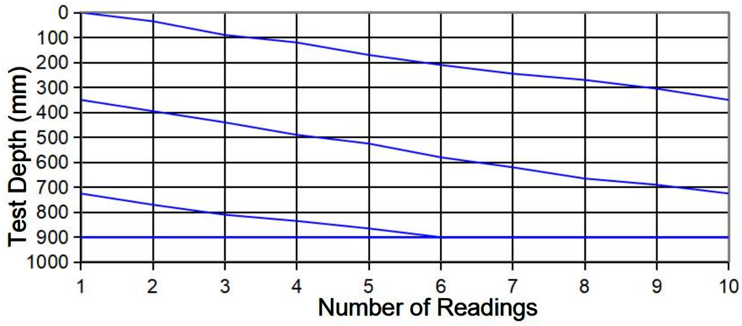
TEST REPORT FOR DYNAMIC CONE PENETROMETER *BY TEST METHOD TMH6-ST6*

CLIENT: ESKOM
DATE REPORTED: 22/08/2023
OUR REF: MAK1520823

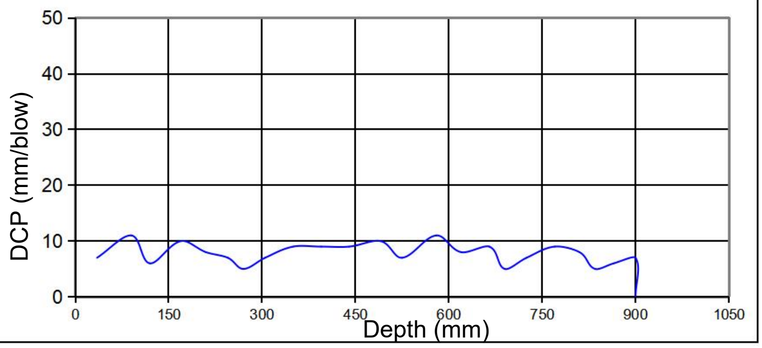
PROJECT: Geotechnical Investigation: Komati Power Station
ATTENTION: Eskom
Tel/Email: 031 350 3370

DESCRIPTION: DCP test was done from existing ground level
DATE TESTED: 22/08/2023
DCP No: DCP1 at TP1

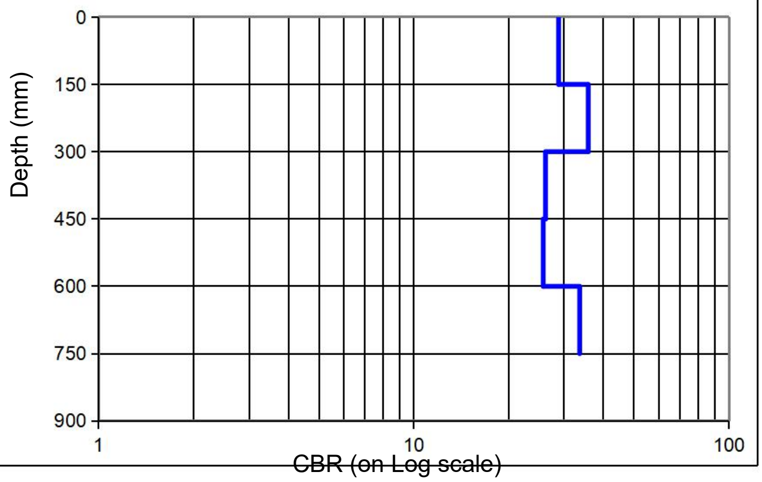
DCP Readings				*Blows per reading:*	**5**				
no.	*mm*	*no.*	*mm*	*no.*	*mm*	*no.*	*mm*	*no.*	*mm*
1	**35**	11	**440**	21	**835**	31		41	
2	**90**	12	**490**	22	**865**	32		42	
3	**120**	13	**525**	23	**900**	33		43	
4	**170**	14	**580**	24		34		44	
5	**210**	15	**620**	25		35		45	
6	**245**	16	**665**	26		36		46	
7	**270**	17	**690**	27		37		47	
8	**305**	18	**725**	28		38		48	
9	**350**	19	**770**	29		39		49	
10	**395**	20	**810**	30		40		50	



DCP number (mm / Blow) DN									
DN	*mm*	*DN*	*mm*	*DN*	*mm*	*DN*	*mm*	*DN*	*mm*
7	35	9	440	5	835				
11	90	10	490	6	865				
6	120	7	525	7	900				
10	170	11	580						
8	210	8	620						
7	245	9	665						
5	270	5	690						
7	305	7	725						
9	350	9	770						
9	395	8	810						



	Depth (mm)				*In situ*	*Blows/mm*	
no.	*From*	-	*To*	*DN*	*CBR*	150mm	300mm
1	1	-	150	8,3	**29**	18	**19,6**
2	151	-	300	7,0	**36**	21	
3	301	-	450	9,0	**26**	17	**16,6**
4	451	-	600	9,1	**26**	17	
5	601	-	750	7,4	**34**	20	
6	751	-	900				
8	901	-	1050				
9	1051	-	1200				
10	1201	-	1350				
11	1351	-	1500				
12	1501	-	1650				
13	1651	-	1800				
14	1801	-	1950				
15	1951	-	2100				



REMARKS: Max penetration depth 900 mm

Where values are presented as continued "cont", refer to the adjacent graphs where DN values vs depth and penetration vs depths can be read.

Signature

22 Frara Drive, Pinelands, Pinetown, 3610
Cell: 031 350 3370
Email: info@bavconsulting.co.za
Reg: 2017/499605/07

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TEST REPORT FOR DYNAMIC CONE PENETROMETER *BY TEST METHOD TMH6-ST6*

CLIENT: ESKOM

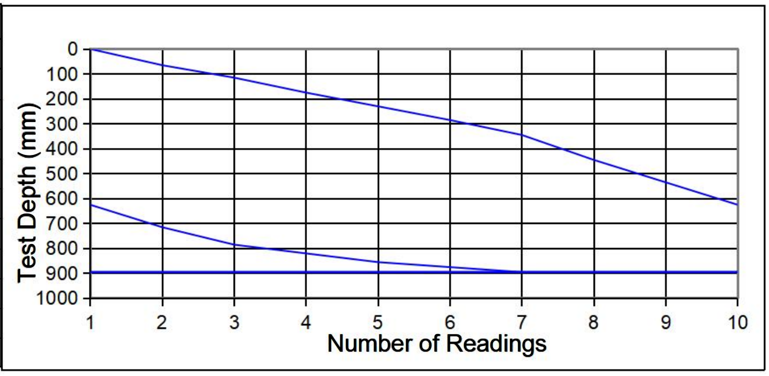
DATE REPORTED: 22/08/2023
OUR REF: MAK1520823

PROJECT: Geotechnical Investigation: Komati Power Station
ATTENTION: Eskom
Tel/Email: 031 350 3370

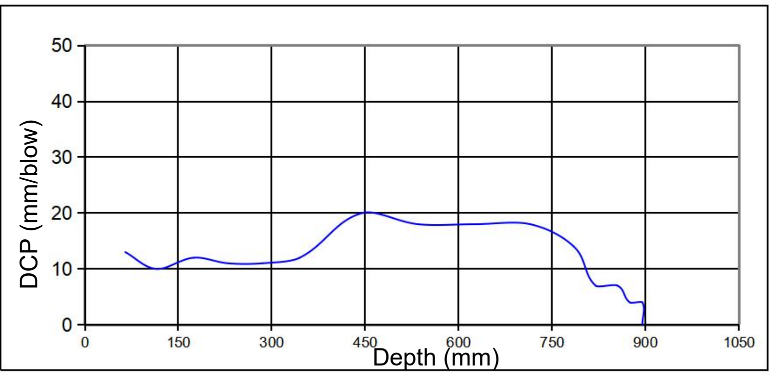
DESCRIPTION: DCP test was done from existing ground level
DCP No: DCP19 at TP19

DATE TESTED: 22/08/2023

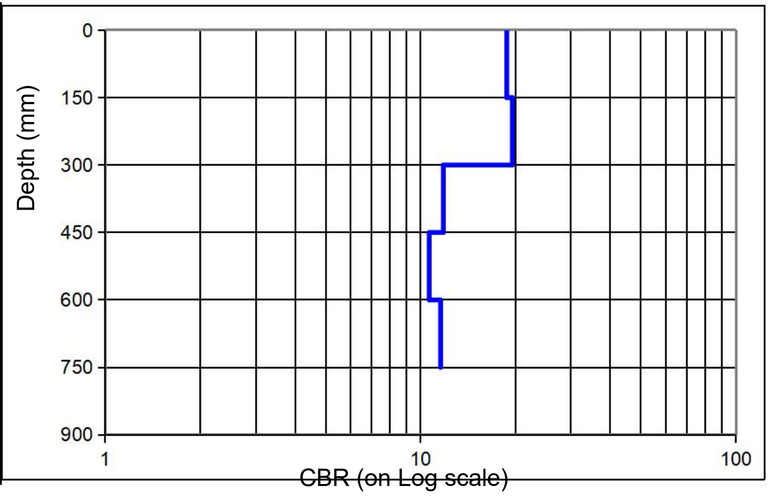
DCP Readings			*Blows per reading:* **5**						
no.	*mm*	*no.*	*mm*	*no.*	*mm*	*no.*	*mm*	*no.*	*mm*
1	**65**	11	**785**	21		31		41	
2	**115**	12	**820**	22		32		42	
3	**175**	13	**855**	23		33		43	
4	**230**	14	**875**	24		34		44	
5	**285**	15	**895**	25		35		45	
6	**345**	16		26		36		46	
7	**445**	17		27		37		47	
8	**535**	18		28		38		48	
9	**625**	19		29		39		49	
10	**715**	20		30		40		50	



DCP number (mm / Blow) DN									
DN	*mm*	*DN*	*mm*	*DN*	*mm*	*DN*	*mm*	*DN*	*mm*
13	65	14	785						
10	115	7	820						
12	175	7	855						
11	230	4	875						
11	285	4	895						
12	345								
20	445								
18	535								
18	625								
18	715								



	Depth (mm)				*In situ*	*Blows/mm*	
no.	*From*	-	*To*	*DN*	*CBR*	150mm	300mm
1	1	-	150	11,6	**19**	13	**13,1**
2	151	-	300	11,3	**20**	13	
3	301	-	450	16,6	**12**	9	**8,7**
4	451	-	600	18,0	**11**	8	
5	601	-	750	16,9	**12**	9	
6	751	-	900				
8	901	-	1050				
9	1051	-	1200				
10	1201	-	1350				
11	1351	-	1500				
12	1501	-	1650				
13	1651	-	1800				
14	1801	-	1950				
15	1951	-	2100				



REMARKS: Max penetration depth **895** **mm**

Where values are presented as continued "cont", refer to the adjacent graphs where DN values vs depth and penetration vs depths can be read.

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22 Frara Drive, Pinelands, Pinetown, 3610
Cell: 031 350 3370
Email: info@bavconsulting.co.za
Reg: 2017/499605/07

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TEST REPORT FOR DYNAMIC CONE PENETROMETER *BY TEST METHOD TMH6-ST6*

CLIENT: ESKOM

DATE REPORTED: 22/08/2023
OUR REF: MAK1520823

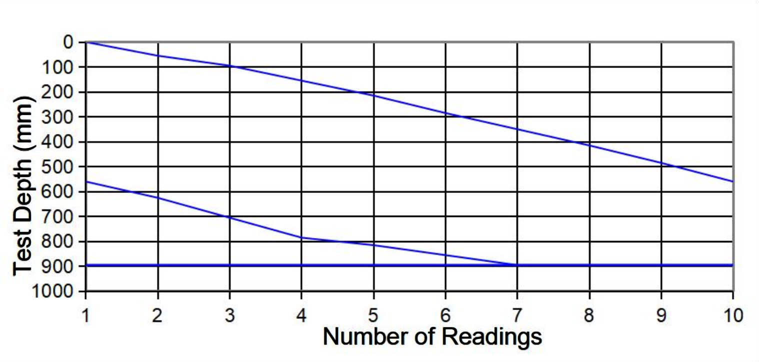
PROJECT: Geotechnical Investigation: Komati Power Station
ATTENTION: Eskom
Tel/Email: 031 350 3370

DESCRIPTION: DCP test was done from existing ground level
DCP No: DCP20 at TP20

DATE TESTED: 22/08/2023

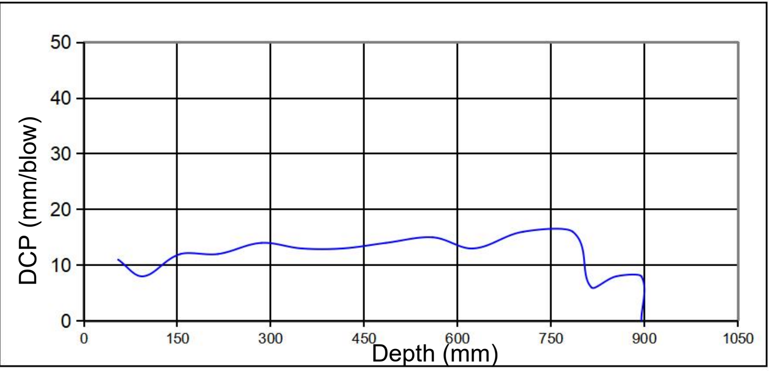
DCP Readings — *Blows per reading:* **5**

no.	*mm*	*no.*	*mm*	*no.*	*mm*	*no.*	*mm*	*no.*	*mm*
1	**55**	11	**705**	21		31		41	
2	**95**	12	**785**	22		32		42	
3	**155**	13	**815**	23		33		43	
4	**215**	14	**855**	24		34		44	
5	**285**	15	**895**	25		35		45	
6	**350**	16		26		36		46	
7	**415**	17		27		37		47	
8	**485**	18		28		38		48	
9	**560**	19		29		39		49	
10	**625**	20		30		40		50	

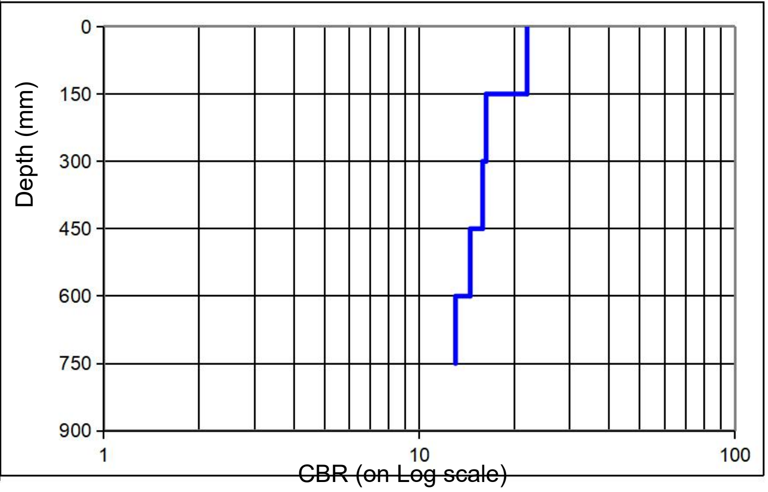


DCP number (mm / Blow) DN

DN	*mm*	*DN*	*mm*	*DN*	*mm*	*DN*	*mm*	*DN*	*mm*
11	55	16	705						
8	95	16	785						
12	155	6	815						
12	215	8	855						
14	285	8	895						
13	350								
13	415								
14	485								
15	560								
13	625								



	Depth (mm)				*In situ*	*Blows/mm*	
no.	*From*	-	*To*	*DN*	*CBR*	150mm	300mm
1	1	-	150	10,3	**22**	15	**13,1**
2	151	-	300	13,0	**16**	12	
3	301	-	450	13,2	**16**	11	**11,0**
4	451	-	600	14,2	**14**	11	
5	601	-	750	15,4	**13**	10	
6	751	-	900				
8	901	-	1050				
9	1051	-	1200				
10	1201	-	1350				
11	1351	-	1500				
12	1501	-	1650				
13	1651	-	1800				
14	1801	-	1950				
15	1951	-	2100				



REMARKS: Max penetration depth **895** **mm**

Where values are presented as continued "cont", refer to the adjacent graphs where DN values vs depth and penetration vs depths can be read.

Signature

22 Frara Drive, Pinelands, Pinetown, 3610
Cell: 031 350 3370
Email: info@bavconsulting.co.za
Reg: 2017/499605/07

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TEST REPORT FOR DYNAMIC CONE PENETROMETER *BY TEST METHOD TMH6-ST6*

CLIENT: ESKOM

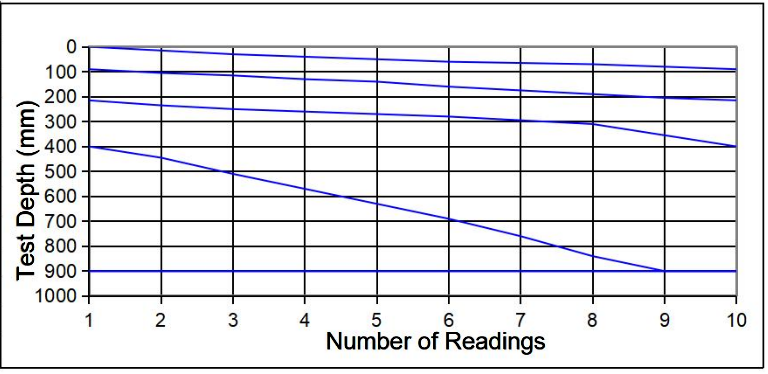
DATE REPORTED: 22/08/2023
OUR REF: MAK1520823

PROJECT: Geotechnical Investigation: Komati Power Station
ATTENTION: Eskom
Tel/Email: 031 350 3370

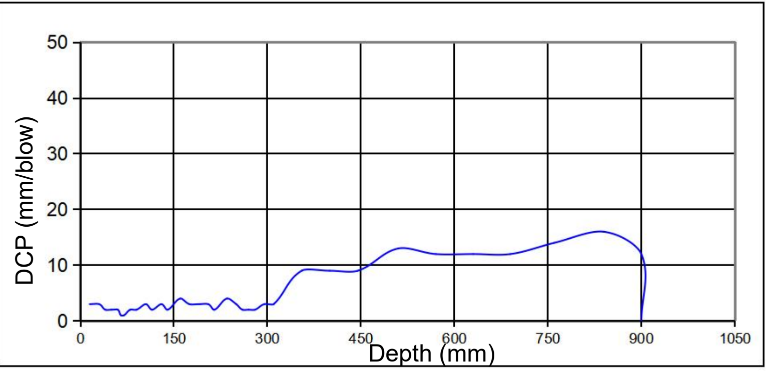
DESCRIPTION: DCP test was done from existing ground level
DCP No: DCP41 at TP41

DATE TESTED: 22/08/2023

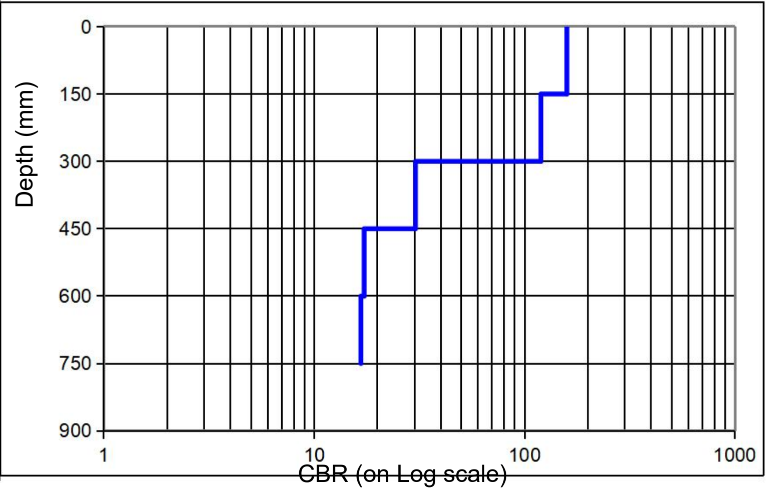
DCP Readings		*Blows per reading:* **5**							
no.	*mm*	*no.*	*mm*	*no.*	*mm*	*no.*	*mm*	*no.*	*mm*
1	**15**	11	**115**	21	**260**	31	**630**	41	
2	**30**	12	**130**	22	**270**	32	**690**	42	
3	**40**	13	**140**	23	**280**	33	**760**	43	
4	**50**	14	**160**	24	**295**	34	**840**	44	
5	**60**	15	**175**	25	**310**	35	**900**	45	
6	**65**	16	**190**	26	**355**	36		46	
7	**70**	17	**205**	27	**400**	37		47	
8	**80**	18	**215**	28	**445**	38		48	
9	**90**	19	**235**	29	**510**	39		49	
10	**105**	20	**250**	30	**570**	40		50	



DCP number (mm / Blow) DN									
DN	*mm*	*DN*	*mm*	*DN*	*mm*	*DN*	*mm*	*DN*	*mm*
3	15	2	115	2	260	12	630		
3	30	3	130	2	270	12	690		
2	40	2	140	2	280	14	760		
2	50	4	160	3	295	16	840		
2	60	3	175	3	310	12	900		
1	65	3	190	9	355				
1	70	3	205	9	400				
2	80	2	215	9	445				
2	90	4	235	13	510				
3	105	3	250	12	570				



	Depth (mm)				*In situ*	*Blows/mm*	
no.	*From*	-	*To*	*DN*	*CBR*	150mm	300mm
1	1	-	150	2,2	**159**	68	**60,8**
2	151	-	300	2,8	**120**	54	
3	301	-	450	8,0	**30**	19	**15,4**
4	451	-	600	12,4	**17**	12	
5	601	-	750	12,7	**17**	12	
6	751	-	900				
8	901	-	1050				
9	1051	-	1200				
10	1201	-	1350				
11	1351	-	1500				
12	1501	-	1650				
13	1651	-	1800				
14	1801	-	1950				
15	1951	-	2100				



REMARKS: Max penetration depth 900 mm

Where values are presented as continued "cont", refer to the adjacent graphs where DN values vs depth and penetration vs depths can be read.

Signature

22 Frara Drive, Pinelands, Pinetown, 3610
Cell: 031 350 3370
Email: info@bavconsulting.co.za
Reg: 2017/499605/07

TEST REPORT FOR DYNAMIC CONE PENETROMETER *BY TEST METHOD TMH6-ST6*

CLIENT: ESKOM

DATE REPORTED: 22/08/2023
OUR REF: MAK1520823

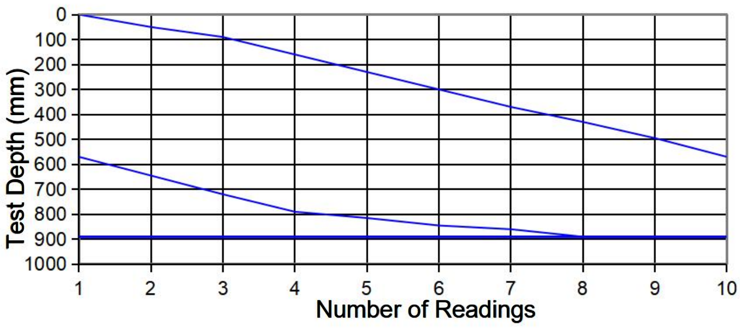
PROJECT: Geotechnical Investigation: Komati Power Station
ATTENTION: Eskom
Tel/Email: 031 350 3370

DESCRIPTION: DCP test was done from existing ground level
DCP No: DCP42 at TP42

DATE TESTED: 22/08/2023

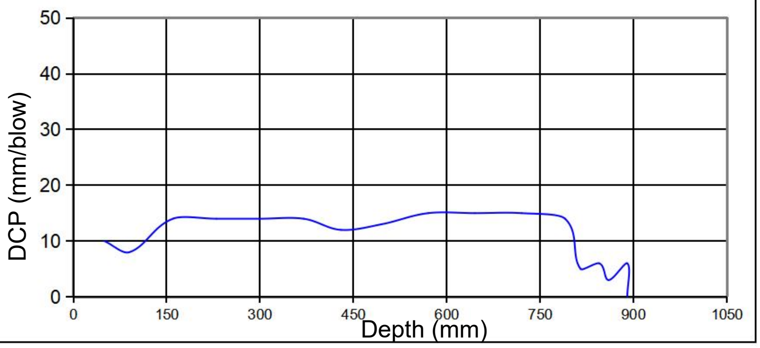
DCP Readings *Blows per reading:* **5**

no.	*mm*	*no.*	*mm*	*no.*	*mm*	*no.*	*mm*	*no.*	*mm*
1	**50**	11	**720**	21		31		41	
2	**90**	12	**790**	22		32		42	
3	**160**	13	**815**	23		33		43	
4	**230**	14	**845**	24		34		44	
5	**300**	15	**860**	25		35		45	
6	**370**	16	**890**	26		36		46	
7	**430**	17		27		37		47	
8	**495**	18		28		38		48	
9	**570**	19		29		39		49	
10	**645**	20		30		40		50	

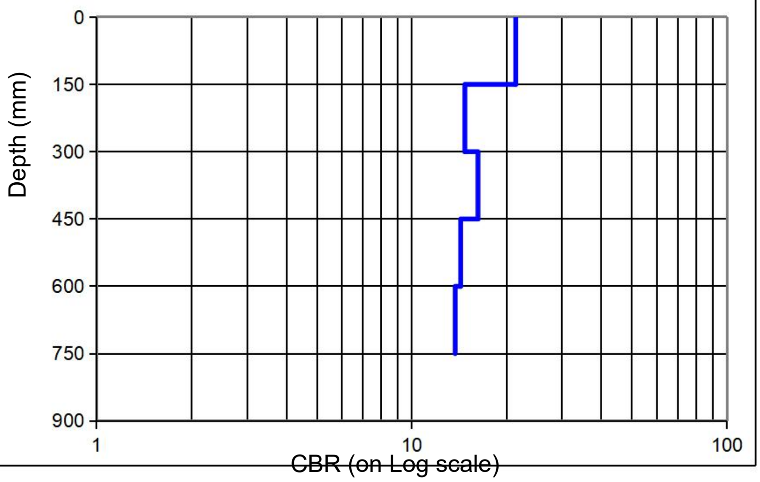


DCP number (mm / Blow) DN

DN	*mm*	*DN*	*mm*	*DN*	*mm*	*DN*	*mm*	*DN*	*mm*
10	50	15	720						
8	90	14	790						
14	160	5	815						
14	230	6	845						
14	300	3	860						
14	370	6	890						
12	430								
13	495								
15	570								
15	645								



	Depth (mm)				*In situ*	*Blows/mm*	
no.	*From*	-	*To*	*DN*	*CBR*	150mm	300mm
1	1	-	150	10,5	**21**	14	**12,5**
2	151	-	300	14,0	**15**	11	
3	301	-	450	13,0	**16**	12	**11,0**
4	451	-	600	14,3	**14**	10	
5	601	-	750	14,8	**14**	10	
6	751	-	900				
8	901	-	1050				
9	1051	-	1200				
10	1201	-	1350				
11	1351	-	1500				
12	1501	-	1650				
13	1651	-	1800				
14	1801	-	1950				
15	1951	-	2100				



REMARKS: Max penetration depth **890** **mm**

Where values are presented as continued "cont", refer to the adjacent graphs where DN values vs depth and penetration vs depths can be read.

Signature

22 Frara Drive, Pinelands, Pinetown, 3610
Cell: 031 350 3370
Email: info@bavconsulting.co.za
Reg: 2017/499605/07

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TEST REPORT FOR DYNAMIC CONE PENETROMETER *BY TEST METHOD TMH6-ST6*

CLIENT: ESKOM
DATE REPORTED: 22/08/2023
OUR REF: MAK1520823

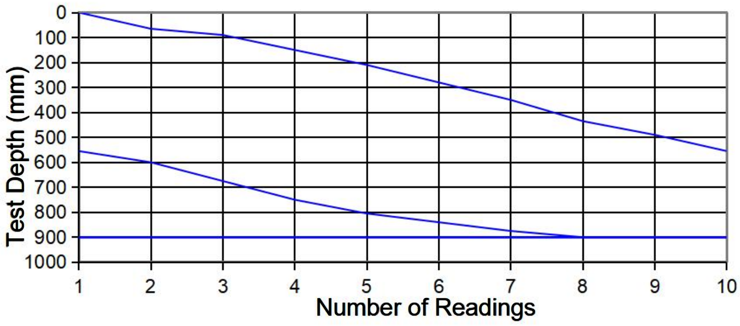
PROJECT: Geotechnical Investigation: Komati Power Station
ATTENTION: Eskom
Tel/Email: 031 350 3370

DESCRIPTION: DCP test was done from existing ground level
DATE TESTED: 22/08/2023
DCP No: DCP43 at TP43

DCP Readings

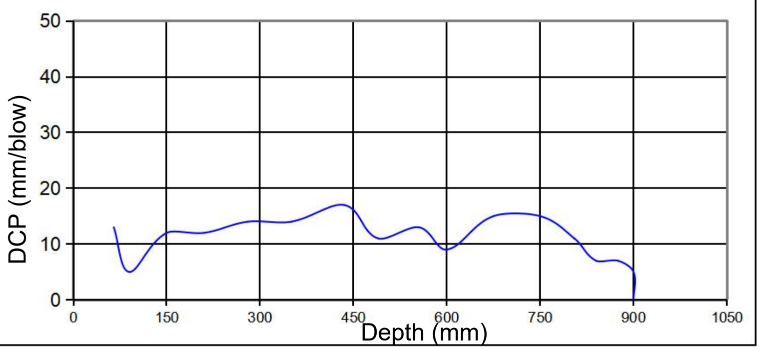
Blows per reading: **5**

no.	*mm*	*no.*	*mm*	*no.*	*mm*	*no.*	*mm*	*no.*	*mm*
1	**65**	11	**675**	21		31		41	
2	**90**	12	**750**	22		32		42	
3	**150**	13	**805**	23		33		43	
4	**210**	14	**840**	24		34		44	
5	**280**	15	**875**	25		35		45	
6	**350**	16	**900**	26		36		46	
7	**435**	17		27		37		47	
8	**490**	18		28		38		48	
9	**555**	19		29		39		49	
10	**600**	20		30		40		50	

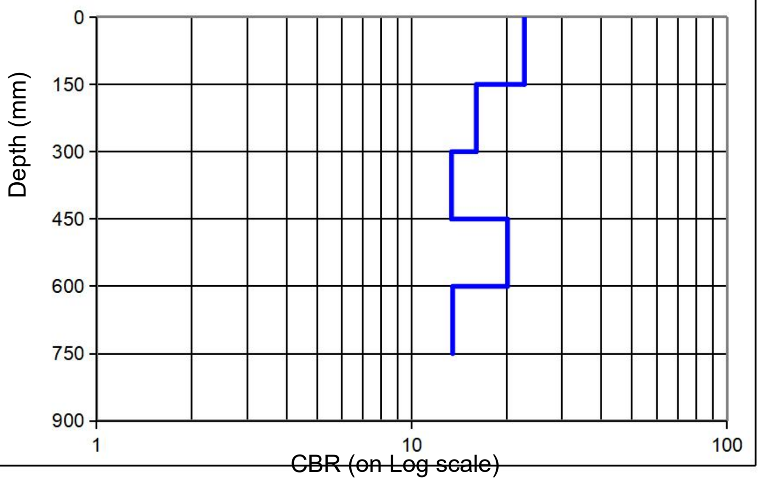


DCP number (mm / Blow) DN

DN	*mm*	*DN*	*mm*	*DN*	*mm*	*DN*	*mm*	*DN*	*mm*
13	65	15	675						
5	90	15	750						
12	150	11	805						
12	210	7	840						
14	280	7	875						
14	350	5	900						
17	435								
11	490								
13	555								
9	600								



	Depth (mm)				*In situ*	*Blows/mm*	
no.	*From*	-	*To*	*DN*	*CBR*	150mm	300mm
1	1	-	150	10,0	**23**	15	**13,2**
2	151	-	300	13,1	**16**	11	
3	301	-	450	15,1	**13**	10	**11,8**
4	451	-	600	11,0	**20**	14	
5	601	-	750	15,0	**13**	10	
6	751	-	900				
8	901	-	1050				
9	1051	-	1200				
10	1201	-	1350				
11	1351	-	1500				
12	1501	-	1650				
13	1651	-	1800				
14	1801	-	1950				
15	1951	-	2100				



REMARKS: Max penetration depth 900 mm

Where values are presented as continued "cont", refer to the adjacent graphs where DN values vs depth and penetration vs depths can be read.

Signature

22 Frara Drive, Pinelands, Pinetown, 3610
Cell: 031 350 3370
Email: info@bavconsulting.co.za
Reg: 2017/499605/07

BAV CONSULTING

TEST REPORT FOR DYNAMIC CONE PENETROMETER *BY TEST METHOD TMH6-ST6*

CLIENT: ESKOM
DATE REPORTED: 22/08/2023
OUR REF: MAK1520823

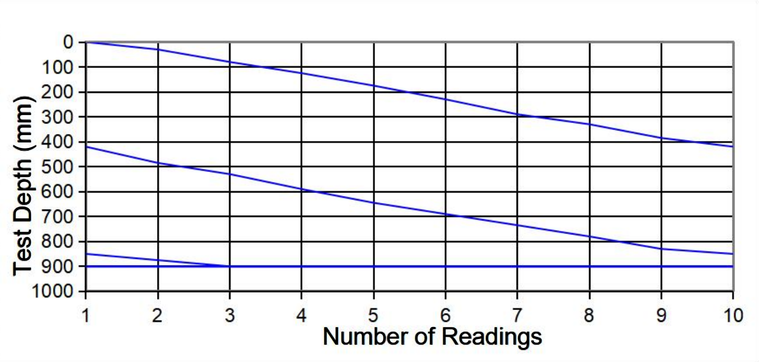
PROJECT: Geotechnical Investigation: Komati Power Station
ATTENTION: Eskom
Tel/Email: 031 350 3370

DESCRIPTION: DCP test was done from existing ground level
DATE TESTED: 22/08/2023
DCP No: DCP44 at TP44

DCP Readings

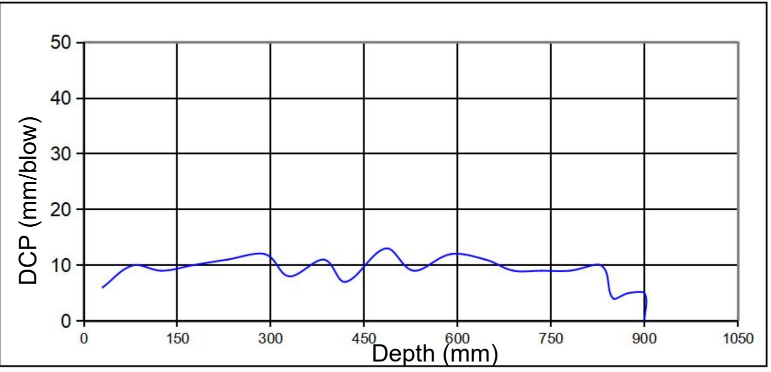
Blows per reading: **5**

no.	*mm*	*no.*	*mm*	*no.*	*mm*	*no.*	*mm*	*no.*	*mm*
1	**30**	11	**530**	21		31		41	
2	**80**	12	**590**	22		32		42	
3	**125**	13	**645**	23		33		43	
4	**175**	14	**690**	24		34		44	
5	**230**	15	**735**	25		35		45	
6	**290**	16	**780**	26		36		46	
7	**330**	17	**830**	27		37		47	
8	**385**	18	**850**	28		38		48	
9	**420**	19	**875**	29		39		49	
10	**485**	20	**900**	30		40		50	

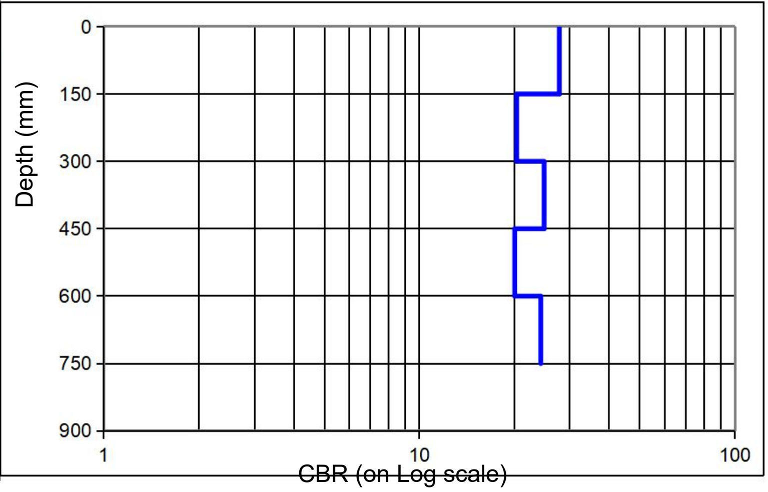


DCP number (mm / Blow) DN

DN	*mm*	*DN*	*mm*	*DN*	*mm*	*DN*	*mm*	*DN*	*mm*
6	30	9	530						
10	80	12	590						
9	125	11	645						
10	175	9	690						
11	230	9	735						
12	290	9	780						
8	330	10	830						
11	385	4	850						
7	420	5	875						
13	485	5	900						



	Depth (mm)				*In situ*	*Blows/mm*	
no.	*From*	-	*To*	*DN*	*CBR*	150mm	300mm
1	1	-	150	8,6	**28**	18	**15,6**
2	151	-	300	10,9	**20**	14	
3	301	-	450	9,3	**25**	16	**14,8**
4	451	-	600	11,0	**20**	14	
5	601	-	750	9,5	**24**	16	
6	751	-	900				
8	901	-	1050				
9	1051	-	1200				
10	1201	-	1350				
11	1351	-	1500				
12	1501	-	1650				
13	1651	-	1800				
14	1801	-	1950				
15	1951	-	2100				



REMARKS: Max penetration depth 900 mm

Where values are presented as continued "cont", refer to the adjacent graphs where DN values vs depth and penetration vs depths can be read.

Signature

22 Frara Drive, Pinelands, Pinetown, 3610
Cell: 031 350 3370
Email: info@bavconsulting.co.za
Reg: 2017/499605/07

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TEST REPORT FOR DYNAMIC CONE PENETROMETER *BY TEST METHOD TMH6-ST6*

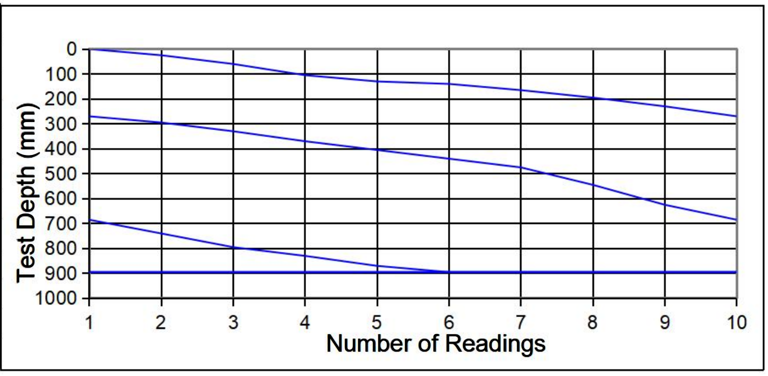
CLIENT: ESKOM **DATE REPORTED: 22/08/2023**
OUR REF: MAK1520823

PROJECT: Geotechnical Investigation: Komati Power Station
ATTENTION: Eskom
Tel/Email: 031 350 3370

DESCRIPTION: DCP test was done from existing ground level **DATE TESTED: 22/08/2023**
DCP No: DCP45 at TP45

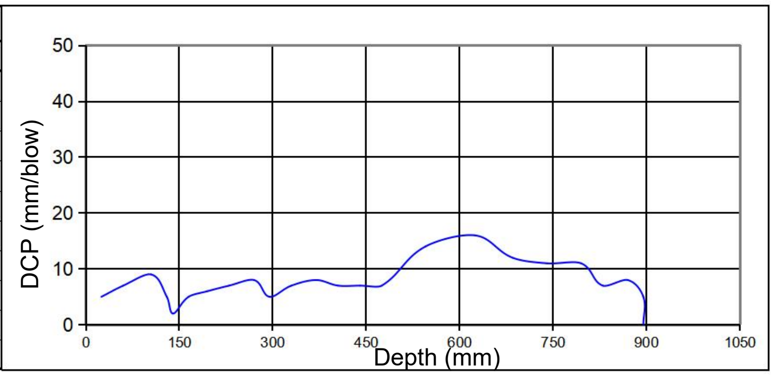
DCP Readings *Blows per reading:* **5**

no.	*mm*	*no.*	*mm*	*no.*	*mm*	*no.*	*mm*	*no.*	*mm*
1	**25**	11	**330**	21	**830**	31		41	
2	**60**	12	**370**	22	**870**	32		42	
3	**105**	13	**405**	23	**895**	33		43	
4	**130**	14	**440**	24		34		44	
5	**140**	15	**475**	25		35		45	
6	**165**	16	**545**	26		36		46	
7	**195**	17	**625**	27		37		47	
8	**230**	18	**685**	28		38		48	
9	**270**	19	**740**	29		39		49	
10	**295**	20	**795**	30		40		50	

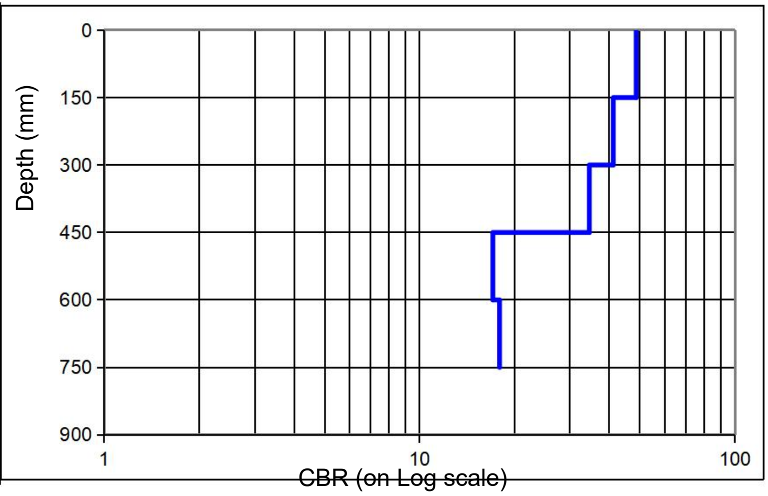


DCP number (mm / Blow) DN

DN	*mm*	*DN*	*mm*	*DN*	*mm*	*DN*	*mm*	*DN*	*mm*
5	25	7	330	7	830				
7	60	8	370	8	870				
9	105	7	405	5	895				
5	130	7	440						
2	140	7	475						
5	165	14	545						
6	195	16	625						
7	230	12	685						
8	270	11	740						
5	295	11	795						



	Depth (mm)				*In situ*	*Blows/mm*	
no.	*From*	-	*To*	*DN*	*CBR*	150mm	300mm
1	1	-	150	5,6	**49**	27	**25,4**
2	151	-	300	6,3	**41**	24	
3	301	-	450	7,2	**35**	21	**16,4**
4	451	-	600	12,5	**17**	12	
5	601	-	750	12,0	**18**	12	
6	751	-	900				
8	901	-	1050				
9	1051	-	1200				
10	1201	-	1350				
11	1351	-	1500				
12	1501	-	1650				
13	1651	-	1800				
14	1801	-	1950				
15	1951	-	2100				



REMARKS: Max penetration depth 895 mm

Where values are presented as continued "cont", refer to the adjacent graphs where DN values vs depth and penetration vs depths can be read.

Signature

22 Frara Drive, Pinelands, Pinetown, 3610
Cell: 031 350 3370
Email: info@bavconsulting.co.za
Reg: 2017/499605/07

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TEST REPORT FOR DYNAMIC CONE PENETROMETER *BY TEST METHOD TMH6-ST6*

CLIENT: ESKOM
DATE REPORTED: 22/08/2023
OUR REF: MAK1520823

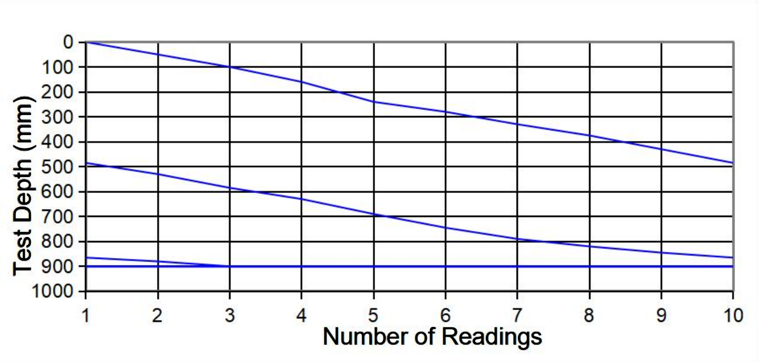
PROJECT: Geotechnical Investigation: Komati Power Station
ATTENTION: Eskom
Tel/Email: 031 350 3370

DESCRIPTION: DCP test was done from existing ground level
DATE TESTED: 22/08/2023
DCP No: DCP46 at TP46

DCP Readings

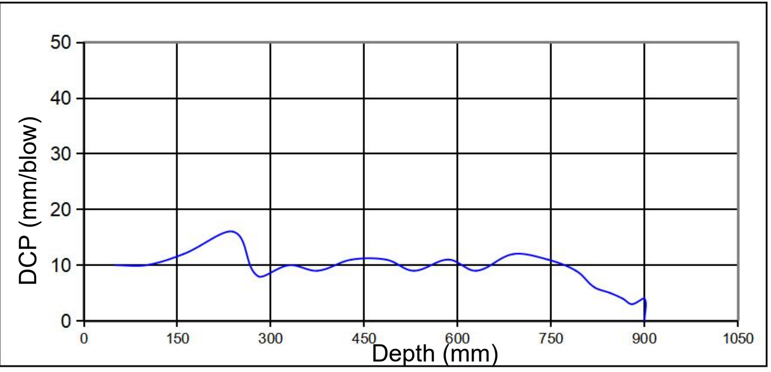
Blows per reading: **5**

no.	*mm*	*no.*	*mm*	*no.*	*mm*	*no.*	*mm*	*no.*	*mm*
1	**50**	11	**585**	21		31		41	
2	**100**	12	**630**	22		32		42	
3	**160**	13	**690**	23		33		43	
4	**240**	14	**745**	24		34		44	
5	**280**	15	**790**	25		35		45	
6	**330**	16	**820**	26		36		46	
7	**375**	17	**845**	27		37		47	
8	**430**	18	**865**	28		38		48	
9	**485**	19	**880**	29		39		49	
10	**530**	20	**900**	30		40		50	

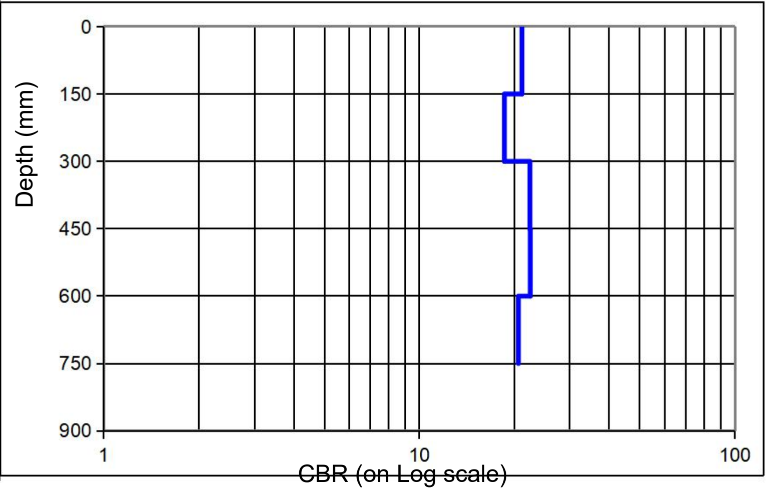


DCP number (mm / Blow) DN

DN	*mm*	*DN*	*mm*	*DN*	*mm*	*DN*	*mm*	*DN*	*mm*
10	50	11	585						
10	100	9	630						
12	160	12	690						
16	240	11	745						
8	280	9	790						
10	330	6	820						
9	375	5	845						
11	430	4	865						
11	485	3	880						
9	530	4	900						



	Depth (mm)				*In situ*	*Blows/mm*	
no.	*From*	-	*To*	*DN*	*CBR*	150mm	300mm
1	1	-	150	10,6	**21**	14	**13,5**
2	151	-	300	11,7	**19**	13	
3	301	-	450	10,1	**22**	15	**14,8**
4	451	-	600	10,1	**22**	15	
5	601	-	750	10,8	**21**	14	
6	751	-	900				
8	901	-	1050				
9	1051	-	1200				
10	1201	-	1350				
11	1351	-	1500				
12	1501	-	1650				
13	1651	-	1800				
14	1801	-	1950				
15	1951	-	2100				



REMARKS: Max penetration depth 900 mm

Where values are presented as continued "cont", refer to the adjacent graphs where DN values vs depth and penetration vs depths can be read.

Signature

22 Frara Drive, Pinelands, Pinetown, 3610
Cell: 031 350 3370
Email: info@bavconsulting.co.za
Reg: 2017/499605/07

BAV CONSULTING

TEST REPORT FOR DYNAMIC CONE PENETROMETER *BY TEST METHOD TMH6-ST6*

CLIENT: ESKOM **DATE REPORTED: 22/08/2023**
OUR REF: MAK1520823

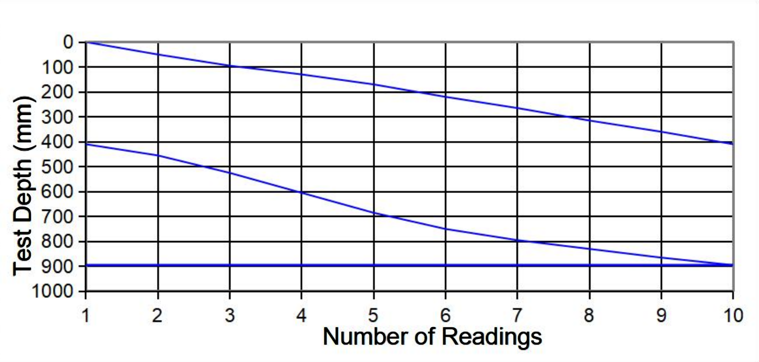
PROJECT: Geotechnical Investigation: Komati Power Station
ATTENTION: Eskom
Tel/Email: 031 350 3370

DESCRIPTION: DCP test was done from existing ground level **DATE TESTED: 22/08/2023**
DCP No: DCP47 at TP47

DCP Readings

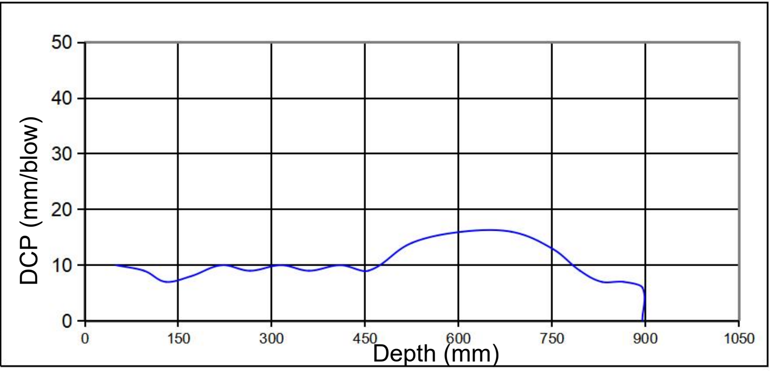
Blows per reading: **5**

no.	*mm*	*no.*	*mm*	*no.*	*mm*	*no.*	*mm*	*no.*	*mm*
1	**50**	11	**525**	21		31		41	
2	**95**	12	**605**	22		32		42	
3	**130**	13	**685**	23		33		43	
4	**170**	14	**750**	24		34		44	
5	**220**	15	**795**	25		35		45	
6	**265**	16	**830**	26		36		46	
7	**315**	17	**865**	27		37		47	
8	**360**	18	**895**	28		38		48	
9	**410**	19		29		39		49	
10	**455**	20		30		40		50	

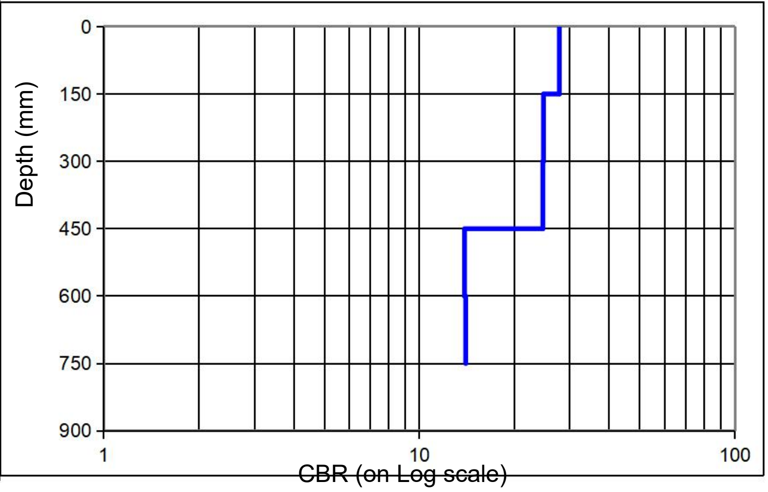


DCP number (mm / Blow) DN

DN	*mm*	*DN*	*mm*	*DN*	*mm*	*DN*	*mm*	*DN*	*mm*
10	50	14	525						
9	95	16	605						
7	130	16	685						
8	170	13	750						
10	220	9	795						
9	265	7	830						
10	315	7	865						
9	360	6	895						
10	410								
9	455								



	Depth (mm)				*In situ*	*Blows/mm*	
no.	*From*	-	*To*	*DN*	*CBR*	150mm	300mm
1	1	-	150	8,6	**28**	18	**16,8**
2	151	-	300	9,4	**25**	16	
3	301	-	450	9,4	**25**	16	**13,1**
4	451	-	600	14,6	**14**	10	
5	601	-	750	14,5	**14**	10	
6	751	-	900				
8	901	-	1050				
9	1051	-	1200				
10	1201	-	1350				
11	1351	-	1500				
12	1501	-	1650				
13	1651	-	1800				
14	1801	-	1950				
15	1951	-	2100				



REMARKS: Max penetration depth **895** **mm**

Where values are presented as continued "cont", refer to the adjacent graphs where DN values vs depth and penetration vs depths can be read.

Signature

APPENDIX C: LABORATORY TEST RESULTS

(SANS 3001-GR1, GR3, GR10, GR20, GR30, GR40, PR5: 2013 – Civil Engineering test methods – Foundation Indicator Tests – SANS Accredited Soil Laboratory)

Specialised Testing Laboratory (Pty) Ltd
Asphalt | Aggregate | Bitumen | Geotechnical

Unit 1, 13 Bloubokkie Street, Koedoespoort 0186
Roelof | 072 674 6343 | roelof@stlab.co.za
Gerrie | 082 309 4448 | gerrie@stlab.co.za
www.stlab.co.za

Quality | Excellence | On Time

Client Name: BAV Consulting (Pty) Ltd
Project Name: Komati Power Station Repurposing
Job Number: PVT-291
Date: 26-Oct-23
Method: SANS 3001 GR1, GR3, GR10, GR12 GR20, GR30, GR31, GR40, GR50, GR53, GR54 & BS 1377 (where applicable)

SUMMARY OF TEST DATA

Sheet Reference:
R-STL-038 Rev01

Grading & Hydrometer Analysis (% Passing)

Sample	KTP1	KTP2	KTP3	KTP4	KTP5	KTP7	KTP8	KTP12
Depth (m)	0.7 - 2.2	0.8 - 2.4	0.0 - 0.4	0.3 - 2.3	0.4 - 2.5	0.0 - 1.9	0.4 - 2.3	0.0 - 0.6
Lab No	PVT-291-2026	PVT-291-2027	PVT-291-2028	PVT-291-2029	PVT-291-2030	PVT-291-2032	PVT-291-2033	PVT-291-2035
53.0	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
37.5	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
26.5	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
19.0	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
13.2	**99**	**100**	**100**	**100**	**99**	**99**	**100**	**100**
9.5	**96**	**99**	**100**	**99**	**97**	**85**	**100**	**98**
6.7	**91**	**95**	**100**	**96**	**95**	**67**	**99**	**96**
4.75	**87**	**93**	**100**	**93**	**91**	**58**	**98**	**93**
2.0	**83**	**89**	**100**	**89**	**84**	**48**	**96**	**91**
1.0	**80**	**85**	**99**	**86**	**81**	**45**	**93**	**89**
0.425	**70**	**77**	**88**	**78**	**73**	**39**	**84**	**75**
0.250	**57**	**68**	**65**	**66**	**64**	**34**	**75**	**60**
0.150	**42**	**55**	**41**	**53**	**51**	**26**	**60**	**40**
0.075	**26**	**39**	**26**	**38**	**36**	**17**	**47**	**23**
0.060	**21**	**33**	**21**	**34**	**31**	**14**	**40**	**19**
0.050	**18**	**30**	**19**	**32**	**29**	**13**	**37**	**17**
0.035	**14**	**25**	**15**	**29**	**25**	**11**	**31**	**14**
0.020	**12**	**23**	**11**	**26**	**23**	**9**	**28**	**12**
0.006	**10**	**20**	**7**	**23**	**20**	**7**	**24**	**9**
0.002	**9**	**17**	**4**	**21**	**19**	**5**	**20**	**6**
GM	**1.21**	**0.95**	**0.86**	**0.95**	**1.07**	**1.96**	**0.73**	**1.11**

Atterberg Limits

LL (%)	**17**	**23**	**-**	**29**	**29**	**20**	**26**	**-**
PI (%)	**3**	**11**	**SP**	**16**	**15**	**5**	**13**	**SP**
LS (%)	**2.5**	**5.0**	**0.5**	**8.0**	**7.5**	**2.5**	**6.0**	**0.5**

pH & Conductivity

pH			**6.2**			**6.1**		
EC (S/m)			**0.014**			**0.005**		

MDD / OMC

MDD (kg/m^3)	**2062**	**1951**		**1835**	**1872**			
OMC (%)	**9.4**	**11.9**		**15.6**	**13.9**			

CBR

100%	**11.6**	**9.0**		**5.2**	**5.5**			
98%	**10.6**	**8.0**		**4.4**	**4.7**			
97%	**10.1**	**7.6**		**4.0**	**4.4**			
95%	**9.0**	**6.7**		**3.3**	**3.6**			
93%	**8.1**	**5.9**		**2.8**	**3.0**			
90%	**6.8**	**4.9**		**2.1**	**2.3**			
Swell (%)	**0.1**	**0.2**		**1.0**	**0.5**			

UCS (MPa)

100%								
97%								
90%								

COLTO Classification

	G9	*****		*****	*****			

Remarks: *= Not Classifiable

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Asphalt | Aggregate | Bitumen | Geotechnical

Unit 1, 13 Bloubokkie Street, Koedoespoort 0186
Roelof | 072 674 6343 | roelof@stlab.co.za
Gerrie | 082 309 4448 | gerrie@stlab.co.za
www.stlab.co.za

Quality | Excellence | On Time

Client Name: BAV Consulting (Pty) Ltd
Project Name: Komati Power Station Repurposing
Job Number: PVT-291
Date: 26-Oct-23
Method: SANS 3001 GR1, GR3, GR10, GR12 GR20, GR30, GR31, GR40, GR50, GR53, GR54 & BS 1377 (where applicable)

SUMMARY OF TEST DATA

Sheet Reference:
R-STL-038 Rev01

Grading & Hydrometer Analysis (% Passing)

Sample	KTP13	KTP14	KTP16	KTP19	KTP20	KTP21	KTP22	KTP23
Depth (m)	0.3 - 1.8	0.3 - 1.8	0.3 - 2.1	0.6 - 2.3	0.1 - 2.7	0.1 - 2.4	0.2 - 2.3	0.3 - 2.4
Lab No	PVT-291-2036	PVT-291-2037	PVT-291-2038	PVT-291-2040	PVT-291-2041	PVT-291-2042	PVT-291-2043	PVT-291-2044
53.0	100	100	100	100	100	100	100	100
37.5	100	100	100	100	100	100	100	100
26.5	100	100	100	100	100	100	100	100
19.0	100	100	100	100	100	100	100	100
13.2	100	100	100	99	100	100	100	100
9.5	100	100	100	97	100	98	100	98
6.7	98	100	96	88	99	92	99	93
4.75	94	99	89	80	98	84	98	88
2.0	88	97	63	71	96	75	96	81
1.0	85	94	52	68	96	72	94	80
0.425	76	86	42	60	92	65	88	72
0.250	66	78	37	51	83	60	77	64
0.150	51	62	31	41	64	44	52	49
0.075	41	48	24	30	43	31	35	33
0.060	38	44	21	26	38	27	30	28
0.050	36	41	19	24	35	25	27	25
0.035	33	37	17	21	30	23	22	21
0.020	30	32	15	18	26	20	19	17
0.006	26	26	12	13	20	16	14	13
0.002	24	22	9	10	17	13	10	11
GM	0.95	0.69	1.71	1.39	0.69	1.29	0.81	1.14

Atterberg Limits

LL (%)	29	33	29	26	27	26	20	25
PI (%)	14	17	13	12	12	10	6	10
LS (%)	7.0	8.5	6.5	5.5	6.0	5.0	3.0	5.0

pH & Conductivity

pH		6.4			6.1		7.0	
EC (S/m)		0.018			0.017		0.007	

MDD / OMC

MDD (kg/m^3)	1883		2071		1843	2095		1991
OMC (%)	13.9		9.5		13.1	10.7		11.7

CBR

100%	8.2		22		5.8	24		10.5
98%	7.6		21		5.1	22		9.5
97%	7.3		20		4.8	21		9.0
95%	6.7		19		4.1	19		8.2
93%	5.9		16		3.5	16		7.5
90%	4.1		13		2.8	13		6.6
Swell (%)	0.3		0.3		0.6	0.0		0.2

UCS (MPa)

100%								
97%								
90%								

COLTO Classification

	*		G7		*	G7		G9

Remarks: *= Not Classifiable

Specialised Testing Laboratory (Pty) Ltd
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Quality | Excellence | On Time

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Method: SANS 3001 GR1, GR3, GR10, GR12 GR20, GR30, GR31, GR40, GR50, GR53, GR54 & BS 1377 (where applicable)

SUMMARY OF TEST DATA

Sheet Reference:
R-STL-038 Rev01

Grading & Hydrometer Analysis (% Passing)

Sample	KTP25	KTP26	KTP28	KTP29	KTP30	KTP31	KTP32	KTP33
Depth (m)	0.4 - 2.3	0.6 - 2.1	0.2 - 2.2	0.5 - 2.8	0.2 - 2.4	0.2 - 2.1	0.2 - 2.2	0.2 - 2.4
Lab No	PVT-291-2046	PVT-291-2047	PVT-291-2049	PVT-291-2050	PVT-291-2051	PVT-291-2052	PVT-291-2053	PVT-291-2054
53.0	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
37.5	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
26.5	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
19.0	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
13.2	**100**	**99**	**100**	**100**	**100**	**100**	**100**	**100**
9.5	**99**	**95**	**98**	**100**	**100**	**99**	**99**	**100**
6.7	**99**	**87**	**95**	**100**	**99**	**95**	**98**	**98**
4.75	**97**	**79**	**91**	**99**	**97**	**91**	**96**	**94**
2.0	**91**	**69**	**86**	**96**	**93**	**87**	**91**	**88**
1.0	**87**	**66**	**84**	**94**	**90**	**86**	**89**	**86**
0.425	**73**	**60**	**80**	**86**	**83**	**81**	**77**	**80**
0.250	**62**	**51**	**72**	**72**	**72**	**74**	**65**	**67**
0.150	**43**	**42**	**59**	**59**	**61**	**67**	**54**	**51**
0.075	**32**	**32**	**44**	**43**	**44**	**52**	**43**	**38**
0.060	**29**	**29**	**40**	**39**	**38**	**47**	**40**	**34**
0.050	**27**	**27**	**38**	**37**	**35**	**44**	**38**	**32**
0.035	**24**	**23**	**35**	**33**	**31**	**40**	**35**	**28**
0.020	**22**	**20**	**32**	**29**	**27**	**34**	**31**	**25**
0.006	**18**	**18**	**29**	**26**	**22**	**27**	**27**	**22**
0.002	**14**	**17**	**27**	**23**	**19**	**25**	**23**	**21**
GM	**1.04**	**1.39**	**0.90**	**0.75**	**0.80**	**0.80**	**0.89**	**0.94**

Atterberg Limits

LL (%)	**19**	**30**	**38**	**29**	**35**	**36**	**28**	**30**
PI (%)	**5**	**14**	**20**	**12**	**13**	**17**	**11**	**13**
LS (%)	**2.5**	**6.5**	**9.5**	**6.0**	**7.0**	**8.5**	**5.5**	**6.5**

pH & Conductivity

pH			**6.1**			**5.9**		
EC (S/m)			**0.023**			**0.015**		

MDD / OMC

MDD (kg/m^3)	**2000**	**1968**		**1872**	**1675**		**2022**	**1965**
OMC (%)	**12.5**	**11.6**		**13.5**	**18.9**		**11.1**	**11.7**

CBR

100%	**15**	**8.2**		**8.7**	**10.0**		**15**	**13**
98%	**13**	**7.2**		**8.2**	**9.8**		**14**	**12**
97%	**12**	**6.8**		**7.7**	**9.4**		**13**	**11**
95%	**9**	**6.0**		**6.8**	**8.6**		**12**	**10**
93%	**6**	**5.3**		**6.1**	**7.0**		**10**	**9**
90%	**4**	**4.4**		**5.1**	**6.8**		**8**	**7**
Swell (%)	**0.0**	**0.1**		**0.0**	**0.4**		**0.1**	**0.3**

UCS (MPa)

100%								
97%								
90%								

COLTO Classification

	*****	*****		*****	*****		**G8**	*****

Remarks: *= Not Classifiable

Specialised Testing Laboratory (Pty) Ltd
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Quality | Excellence | On Time

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Job Number: PVT-291
Date: 26-Oct-23
Method: SANS 3001 GR1, GR3, GR10, GR12 GR20, GR30, GR31, GR40, GR50, GR53, GR54 & BS 1377 (where applicable)

SUMMARY OF TEST DATA

Sheet Reference:
R-STL-038 Rev01

Grading & Hydrometer Analysis (% Passing)

Sample	KTP35	KTP36	KTP37	KTP39	KTP41	KTP42	KTP43	KTP44
Depth (m)	0.2 - 2.6	0.9 - 1.9	0.3 - 2.4	1.1 - 3.2	1.4 - 2.0	0.7 - 2.5	0.1 - 2.4	0.1 - 2.6
Lab No	PVT-291-2056	PVT-291-2057	PVT-291-2058	PVT-291-2060	PVT-291-2062	PVT-291-2063	PVT-291-2064	PVT-291-2065
53.0	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
37.5	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
26.5	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
19.0	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
13.2	**100**	**100**	**92**	**98**	**100**	**100**	**100**	**100**
9.5	**99**	**100**	**85**	**96**	**99**	**100**	**100**	**98**
6.7	**95**	**100**	**72**	**93**	**99**	**100**	**100**	**96**
4.75	**92**	**100**	**62**	**91**	**99**	**100**	**100**	**94**
2.0	**85**	**100**	**48**	**88**	**98**	**98**	**100**	**91**
1.0	**83**	**96**	**45**	**86**	**96**	**97**	**99**	**89**
0.425	**75**	**79**	**40**	**76**	**81**	**90**	**89**	**82**
0.250	**59**	**46**	**34**	**59**	**47**	**81**	**78**	**68**
0.150	**48**	**29**	**30**	**46**	**31**	**67**	**68**	**52**
0.075	**35**	**20**	**23**	**33**	**22**	**49**	**54**	**36**
0.060	**31**	**17**	**20**	**29**	**17**	**41**	**47**	**30**
0.050	**28**	**15**	**19**	**27**	**15**	**37**	**44**	**27**
0.035	**24**	**12**	**17**	**23**	**12**	**31**	**40**	**23**
0.020	**20**	**9**	**15**	**19**	**10**	**28**	**37**	**21**
0.006	**17**	**5**	**9**	**12**	**7**	**26**	**33**	**19**
0.002	**15**	**3**	**3**	**4**	**4**	**25**	**30**	**18**
GM	**1.05**	**1.01**	**1.89**	**1.03**	**0.99**	**0.63**	**0.57**	**0.91**

Atterberg Limits

LL (%)	**25**	**-**	**29**	**27**	**-**	**28**	**22**	**25**
PI (%)	**9**	**NP**	**13**	**13**	**NP**	**13**	**8**	**10**
LS (%)	**4.0**	**0.0**	**6.5**	**6.5**	**0.0**	**6.5**	**4.0**	**5.0**

pH & Conductivity

pH			**5.5**	**4.7**		**5.4**		
EC (S/m)			**0.007**	**0.070**		**0.014**		

MDD / OMC

MDD (kg/m^3)	**2030**	**1914**		**1910**	**1937**	**1889**		**1942**
OMC (%)	**10.3**	**10.5**		**12.0**	**10.0**	**13.9**		**11.1**

CBR

100%	**16**	**13**		**7.6**	**21**	**15**		**17**
98%	**15**	**12**		**6.6**	**18**	**14**		**16**
97%	**14**	**11**		**6.2**	**16**	**13**		**15**
95%	**12**	**10**		**4.9**	**14**	**11**		**13**
93%	**11**	**8**		**3.7**	**12**	**9**		**11**
90%	**9**	**5**		**2.5**	**9**	**7**		**9**
Swell (%)	**0.1**	**0.0**		**0.7**	**0.1**	**0.0**		**0.0**

UCS (MPa)

100%								
97%								
90%								

COLTO Classification

	G9	**G9**		*****	**G8**	*****		**G8**

Remarks: *= Not Classifiable

Client Name: BAV Consulting (Pty) Ltd
Project Name: Komati Power Station Repurposing
Job Number: PVT-291
Date: 26-Oct-23
Method: SANS 3001 GR1, GR3, GR10, GR12 GR20, GR30, GR31, GR40, GR50, GR53, GR54 & BS 1377 (where applicable)

SUMMARY OF TEST DATA

Sheet Reference:
R-STL-038 Rev01

Grading & Hydrometer Analysis (% Passing)

Sample	KTP45	KTP46	KTP47					
Depth (m)	0.1 - 2.2	1.0 - 2.3	0.4 - 2.2					
Lab No	PVT-291-2066	PVT-291-2067	PVT-291-2068					
53.0	**100**	**100**	**100**					
37.5	**100**	**100**	**100**					
26.5	**100**	**100**	**100**					
19.0	**100**	**100**	**100**					
13.2	**100**	**100**	**100**					
9.5	**100**	**100**	**99**					
6.7	**100**	**100**	**98**					
4.75	**100**	**100**	**96**					
2.0	**99**	**99**	**94**					
1.0	**98**	**97**	**92**					
0.425	**92**	**90**	**85**					
0.250	**75**	**79**	**73**					
0.150	**60**	**70**	**63**					
0.075	**46**	**57**	**52**					
0.060	**40**	**51**	**48**					
0.050	**37**	**48**	**46**					
0.035	**31**	**42**	**43**					
0.020	**28**	**39**	**39**					
0.006	**25**	**35**	**36**					
0.002	**23**	**33**	**35**					
GM	**0.63**	**0.54**	**0.69**					

Atterberg Limits

LL (%)	**29**	**32**	**40**					
PI (%)	**11**	**17**	**23**					
LS (%)	**6.0**	**8.5**	**12.0**					

pH & Conductivity

pH			**6.4**					
EC (S/m)			**0.027**					

MDD / OMC

MDD (kg/m^3)		**1911**						
OMC (%)		**12.9**						

CBR

100%		**11**						
98%		**10**						
97%		**9**						
95%		**8**						
93%		**6**						
90%		**4**						
Swell (%)		**0.1**						

UCS (MPa)

100%								
97%								
90%								

COLTO Classification

		*****						

Remarks: *= Not Classifiable

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Asphalt | Aggregate | Bitumen | Geotechnical
Quality | Excellence | On Time

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Client Name: BAV Consulting (Pty) Ltd
Project Name: Komati Power Station Repurposing
Job Number: PVT-291
Date: 2023-10-26
Method: SANS 3001 GR1, GR3, GR10 GR12 & BS 1377 (where applicable)

FOUNDATION INDICATOR

Sheet Reference:
R-STL-011 Rev02

Grading & Hydrometer Analysis (Particle Size (mm) & % Passing)				**Atterberg Limits & Classification**			
Sample	KTP1	KTP2	KTP3	Sample	KTP1	KTP2	KTP3
Depth (m)	0.7 - 2.2	0.8 - 2.4	0.0 - 0.4	Depth (m)	0.7 - 2.2	0.8 - 2.4	0.0 - 0.4
Lab No	PVT-291-2026	PVT-291-2027	PVT-291-2028	Lab No	PVT-291-2026	PVT-291-2027	PVT-291-2028
53.0	**100**	**100**	**100**	Liquid Limit (%)	**17**	**23**	**-**
37.5	**100**	**100**	**100**	Plastic Limit (%)	**14**	**12**	**-**
26.5	**100**	**100**	**100**	Plasticity Index (%)	**3**	**11**	**SP**
19.0	**100**	**100**	**100**	Linear Shrinkage (%)	**2.5**	**5.0**	**0.5**
13.2	**99**	**100**	**100**	PI of whole sample	**2**	**8**	**-**
9.5	**96**	**99**	**100**				
6.7	**91**	**95**	**100**	% Gravel	**17**	**11**	**0**
4.75	**87**	**93**	**100**	% Sand	**62**	**56**	**79**
2.00	**83**	**89**	**100**	% Silt	**12**	**16**	**17**
1.00	**80**	**85**	**99**	% Clay	**9**	**17**	**4**
0.425	**70**	**77**	**88**	Activity	**0.3**	**0.7**	**0.0**
0.250	**57**	**68**	**65**				
0.150	**42**	**55**	**41**	% Soil Mortar	**83**	**89**	**100**
0.075	**26**	**39**	**26**				
0.060	**21**	**33**	**21**	Grading Modulus	**1.21**	**0.95**	**0.86**
0.050	**18**	**30**	**19**	Moisture Content (%)	**N / T**	**N / T**	**N / T**
0.035	**14**	**25**	**15**	Relative Density (SG)*	**2.65**	**2.65**	**2.65**
0.020	**12**	**23**	**11**				
0.006	**10**	**20**	**7**	Unified (ASTM D2487)	**SC-SM**	**SC**	**SM**
0.002	**9**	**17**	**4**	AASHTO (M145-91)	**A - 2 - 4**	**A - 6**	**A - 2 - 4**

Remarks: *: Assumed
N / T: Not Tested

Specialised Testing Laboratory (Pty) Ltd
Asphalt | Aggregate | Bitumen | Geotechnical

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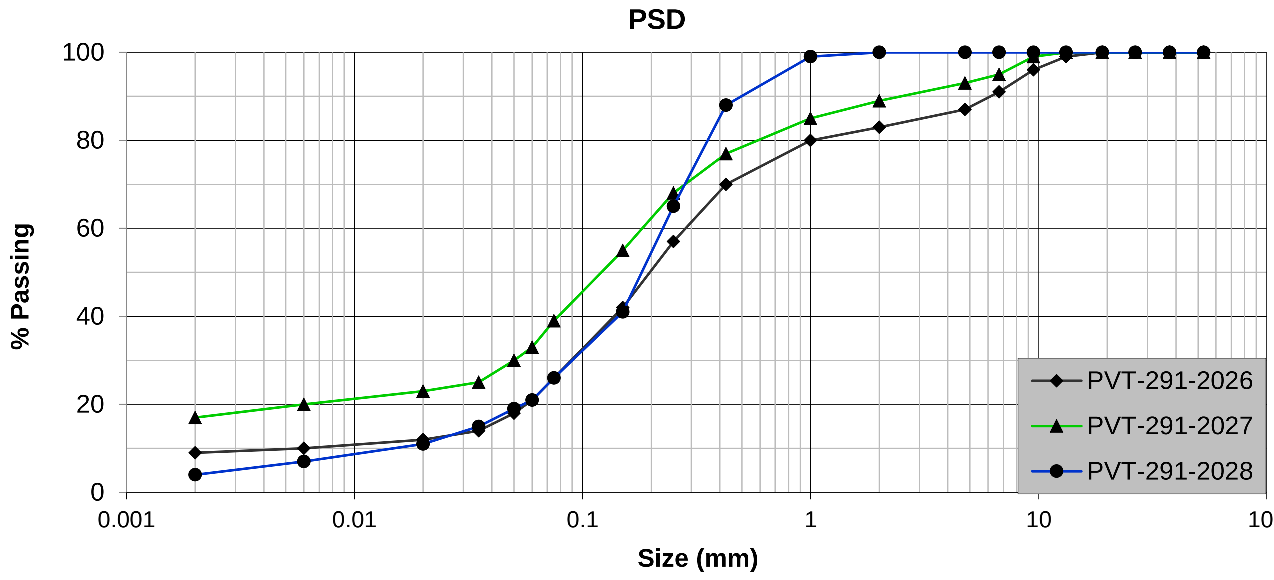
www.stlab.co.za

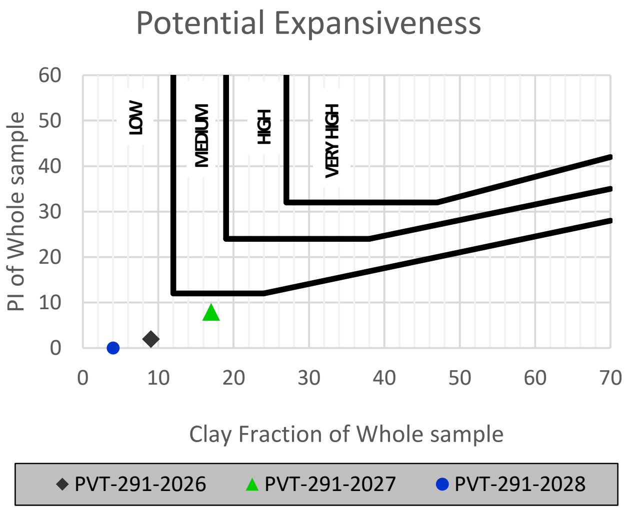
Quality | Excellence | On Time

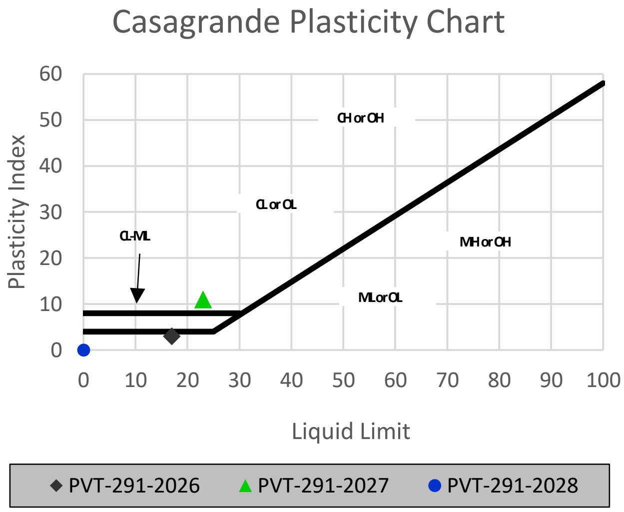
Client Name:	BAV Consulting (Pty) Ltd
Project Name:	Komati Power Station Repurposing
Job Number:	PVT-291
Date:	2023-10-26
Method:	SANS 3001 GR1, GR3, GR10 GR12 & BS 1377 (where applicable)

FOUNDATION INDICATOR

Sheet Reference:
R-STL-011 Rev02







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Date: 2023-10-26
Method: SANS 3001 GR1, GR3, GR10 GR12 & BS 1377 (where applicable)

FOUNDATION INDICATOR

Sheet Reference: R-STL-011 Rev02

Grading & Hydrometer Analysis (Particle Size (mm) & % Passing)				**Atterberg Limits & Classification**			
Sample	KTP4	KTP5	KTP7	Sample	KTP4	KTP5	KTP7
Depth (m)	0.3 - 2.3	0.4 - 2.5	0.0 - 1.9	Depth (m)	0.3 - 2.3	0.4 - 2.5	0.0 - 1.9
Lab No	PVT-291-2029	PVT-291-2030	PVT-291-2032	Lab No	PVT-291-2029	PVT-291-2030	PVT-291-2032
53.0	**100**	**100**	**100**	Liquid Limit (%)	**29**	**29**	**20**
37.5	**100**	**100**	**100**	Plastic Limit (%)	**13**	**14**	**15**
26.5	**100**	**100**	**100**	Plasticity Index (%)	**16**	**15**	**5**
19.0	**100**	**100**	**100**	Linear Shrinkage (%)	**8.0**	**7.5**	**2.5**
13.2	**100**	**99**	**99**	PI of whole sample	**12**	**11**	**2**
9.5	**99**	**97**	**85**				
6.7	**96**	**95**	**67**	% Gravel	**11**	**16**	**52**
4.75	**93**	**91**	**58**	% Sand	**55**	**53**	**34**
2.00	**89**	**84**	**48**	% Silt	**13**	**12**	**9**
1.00	**86**	**81**	**45**	% Clay	**21**	**19**	**5**
0.425	**78**	**73**	**39**	Activity	**0.8**	**0.8**	**1.0**
0.250	**66**	**64**	**34**				
0.150	**53**	**51**	**26**	% Soil Mortar	**89**	**84**	**48**
0.075	**38**	**36**	**17**				
0.060	**34**	**31**	**14**	Grading Modulus	**0.95**	**1.07**	**1.96**
0.050	**32**	**29**	**13**	Moisture Content (%)	**N / T**	**N / T**	**N / T**
0.035	**29**	**25**	**11**	Relative Density (SG)*	**2.65**	**2.65**	**2.65**
0.020	**26**	**23**	**9**				
0.006	**23**	**20**	**7**	Unified (ASTM D2487)	**SC**	**SC**	**GC-GM**
0.002	**21**	**19**	**5**	AASHTO (M145-91)	**A - 6**	**A - 6**	**A - 1 - b**

Remarks: *: Assumed
N / T: Not Tested

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Roelof | 072 674 6343 | roelof@stlab.co.za
Gerrie | 082 309 4448 | gerrie@stlab.co.za
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Client Name:	BAV Consulting (Pty) Ltd
Project Name:	Komati Power Station Repurposing
Job Number:	PVT-291
Date:	2023-10-26
Method:	SANS 3001 GR1, GR3, GR10 GR12 & BS 1377 (where applicable)

FOUNDATION INDICATOR

Sheet Reference:
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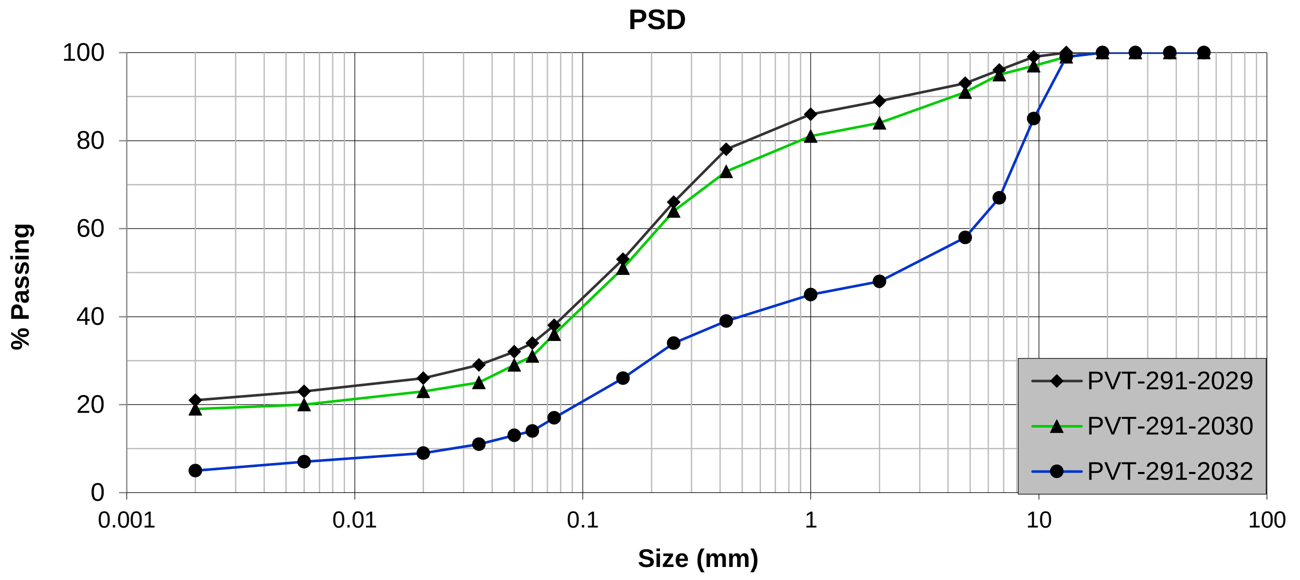

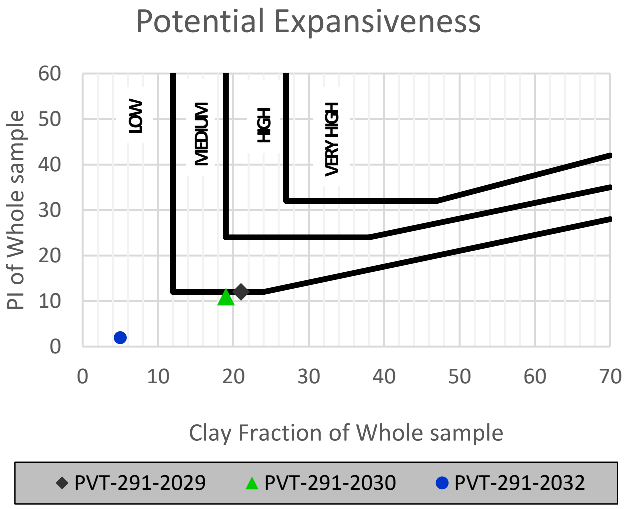

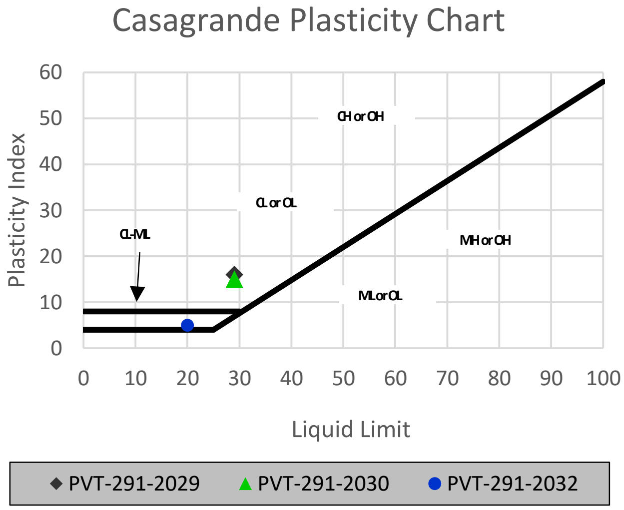

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Grading & Hydrometer Analysis (Particle Size (mm) & % Passing)				Atterberg Limits & Classification			
Sample	KTP8	KTP12	KTP13	Sample	KTP8	KTP12	KTP13
Depth (m)	0.4 - 2.3	0.0 - 0.6	0.3 - 1.8	Depth (m)	0.4 - 2.3	0.0 - 0.6	0.3 - 1.8
Lab No	PVT-291-2033	PVT-291-2035	PVT-291-2036	Lab No	PVT-291-2033	PVT-291-2035	PVT-291-2036
53.0	**100**	**100**	**100**	Liquid Limit (%)	**26**	**-**	**29**
37.5	**100**	**100**	**100**	Plastic Limit (%)	**13**	**-**	**15**
26.5	**100**	**100**	**100**	Plasticity Index (%)	**13**	**SP**	**14**
19.0	**100**	**100**	**100**	Linear Shrinkage (%)	**6.0**	**0.5**	**7.0**
13.2	**100**	**100**	**100**	PI of whole sample	**11**	**-**	**11**
9.5	**100**	**98**	**100**				
6.7	**99**	**96**	**98**	% Gravel	**4**	**9**	**12**
4.75	**98**	**93**	**94**	% Sand	**56**	**72**	**50**
2.00	**96**	**91**	**88**	% Silt	**20**	**13**	**14**
1.00	**93**	**89**	**85**	% Clay	**20**	**6**	**24**
0.425	**84**	**75**	**76**	Activity	**0.7**	**0.0**	**0.6**
0.250	**75**	**60**	**66**				
0.150	**60**	**40**	**51**	% Soil Mortar	**96**	**91**	**88**
0.075	**47**	**23**	**41**				
0.060	**40**	**19**	**38**	Grading Modulus	**0.73**	**1.11**	**0.95**
0.050	**37**	**17**	**36**	Moisture Content (%)	**N / T**	**N / T**	**N / T**
0.035	**31**	**14**	**33**	Relative Density (SG)*	**2.65**	**2.65**	**2.65**
0.020	**28**	**12**	**30**				
0.006	**24**	**9**	**26**	Unified (ASTM D2487)	**SC**	**SM**	**SC**
0.002	**20**	**6**	**24**	AASHTO (M145-91)	**A - 6**	**A - 2 - 4**	**A - 6**

Remarks: *: Assumed
N / T: Not Tested

Client Name: BAV Consulting (Pty) Ltd
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FOUNDATION INDICATOR

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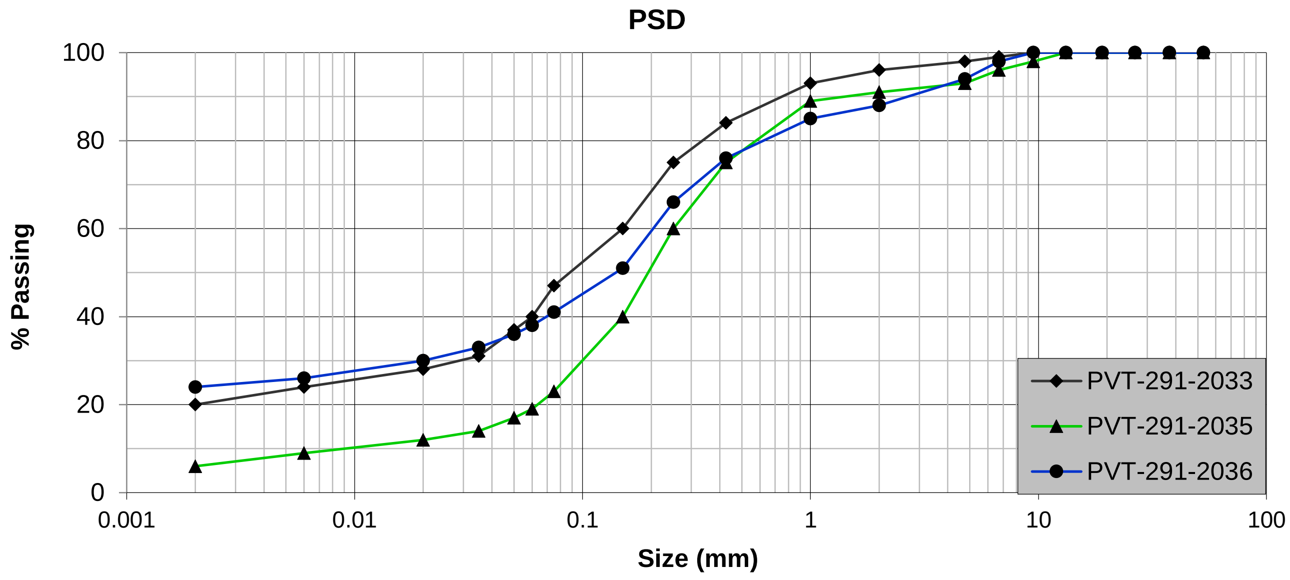

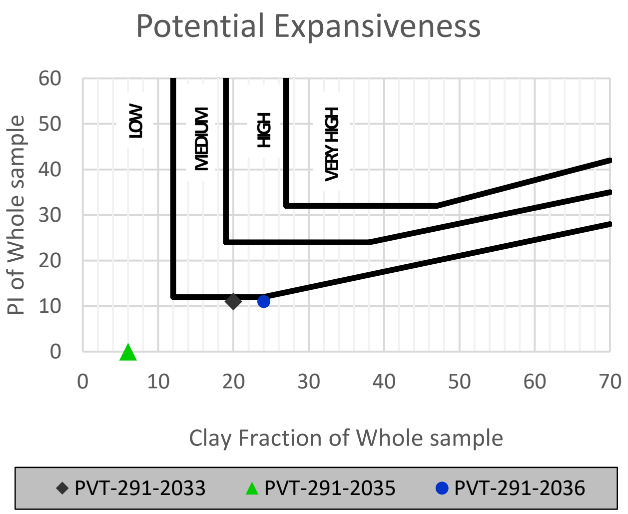

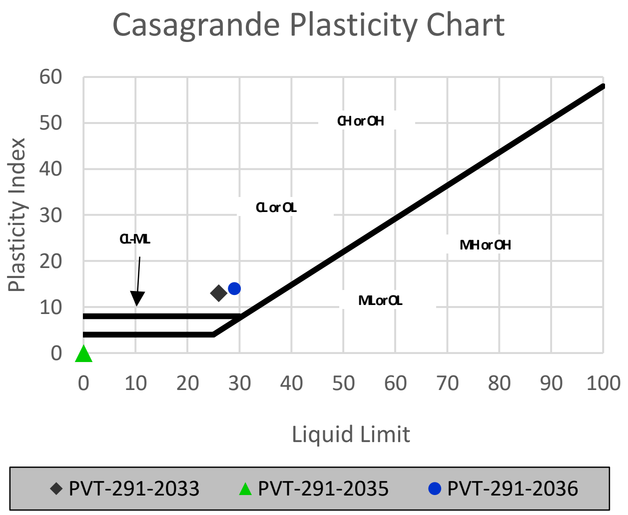

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Grading & Hydrometer Analysis

(Particle Size (mm) & % Passing)

Sample	KTP14	KTP16	KTP19
Depth (m)	0.3 - 1.8	0.3 - 2.1	0.6 - 2.3
Lab No	PVT-291-2037	PVT-291-2038	PVT-291-2040
53.0	**100**	**100**	**100**
37.5	**100**	**100**	**100**
26.5	**100**	**100**	**100**
19.0	**100**	**100**	**100**
13.2	**100**	**100**	**99**
9.5	**100**	**100**	**97**
6.7	**100**	**96**	**88**
4.75	**99**	**89**	**80**
2.00	**97**	**63**	**71**
1.00	**94**	**52**	**68**
0.425	**86**	**42**	**60**
0.250	**78**	**37**	**51**
0.150	**62**	**31**	**41**
0.075	**48**	**24**	**30**
0.060	**44**	**21**	**26**
0.050	**41**	**19**	**24**
0.035	**37**	**17**	**21**
0.020	**32**	**15**	**18**
0.006	**26**	**12**	**13**
0.002	**22**	**9**	**10**

Atterberg Limits & Classification

Sample	KTP14	KTP16	KTP19
Depth (m)	0.3 - 1.8	0.3 - 2.1	0.6 - 2.3
Lab No	PVT-291-2037	PVT-291-2038	PVT-291-2040
Liquid Limit (%)	**33**	**29**	**26**
Plastic Limit (%)	**16**	**16**	**14**
Plasticity Index (%)	**17**	**13**	**12**
Linear Shrinkage (%)	**8.5**	**6.5**	**5.5**
PI of whole sample	**15**	**5**	**7**
% Gravel	**3**	**37**	**29**
% Sand	**53**	**42**	**45**
% Silt	**22**	**12**	**16**
% Clay	**22**	**9**	**10**
Activity	**0.8**	**1.4**	**1.2**
% Soil Mortar	**97**	**63**	**71**
Grading Modulus	**0.69**	**1.71**	**1.39**
Moisture Content (%)	**N / T**	**N / T**	**N / T**
Relative Density (SG)*	**2.65**	**2.65**	**2.65**
Unified (ASTM D2487)	**SC**	**SC**	**SC**
AASHTO (M145-91)	**A - 6**	**A - 2 - 6**	**A - 2 - 6**

Remarks: *: Assumed
N / T: Not Tested

Client Name:	BAV Consulting (Pty) Ltd
Project Name:	Komati Power Station Repurposing
Job Number:	PVT-291
Date:	2023-10-26
Method:	SANS 3001 GR1, GR3, GR10 GR12 & BS 1377 (where applicable)

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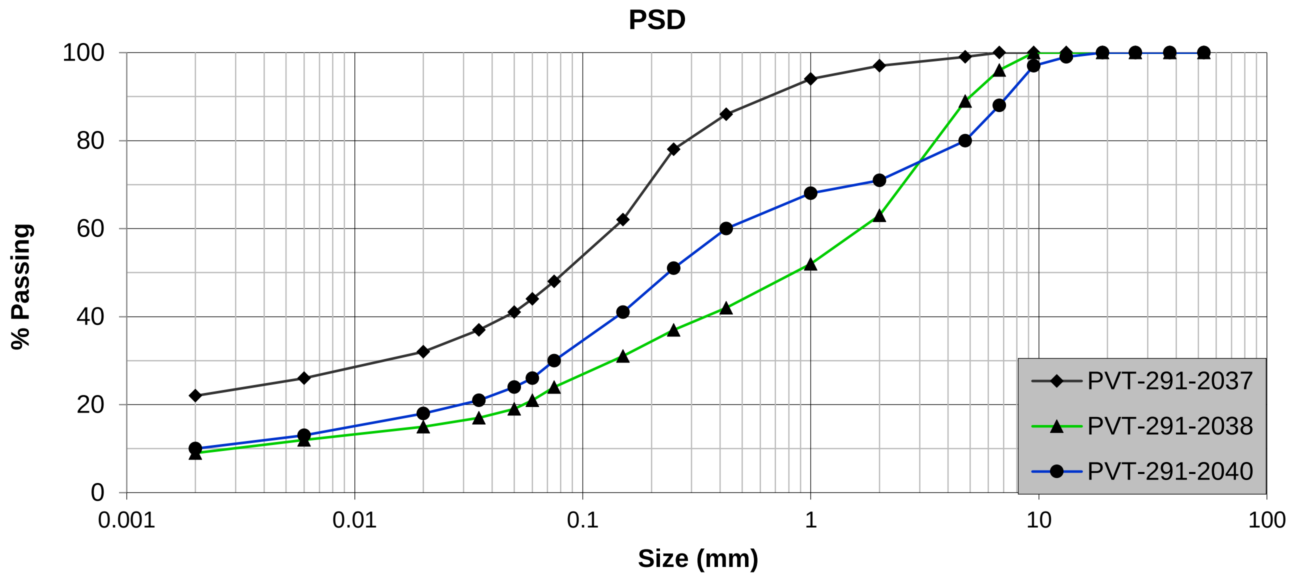

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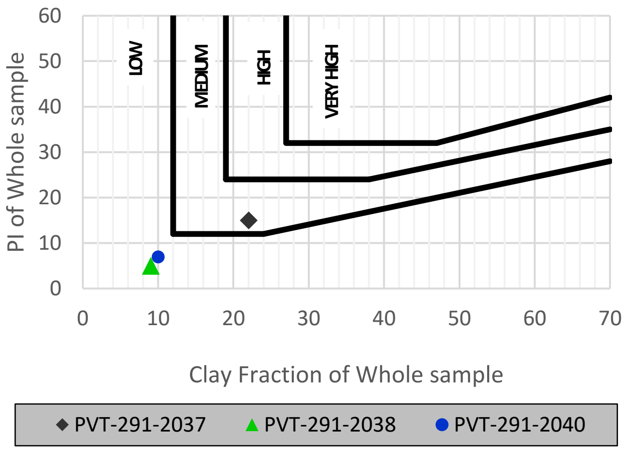
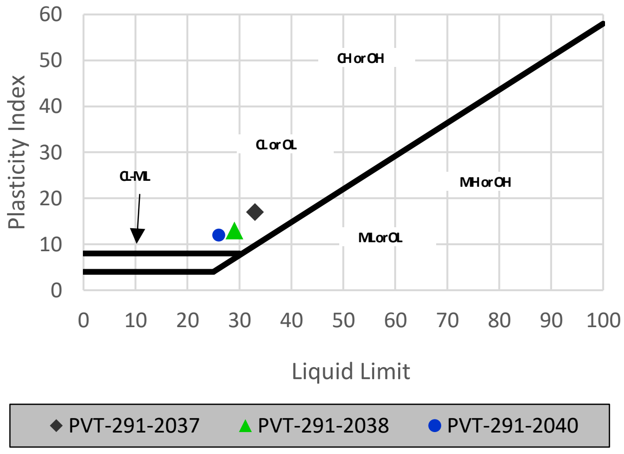


Casagrande Plasticity Chart



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Job Number:	PVT-291
Date:	2023-10-26
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Sheet Reference:
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Grading & Hydrometer Analysis (Particle Size (mm) & % Passing)				**Atterberg Limits & Classification**			
Sample	KTP20	KTP21	KTP22	Sample	KTP20	KTP21	KTP22
Depth (m)	0.1 - 2.7	0.1 - 2.4	0.2 - 2.3	Depth (m)	0.1 - 2.7	0.1 - 2.4	0.2 - 2.3
Lab No	PVT-291-2041	PVT-291-2042	PVT-291-2043	Lab No	PVT-291-2041	PVT-291-2042	PVT-291-2043
53.0	**100**	**100**	**100**	Liquid Limit (%)	**27**	**26**	**20**
37.5	**100**	**100**	**100**	Plastic Limit (%)	**15**	**16**	**14**
26.5	**100**	**100**	**100**	Plasticity Index (%)	**12**	**10**	**6**
19.0	**100**	**100**	**100**	Linear Shrinkage (%)	**6.0**	**5.0**	**3.0**
13.2	**100**	**100**	**100**	PI of whole sample	**11**	**7**	**5**
9.5	**100**	**98**	**100**				
6.7	**99**	**92**	**99**	% Gravel	**4**	**25**	**4**
4.75	**98**	**84**	**98**	% Sand	**58**	**48**	**66**
2.00	**96**	**75**	**96**	% Silt	**21**	**14**	**20**
1.00	**96**	**72**	**94**	% Clay	**17**	**13**	**10**
0.425	**92**	**65**	**88**	Activity	**0.7**	**0.8**	**0.6**
0.250	**83**	**60**	**77**				
0.150	**64**	**44**	**52**	% Soil Mortar	**96**	**75**	**96**
0.075	**43**	**31**	**35**				
0.060	**38**	**27**	**30**	Grading Modulus	**0.69**	**1.29**	**0.81**
0.050	**35**	**25**	**27**	Moisture Content (%)	**N / T**	**N / T**	**N / T**
0.035	**30**	**23**	**22**	Relative Density (SG)*	**2.65**	**2.65**	**2.65**
0.020	**26**	**20**	**19**				
0.006	**20**	**16**	**14**	Unified (ASTM D2487)	**SC**	**SC**	**SC-SM**
0.002	**17**	**13**	**10**	AASHTO (M145-91)	**A - 6**	**A - 2 - 4**	**A - 2 - 4**

Remarks: *: Assumed
N / T: Not Tested

Client Name:	BAV Consulting (Pty) Ltd
Project Name:	Komati Power Station Repurposing
Job Number:	PVT-291
Date:	2023-10-26
Method:	SANS 3001 GR1, GR3, GR10 GR12 & BS 1377 (where applicable)

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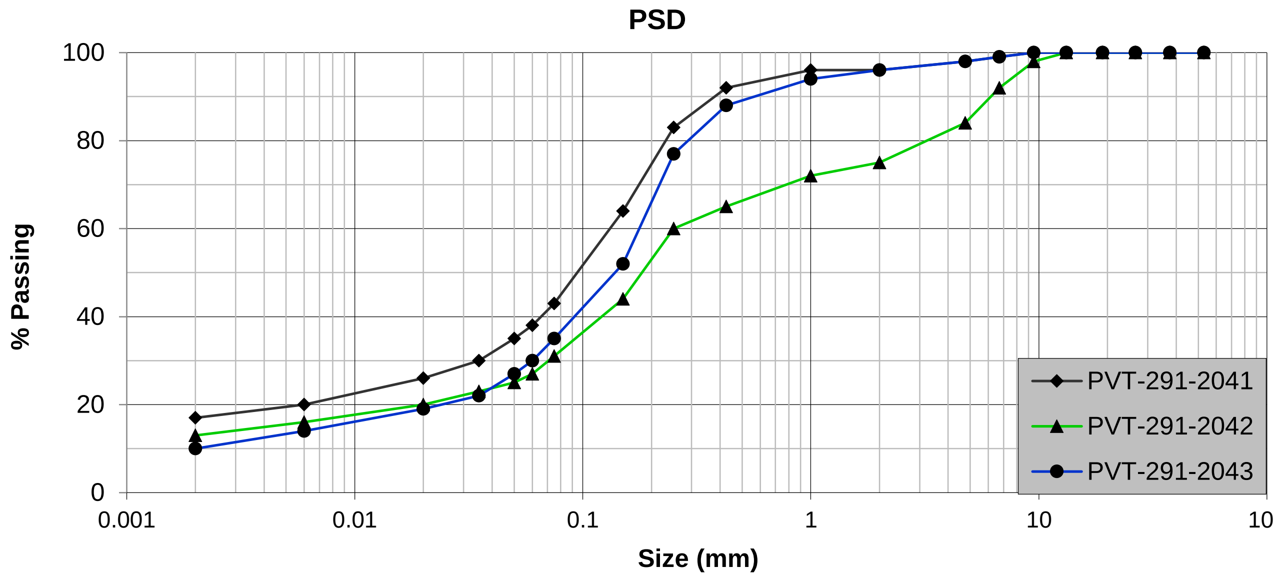

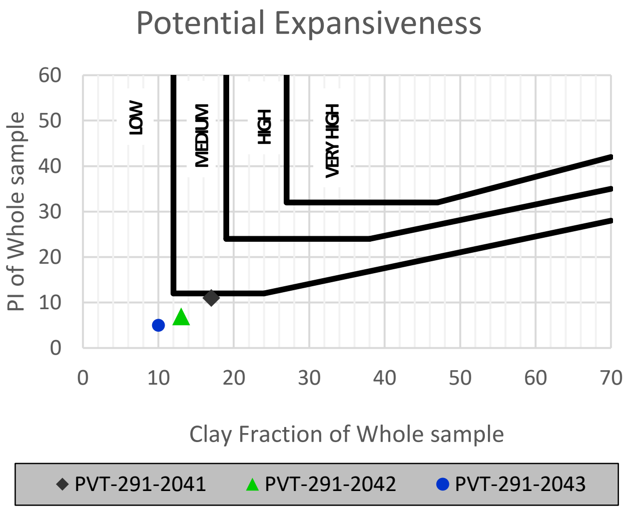

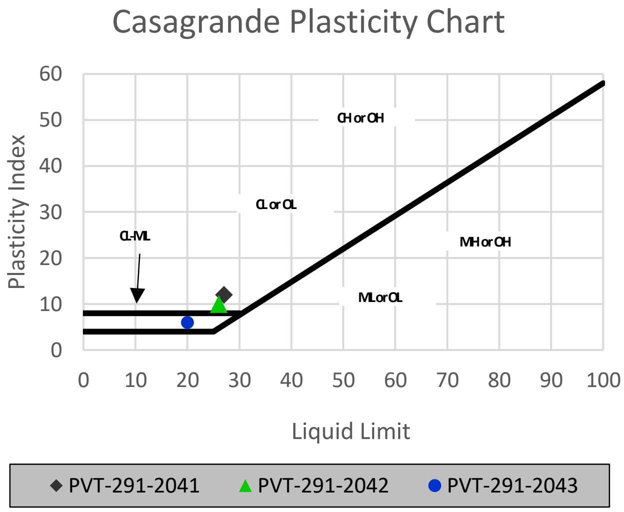

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Grading & Hydrometer Analysis
(Particle Size (mm) & % Passing)

Sample	KTP23	KTP25	KTP26
Depth (m)	0.3 - 2.4	0.4 - 2.3	0.6 - 2.1
Lab No	PVT-291-2044	PVT-291-2046	PVT-291-2047
53.0	**100**	**100**	**100**
37.5	**100**	**100**	**100**
26.5	**100**	**100**	**100**
19.0	**100**	**100**	**100**
13.2	**100**	**100**	**99**
9.5	**98**	**99**	**95**
6.7	**93**	**99**	**87**
4.75	**88**	**97**	**79**
2.00	**81**	**91**	**69**
1.00	**80**	**87**	**66**
0.425	**72**	**73**	**60**
0.250	**64**	**62**	**51**
0.150	**49**	**43**	**42**
0.075	**33**	**32**	**32**
0.060	**28**	**29**	**29**
0.050	**25**	**27**	**27**
0.035	**21**	**24**	**23**
0.020	**17**	**22**	**20**
0.006	**13**	**18**	**18**
0.002	**11**	**14**	**17**

Atterberg Limits & Classification

Sample	KTP23	KTP25	KTP26
Depth (m)	0.3 - 2.4	0.4 - 2.3	0.6 - 2.1
Lab No	PVT-291-2044	PVT-291-2046	PVT-291-2047
Liquid Limit (%)	**25**	**19**	**30**
Plastic Limit (%)	**15**	**14**	**16**
Plasticity Index (%)	**10**	**5**	**14**
Linear Shrinkage (%)	**5.0**	**2.5**	**6.5**
PI of whole sample	**7**	**4**	**8**
% Gravel	**19**	**9**	**31**
% Sand	**53**	**62**	**40**
% Silt	**17**	**15**	**12**
% Clay	**11**	**14**	**17**
Activity	**0.9**	**0.4**	**0.8**
% Soil Mortar	**81**	**91**	**69**
Grading Modulus	**1.14**	**1.04**	**1.39**
Moisture Content (%)	**N / T**	**N / T**	**N / T**
Relative Density (SG)*	**2.65**	**2.65**	**2.65**
Unified (ASTM D2487)	**SC**	**SC-SM**	**SC**
AASHTO (M145-91)	**A - 2 - 4**	**A - 2 - 4**	**A - 2 - 6**

Remarks: *: Assumed
N / T: Not Tested

Client Name: BAV Consulting (Pty) Ltd
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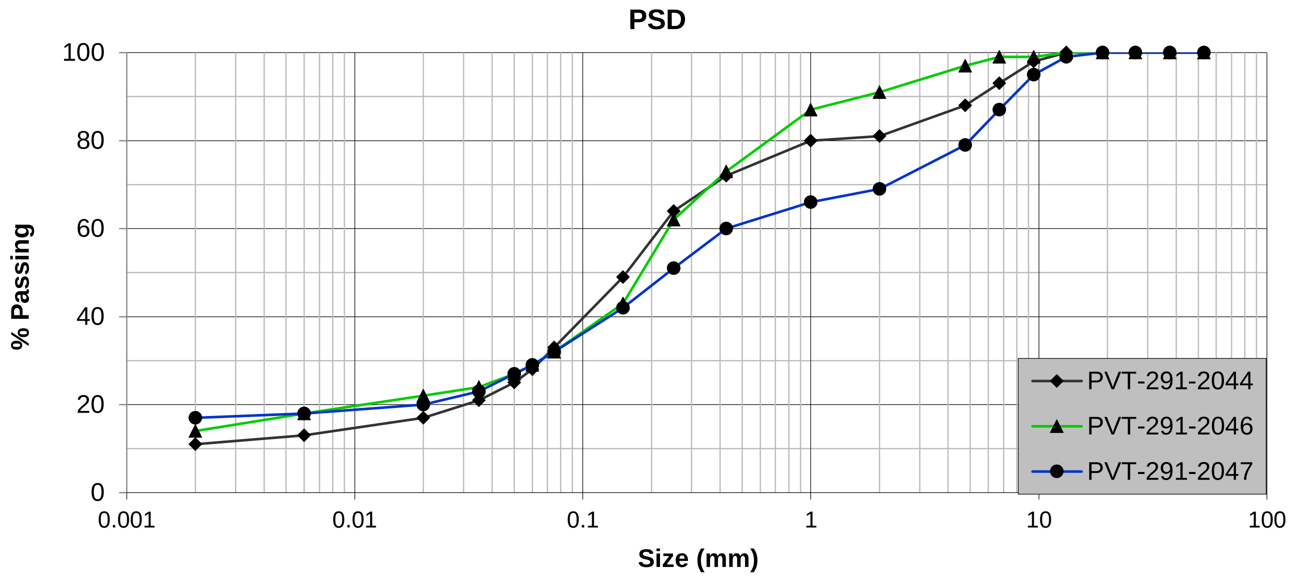
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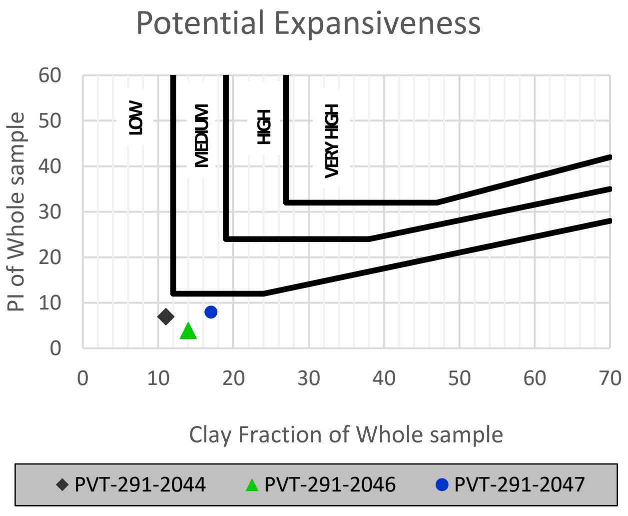
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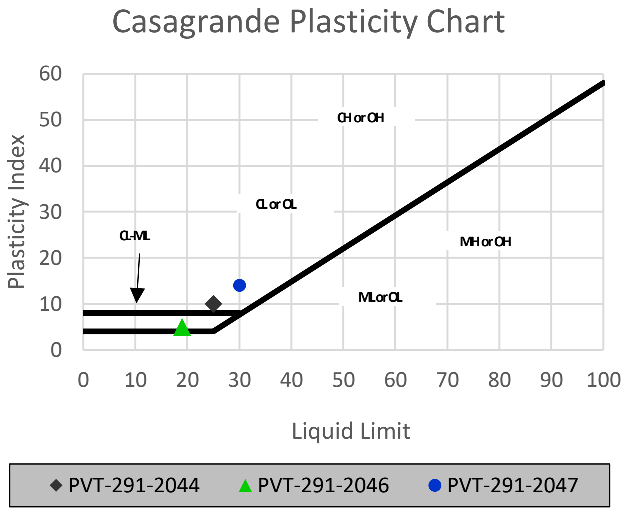
Casagrande Plasticity Chart

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FOUNDATION INDICATOR

Sheet Reference:
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Grading & Hydrometer Analysis (Particle Size (mm) & % Passing)				**Atterberg Limits & Classification**			
Sample	KTP28	KTP29	KTP30	Sample	KTP28	KTP29	KTP30
Depth (m)	0.2 - 2.2	0.5 - 2.8	0.2 - 2.4	Depth (m)	0.2 - 2.2	0.5 - 2.8	0.2 - 2.4
Lab No	PVT-291-2049	PVT-291-2050	PVT-291-2051	Lab No	PVT-291-2049	PVT-291-2050	PVT-291-2051
53.0	**100**	**100**	**100**	Liquid Limit (%)	**38**	**29**	**35**
37.5	**100**	**100**	**100**	Plastic Limit (%)	**18**	**17**	**22**
26.5	**100**	**100**	**100**	Plasticity Index (%)	**20**	**12**	**13**
19.0	**100**	**100**	**100**	Linear Shrinkage (%)	**9.5**	**6.0**	**7.0**
13.2	**100**	**100**	**100**	PI of whole sample	**16**	**10**	**11**
9.5	**98**	**100**	**100**				
6.7	**95**	**100**	**99**	% Gravel	**14**	**4**	**7**
4.75	**91**	**99**	**97**	% Sand	**46**	**57**	**55**
2.00	**86**	**96**	**93**	% Silt	**13**	**16**	**19**
1.00	**84**	**94**	**90**	% Clay	**27**	**23**	**19**
0.425	**80**	**86**	**83**	Activity	**0.7**	**0.5**	**0.7**
0.250	**72**	**72**	**72**				
0.150	**59**	**59**	**61**	% Soil Mortar	**86**	**96**	**93**
0.075	**44**	**43**	**44**				
0.060	**40**	**39**	**38**	Grading Modulus	**0.90**	**0.75**	**0.80**
0.050	**38**	**37**	**35**	Moisture Content (%)	**N / T**	**N / T**	**N / T**
0.035	**35**	**33**	**31**	Relative Density (SG)*	**2.65**	**2.65**	**2.65**
0.020	**32**	**29**	**27**				
0.006	**29**	**26**	**22**	Unified (ASTM D2487)	**SC**	**SC**	**SC**
0.002	**27**	**23**	**19**	AASHTO (M145-91)	**A - 6**	**A - 6**	**A - 6**

Remarks: *: Assumed
N / T: Not Tested

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Sheet Reference:
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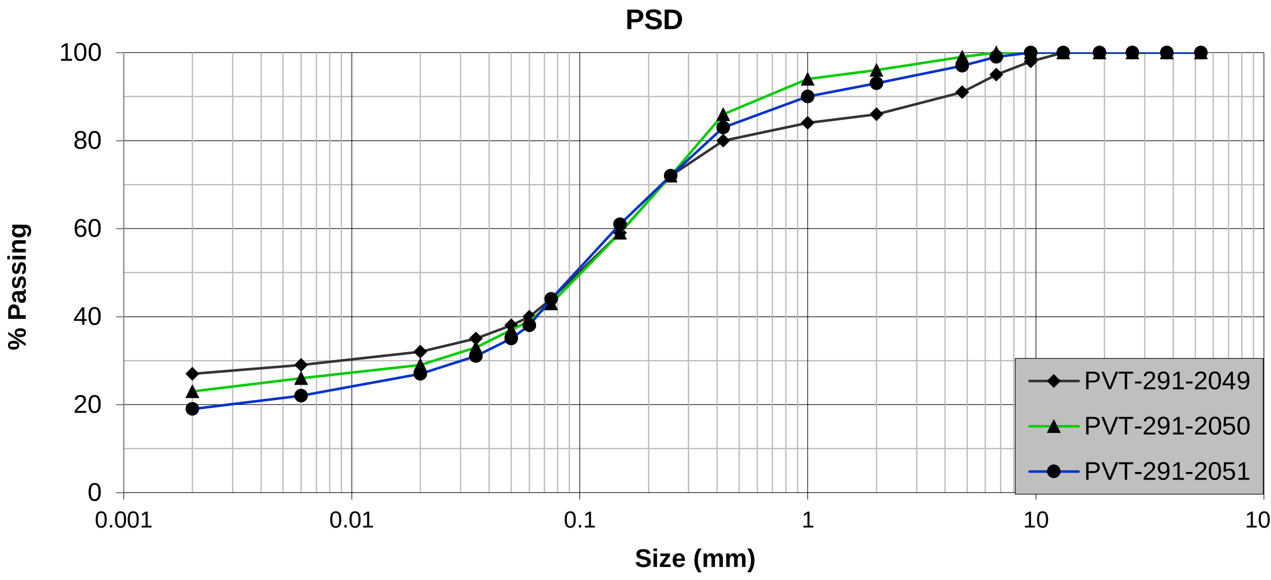

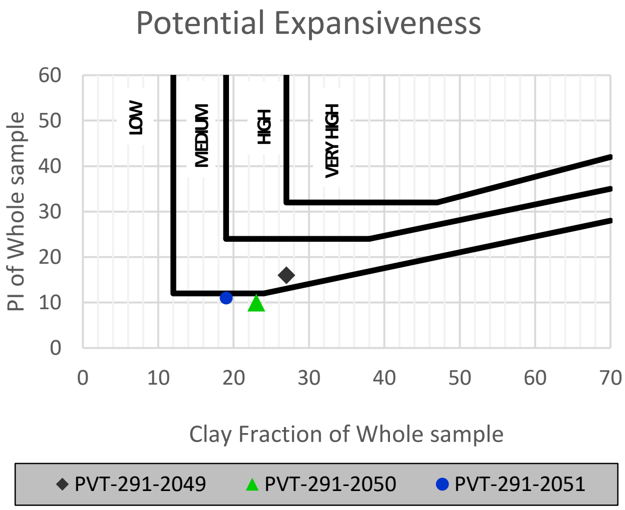

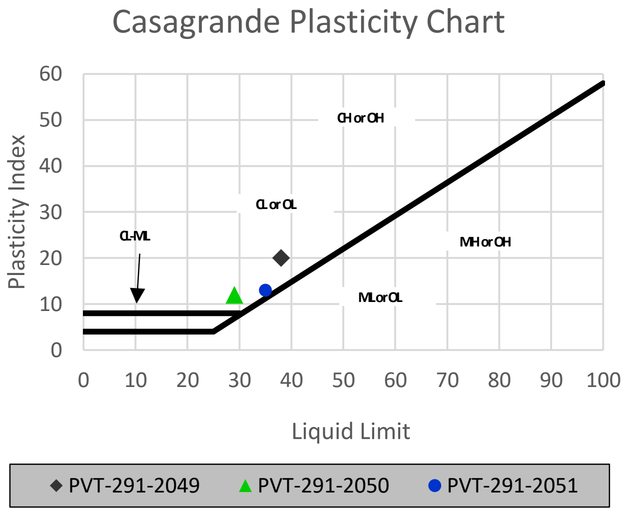

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Roelof | 072 674 6343 | roelof@stlab.co.za
Gerrie | 082 309 4448 | gerrie@stlab.co.za
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Client Name:	BAV Consulting (Pty) Ltd
Project Name:	Komati Power Station Repurposing
Job Number:	PVT-291
Date:	2023-10-26
Method:	SANS 3001 GR1, GR3, GR10 GR12 & BS 1377 (where applicable)

FOUNDATION INDICATOR

Sheet Reference:
R-STL-011 Rev02

Grading & Hydrometer Analysis (Particle Size (mm) & % Passing)				**Atterberg Limits & Classification**			
Sample	KTP31	KTP32	KTP33	Sample	KTP31	KTP32	KTP33
Depth (m)	0.2 - 2.1	0.2 - 2.2	0.2 - 2.4	Depth (m)	0.2 - 2.1	0.2 - 2.2	0.2 - 2.4
Lab No	PVT-291-2052	PVT-291-2053	PVT-291-2054	Lab No	PVT-291-2052	PVT-291-2053	PVT-291-2054
53.0	**100**	**100**	**100**	Liquid Limit (%)	**36**	**28**	**30**
37.5	**100**	**100**	**100**	Plastic Limit (%)	**19**	**17**	**17**
26.5	**100**	**100**	**100**	Plasticity Index (%)	**17**	**11**	**13**
19.0	**100**	**100**	**100**	Linear Shrinkage (%)	**8.5**	**5.5**	**6.5**
13.2	**100**	**100**	**100**	PI of whole sample	**14**	**8**	**10**
9.5	**99**	**99**	**100**				
6.7	**95**	**98**	**98**	% Gravel	**13**	**9**	**12**
4.75	**91**	**96**	**94**	% Sand	**40**	**51**	**54**
2.00	**87**	**91**	**88**	% Silt	**22**	**17**	**13**
1.00	**86**	**89**	**86**	% Clay	**25**	**23**	**21**
0.425	**81**	**77**	**80**	Activity	**0.7**	**0.5**	**0.6**
0.250	**74**	**65**	**67**				
0.150	**67**	**54**	**51**	% Soil Mortar	**87**	**91**	**88**
0.075	**52**	**43**	**38**				
0.060	**47**	**40**	**34**	Grading Modulus	**0.80**	**0.89**	**0.94**
0.050	**44**	**38**	**32**	Moisture Content (%)	**N / T**	**N / T**	**N / T**
0.035	**40**	**35**	**28**	Relative Density (SG)*	**2.65**	**2.65**	**2.65**
0.020	**34**	**31**	**25**				
0.006	**27**	**27**	**22**	Unified (ASTM D2487)	**CL**	**SC**	**SC**
0.002	**25**	**23**	**21**	AASHTO (M145-91)	**A - 6**	**A - 6**	**A - 6**

Remarks: *: Assumed
N / T: Not Tested

Client Name:	BAV Consulting (Pty) Ltd
Project Name:	Komati Power Station Repurposing
Job Number:	PVT-291
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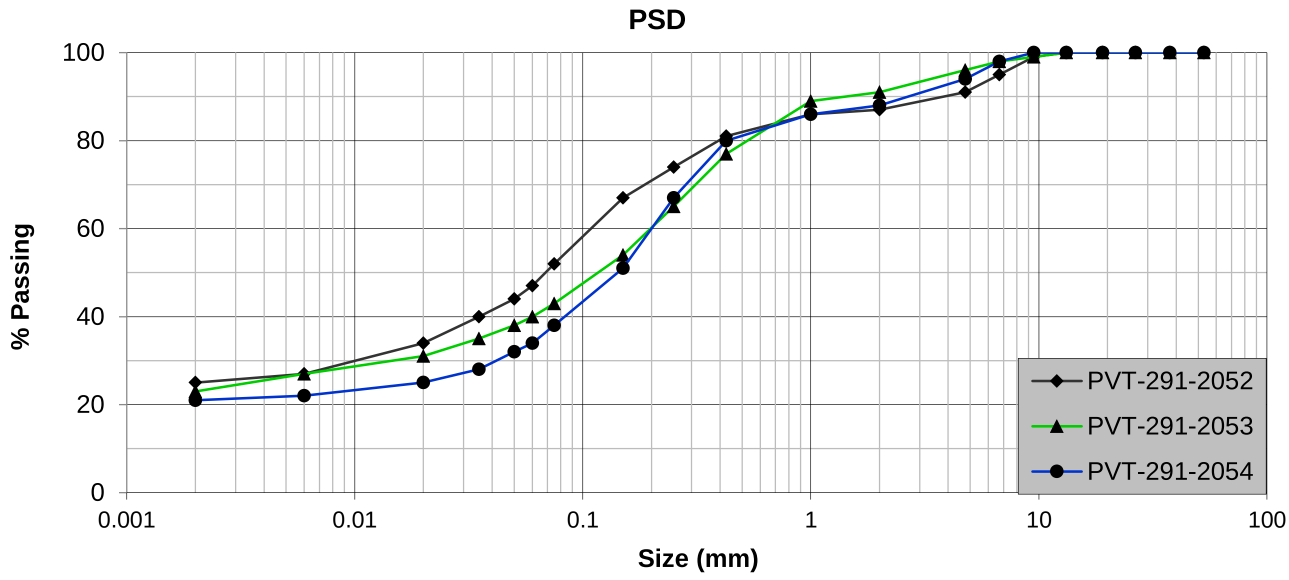
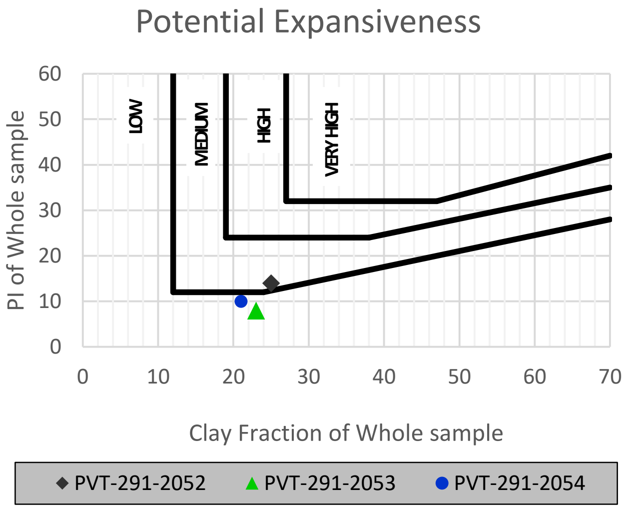
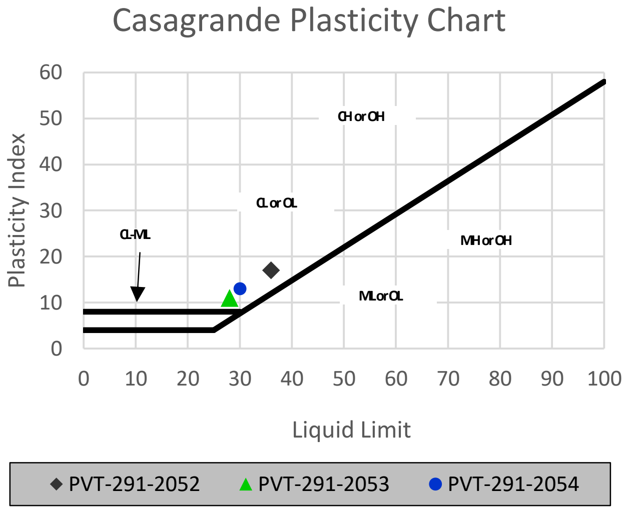
FOUNDATION INDICATOR

Sheet Reference:
R-STL-011 Rev02







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Roelof | 072 674 6343 | roelof@stlab.co.za
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FOUNDATION INDICATOR

Sheet Reference:
R-STL-011 Rev02

Grading & Hydrometer Analysis (Particle Size (mm) & % Passing)				**Atterberg Limits & Classification**			
Sample	KTP35	KTP36	KTP37	Sample	KTP35	KTP36	KTP37
Depth (m)	0.2 - 2.6	0.9 - 1.9	0.3 - 2.4	Depth (m)	0.2 - 2.6	0.9 - 1.9	0.3 - 2.4
Lab No	PVT-291-2056	PVT-291-2057	PVT-291-2058	Lab No	PVT-291-2056	PVT-291-2057	PVT-291-2058
53.0	**100**	**100**	**100**	Liquid Limit (%)	**25**	**-**	**29**
37.5	**100**	**100**	**100**	Plastic Limit (%)	**16**	**-**	**16**
26.5	**100**	**100**	**100**	Plasticity Index (%)	**9**	**NP**	**13**
19.0	**100**	**100**	**100**	Linear Shrinkage (%)	**4.0**	**0.0**	**6.5**
13.2	**100**	**100**	**92**	PI of whole sample	**7**	**-**	**5**
9.5	**99**	**100**	**85**				
6.7	**95**	**100**	**72**	% Gravel	**15**	**0**	**52**
4.75	**92**	**100**	**62**	% Sand	**54**	**83**	**28**
2.00	**85**	**100**	**48**	% Silt	**16**	**14**	**17**
1.00	**83**	**96**	**45**	% Clay	**15**	**3**	**3**
0.425	**75**	**79**	**40**	Activity	**0.6**	**0.0**	**4.3**
0.250	**59**	**46**	**34**				
0.150	**48**	**29**	**30**	% Soil Mortar	**85**	**100**	**48**
0.075	**35**	**20**	**23**				
0.060	**31**	**17**	**20**	Grading Modulus	**1.05**	**1.01**	**1.89**
0.050	**28**	**15**	**19**	Moisture Content (%)	**N / T**	**N / T**	**N / T**
0.035	**24**	**12**	**17**	Relative Density (SG)*	**2.65**	**2.65**	**2.65**
0.020	**20**	**9**	**15**				
0.006	**17**	**5**	**9**	Unified (ASTM D2487)	**SC**	**SM**	**SC**
0.002	**15**	**3**	**3**	AASHTO (M145-91)	**A - 4**	**A - 2 - 4**	**A - 2 - 6**

Remarks: *: Assumed
N / T: Not Tested

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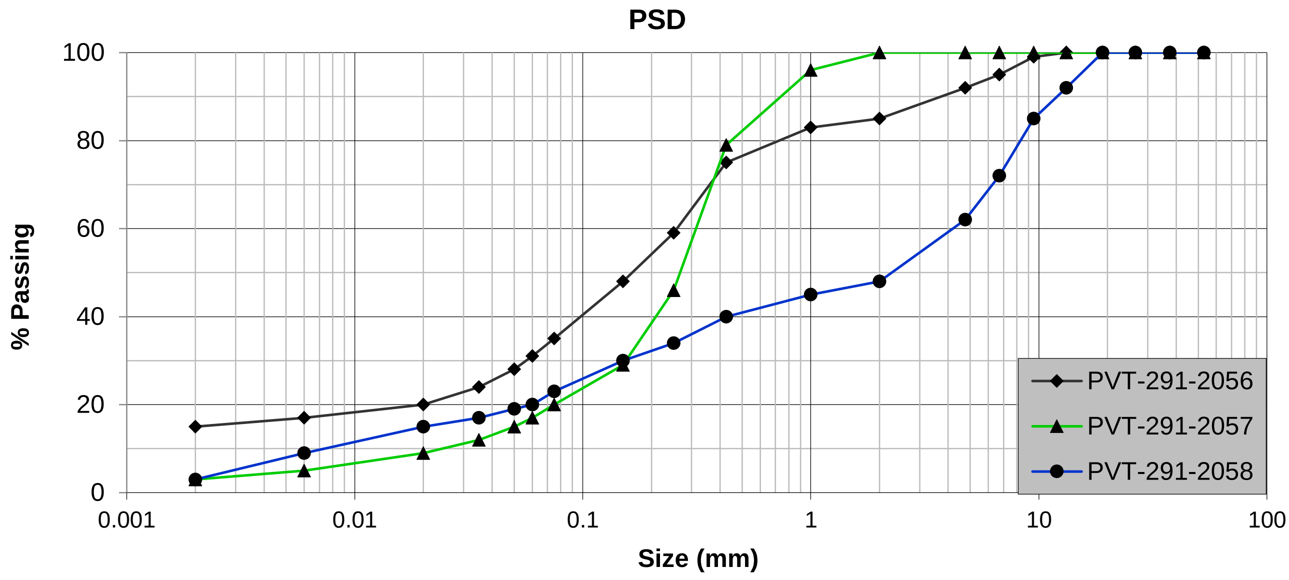
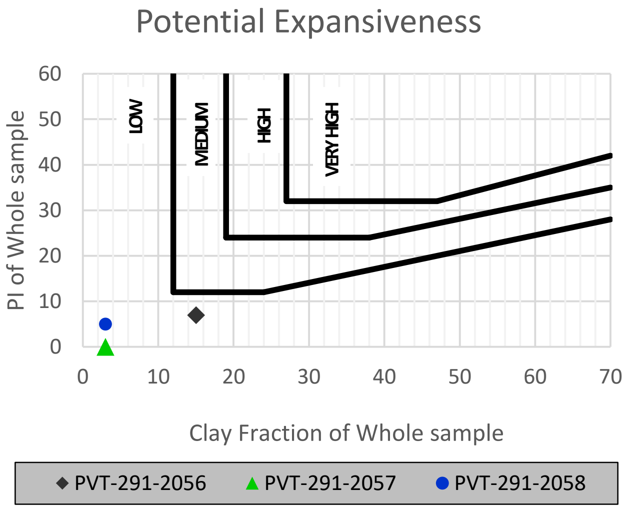
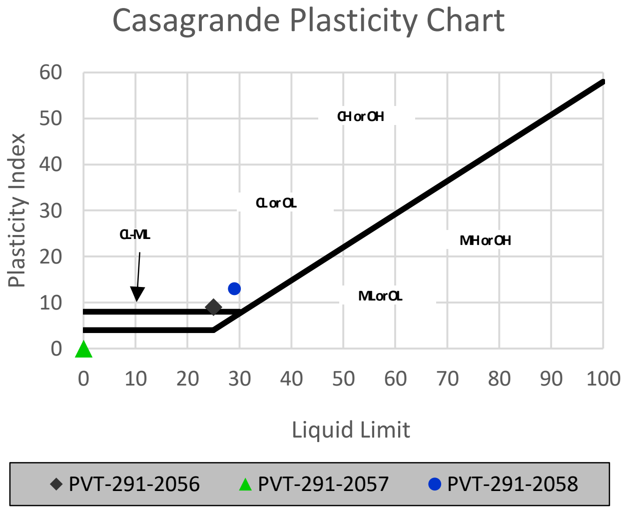
FOUNDATION INDICATOR

Sheet Reference:
R-STL-011 Rev02







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FOUNDATION INDICATOR

Sheet Reference: R-STL-011 Rev02

Grading & Hydrometer Analysis
(Particle Size (mm) & % Passing)

Sample	KTP39	KTP41	KTP42
Depth (m)	1.1 - 3.2	1.4 - 2.0	0.7 - 2.5
Lab No	PVT-291-2060	PVT-291-2062	PVT-291-2063
53.0	**100**	**100**	**100**
37.5	**100**	**100**	**100**
26.5	**100**	**100**	**100**
19.0	**100**	**100**	**100**
13.2	**98**	**100**	**100**
9.5	**96**	**99**	**100**
6.7	**93**	**99**	**100**
4.75	**91**	**99**	**100**
2.00	**88**	**98**	**98**
1.00	**86**	**96**	**97**
0.425	**76**	**81**	**90**
0.250	**59**	**47**	**81**
0.150	**46**	**31**	**67**
0.075	**33**	**22**	**49**
0.060	**29**	**17**	**41**
0.050	**27**	**15**	**37**
0.035	**23**	**12**	**31**
0.020	**19**	**10**	**28**
0.006	**12**	**7**	**26**
0.002	**4**	**4**	**25**

Atterberg Limits & Classification

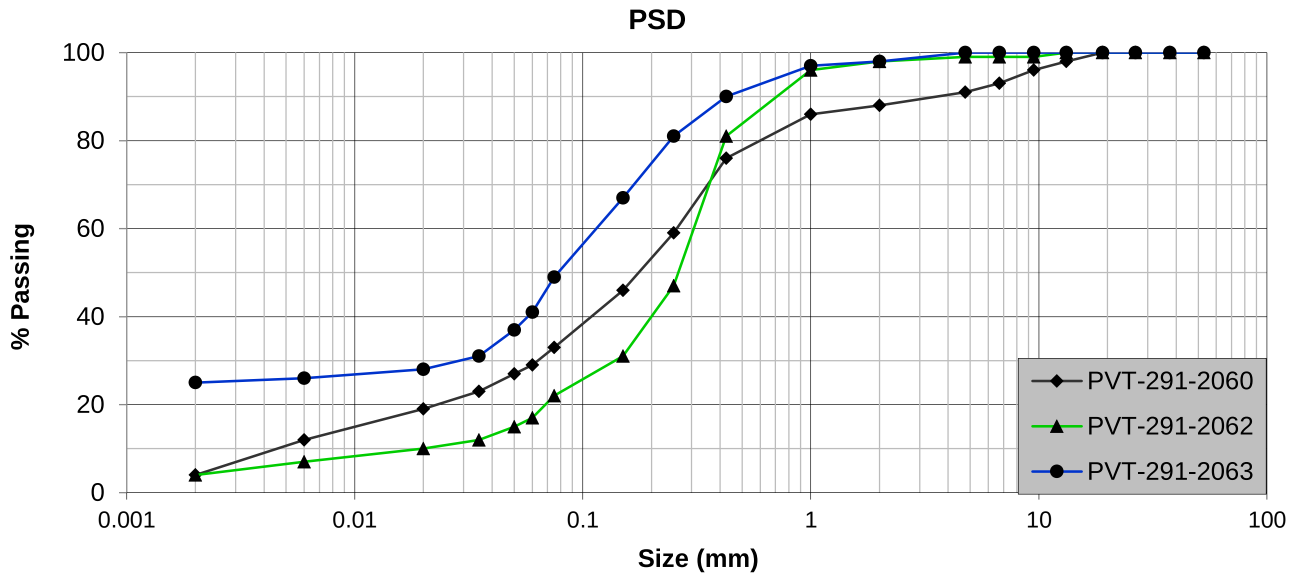
Sample	KTP39	KTP41	KTP42
Depth (m)	1.1 - 3.2	1.4 - 2.0	0.7 - 2.5
Lab No	PVT-291-2060	PVT-291-2062	PVT-291-2063
Liquid Limit (%)	**27**	**-**	**28**
Plastic Limit (%)	**14**	**-**	**15**
Plasticity Index (%)	**13**	**NP**	**13**
Linear Shrinkage (%)	**6.5**	**0.0**	**6.5**
PI of whole sample	**10**	**-**	**12**
% Gravel	**12**	**2**	**2**
% Sand	**59**	**81**	**57**
% Silt	**25**	**13**	**16**
% Clay	**4**	**4**	**25**
Activity	**3.3**	**0.0**	**0.5**
% Soil Mortar	**88**	**98**	**98**
Grading Modulus	**1.03**	**0.99**	**0.63**
Moisture Content (%)	**N / T**	**N / T**	**N / T**
Relative Density (SG)*	**2.65**	**2.65**	**2.65**
Unified (ASTM D2487)	**SC**	**SM**	**SC**
AASHTO (M145-91)	**A - 2 - 6**	**A - 2 - 4**	**A - 6**

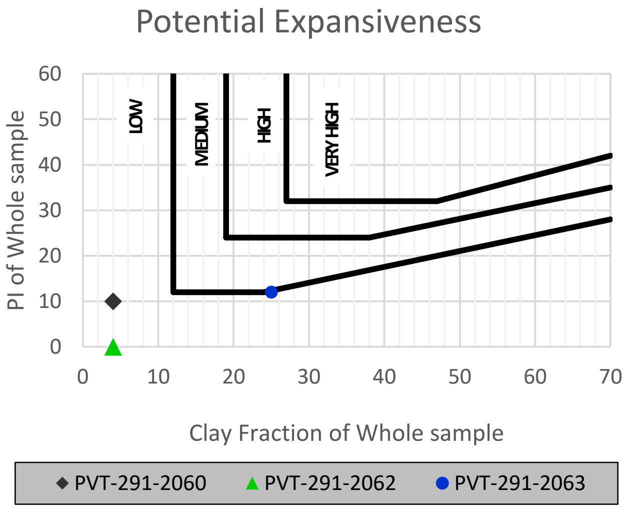
Remarks: *: Assumed
N / T: Not Tested

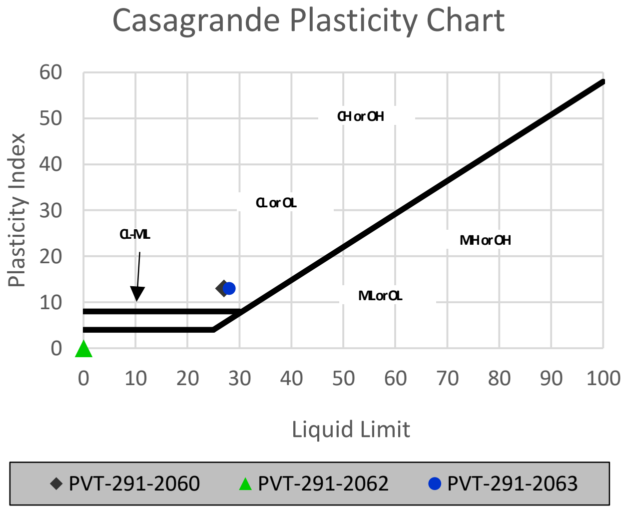
Client Name:	BAV Consulting (Pty) Ltd
Project Name:	Komati Power Station Repurposing
Job Number:	PVT-291
Date:	2023-10-26
Method:	SANS 3001 GR1, GR3, GR10 GR12 & BS 1377 (where applicable)

FOUNDATION INDICATOR

Sheet Reference: R-STL-011 Rev02







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Roelof | 072 674 6343 | roelof@stlab.co.za
Gerrie | 082 309 4448 | gerrie@stlab.co.za
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FOUNDATION INDICATOR

Sheet Reference:
R-STL-011 Rev02

Grading & Hydrometer Analysis (Particle Size (mm) & % Passing)				**Atterberg Limits & Classification**			
Sample	KTP43	KTP44	KTP45	Sample	KTP43	KTP44	KTP45
Depth (m)	0.1 - 2.4	0.1 - 2.6	0.1 - 2.2	Depth (m)	0.1 - 2.4	0.1 - 2.6	0.1 - 2.2
Lab No	PVT-291-2064	PVT-291-2065	PVT-291-2066	Lab No	PVT-291-2064	PVT-291-2065	PVT-291-2066
53.0	**100**	**100**	**100**	Liquid Limit (%)	**22**	**25**	**29**
37.5	**100**	**100**	**100**	Plastic Limit (%)	**14**	**15**	**18**
26.5	**100**	**100**	**100**	Plasticity Index (%)	**8**	**10**	**11**
19.0	**100**	**100**	**100**	Linear Shrinkage (%)	**4.0**	**5.0**	**6.0**
13.2	**100**	**100**	**100**	PI of whole sample	**7**	**8**	**10**
9.5	**100**	**98**	**100**				
6.7	**100**	**96**	**100**	% Gravel	**0**	**9**	**1**
4.75	**100**	**94**	**100**	% Sand	**53**	**61**	**59**
2.00	**100**	**91**	**99**	% Silt	**17**	**12**	**17**
1.00	**99**	**89**	**98**	% Clay	**30**	**18**	**23**
0.425	**89**	**82**	**92**	Activity	**0.3**	**0.6**	**0.5**
0.250	**78**	**68**	**75**				
0.150	**68**	**52**	**60**	% Soil Mortar	**100**	**91**	**99**
0.075	**54**	**36**	**46**				
0.060	**47**	**30**	**40**	Grading Modulus	**0.57**	**0.91**	**0.63**
0.050	**44**	**27**	**37**	Moisture Content (%)	**N / T**	**N / T**	**N / T**
0.035	**40**	**23**	**31**	Relative Density (SG)*	**2.65**	**2.65**	**2.65**
0.020	**37**	**21**	**28**				
0.006	**33**	**19**	**25**	Unified (ASTM D2487)	**CL**	**SC**	**SC**
0.002	**30**	**18**	**23**	AASHTO (M145-91)	**A - 4**	**A - 4**	**A - 6**

Remarks: *: Assumed
N / T: Not Tested

Client Name: BAV Consulting (Pty) Ltd
Project Name: Komati Power Station Repurposing
Job Number: PVT-291
Date: 2023-10-26
Method: SANS 3001 GR1, GR3, GR10 GR12 & BS 1377 (where applicable)

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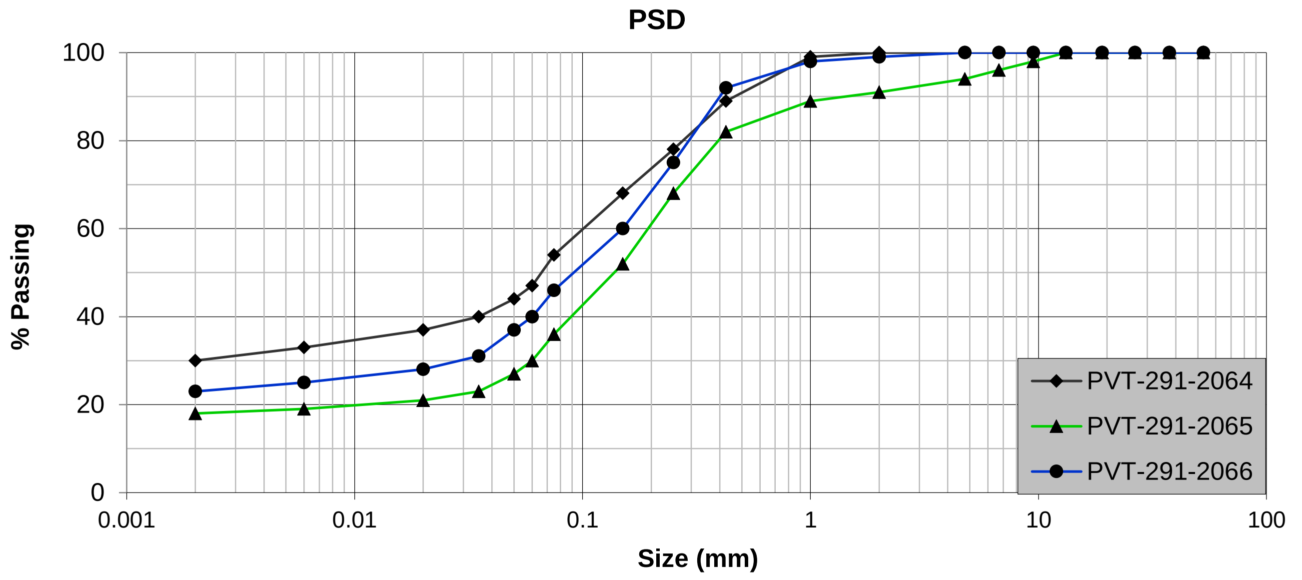
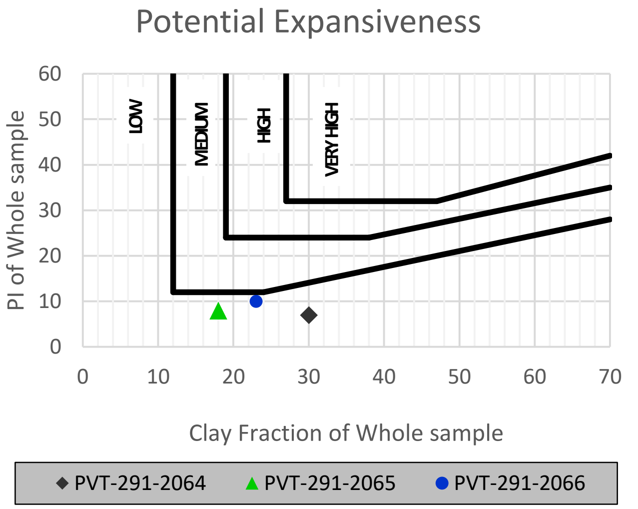
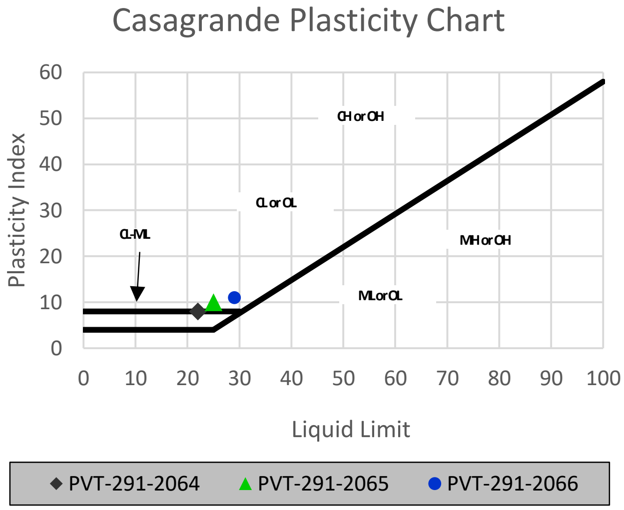
Sheet Reference:
R-STL-011 Rev02







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Roelof | 072 674 6343 | roelof@stlab.co.za
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FOUNDATION INDICATOR

Sheet Reference:
R-STL-011 Rev02

Grading & Hydrometer Analysis
(Particle Size (mm) & % Passing)

Sample	KTP46	KTP47	
Depth (m)	1.0 - 2.3	0.4 - 2.2	
Lab No	PVT-291-2067	PVT-291-2068	
53.0	**100**	**100**	
37.5	**100**	**100**	
26.5	**100**	**100**	
19.0	**100**	**100**	
13.2	**100**	**100**	
9.5	**100**	**99**	
6.7	**100**	**98**	
4.75	**100**	**96**	
2.00	**99**	**94**	
1.00	**97**	**92**	
0.425	**90**	**85**	
0.250	**79**	**73**	
0.150	**70**	**63**	
0.075	**57**	**52**	
0.060	**51**	**48**	
0.050	**48**	**46**	
0.035	**42**	**43**	
0.020	**39**	**39**	
0.006	**35**	**36**	
0.002	**33**	**35**	

Atterberg Limits & Classification

Sample	KTP46	KTP47	
Depth (m)	1.0 - 2.3	0.4 - 2.2	
Lab No	PVT-291-2067	PVT-291-2068	
Liquid Limit (%)	**32**	**40**	
Plastic Limit (%)	**15**	**17**	
Plasticity Index (%)	**17**	**23**	
Linear Shrinkage (%)	**8.5**	**12.0**	
PI of whole sample	**15**	**20**	
% Gravel	**1**	**6**	
% Sand	**48**	**46**	
% Silt	**18**	**13**	
% Clay	**33**	**35**	
Activity	**0.5**	**0.7**	
% Soil Mortar	**99**	**94**	
Grading Modulus	**0.54**	**0.69**	
Moisture Content (%)	**N / T**	**N / T**	
Relative Density (SG)*	**2.65**	**2.65**	
Unified (ASTM D2487)	**CL**	**CL**	
AASHTO (M145-91)	**A - 6**	**A - 6**	

Remarks: *: Assumed
N / T: Not Tested

Client Name: BAV Consulting (Pty) Ltd
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Job Number: PVT-291
Date: 2023-10-26
Method: SANS 3001 GR1, GR3, GR10 GR12 & BS 1377 (where applicable)

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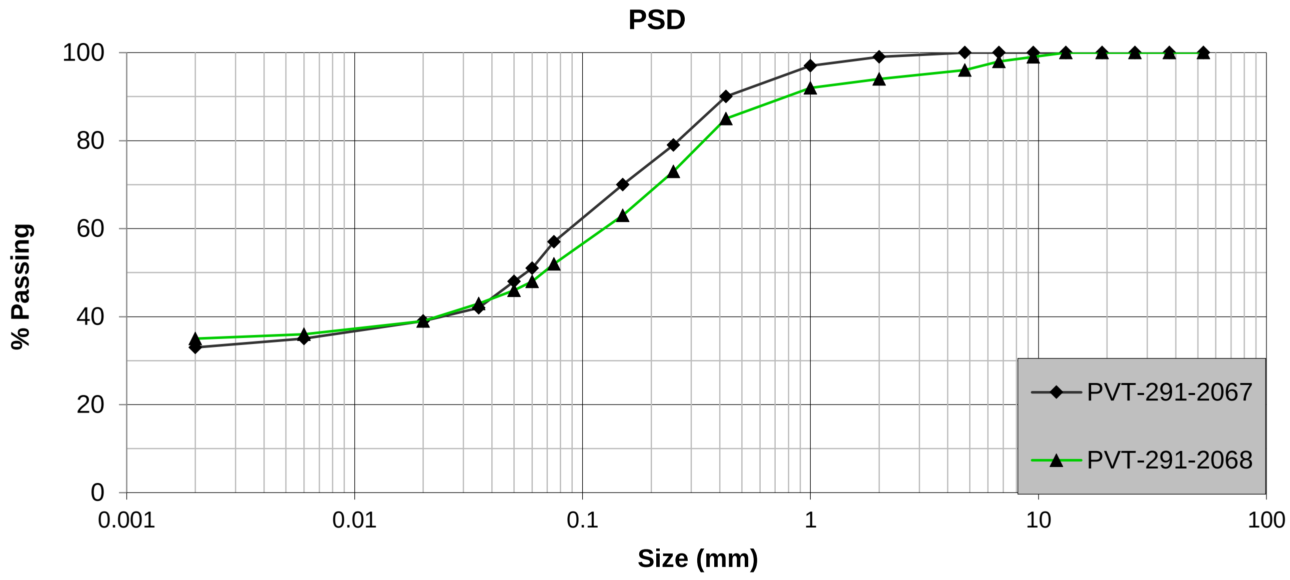
Sheet Reference: R-STL-011 Rev02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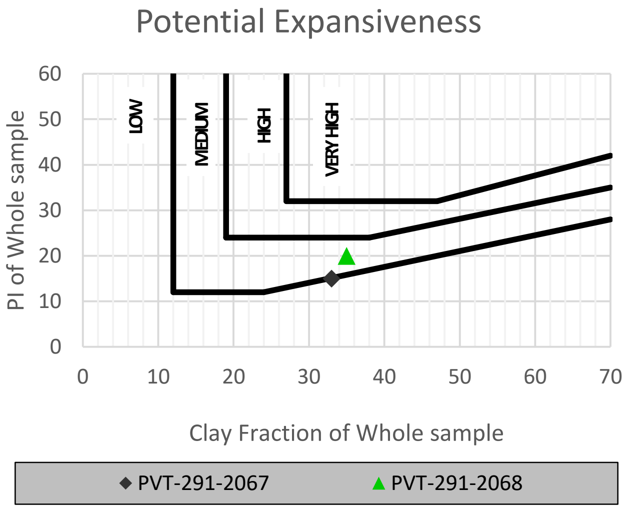
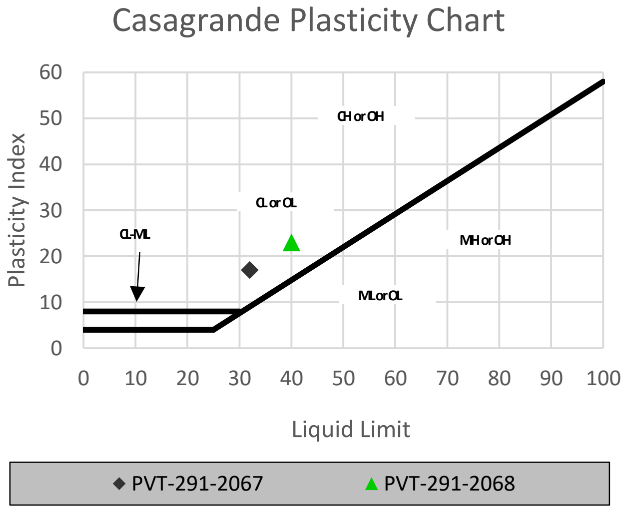

Potential Expansiveness


Casagrande Plasticity Chart

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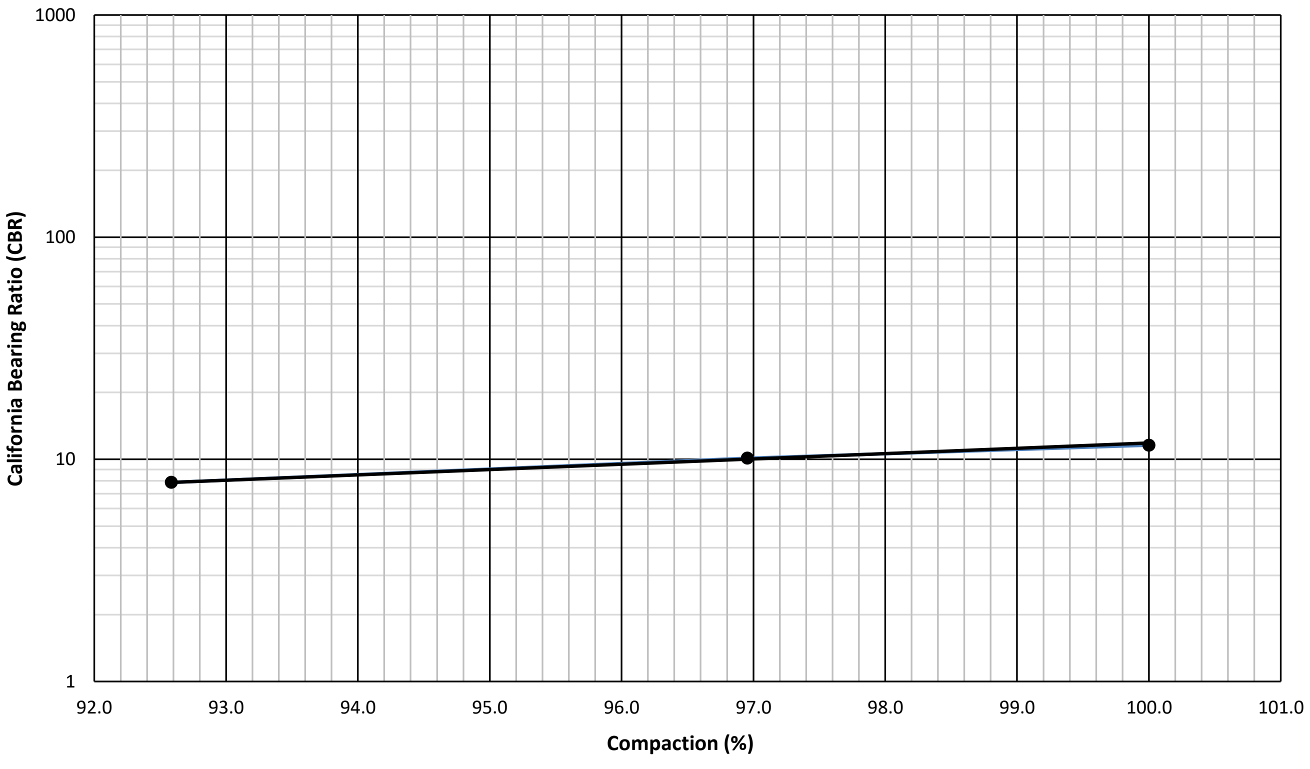
Client Name:	BAV Consulting (Pty) Ltd	**Job Number:**	PVT-291
Project Name:	Komati Power Station Repurposing	**Lab Number:**	PVT-291-2026
Sample:	KTP1	**Method:**	SANS 3001 GR40
Depth: (m)	0.7 - 2.2	**Date:**	26-Oct-23

CALIFORNIA BEARING RATIO

Sheet Reference:
R-STL-014 Rev01

Mod. AASHTO Values		Compaction Data: CBR			Swell	CBR at (mm)			CBR Values	
MDD	OMC	Dry Dens.	MC	Comp.						
(kg/m³)	(%)	(kg/m³)	(%)	(%)	(%)	2.5	5.0	7.5	Compaction (%)	CBR
2062	9.4	2036	9.6	100.0	0.1	12	12	12	100	**11.6**
									98	**10.6**
2062	9.4	1974	9.6	97.0	0.2	10	10	11	97	**10.1**
									95	**9.0**
2062	9.4	1885	9.6	92.6	0.2	8	7	6	93	**8.1**
									90	**6.8**



Client Name:	BAV Consulting (Pty) Ltd	**Job Number:**	PVT-291
Project Name:	Komati Power Station Repurposing	**Lab Number:**	PVT-291-2026
Sample:	KTP1	**Method:**	SANS 3001 GR30
Depth: (m)	0.7 - 2.2	**Date:**	26-Oct-23

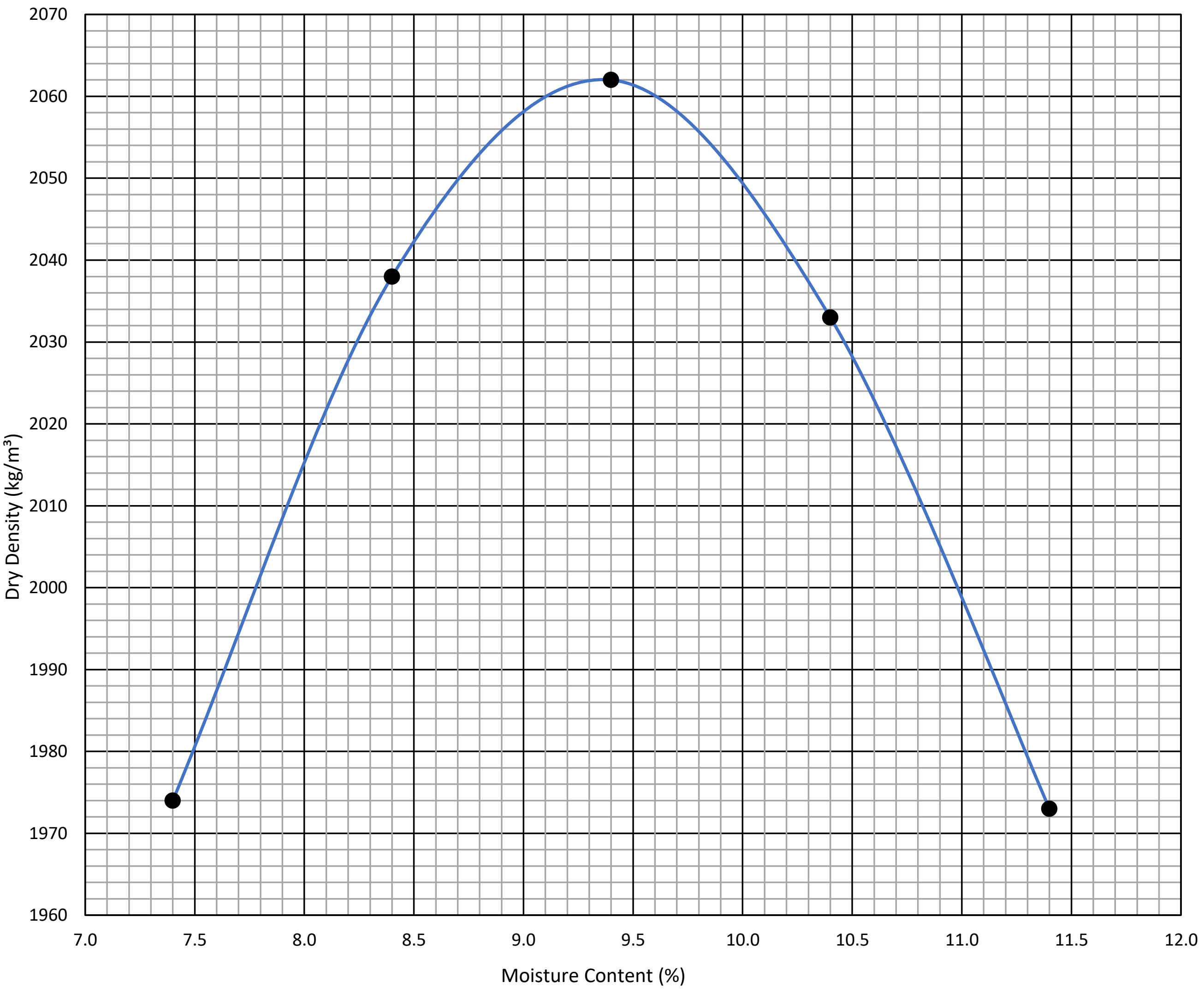
MDD & OMC DETERMINATION (Mod. AASHTO)

Sheet Reference:
R-STL-013 Rev01

Maximum Dry Density: **2062** kg/m³

Optimum Moisture Content: **9.4** %

Moisture Content (%)	7.4	8.4	9.4	10.4	11.4			
Dry Density (kg/m³)	1974	2038	2062	2033	1973			

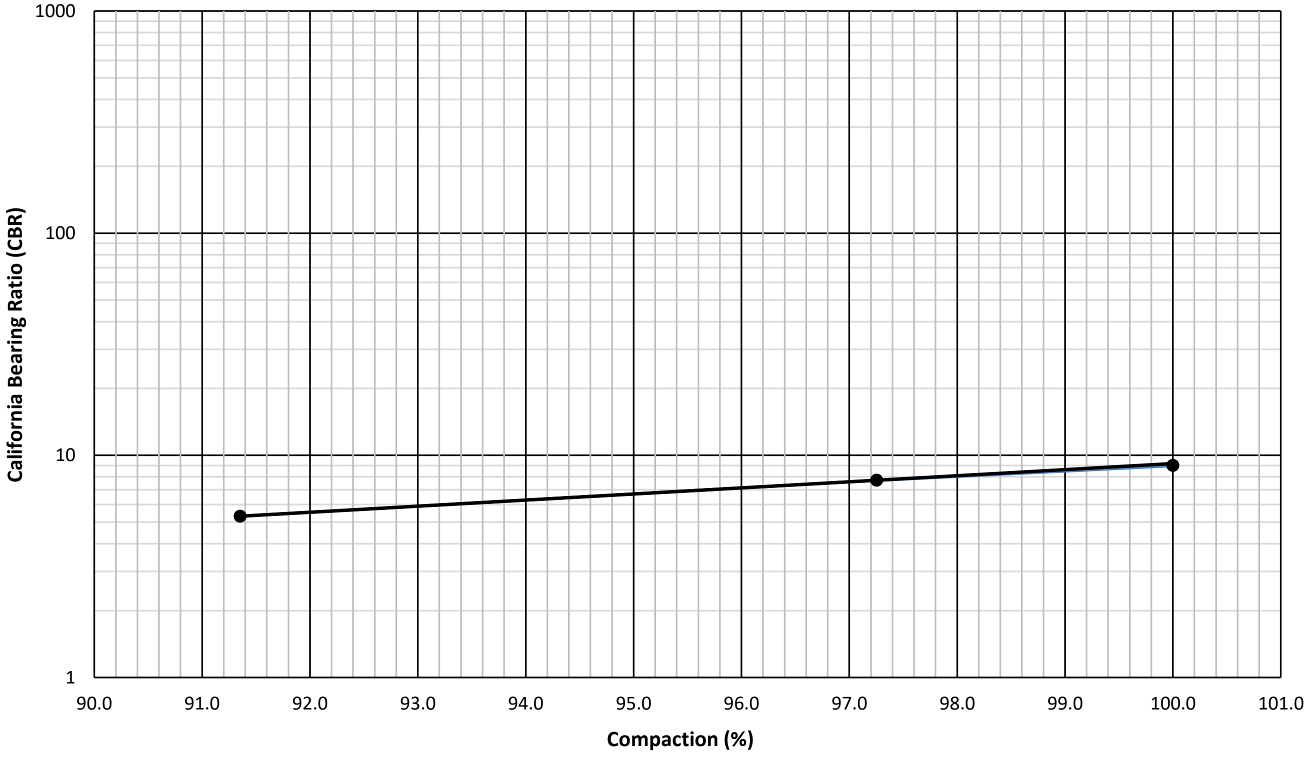


Client Name:	BAV Consulting (Pty) Ltd	**Job Number:**	PVT-291
Project Name:	Komati Power Station Repurposing	**Lab Number:**	PVT-291-2027
Sample:	KTP2	**Method:**	SANS 3001 GR40
Depth: (m)	0.8 - 2.4	**Date:**	26-Oct-23

CALIFORNIA BEARING RATIO

Sheet Reference:
R-STL-014 Rev01

Mod. AASHTO Values		**Compaction Data: CBR**			**Swell**	**CBR at (mm)**			**CBR Values**	
MDD	**OMC**	**Dry Dens.**	**MC**	**Comp.**						
(kg/m³)	(%)	(kg/m³)	(%)	(%)	(%)	2.5	5.0	7.5	Compaction (%)	CBR
									100	**9.0**
1951	11.9	1966	11.9	100.0	0.2	9	7	7	98	**8.0**
									97	**7.6**
1951	11.9	1912	11.9	97.3	0.3	8	7	6	95	**6.7**
									93	**5.9**
1951	11.9	1796	11.9	91.4	0.3	5	5	4	90	**4.9**



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Roelof | 072 674 6343 | roelof@stlab.co.za
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Client Name:	BAV Consulting (Pty) Ltd	**Job Number:**	PVT-291
Project Name:	Komati Power Station Repurposing	**Lab Number:**	PVT-291-2027
Sample:	KTP2	**Method:**	SANS 3001 GR30
Depth: (m)	0.8 - 2.4	**Date:**	26-Oct-23

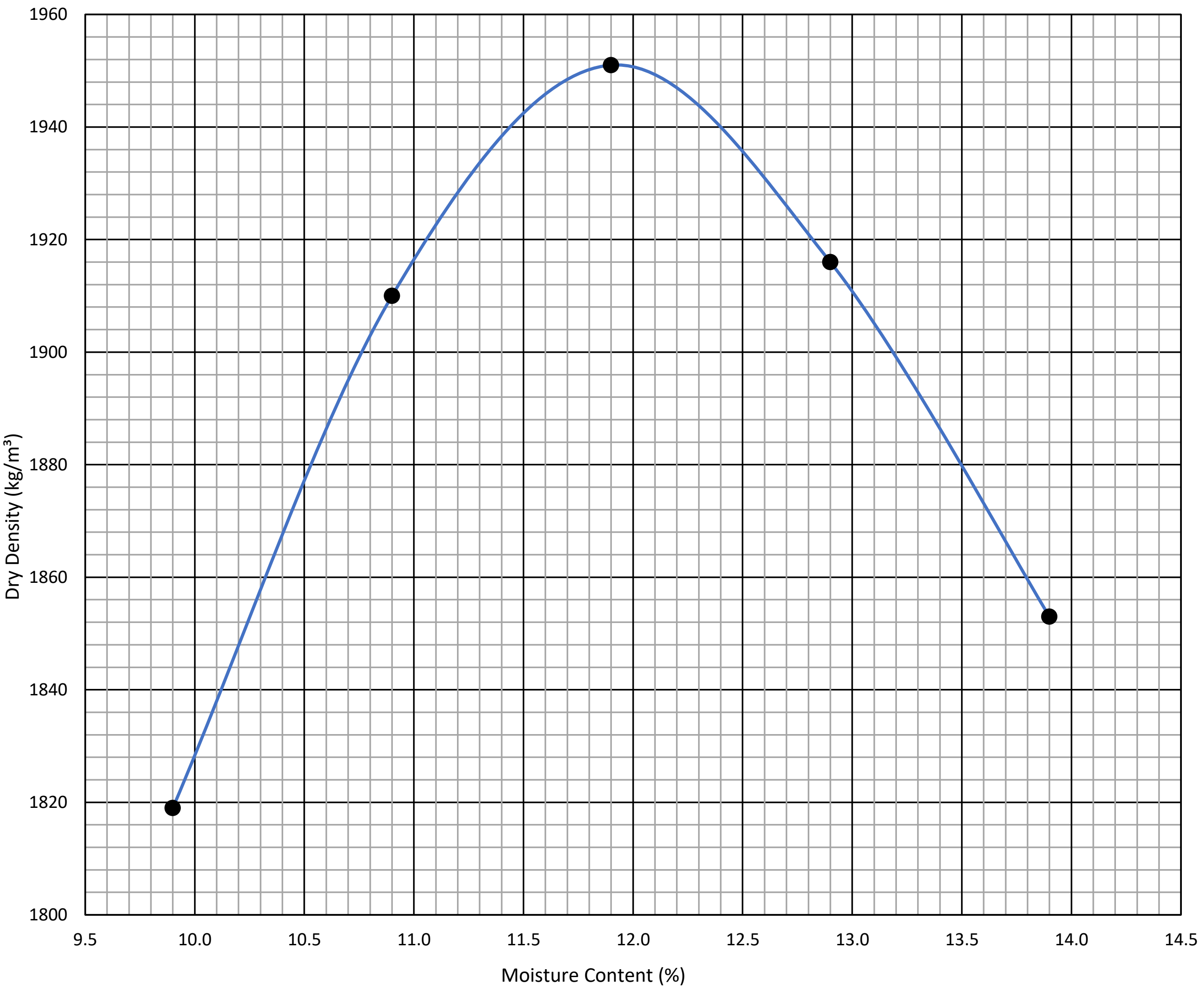
MDD & OMC DETERMINATION (Mod. AASHTO)

Sheet Reference:
R-STL-013 Rev01

Maximum Dry Density: **1951** kg/m³

Optimum Moisture Content: **11.9** %

Moisture Content (%)	9.9	10.9	11.9	12.9	13.9			
Dry Density (kg/m³)	1819	1910	1951	1916	1853			

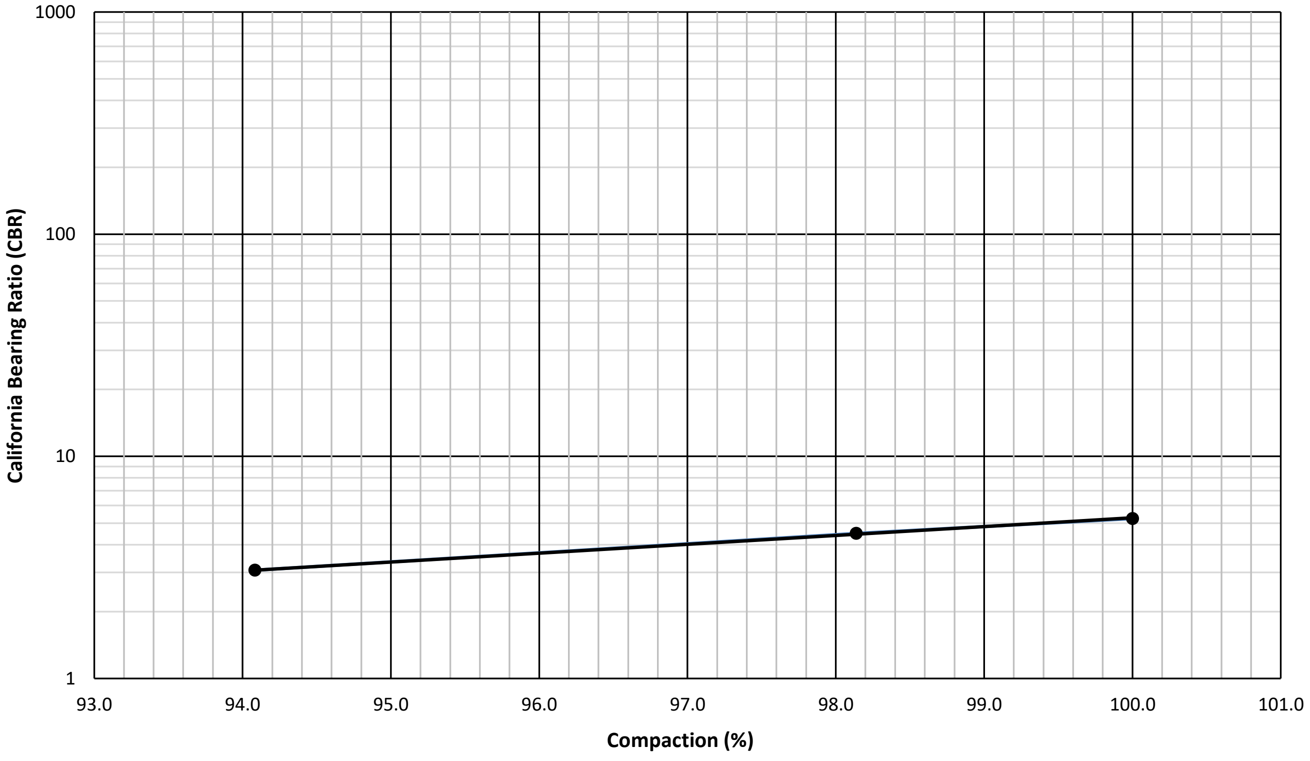


Client Name:	BAV Consulting (Pty) Ltd	**Job Number:**	PVT-291
Project Name:	Komati Power Station Repurposing	**Lab Number:**	PVT-291-2029
Sample:	KTP4	**Method:**	SANS 3001 GR40
Depth: (m)	0.3 - 2.3	**Date:**	26-Oct-23

CALIFORNIA BEARING RATIO

Sheet Reference:
R-STL-014 Rev01

Mod. AASHTO Values		**Compaction Data: CBR**			**Swell**	**CBR at (mm)**			**CBR Values**	
MDD	**OMC**	**Dry Dens.**	**MC**	**Comp.**						
(kg/m³)	(%)	(kg/m³)	(%)	(%)	(%)	2.5	5.0	7.5	Compaction (%)	CBR
1835	15.6	1825	14.7	100.0	1.0	5	4	3	100	**5.2**
									98	**4.4**
1835	15.6	1791	14.7	98.1	1.1	4	3	3	97	**4.0**
									95	**3.3**
1835	15.6	1717	14.7	94.1	1.5	3	3	2	93	**2.8**
									90	**2.1**



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Client Name:	BAV Consulting (Pty) Ltd	**Job Number:**	PVT-291
Project Name:	Komati Power Station Repurposing	**Lab Number:**	PVT-291-2029
Sample:	KTP4	**Method:**	SANS 3001 GR30
Depth: (m)	0.3 - 2.3	**Date:**	26-Oct-23

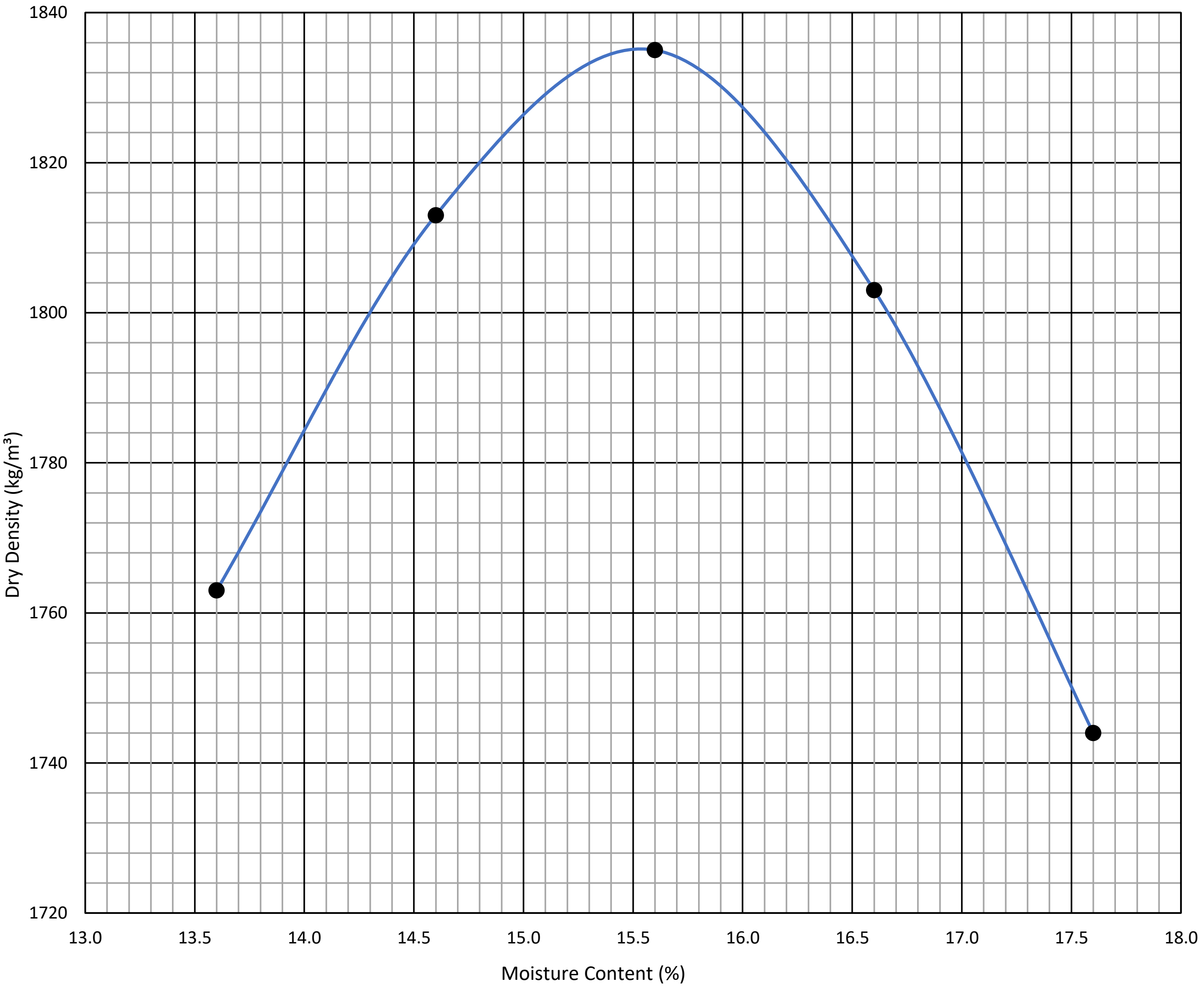
MDD & OMC DETERMINATION (Mod. AASHTO)

Sheet Reference: R-STL-013 Rev01

Maximum Dry Density: **1835** kg/m³

Optimum Moisture Content: **15.6** %

Moisture Content (%)	13.6	14.6	15.6	16.6	17.6			
Dry Density (kg/m³)	1763	1813	1835	1803	1744			

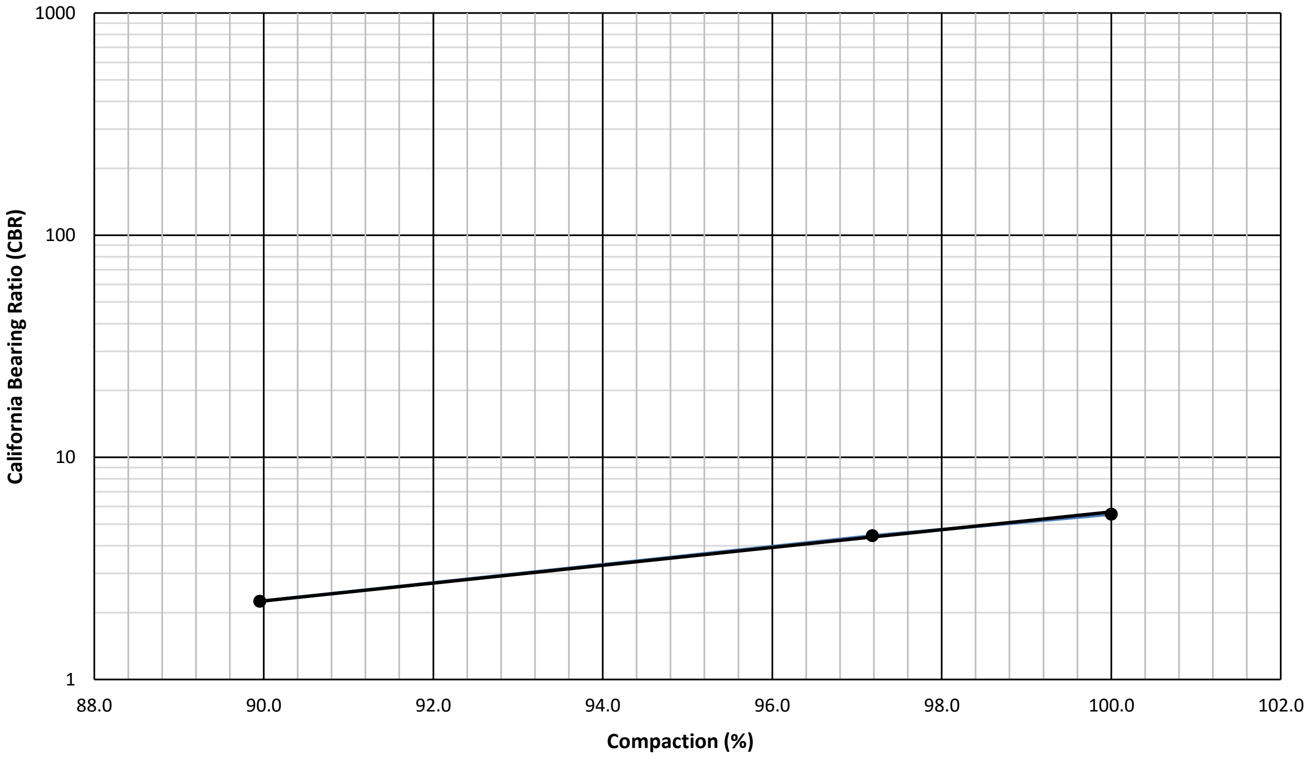


Client Name:	BAV Consulting (Pty) Ltd	**Job Number:**	PVT-291
Project Name:	Komati Power Station Repurposing	**Lab Number:**	PVT-291-2030
Sample:	KTP5	**Method:**	SANS 3001 GR40
Depth: (m)	0.4 - 2.5	**Date:**	26-Oct-23

CALIFORNIA BEARING RATIO

Sheet Reference:
R-STL-014 Rev01

Mod. AASHTO Values		Compaction Data: CBR			Swell	CBR at (mm)			CBR Values	
MDD	OMC	Dry Dens.	MC	Comp.						
(kg/m³)	(%)	(kg/m³)	(%)	(%)	(%)	2.5	5.0	7.5	Compaction (%)	CBR
									100	**5.5**
1872	13.9	1881	14.1	100.0	0.5	6	5	4	98	**4.7**
									97	**4.4**
1872	13.9	1828	14.1	97.2	0.6	4	4	3	95	**3.6**
									93	**3.0**
1872	13.9	1692	14.1	90.0	1.0	2	2	2	90	**2.3**



Client Name: BAV Consulting (Pty) Ltd
Project Name: Komati Power Station Repurposing
Sample: KTP5
Depth: (m) 0.4 - 2.5

Job Number: PVT-291
Lab Number: PVT-291-2030
Method: SANS 3001 GR30
Date: 26-Oct-23

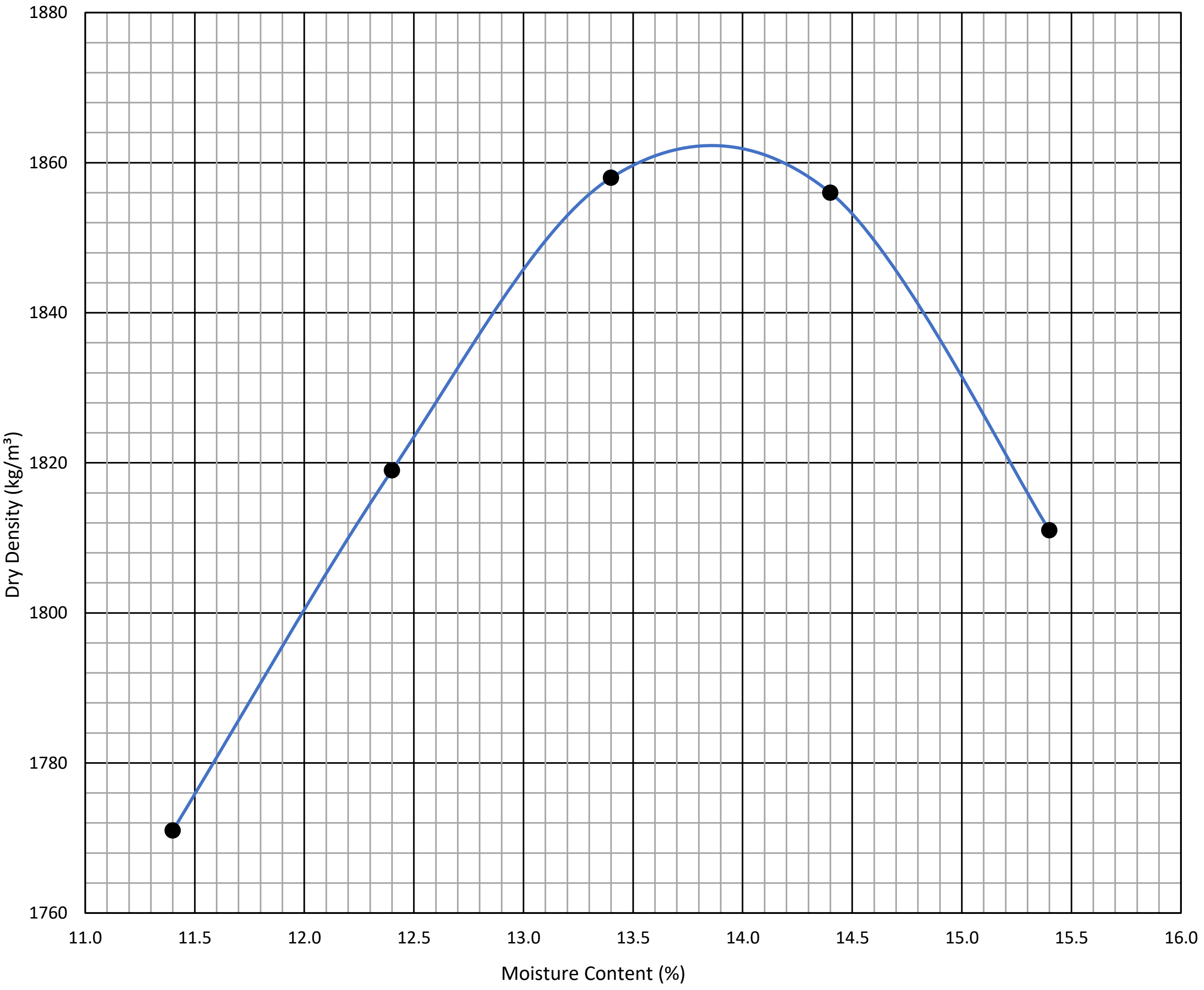
MDD & OMC DETERMINATION (Mod. AASHTO)

Sheet Reference: **R-STL-013 Rev01**

Maximum Dry Density: **1872** kg/m³

Optimum Moisture Content: **13.9** %

Moisture Content (%)	11.4	12.4	13.4	14.4	15.4			
Dry Density (kg/m³)	1771	1819	1858	1856	1811			

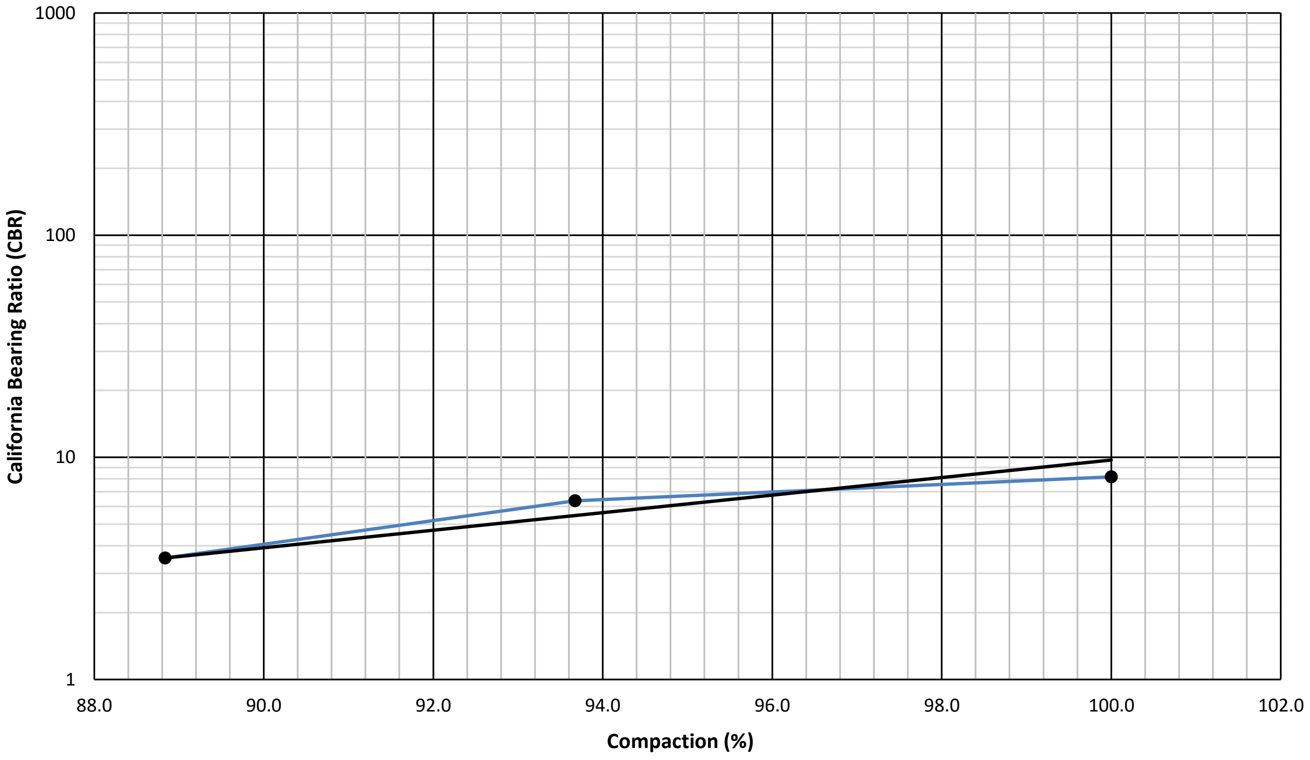


Client Name:	BAV Consulting (Pty) Ltd	**Job Number:**	PVT-291
Project Name:	Komati Power Station Repurposing	**Lab Number:**	PVT-291-2036
Sample:	KTP13	**Method:**	SANS 3001 GR40
Depth: (m)	0.3 - 1.8	**Date:**	26-Oct-23

CALIFORNIA BEARING RATIO

Sheet Reference:
R-STL-014 Rev01

Mod. AASHTO Values		**Compaction Data: CBR**			**Swell**	**CBR at (mm)**			**CBR Values**	
MDD	**OMC**	**Dry Dens.**	**MC**	**Comp.**						
(kg/m³)	(%)	(kg/m³)	(%)	(%)	(%)	2.5	5.0	7.5	Compaction (%)	CBR
									100	**8.2**
1883	13.9	1881	14.6	100.0	0.3	8	7	6	98	**7.6**
									97	**7.3**
1883	13.9	1762	14.6	93.7	0.4	6	5	5	95	**6.7**
									93	**5.9**
1883	13.9	1671	14.6	88.8	0.5	4	3	3	90	**4.1**



Client Name: BAV Consulting (Pty) Ltd
Project Name: Komati Power Station Repurposing
Sample: KTP13
Depth: (m) 0.3 - 1.8

Job Number: PVT-291
Lab Number: PVT-291-2036
Method: SANS 3001 GR30
Date: 26-Oct-23

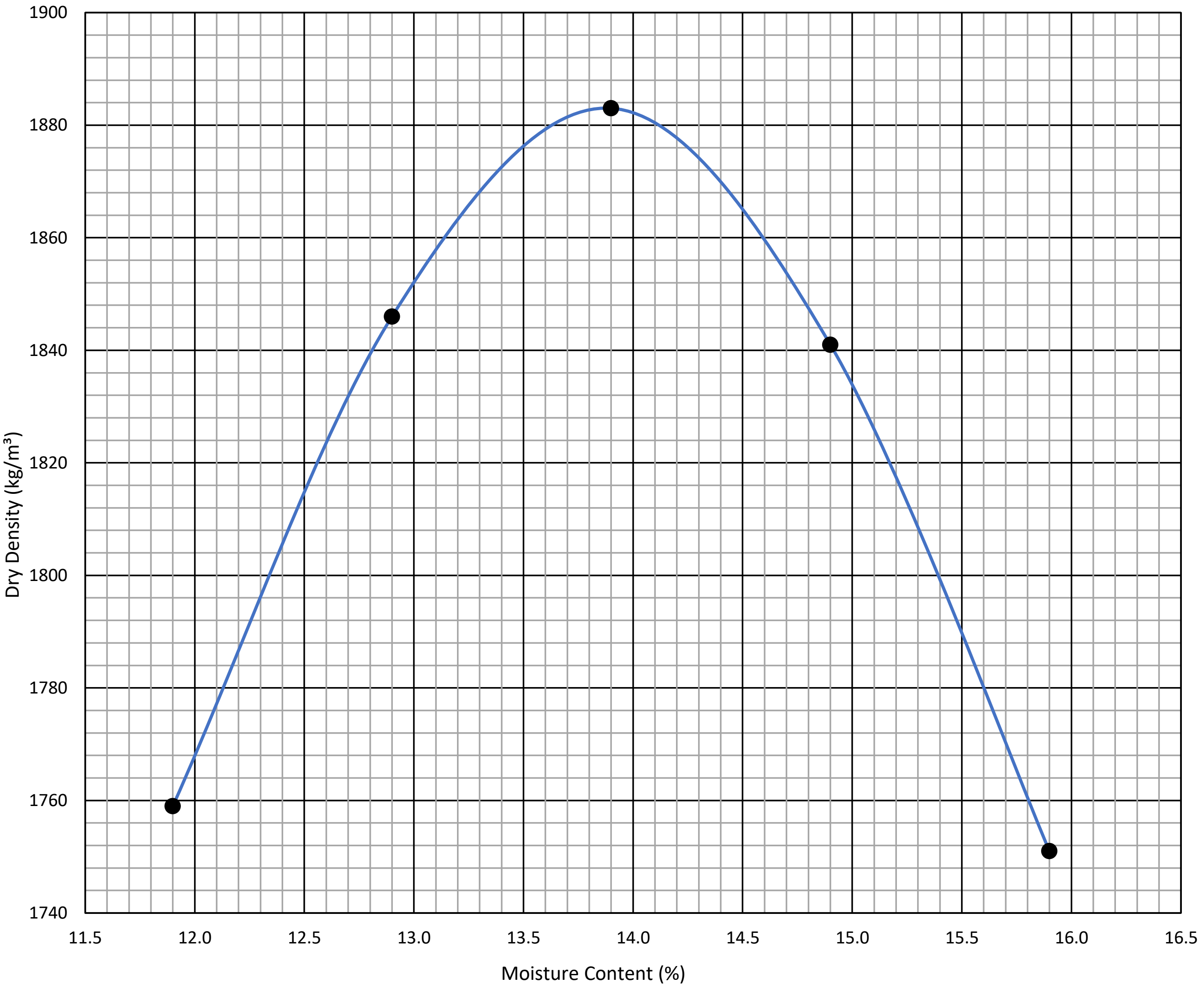
MDD & OMC DETERMINATION (Mod. AASHTO)

Sheet Reference:
R-STL-013 Rev01

Maximum Dry Density: **1883** kg/m³

Optimum Moisture Content: **13.9** %

Moisture Content (%)	11.9	12.9	13.9	14.9	15.9			
Dry Density (kg/m³)	1759	1846	1883	1841	1751			



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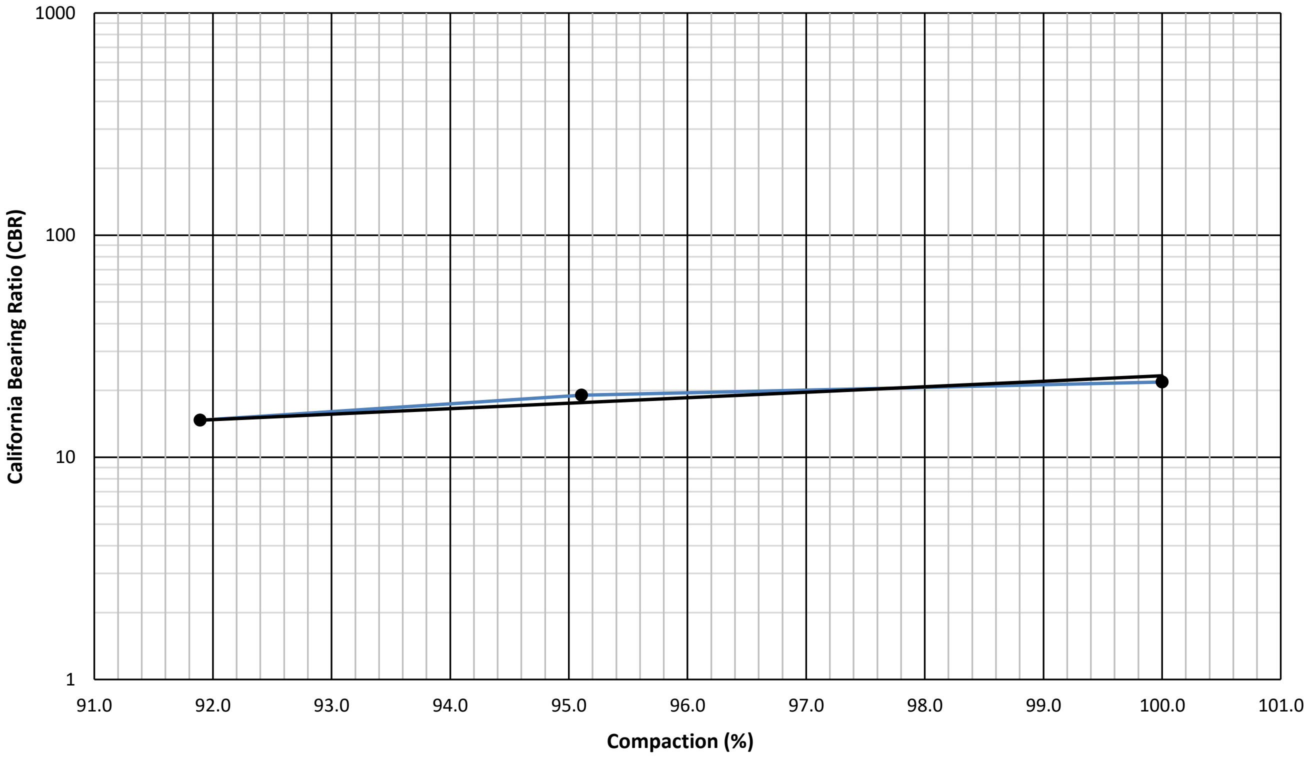
Client Name: BAV Consulting (Pty) Ltd
Project Name: Komati Power Station Repurposing
Sample: KTP16
Depth: (m) 0.3 - 2.1

Job Number: PVT-291
Lab Number: PVT-291-2038
Method: SANS 3001 GR40
Date: 26-Oct-23

CALIFORNIA BEARING RATIO

Sheet Reference:
R-STL-014 Rev01

Mod. AASHTO Values		**Compaction Data: CBR**			**Swell**	**CBR at (mm)**			**CBR Values**	
MDD	**OMC**	**Dry Dens.**	**MC**	**Comp.**						
(kg/m^3)	(%)	(kg/m^3)	(%)	(%)	(%)	2.5	5.0	7.5	Compaction (%)	CBR
2071	9.5	2084	9.9	100.0	0.3	22	27	30	100	**22**
									98	**21**
2071	9.5	1982	9.9	95.1	0.4	19	21	20	97	**20**
									95	**19**
2071	9.5	1915	9.9	91.9	0.5	15	13	12	93	**16**
									90	**13**



Client Name:	BAV Consulting (Pty) Ltd	**Job Number:**	PVT-291
Project Name:	Komati Power Station Repurposing	**Lab Number:**	PVT-291-2038
Sample:	KTP16	**Method:**	SANS 3001 GR30
Depth: (m)	0.3 - 2.1	**Date:**	26-Oct-23

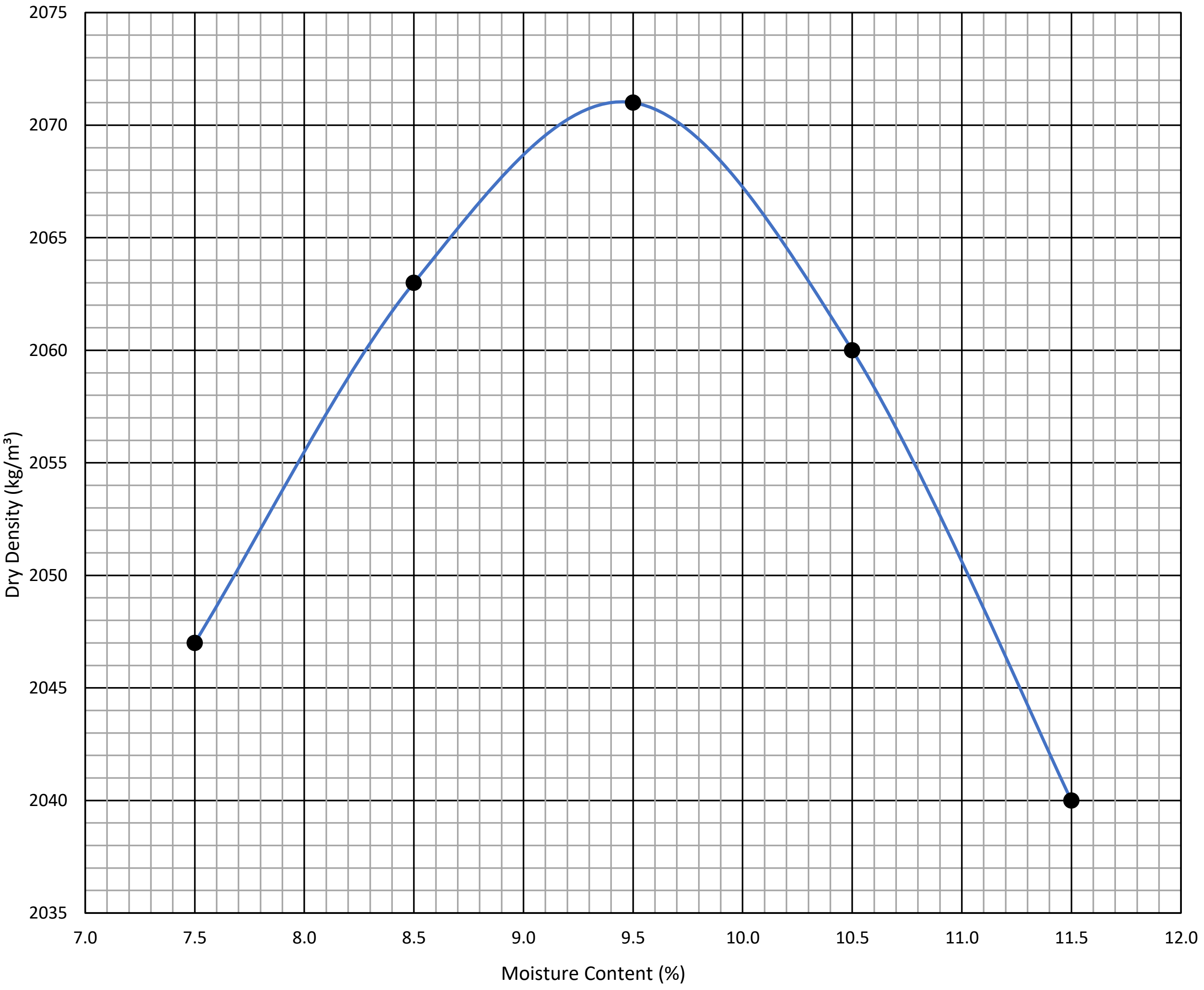
MDD & OMC DETERMINATION (Mod. AASHTO)

Sheet Reference:
R-STL-013 Rev01

Maximum Dry Density: **2071** kg/m³

Optimum Moisture Content: **9.5** %

Moisture Content (%)	7.5	8.5	9.5	10.5	11.5			
Dry Density (kg/m³)	2047	2063	2071	2060	2040			



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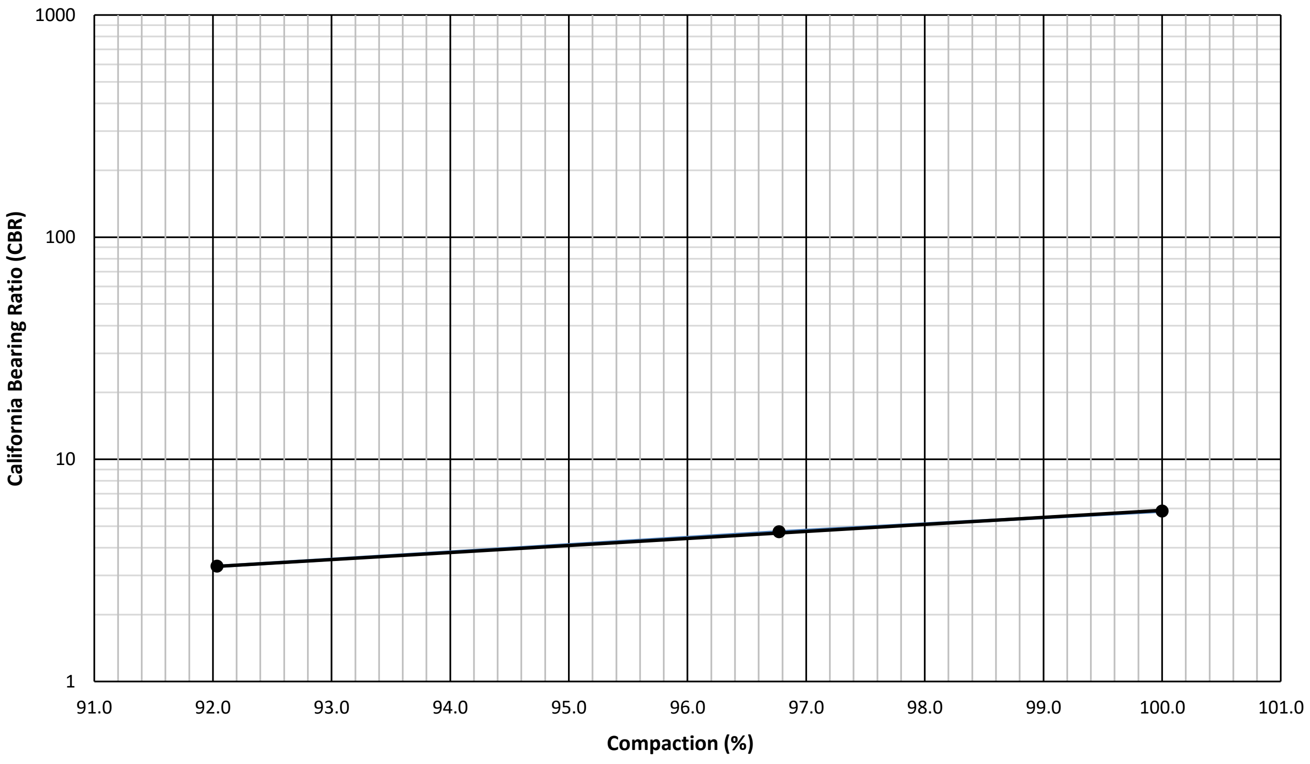
Client Name: BAV Consulting (Pty) Ltd
Project Name: Komati Power Station Repurposing
Sample: KTP20
Depth: (m) 0.1 - 2.7

Job Number: PVT-291
Lab Number: PVT-291-2041
Method: SANS 3001 GR40
Date: 26-Oct-23

CALIFORNIA BEARING RATIO

Sheet Reference:
R-STL-014 Rev01

Mod. AASHTO Values		Compaction Data: CBR			Swell	CBR at (mm)			CBR Values	
MDD	OMC	Dry Dens.	MC	Comp.						
(kg/m^3)	(%)	(kg/m^3)	(%)	(%)	(%)	2.5	5.0	7.5	Compaction (%)	CBR
1843	13.1	1858	13.6	100.0	0.6	6	6	6	100	**5.8**
									98	**5.1**
1843	13.1	1798	13.6	96.8	0.9	5	5	5	97	**4.8**
									95	**4.1**
1843	13.1	1710	13.6	92.0	1.1	3	3	3	93	**3.5**
									90	**2.8**



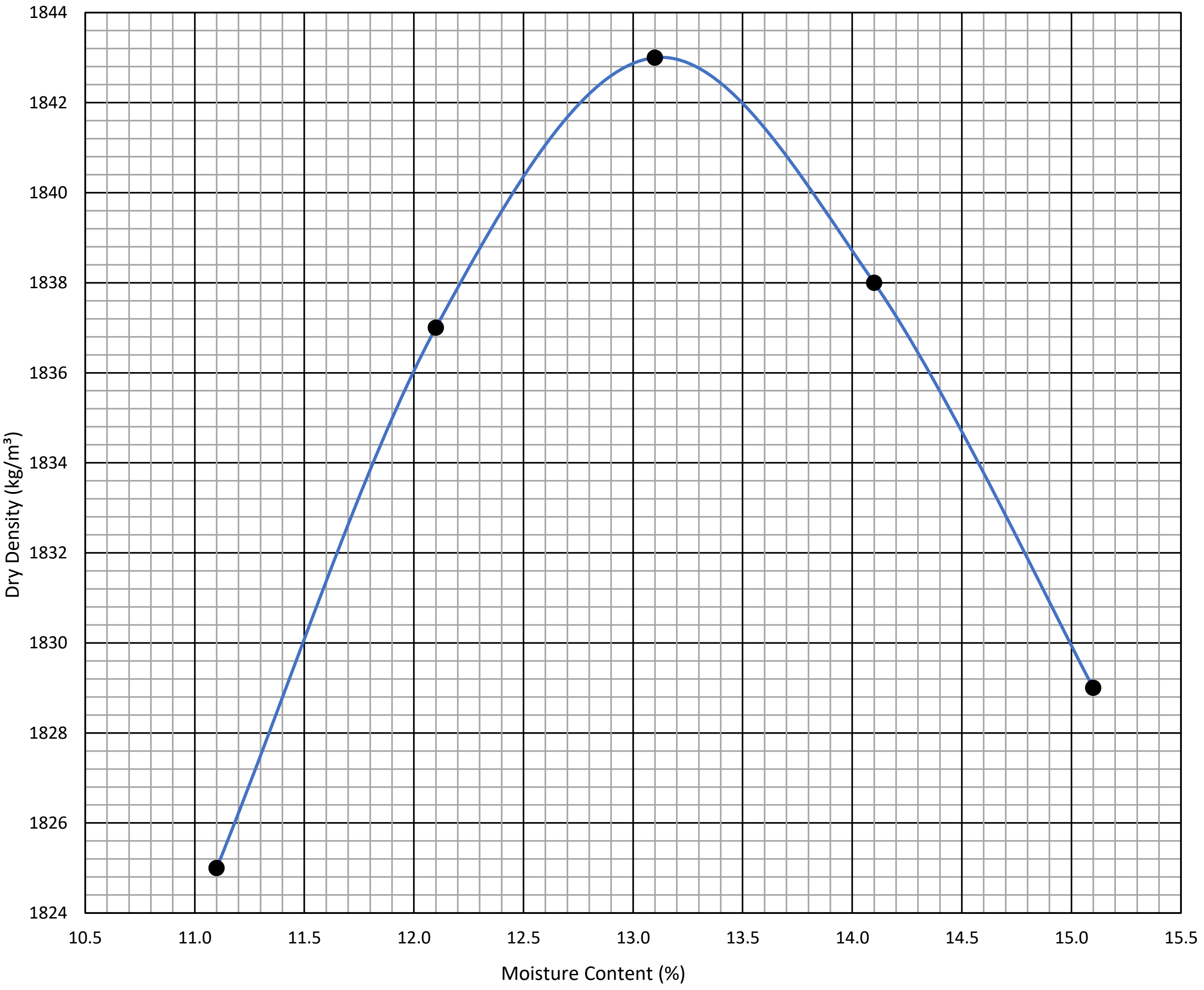
Client Name:	BAV Consulting (Pty) Ltd	**Job Number:**	PVT-291
Project Name:	Komati Power Station Repurposing	**Lab Number:**	PVT-291-2041
Sample:	KTP20	**Method:**	SANS 3001 GR30
Depth: (m)	0.1 - 2.7	**Date:**	26-Oct-23

MDD & OMC DETERMINATION (Mod. AASHTO)

Sheet Reference:
R-STL-013 Rev01

Maximum Dry Density: **1843** kg/m³ Optimum Moisture Content: **13.1** %

Moisture Content (%)	11.1	12.1	13.1	14.1	15.1			
Dry Density (kg/m³)	1825	1837	1843	1838	1829			



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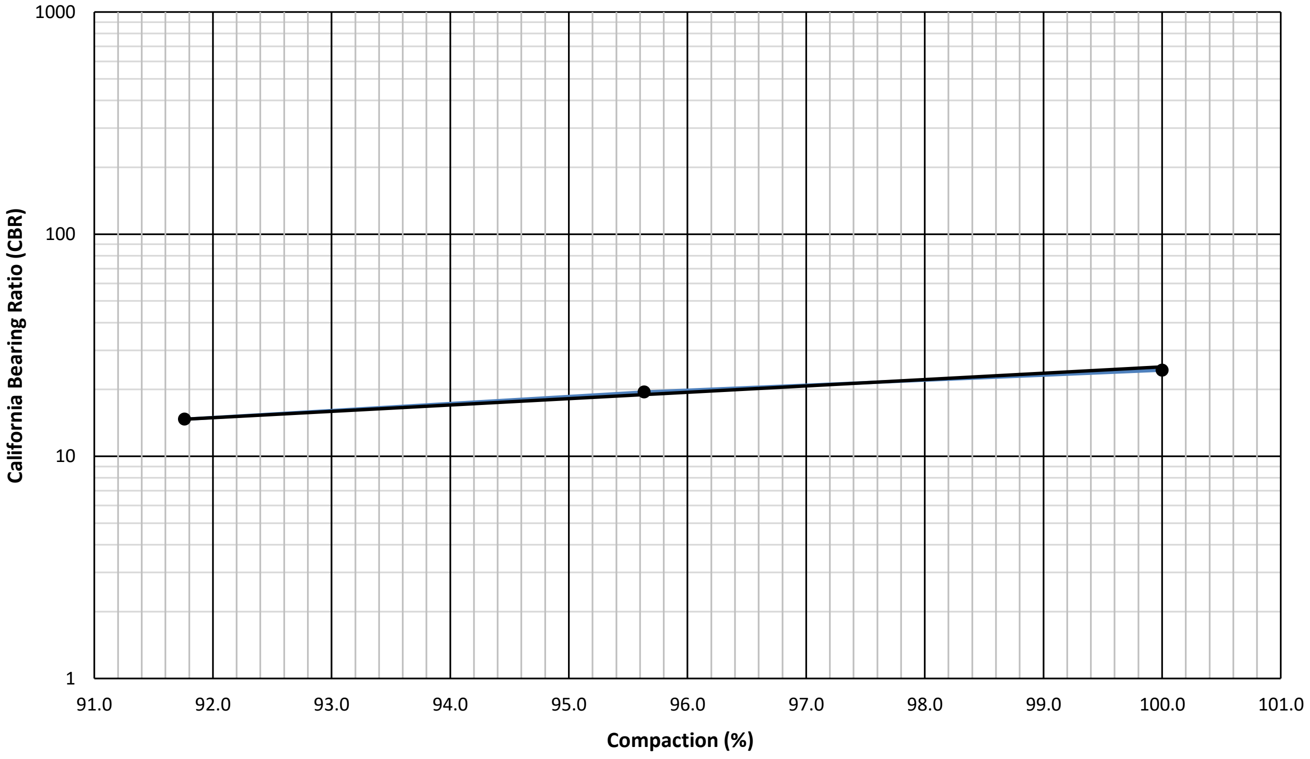
Client Name:	BAV Consulting (Pty) Ltd	**Job Number:**	PVT-291
Project Name:	Komati Power Station Repurposing	**Lab Number:**	PVT-291-2042
Sample:	KTP21	**Method:**	SANS 3001 GR40
Depth: (m)	0.1 - 2.4	**Date:**	26-Oct-23

CALIFORNIA BEARING RATIO

Sheet Reference:
R-STL-014 Rev01

Mod. AASHTO Values		**Compaction Data: CBR**			**Swell**	**CBR at (mm)**			**CBR Values**	
MDD	**OMC**	**Dry Dens.**	**MC**	**Comp.**						
(kg/m³)	(%)	(kg/m³)	(%)	(%)	(%)	2.5	5.0	7.5	Compaction (%)	CBR
2095	10.7	2039	10.8	100.0	0.0	24	21	19	100	**24**
									98	**22**
2095	10.7	1950	10.8	95.6	0.0	19	21	21	97	**21**
									95	**19**
2095	10.7	1871	10.8	91.8	0.0	15	12	10	93	**16**
									90	**13**



Client Name:	BAV Consulting (Pty) Ltd	**Job Number:**	PVT-291
Project Name:	Komati Power Station Repurposing	**Lab Number:**	PVT-291-2042
Sample:	KTP21	**Method:**	SANS 3001 GR30
Depth: (m)	0.1 - 2.4	**Date:**	26-Oct-23

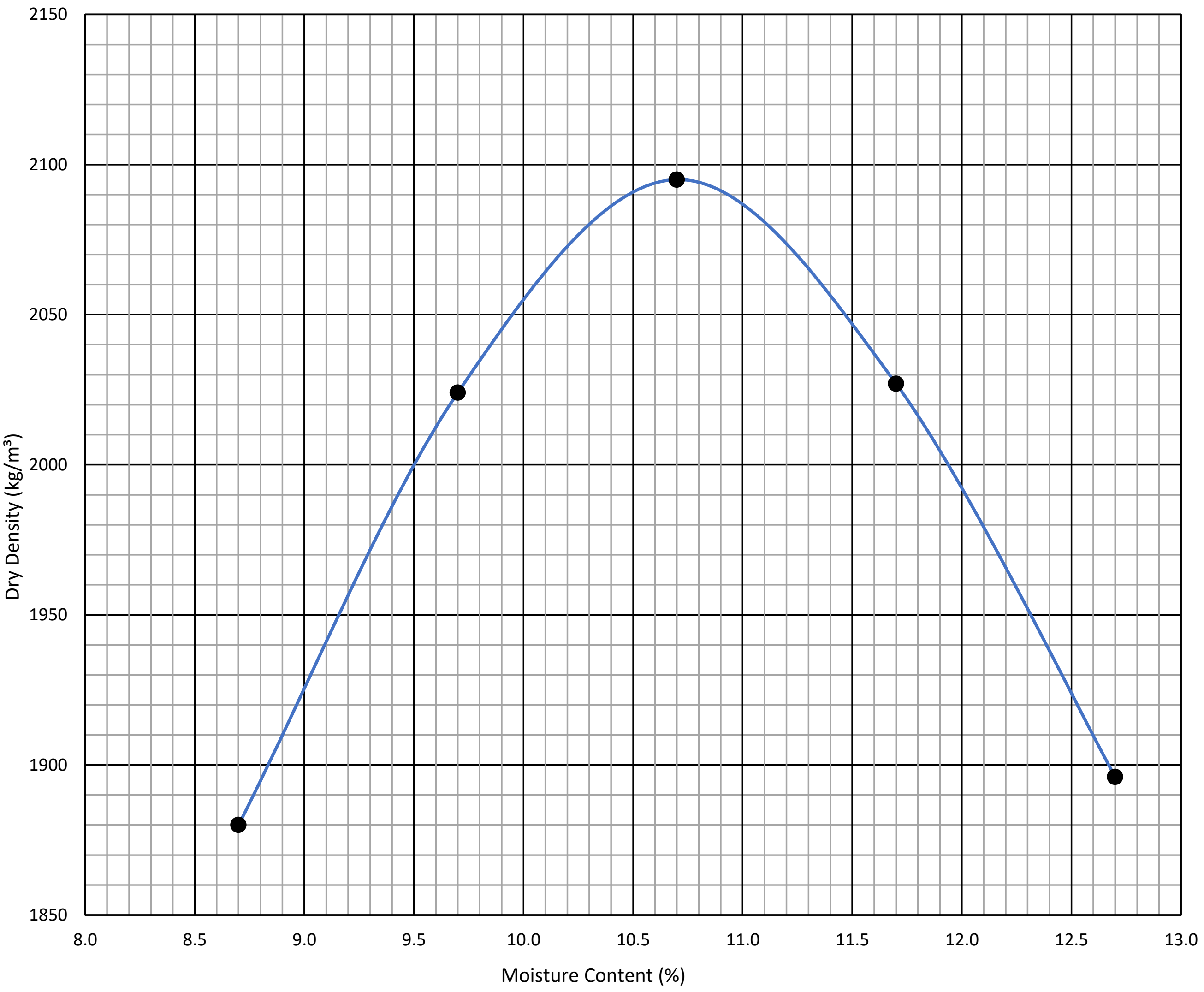
MDD & OMC DETERMINATION (Mod. AASHTO)

Sheet Reference:
R-STL-013 Rev01

Maximum Dry Density: **2095** kg/m³

Optimum Moisture Content: **10.7** %

Moisture Content (%)	8.7	9.7	10.7	11.7	12.7			
Dry Density (kg/m³)	1880	2024	2095	2027	1896			

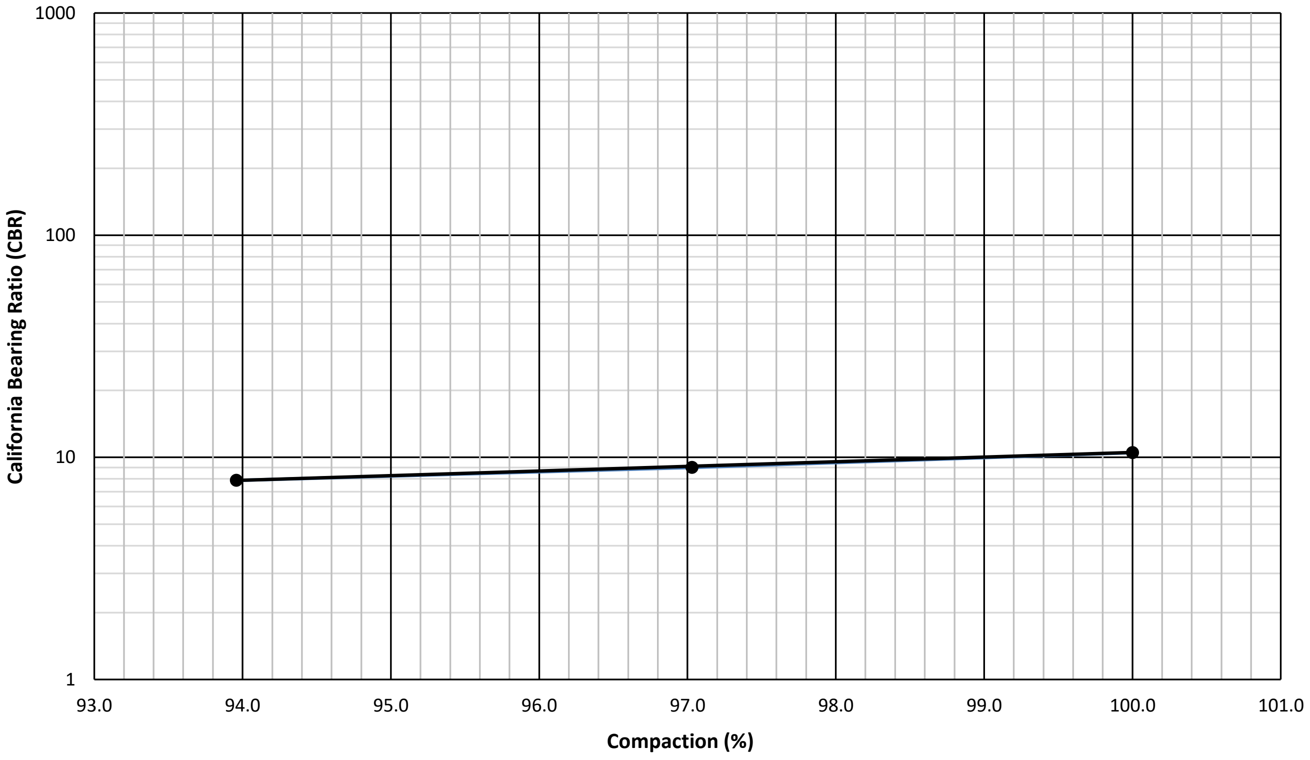


Client Name:	BAV Consulting (Pty) Ltd	**Job Number:**	PVT-291
Project Name:	Komati Power Station Repurposing	**Lab Number:**	PVT-291-2044
Sample:	KTP23	**Method:**	SANS 3001 GR40
Depth: (m)	0.3 - 2.4	**Date:**	26-Oct-23

CALIFORNIA BEARING RATIO

Sheet Reference:
R-STL-014 Rev01

Mod. AASHTO Values		**Compaction Data: CBR**			**Swell**	**CBR at (mm)**			**CBR Values**	
MDD	**OMC**	**Dry Dens.**	**MC**	**Comp.**						
(kg/m³)	(%)	(kg/m³)	(%)	(%)	(%)	2.5	5.0	7.5	Compaction (%)	CBR
									100	**10.5**
1991	11.7	1986	11.6	100.0	0.2	10	9	9	98	**9.5**
									97	**9.0**
1991	11.7	1927	11.6	97.0	0.2	9	9	9	95	**8.2**
									93	**7.5**
1991	11.7	1866	11.6	94.0	0.3	8	7	7	90	**6.6**



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Client Name: BAV Consulting (Pty) Ltd
Project Name: Komati Power Station Repurposing
Sample: KTP23
Depth: (m) 0.3 - 2.4

Job Number: PVT-291
Lab Number: PVT-291-2044
Method: SANS 3001 GR30
Date: 26-Oct-23

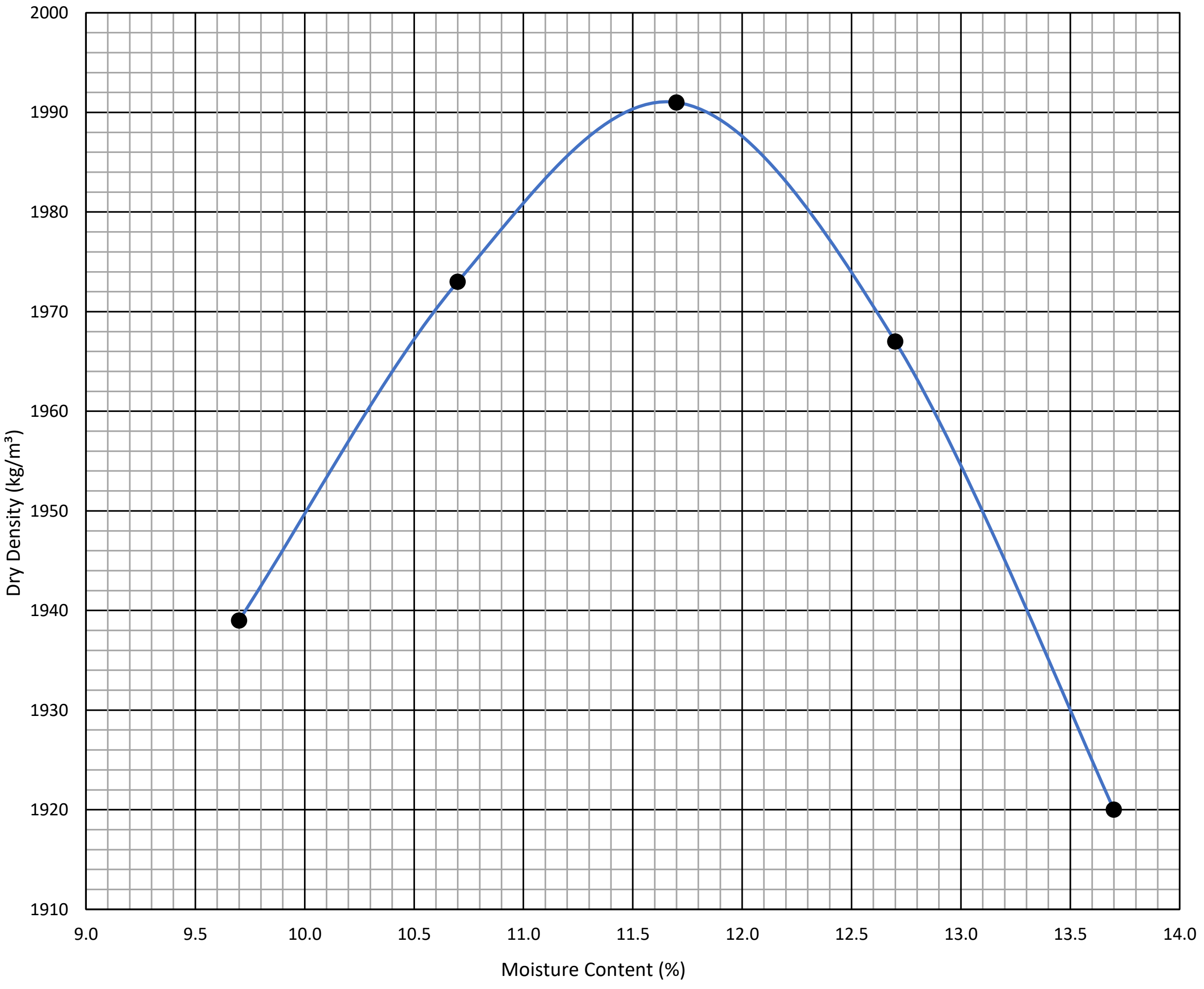
MDD & OMC DETERMINATION (Mod. AASHTO)

Sheet Reference:
R-STL-013 Rev01

Maximum Dry Density: **1991** kg/m³

Optimum Moisture Content: **11.7** %

Moisture Content (%)	9.7	10.7	11.7	12.7	13.7			
Dry Density (kg/m³)	1939	1973	1991	1967	1920			

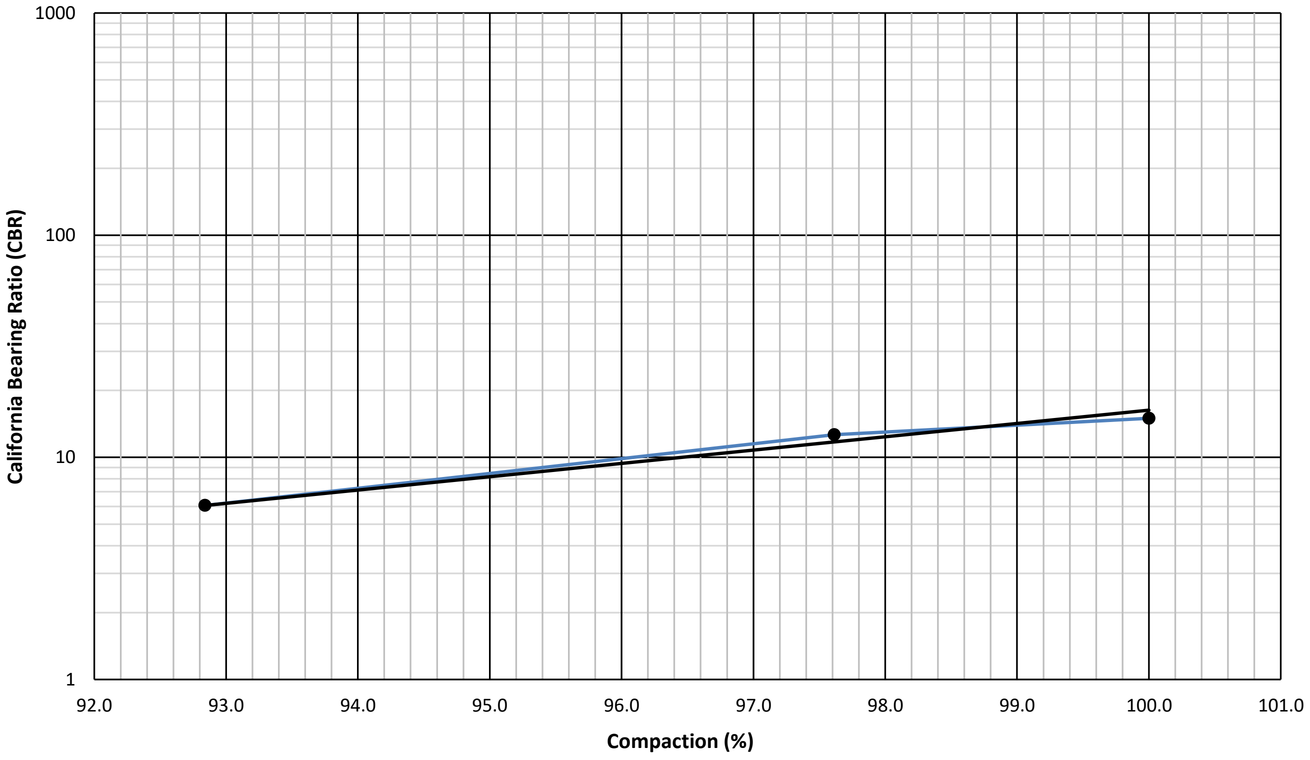


Client Name:	BAV Consulting (Pty) Ltd	**Job Number:**	PVT-291
Project Name:	Komati Power Station Repurposing	**Lab Number:**	PVT-291-2046
Sample:	KTP25	**Method:**	SANS 3001 GR40
Depth: (m)	0.4 - 2.3	**Date:**	26-Oct-23

CALIFORNIA BEARING RATIO

Sheet Reference:
R-STL-014 Rev01

Mod. AASHTO Values		Compaction Data: CBR			Swell	CBR at (mm)			CBR Values	
MDD	OMC	Dry Dens.	MC	Comp.						
(kg/m³)	(%)	(kg/m³)	(%)	(%)	(%)	2.5	5.0	7.5	Compaction (%)	CBR
									100	**15**
2000	12.5	2053	9.9	100.0	0.0	15	15	14	98	**13**
									97	**12**
2000	12.5	2004	9.9	97.6	0.1	13	17	20	95	**9**
									93	**6**
2000	12.5	1906	9.9	92.8	0.1	6	9	11	90	**4**



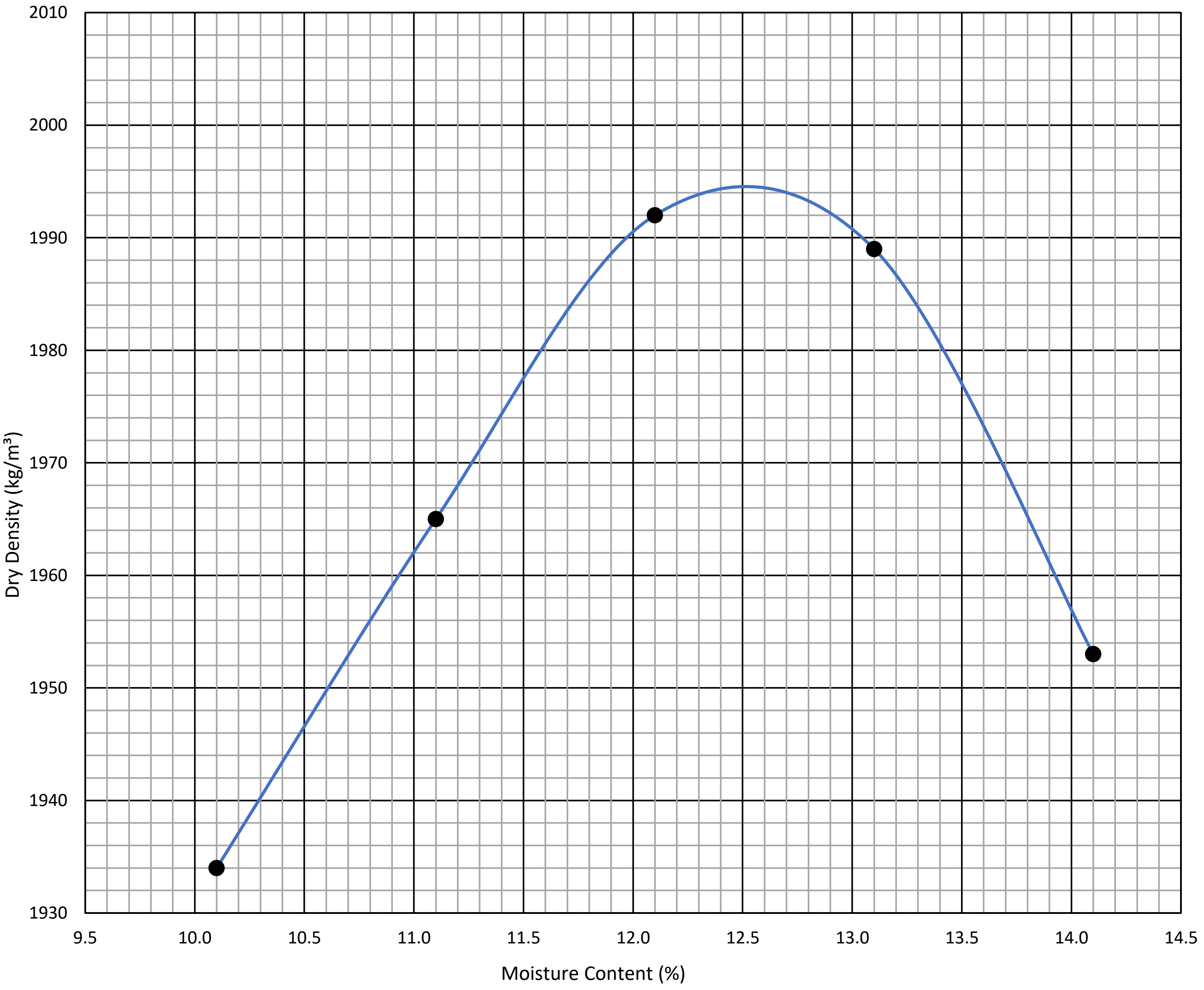
Client Name:	BAV Consulting (Pty) Ltd	**Job Number:**	PVT-291
Project Name:	Komati Power Station Repurposing	**Lab Number:**	PVT-291-2046
Sample:	KTP25	**Method:**	SANS 3001 GR30
Depth: (m)	0.4 - 2.3	**Date:**	26-Oct-23

MDD & OMC DETERMINATION (Mod. AASHTO)

Sheet Reference:
R-STL-013 Rev01

Maximum Dry Density: **2000** kg/m³ Optimum Moisture Content: **12.5** %

Moisture Content (%)	10.1	11.1	12.1	13.1	14.1			
Dry Density (kg/m³)	1934	1965	1992	1989	1953			

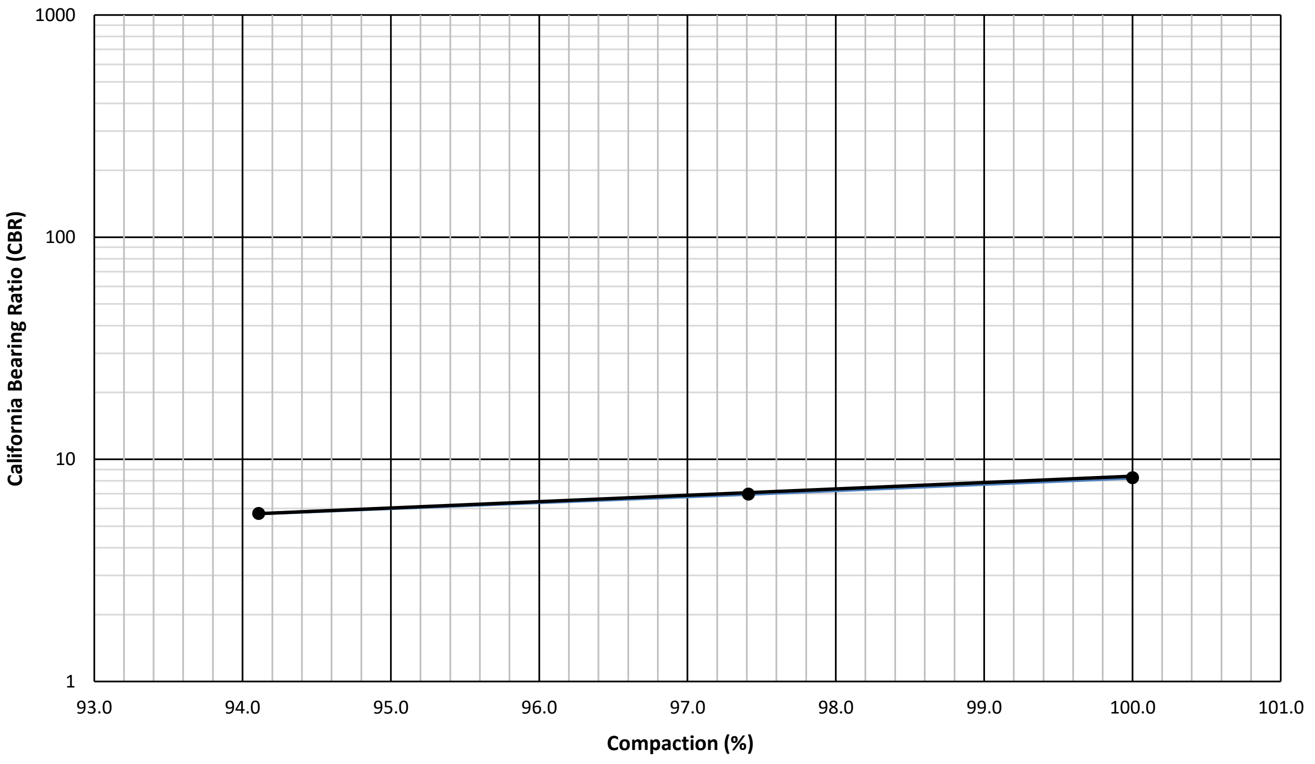


Client Name:	BAV Consulting (Pty) Ltd	**Job Number:**	PVT-291
Project Name:	Komati Power Station Repurposing	**Lab Number:**	PVT-291-2047
Sample:	KTP26	**Method:**	SANS 3001 GR40
Depth: (m)	0.6 - 2.1	**Date:**	26-Oct-23

CALIFORNIA BEARING RATIO

Sheet Reference:
R-STL-014 Rev01

Mod. AASHTO Values		**Compaction Data: CBR**			**Swell**	**CBR at (mm)**			**CBR Values**	
MDD	**OMC**	**Dry Dens.**	**MC**	**Comp.**						
(kg/m³)	(%)	(kg/m³)	(%)	(%)	(%)	2.5	5.0	7.5	Compaction (%)	CBR
1968	11.6	1969	11.9	100.0	0.1	8	7	6	100	**8.2**
									98	**7.2**
1968	11.6	1918	11.9	97.4	0.2	7	7	6	97	**6.8**
									95	**6.0**
1968	11.6	1853	11.9	94.1	0.2	6	5	5	93	**5.3**
									90	**4.4**



Client Name:	BAV Consulting (Pty) Ltd	**Job Number:**	PVT-291
Project Name:	Komati Power Station Repurposing	**Lab Number:**	PVT-291-2047
Sample:	KTP26	**Method:**	SANS 3001 GR30
Depth: (m)	0.6 - 2.1	**Date:**	26-Oct-23

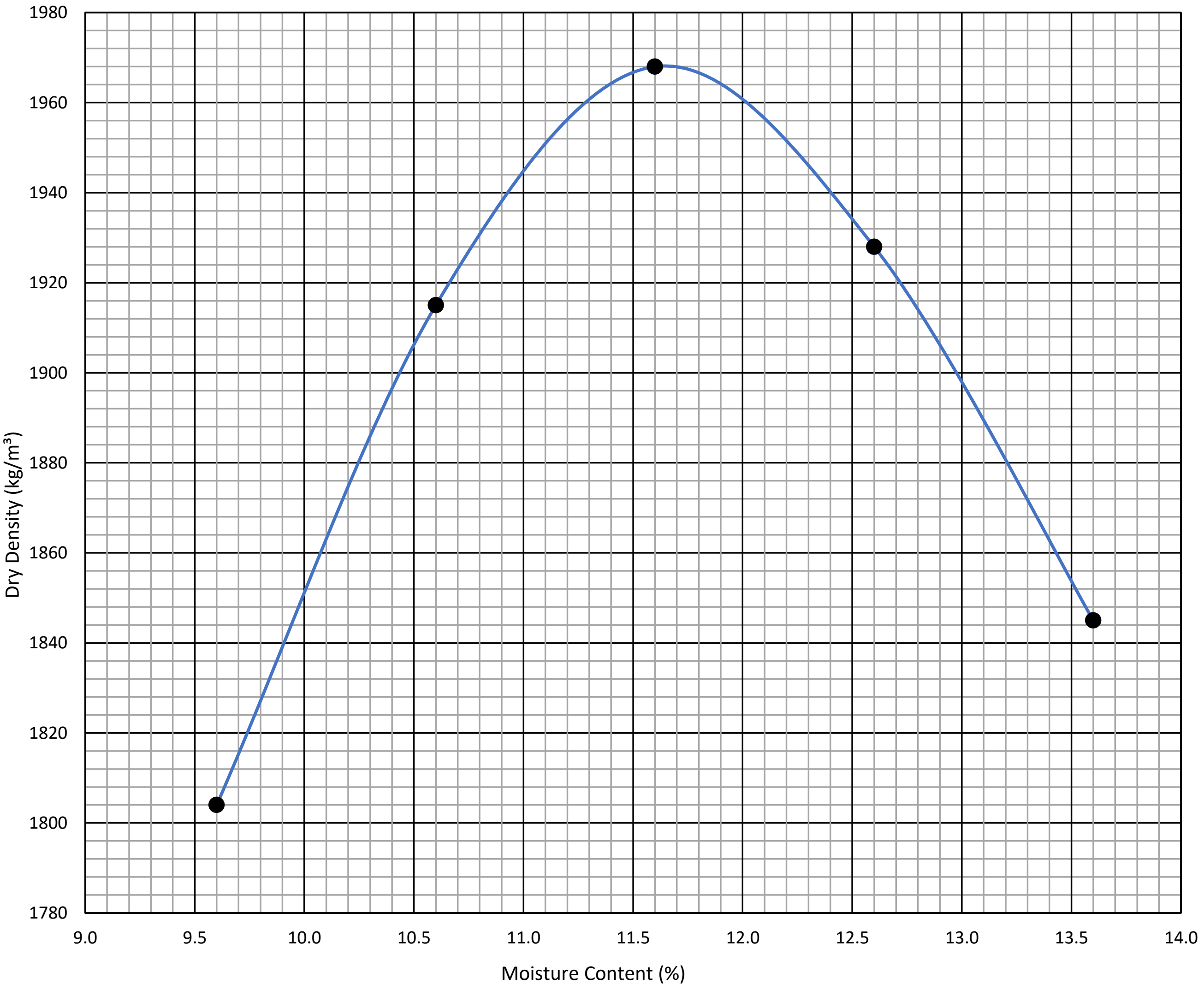
MDD & OMC DETERMINATION (Mod. AASHTO)

Sheet Reference:
R-STL-013 Rev01

Maximum Dry Density: **1968** kg/m³

Optimum Moisture Content: **11.6** %

Moisture Content (%)	9.6	10.6	11.6	12.6	13.6			
Dry Density (kg/m³)	1804	1915	1968	1928	1845			

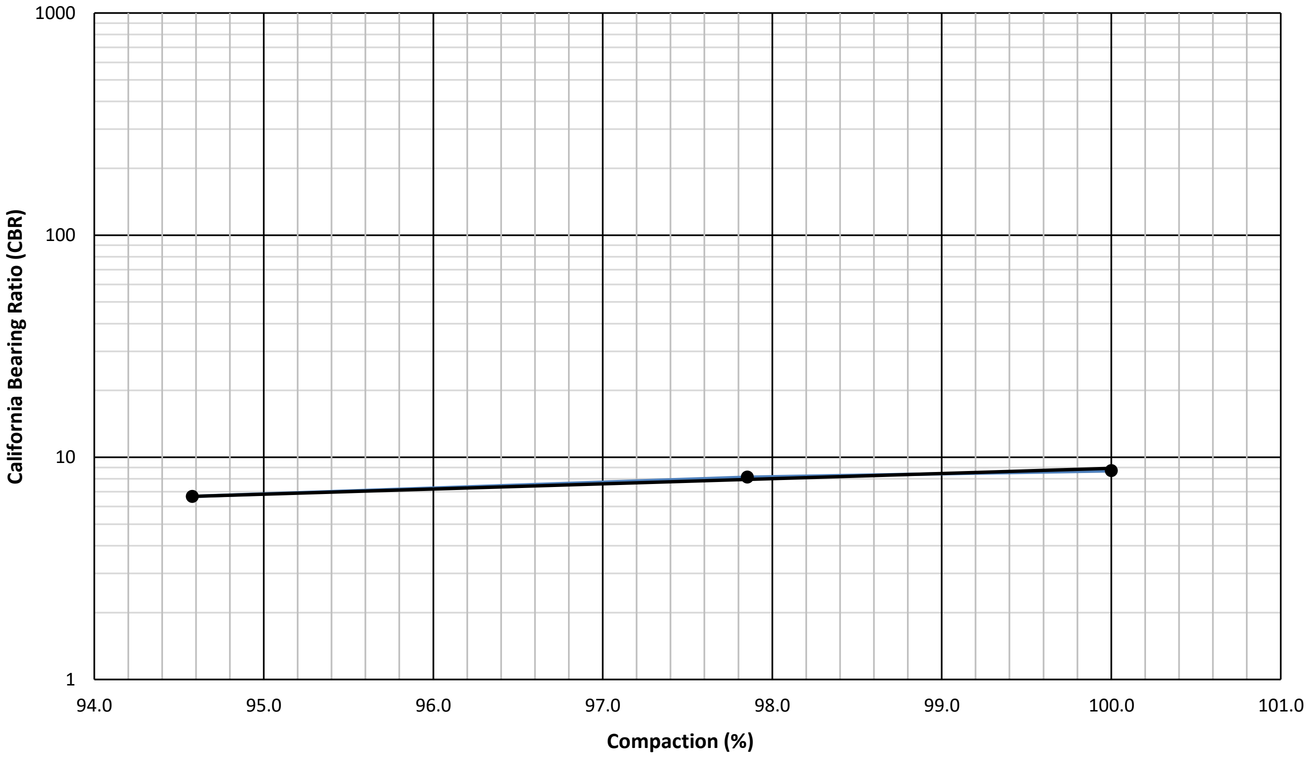


Client Name:	BAV Consulting (Pty) Ltd	**Job Number:**	PVT-291
Project Name:	Komati Power Station Repurposing	**Lab Number:**	PVT-291-2050
Sample:	KTP29	**Method:**	SANS 3001 GR40
Depth: (m)	0.5 - 2.8	**Date:**	26-Oct-23

CALIFORNIA BEARING RATIO

Sheet Reference:
R-STL-014 Rev01

Mod. AASHTO Values		**Compaction Data: CBR**			**Swell**	**CBR at (mm)**			**CBR Values**	
MDD	**OMC**	**Dry Dens.**	**MC**	**Comp.**						
(kg/m³)	(%)	(kg/m³)	(%)	(%)	(%)	2.5	5.0	7.5	Compaction (%)	CBR
									100	**8.7**
1872	13.5	1863	13.8	100.0	0.0	9	8	7	98	**8.2**
									97	**7.7**
1872	13.5	1823	13.8	97.9	0.1	8	7	6	95	**6.8**
									93	**6.1**
1872	13.5	1762	13.8	94.6	0.1	7	6	6	90	**5.1**



Client Name:	BAV Consulting (Pty) Ltd	**Job Number:**	PVT-291
Project Name:	Komati Power Station Repurposing	**Lab Number:**	PVT-291-2050
Sample:	KTP29	**Method:**	SANS 3001 GR30
Depth: (m)	0.5 - 2.8	**Date:**	26-Oct-23

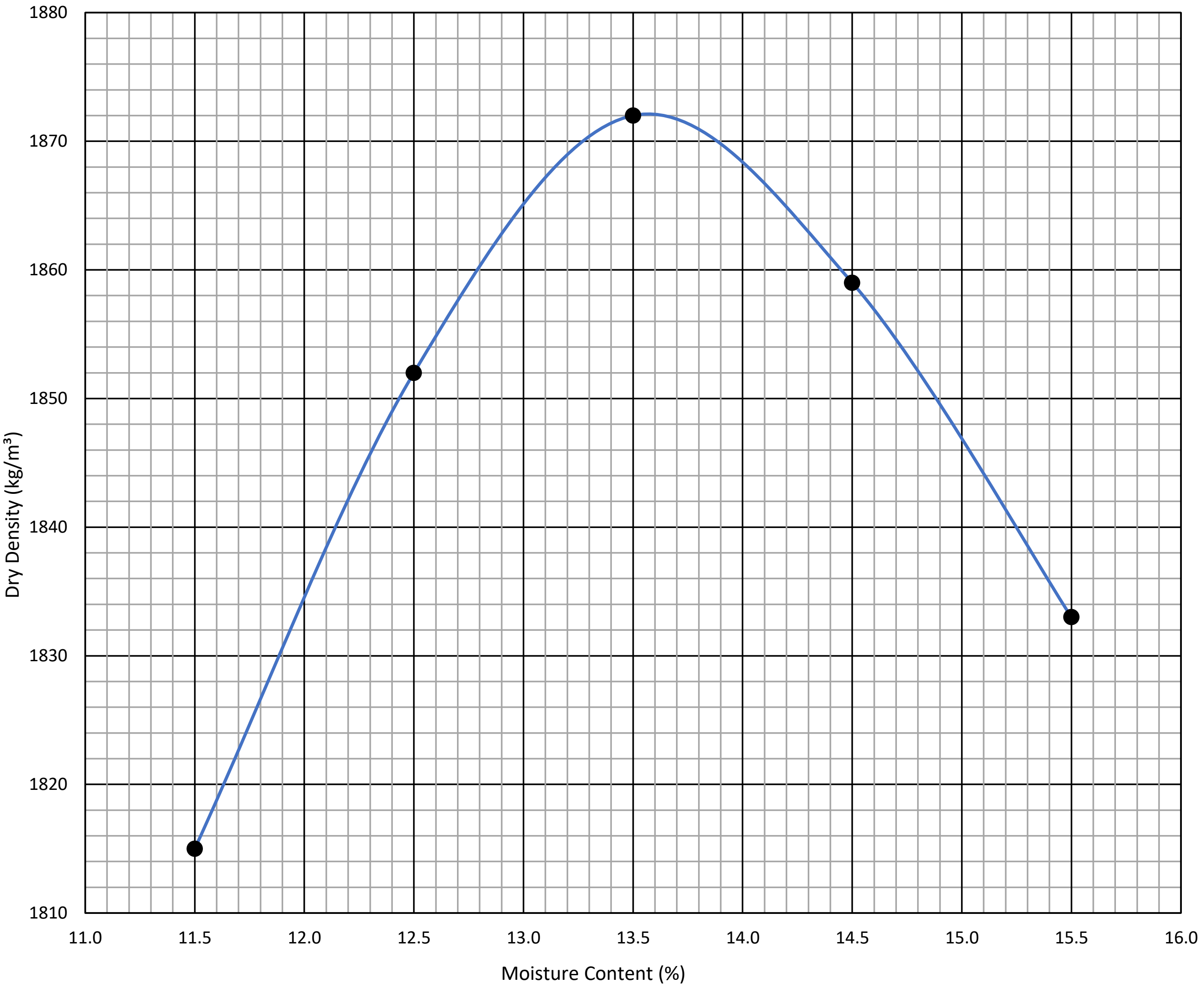
MDD & OMC DETERMINATION (Mod. AASHTO)

Sheet Reference:
R-STL-013 Rev01

Maximum Dry Density: **1872** kg/m³

Optimum Moisture Content: **13.5** %

Moisture Content (%)	11.5	12.5	13.5	14.5	15.5			
Dry Density (kg/m³)	1815	1852	1872	1859	1833			



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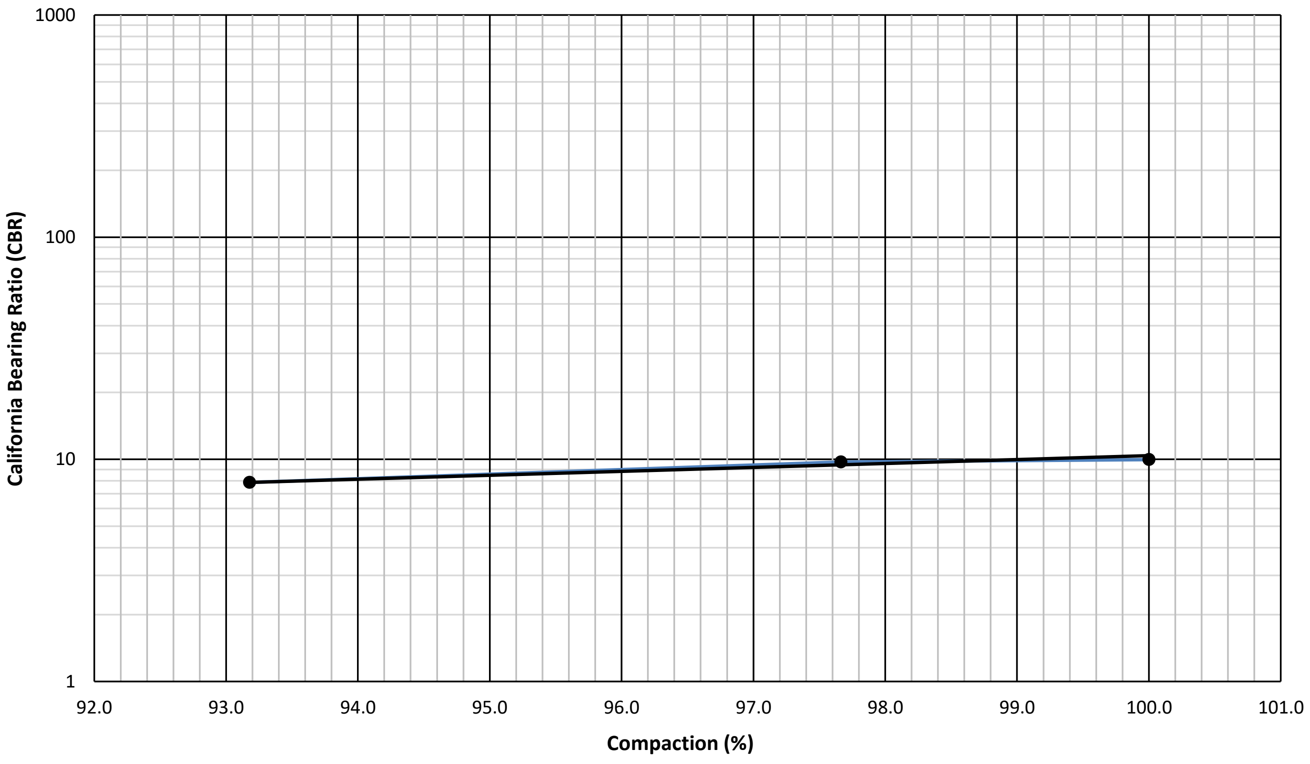
Client Name:	BAV Consulting (Pty) Ltd	**Job Number:**	PVT-291
Project Name:	Komati Power Station Repurposing	**Lab Number:**	PVT-291-2051
Sample:	KTP30	**Method:**	SANS 3001 GR40
Depth: (m)	0.2 - 2.4	**Date:**	26-Oct-23

CALIFORNIA BEARING RATIO

Sheet Reference:
R-STL-014 Rev01

Mod. AASHTO Values		**Compaction Data: CBR**			**Swell**	**CBR at (mm)**			**CBR Values**	
MDD	**OMC**	**Dry Dens.**	**MC**	**Comp.**						
(kg/m³)	(%)	(kg/m³)	(%)	(%)	(%)	2.5	5.0	7.5	Compaction (%)	CBR
1675	18.9	1627	19.9	100.0	0.4	10	10	9	100	**10.0**
									98	**9.8**
1675	18.9	1589	19.9	97.7	0.5	10	10	10	97	**9.4**
									95	**8.6**
1675	18.9	1516	19.9	93.2	0.7	8	8	8	93	**7.8**
									90	**6.8**



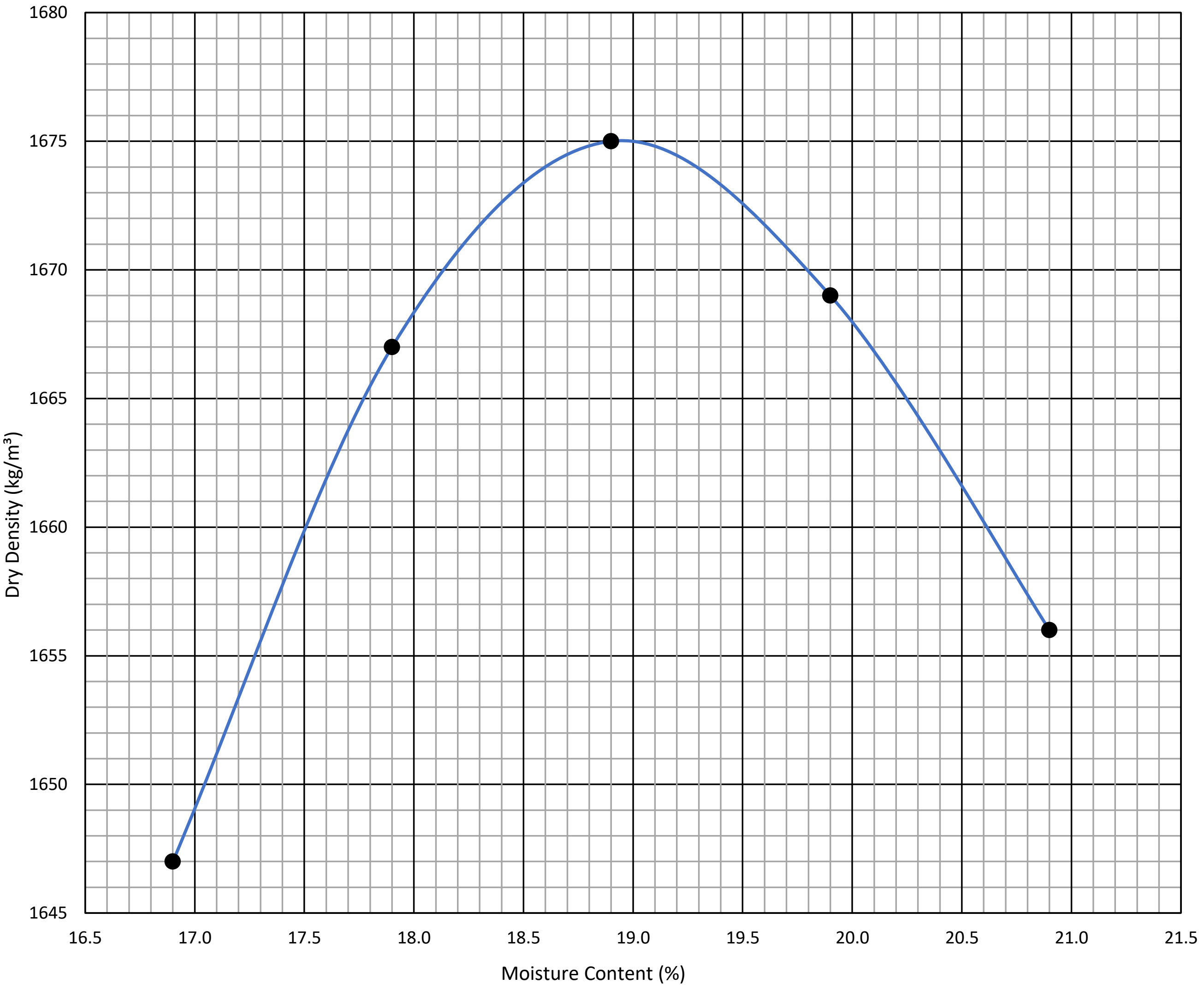
Client Name:	BAV Consulting (Pty) Ltd	**Job Number:**	PVT-291
Project Name:	Komati Power Station Repurposing	**Lab Number:**	PVT-291-2051
Sample:	KTP30	**Method:**	SANS 3001 GR30
Depth: (m)	0.2 - 2.4	**Date:**	26-Oct-23

MDD & OMC DETERMINATION (Mod. AASHTO)

Sheet Reference:
R-STL-013 Rev01

Maximum Dry Density: **1675** kg/m³ Optimum Moisture Content: **18.9** %

Moisture Content (%)	16.9	17.9	18.9	19.9	20.9			
Dry Density (kg/m³)	1647	1667	1675	1669	1656			

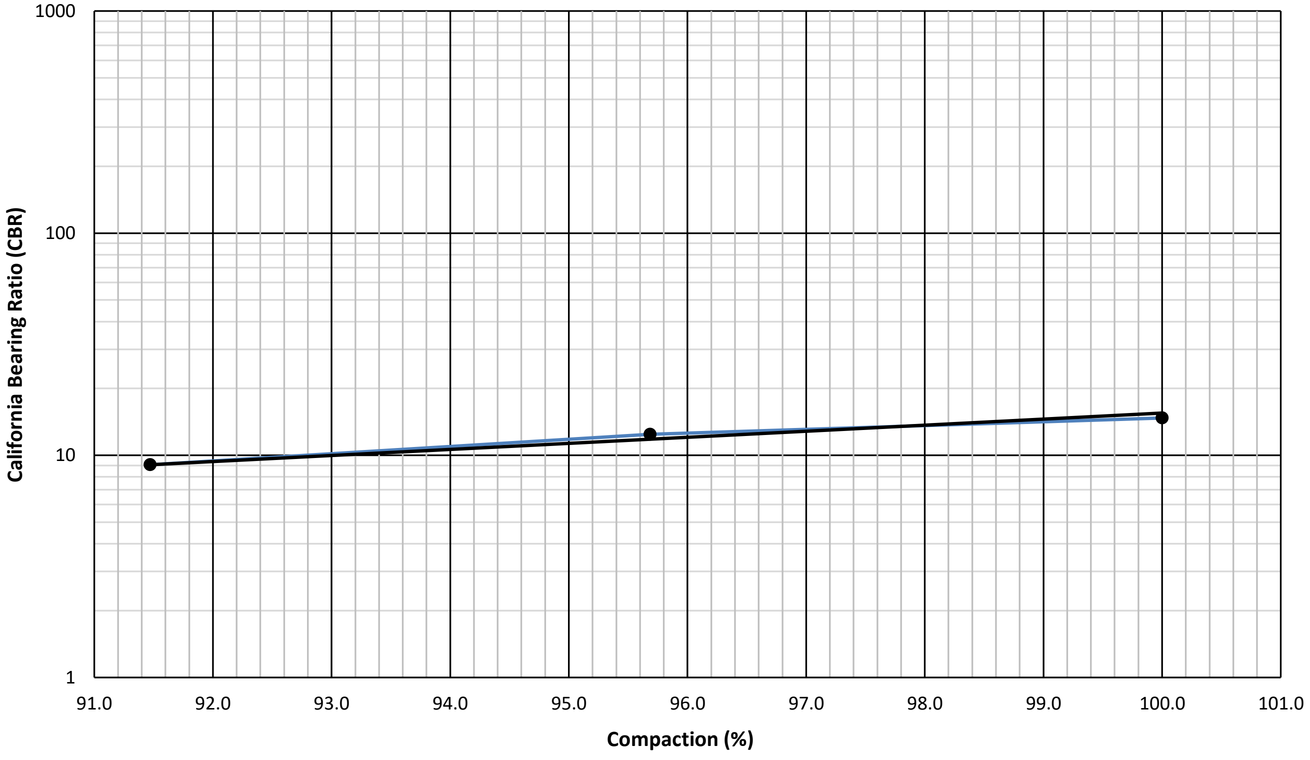


Client Name:	BAV Consulting (Pty) Ltd	**Job Number:**	PVT-291
Project Name:	Komati Power Station Repurposing	**Lab Number:**	PVT-291-2053
Sample:	KTP32	**Method:**	SANS 3001 GR40
Depth: (m)	0.2 - 2.2	**Date:**	26-Oct-23

CALIFORNIA BEARING RATIO

Sheet Reference:
R-STL-014 Rev01

Mod. AASHTO Values		Compaction Data: CBR			Swell	CBR at (mm)			CBR Values	
MDD	OMC	Dry Dens.	MC	Comp.						
(kg/m³)	(%)	(kg/m³)	(%)	(%)	(%)	2.5	5.0	7.5	Compaction (%)	CBR
									100	**15**
2022	11.1	1993	11.0	100.0	0.1	15	15	15	98	**14**
									97	**13**
2022	11.1	1907	11.0	95.7	0.1	12	13	12	95	**12**
									93	**10**
2022	11.1	1823	11.0	91.5	0.2	9	8	7	90	**8**



Client Name:	BAV Consulting (Pty) Ltd	**Job Number:**	PVT-291
Project Name:	Komati Power Station Repurposing	**Lab Number:**	PVT-291-2053
Sample:	KTP32	**Method:**	SANS 3001 GR30
Depth: (m)	0.2 - 2.2	**Date:**	26-Oct-23

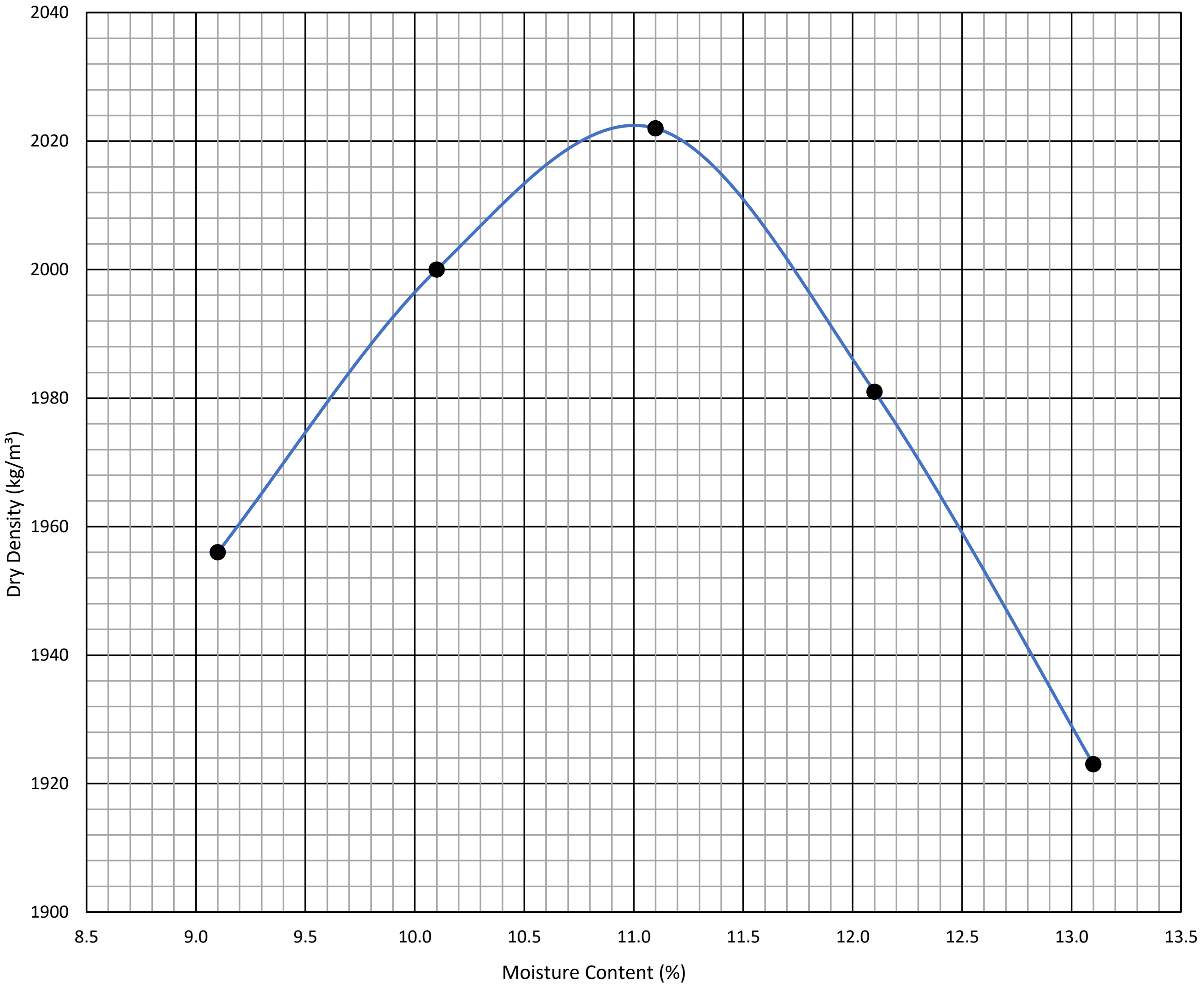
MDD & OMC DETERMINATION (Mod. AASHTO)

Sheet Reference:
R-STL-013 Rev01

Maximum Dry Density: **2022** kg/m³

Optimum Moisture Content: **11.1** %

Moisture Content (%)	9.1	10.1	11.1	12.1	13.1			
Dry Density (kg/m³)	1956	2000	2022	1981	1923			

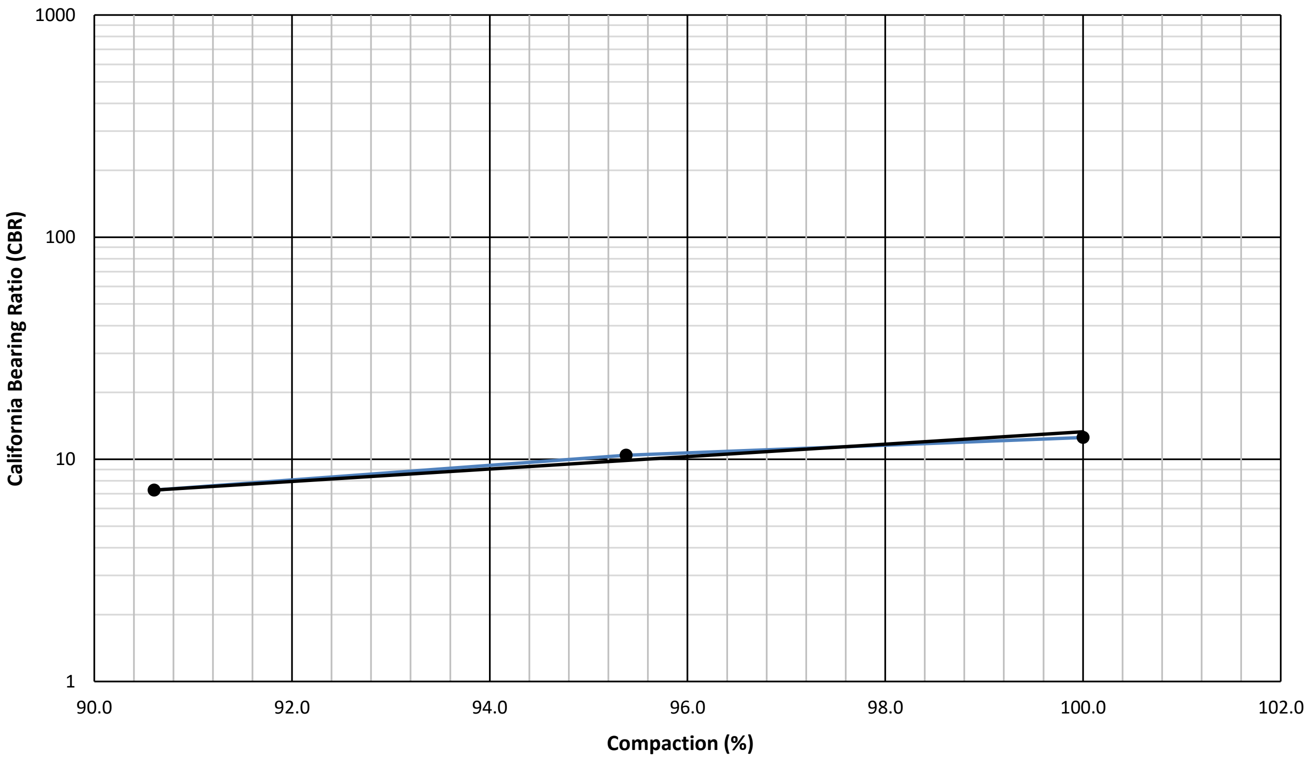


Client Name:	BAV Consulting (Pty) Ltd	**Job Number:**	PVT-291
Project Name:	Komati Power Station Repurposing	**Lab Number:**	PVT-291-2054
Sample:	KTP33	**Method:**	SANS 3001 GR40
Depth: (m)	0.2 - 2.4	**Date:**	26-Oct-23

CALIFORNIA BEARING RATIO

Sheet Reference:
R-STL-014 Rev01

Mod. AASHTO Values		**Compaction Data: CBR**			**Swell**	**CBR at (mm)**			**CBR Values**	
MDD	**OMC**	**Dry Dens.**	**MC**	**Comp.**						
(kg/m³)	(%)	(kg/m³)	(%)	(%)	(%)	2.5	5.0	7.5	Compaction (%)	CBR
									100	**13**
1965	11.7	1948	11.5	100.0	0.3	13	12	11	98	**12**
									97	**11**
1965	11.7	1858	11.5	95.4	0.3	10	10	9	95	**10**
									93	**9**
1965	11.7	1765	11.5	90.6	0.4	7	6	5	90	**7**



Client Name:	BAV Consulting (Pty) Ltd	**Job Number:**	PVT-291
Project Name:	Komati Power Station Repurposing	**Lab Number:**	PVT-291-2054
Sample:	KTP33	**Method:**	SANS 3001 GR30
Depth: (m)	0.2 - 2.4	**Date:**	26-Oct-23

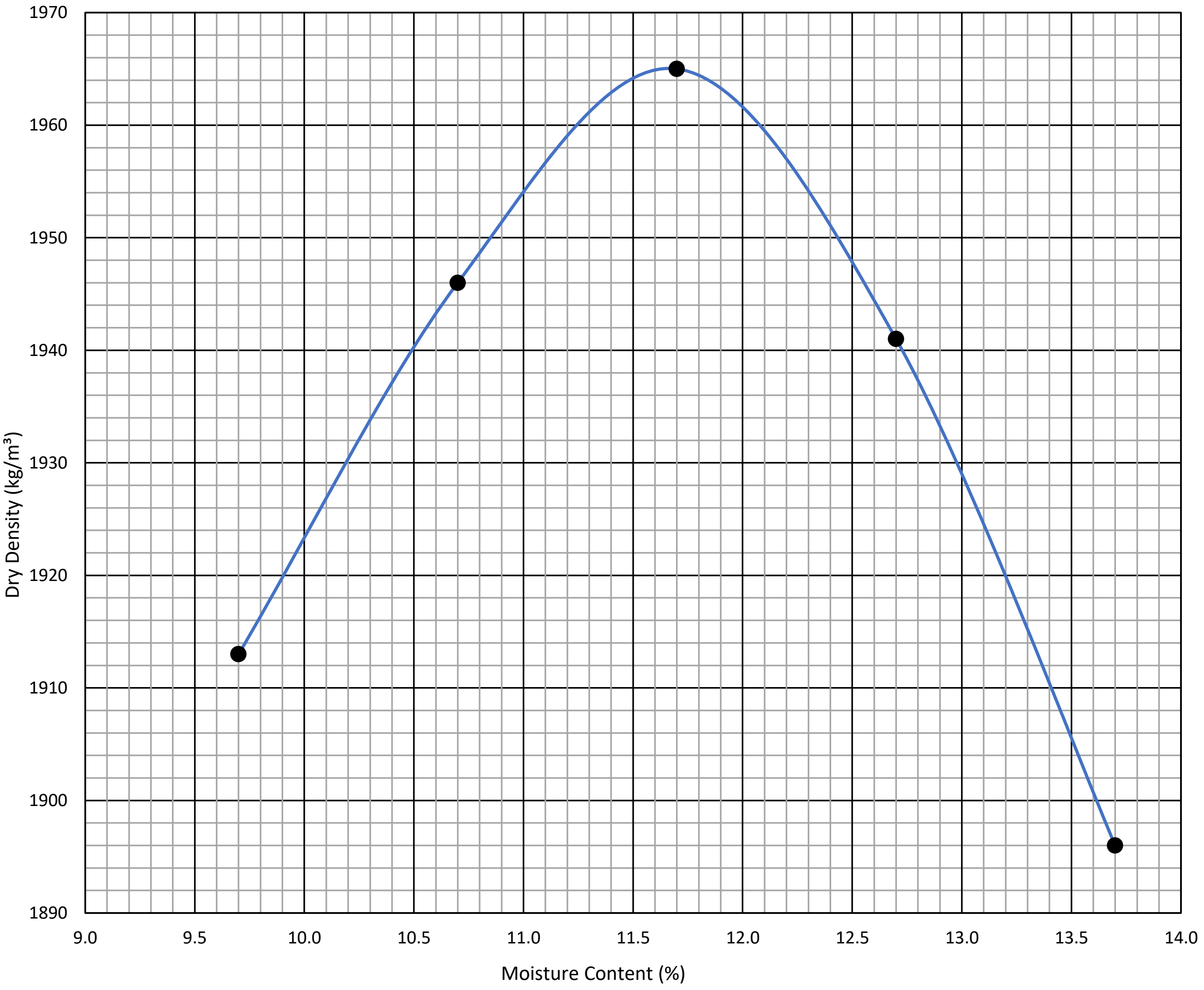
MDD & OMC DETERMINATION (Mod. AASHTO)

Sheet Reference:
R-STL-013 Rev01

Maximum Dry Density: **1965** kg/m³

Optimum Moisture Content: **11.7** %

Moisture Content (%)	9.7	10.7	11.7	12.7	13.7			
Dry Density (kg/m³)	1913	1946	1965	1941	1896			



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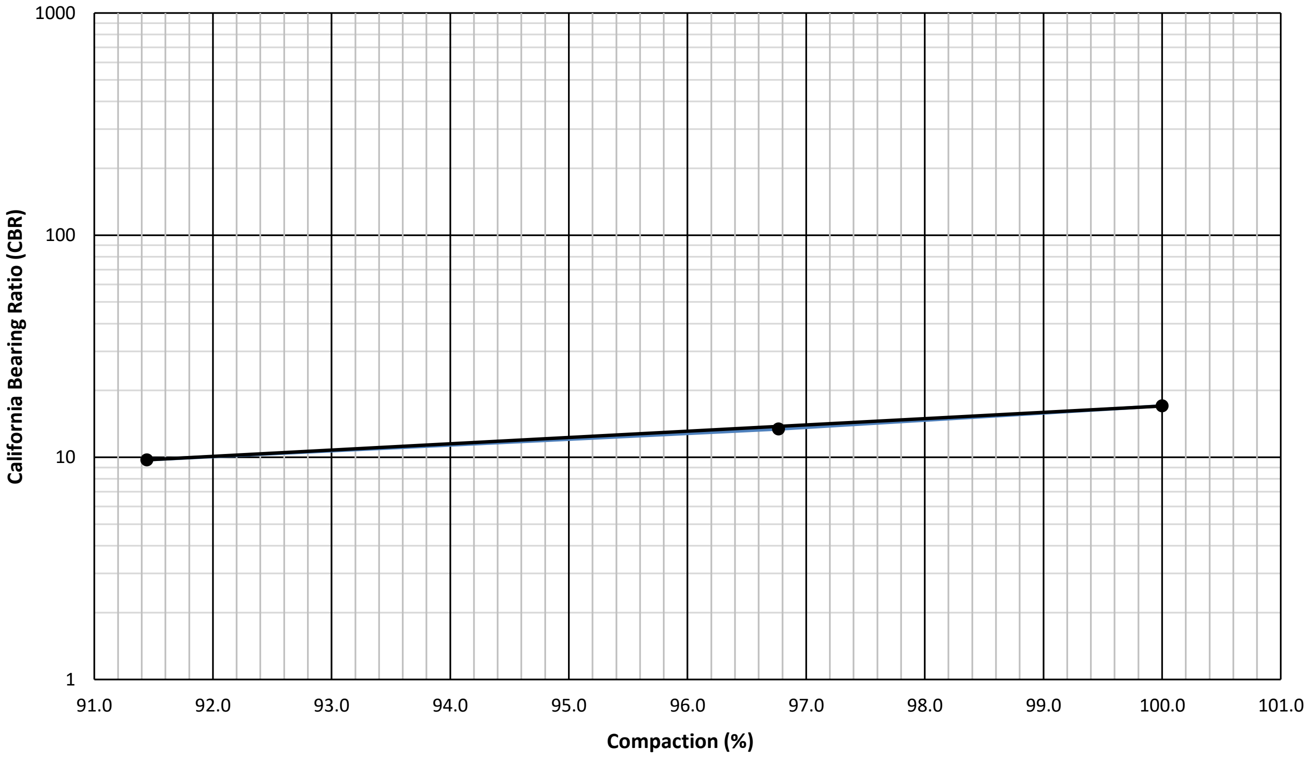
Client Name: BAV Consulting (Pty) Ltd
Project Name: Komati Power Station Repurposing
Sample: KTP35
Depth: (m) 0.2 - 2.6
Job Number: PVT-291
Lab Number: PVT-291-2056
Method: SANS 3001 GR40
Date: 26-Oct-23

CALIFORNIA BEARING RATIO

Sheet Reference:
R-STL-014 Rev01

Mod. AASHTO Values		**Compaction Data: CBR**			**Swell**	**CBR at (mm)**			**CBR Values**	
MDD	**OMC**	**Dry Dens.**	**MC**	**Comp.**						
(kg/m³)	(%)	(kg/m³)	(%)	(%)	(%)	2.5	5.0	7.5	Compaction (%)	CBR
2030	10.3	2010	10.5	100.0	0.1	17	17	17	100	**17**
									98	**15**
2030	10.3	1945	10.5	96.8	0.1	13	14	14	97	**14**
									95	**12**
2030	10.3	1838	10.5	91.4	0.2	10	8	7	93	**11**
									90	**9**



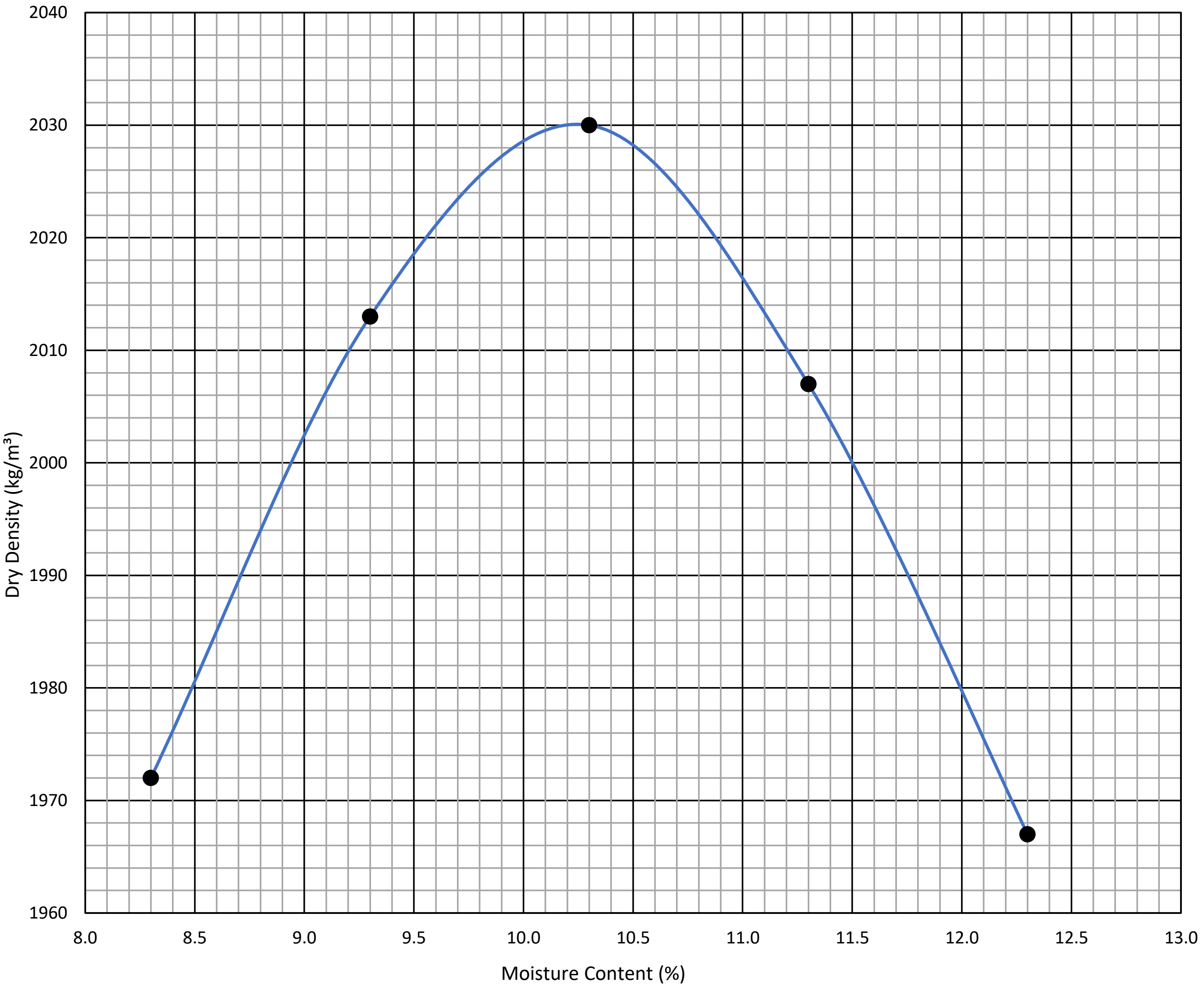
Client Name:	BAV Consulting (Pty) Ltd	**Job Number:**	PVT-291
Project Name:	Komati Power Station Repurposing	**Lab Number:**	PVT-291-2056
Sample:	KTP35	**Method:**	SANS 3001 GR30
Depth: (m)	0.2 - 2.6	**Date:**	26-Oct-23

MDD & OMC DETERMINATION (Mod. AASHTO)

Sheet Reference:
R-STL-013 Rev01

Maximum Dry Density: **2030** kg/m³ Optimum Moisture Content: **10.3** %

Moisture Content (%)	8.3	9.3	10.3	11.3	12.3			
Dry Density (kg/m³)	1972	2013	2030	2007	1967			



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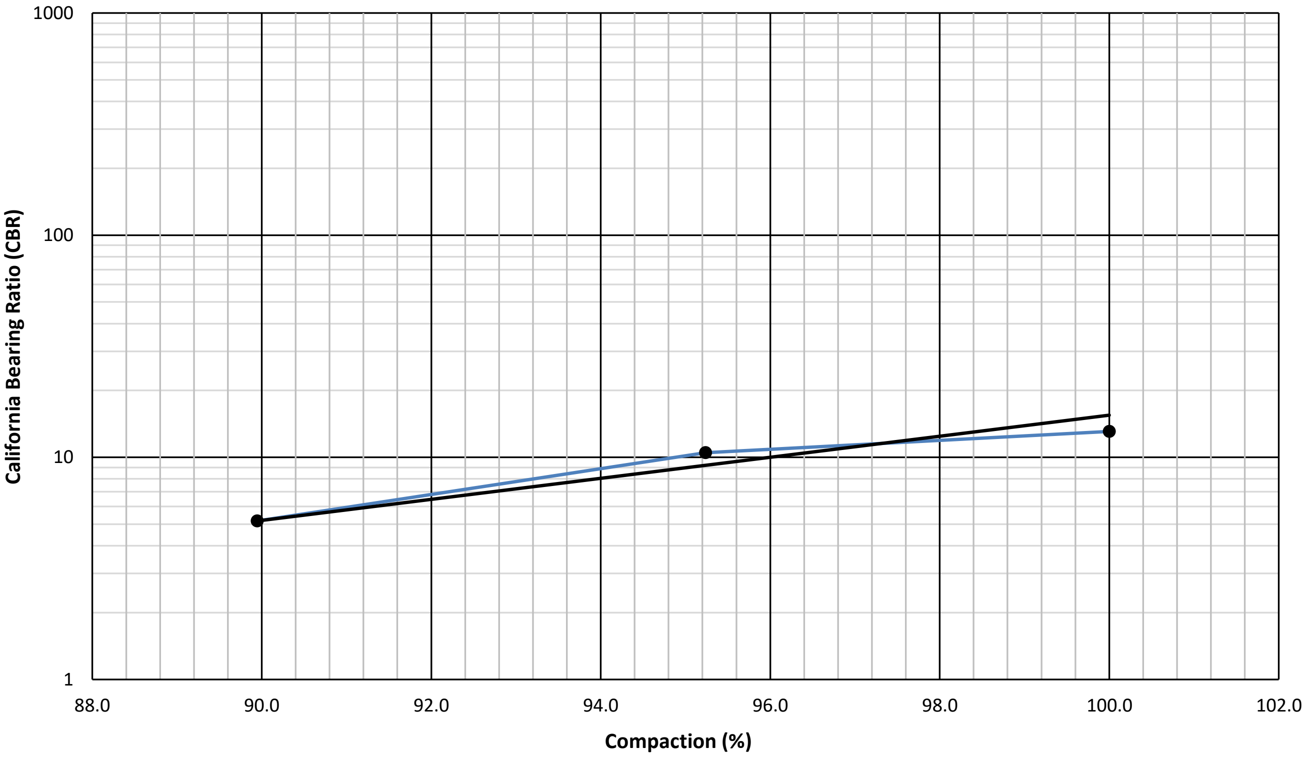
Client Name: BAV Consulting (Pty) Ltd
Project Name: Komati Power Station Repurposing
Sample: KTP36
Depth: (m) 0.9 - 1.9
Job Number: PVT-291
Lab Number: PVT-291-2057
Method: SANS 3001 GR40
Date: 26-Oct-23

CALIFORNIA BEARING RATIO

Sheet Reference:
R-STL-014 Rev01

Mod. AASHTO Values		Compaction Data: CBR			Swell	CBR at (mm)			CBR Values	
MDD	OMC	Dry Dens.	MC	Comp.						
(kg/m³)	(%)	(kg/m³)	(%)	(%)	(%)	2.5	5.0	7.5	Compaction (%)	CBR
1914	10.5	1890	10.3	100.0	0.0	13	19	24	100	**13**
									98	**12**
1914	10.5	1800	10.3	95.2	0.1	10	15	18	97	**11**
									95	**10**
1914	10.5	1700	10.3	89.9	0.1	5	6	7	93	**8**
									90	**5**



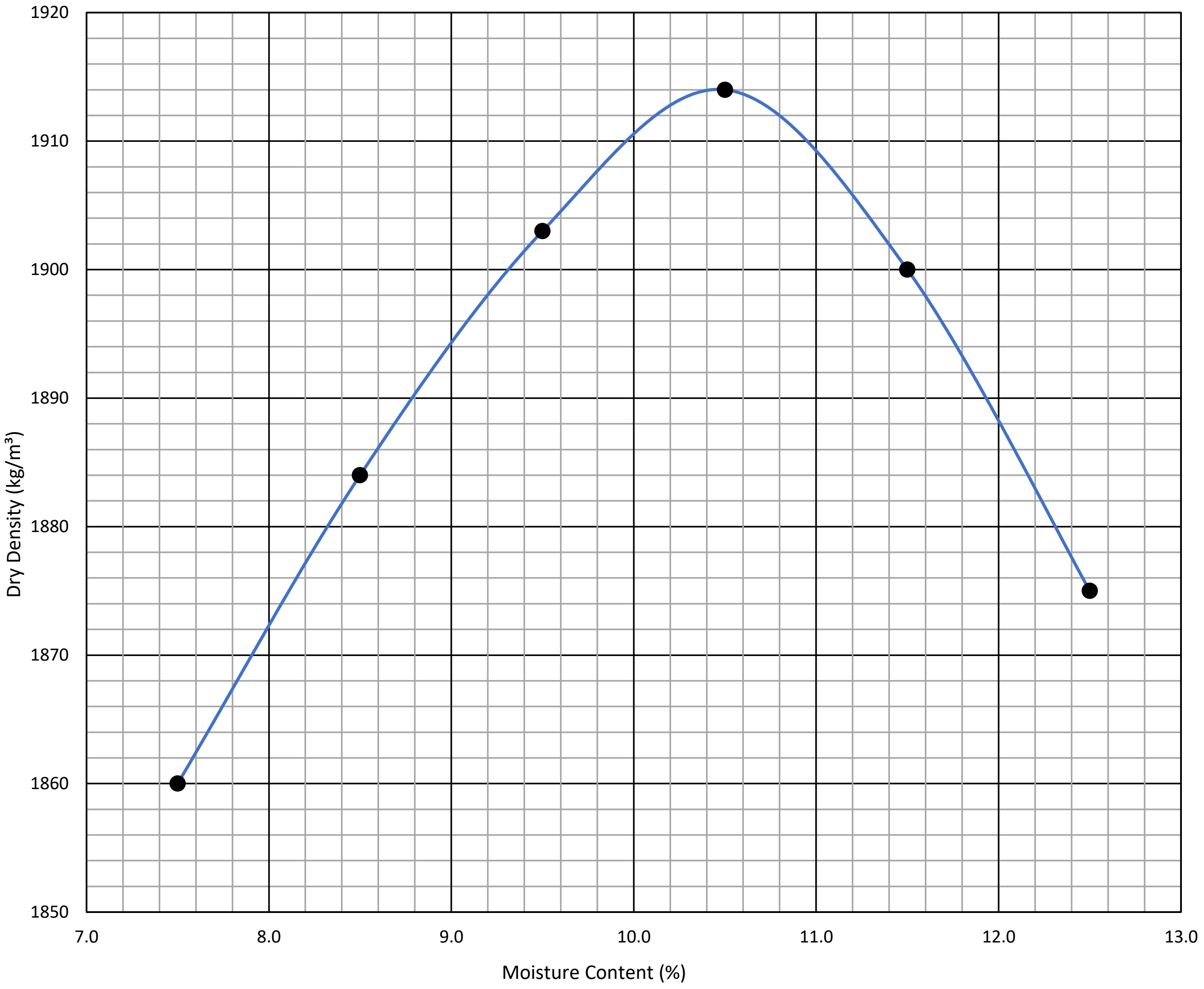
Client Name:	BAV Consulting (Pty) Ltd	**Job Number:**	PVT-291
Project Name:	Komati Power Station Repurposing	**Lab Number:**	PVT-291-2057
Sample:	KTP36	**Method:**	SANS 3001 GR30
Depth: (m)	0.9 - 1.9	**Date:**	26-Oct-23

MDD & OMC DETERMINATION (Mod. AASHTO)

Sheet Reference:
R-STL-013 Rev01

Maximum Dry Density: **1914** kg/m³ Optimum Moisture Content: **10.5** %

Moisture Content (%)	7.5	8.5	9.5	10.5	11.5	12.5		
Dry Density (kg/m³)	1860	1884	1903	1914	1900	1875		

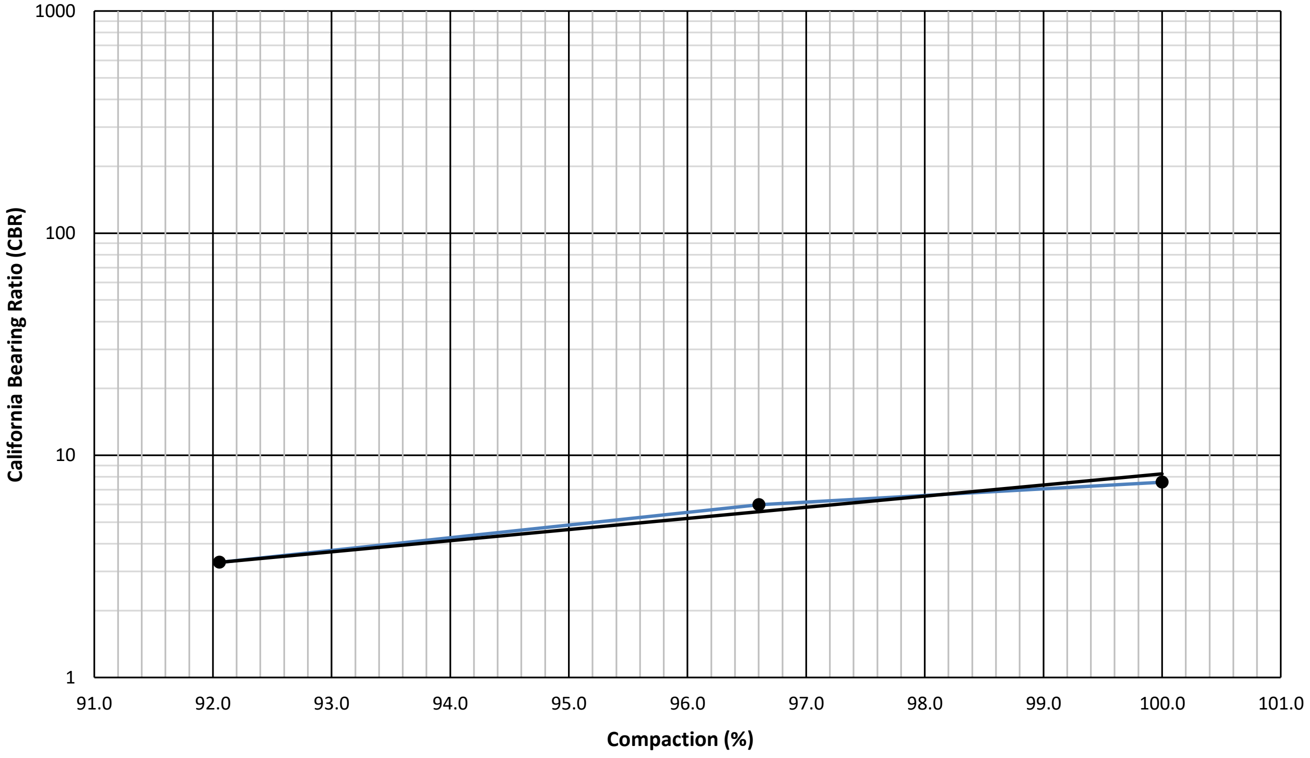


Client Name:	BAV Consulting (Pty) Ltd	**Job Number:**	PVT-291
Project Name:	Komati Power Station Repurposing	**Lab Number:**	PVT-291-2060
Sample:	KTP39	**Method:**	SANS 3001 GR40
Depth: (m)	1.1 - 3.2	**Date:**	26-Oct-23

CALIFORNIA BEARING RATIO

Sheet Reference:
R-STL-014 Rev01

Mod. AASHTO Values		Compaction Data: CBR			Swell	CBR at (mm)			CBR Values	
MDD	OMC	Dry Dens.	MC	Comp.						
(kg/m³)	(%)	(kg/m³)	(%)	(%)	(%)	2.5	5.0	7.5	Compaction (%)	CBR
									100	**7.6**
1910	12.0	1913	11.8	100.0	0.7	8	7	6	98	**6.6**
									97	**6.2**
1910	12.0	1848	11.8	96.6	0.8	6	6	5	95	**4.9**
									93	**3.7**
1910	12.0	1761	11.8	92.1	0.9	3	4	3	90	**2.5**



Client Name:	BAV Consulting (Pty) Ltd	**Job Number:**	PVT-291
Project Name:	Komati Power Station Repurposing	**Lab Number:**	PVT-291-2060
Sample:	KTP39	**Method:**	SANS 3001 GR30
Depth: (m)	1.1 - 3.2	**Date:**	26-Oct-23

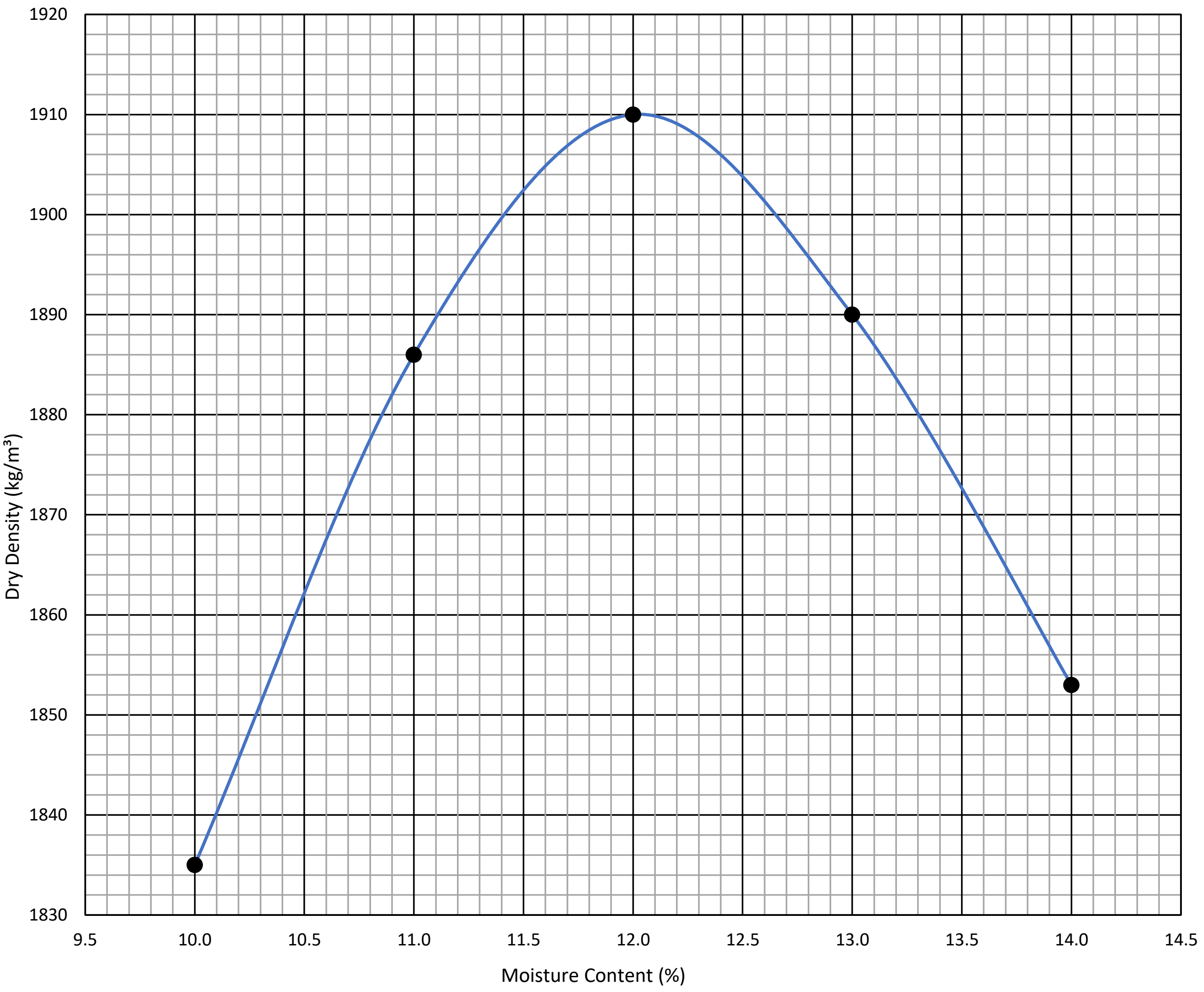
MDD & OMC DETERMINATION (Mod. AASHTO)

Sheet Reference: **R-STL-013 Rev01**

Maximum Dry Density: **1910** kg/m³

Optimum Moisture Content: **12.0** %

Moisture Content (%)	10.0	11.0	12.0	13.0	14.0			
Dry Density (kg/m³)	1835	1886	1910	1890	1853			



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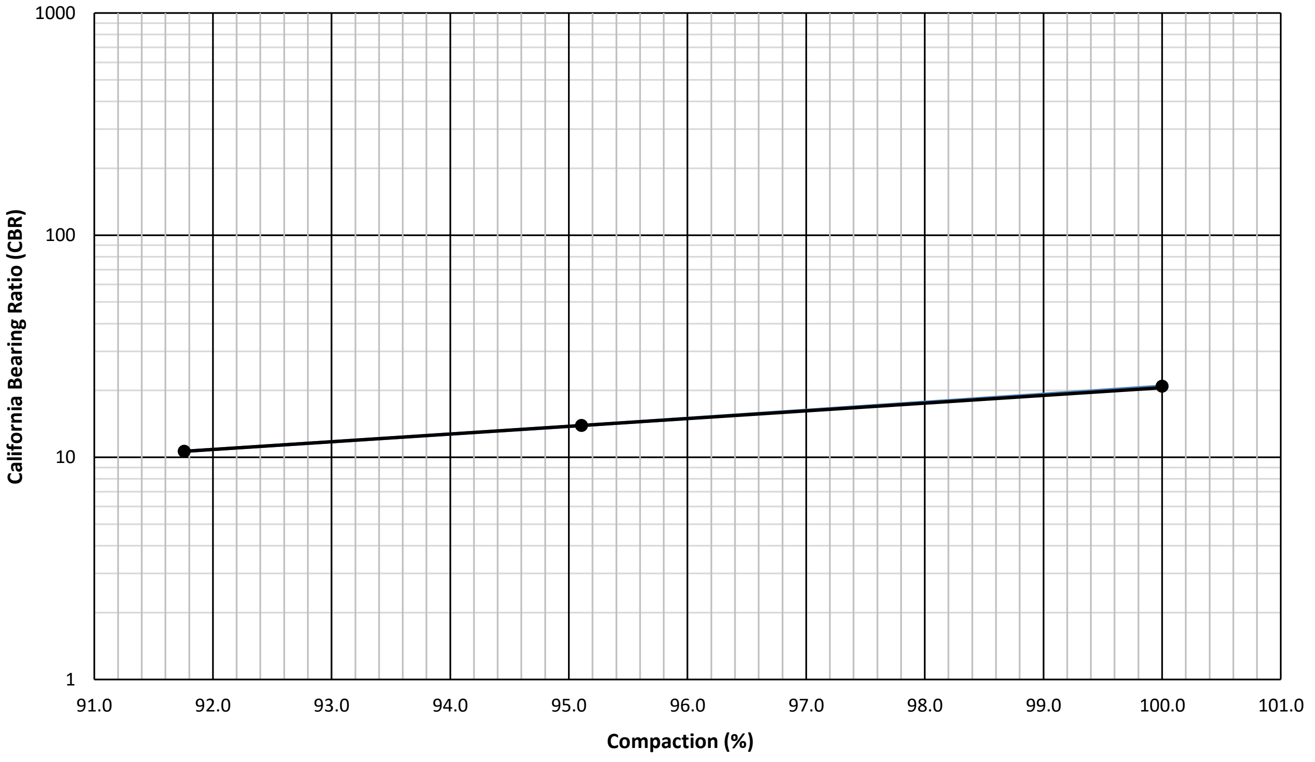
Client Name:	BAV Consulting (Pty) Ltd	**Job Number:**	PVT-291
Project Name:	Komati Power Station Repurposing	**Lab Number:**	PVT-291-2062
Sample:	KTP41	**Method:**	SANS 3001 GR40
Depth: (m)	1.4 - 2.0	**Date:**	26-Oct-23

CALIFORNIA BEARING RATIO

Sheet Reference:
R-STL-014 Rev01

Mod. AASHTO Values		**Compaction Data: CBR**			**Swell**	**CBR at (mm)**			**CBR Values**	
MDD	**OMC**	**Dry Dens.**	**MC**	**Comp.**						
(kg/m^3)	(%)	(kg/m^3)	(%)	(%)	(%)	2.5	5.0	7.5	Compaction (%)	CBR
1937	10.0	1941	9.9	100.0	0.1	21	28	32	100	**21**
									98	**18**
1937	10.0	1846	9.9	95.1	0.2	14	14	14	97	**16**
									95	**14**
1937	10.0	1781	9.9	91.8	0.3	11	13	15	93	**12**
									90	**9**



Client Name:	BAV Consulting (Pty) Ltd	**Job Number:**	PVT-291
Project Name:	Komati Power Station Repurposing	**Lab Number:**	PVT-291-2062
Sample:	KTP41	**Method:**	SANS 3001 GR30
Depth: (m)	1.4 - 2.0	**Date:**	26-Oct-23

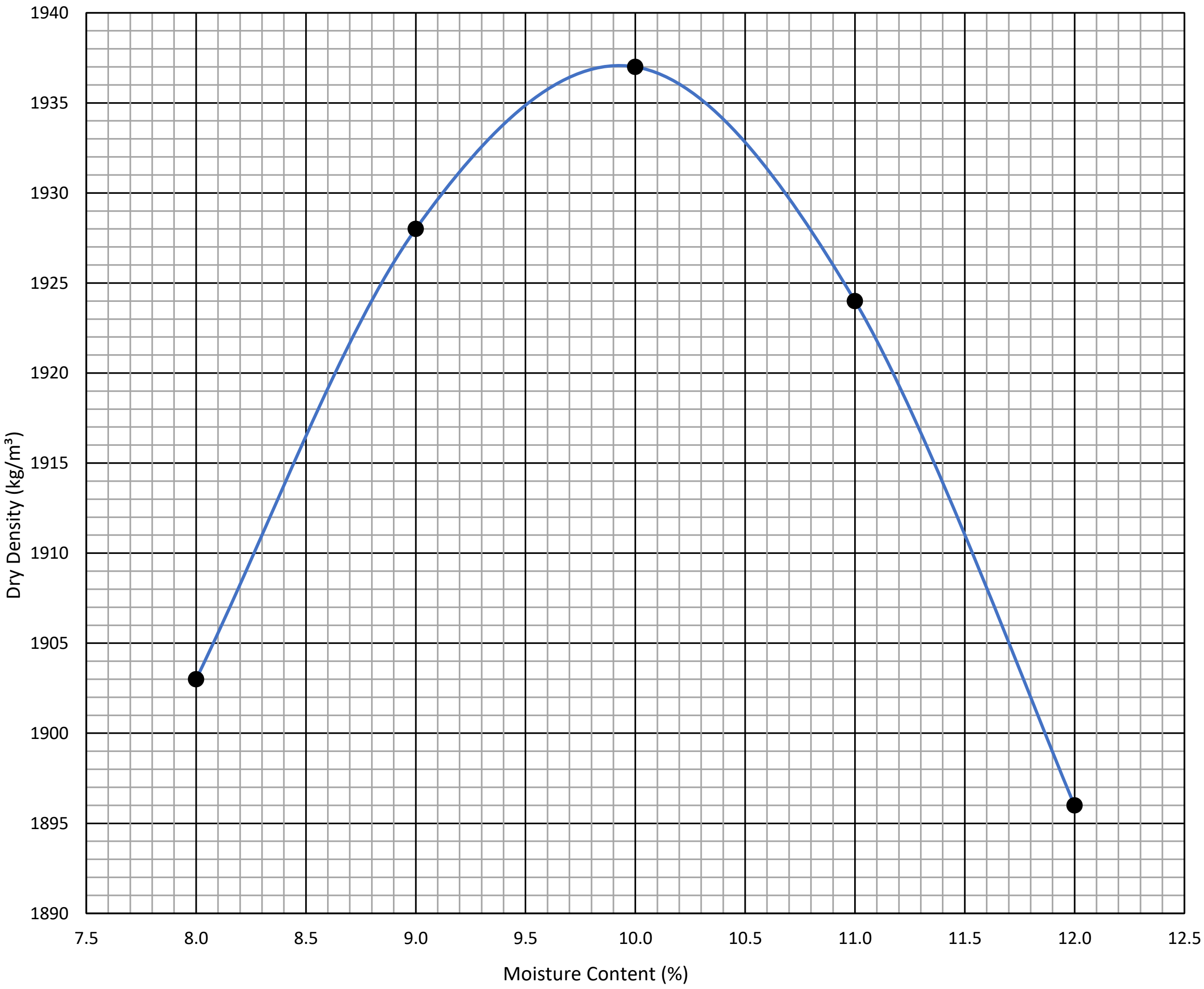
MDD & OMC DETERMINATION (Mod. AASHTO)

Sheet Reference:
R-STL-013 Rev01

Maximum Dry Density: **1937** kg/m³

Optimum Moisture Content: **10.0** %

Moisture Content (%)	8.0	9.0	10.0	11.0	12.0			
Dry Density (kg/m³)	1903	1928	1937	1924	1896			

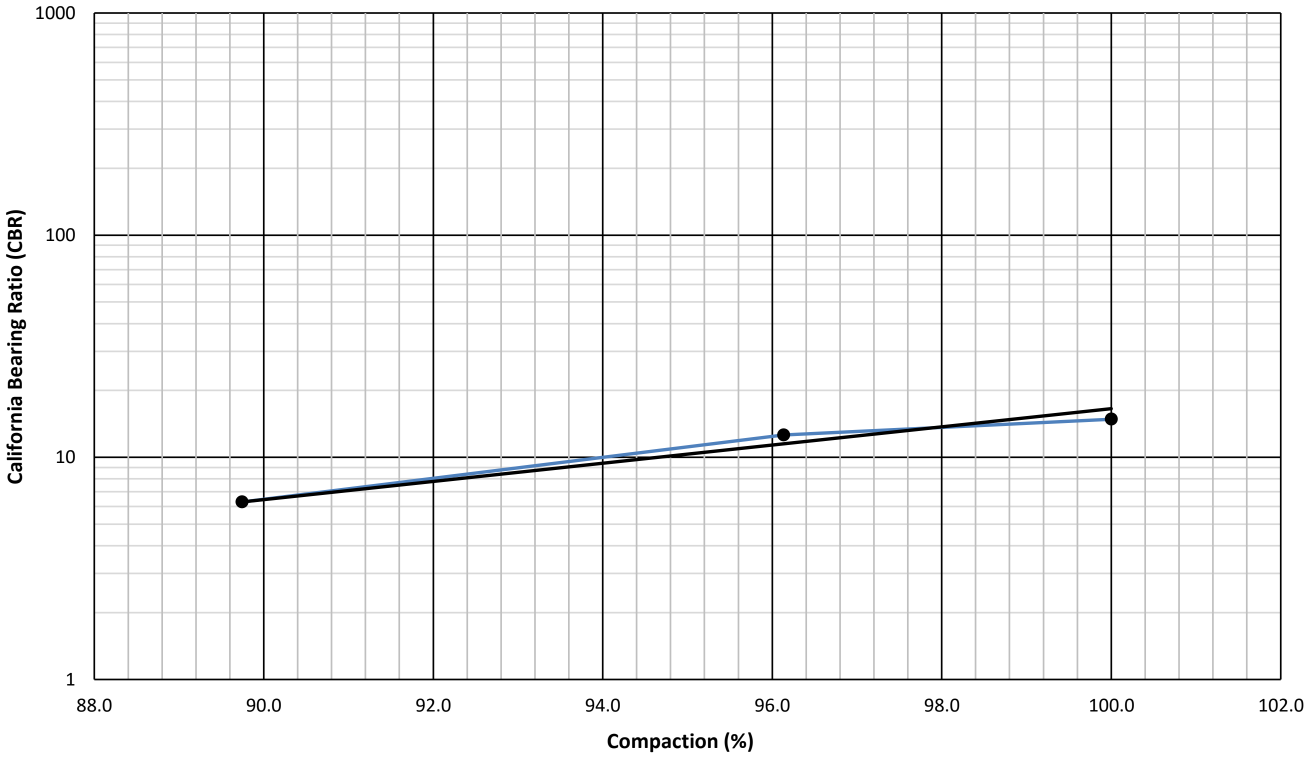


Client Name:	BAV Consulting (Pty) Ltd	**Job Number:**	PVT-291
Project Name:	Komati Power Station Repurposing	**Lab Number:**	PVT-291-2063
Sample:	KTP42	**Method:**	SANS 3001 GR40
Depth: (m)	0.7 - 2.5	**Date:**	26-Oct-23

CALIFORNIA BEARING RATIO

Sheet Reference:
R-STL-014 Rev01

Mod. AASHTO Values		**Compaction Data: CBR**			**Swell**	**CBR at (mm)**			**CBR Values**	
MDD	**OMC**	**Dry Dens.**	**MC**	**Comp.**						
(kg/m³)	(%)	(kg/m³)	(%)	(%)	(%)	2.5	5.0	7.5	Compaction (%)	CBR
									100	**15**
1889	13.9	1862	13.6	100.0	0.0	15	12	10	98	**14**
									97	**13**
1889	13.9	1790	13.6	96.1	0.0	13	11	10	95	**11**
									93	**9**
1889	13.9	1671	13.6	89.7	0.1	6	5	4	90	**7**



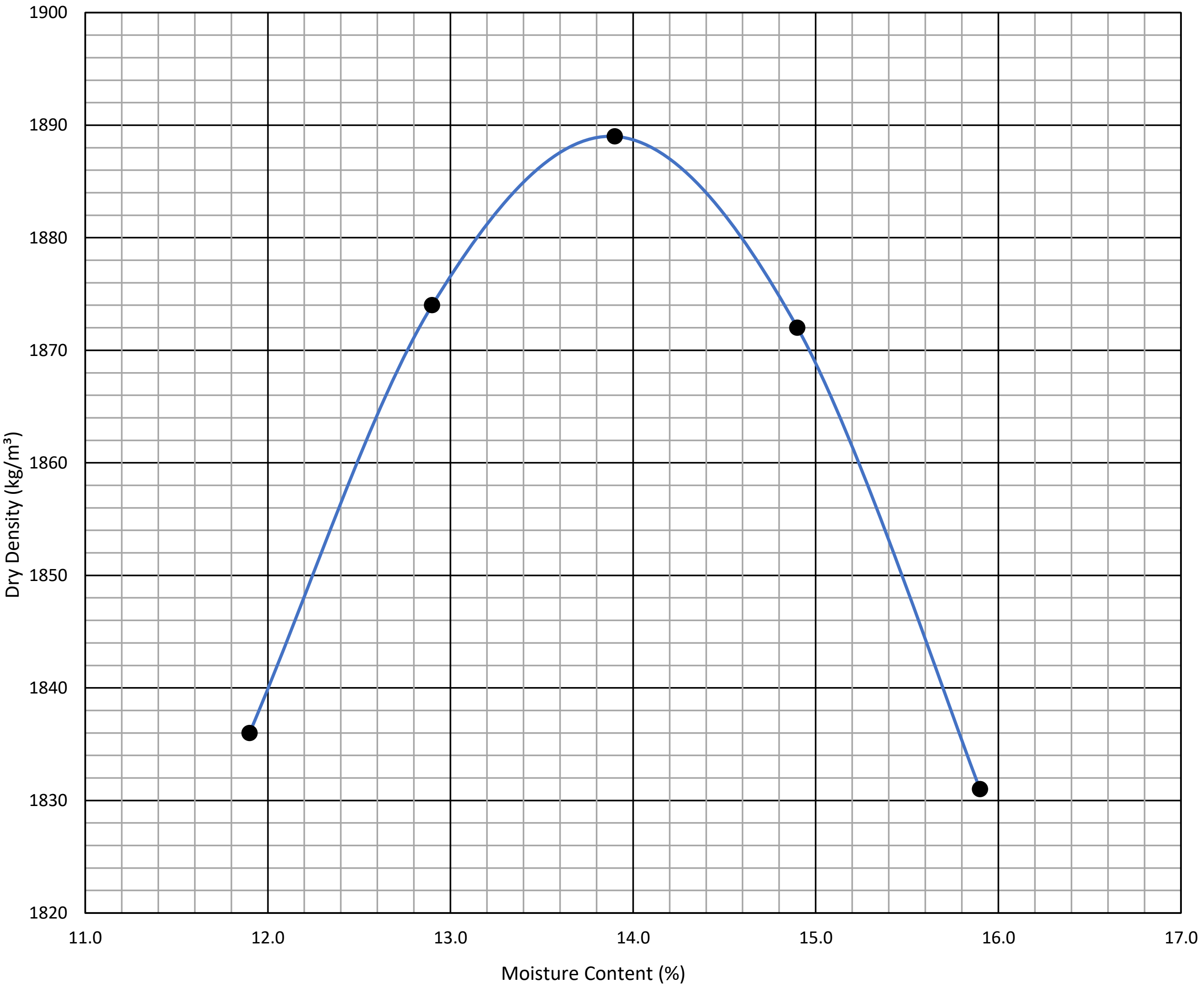
Client Name:	BAV Consulting (Pty) Ltd	**Job Number:**	PVT-291
Project Name:	Komati Power Station Repurposing	**Lab Number:**	PVT-291-2063
Sample:	KTP42	**Method:**	SANS 3001 GR30
Depth: (m)	0.7 - 2.5	**Date:**	26-Oct-23

MDD & OMC DETERMINATION (Mod. AASHTO)

Sheet Reference:
R-STL-013 Rev01

Maximum Dry Density: **1889** kg/m³ Optimum Moisture Content: **13.9** %

Moisture Content (%)	11.9	12.9	13.9	14.9	15.9			
Dry Density (kg/m³)	1836	1874	1889	1872	1831			



Specialised Testing Laboratory (Pty) Ltd
Asphalt | Aggregate | Bitumen | Geotechnical
Unit 1, 13 Bloubokkie Street, Koedoespoort 0186
Roelof | 072 674 6343 | roelof@stlab.co.za
Gerrie | 082 309 4448 | gerrie@stlab.co.za
www.stlab.co.za
Quality | Excellence | On Time

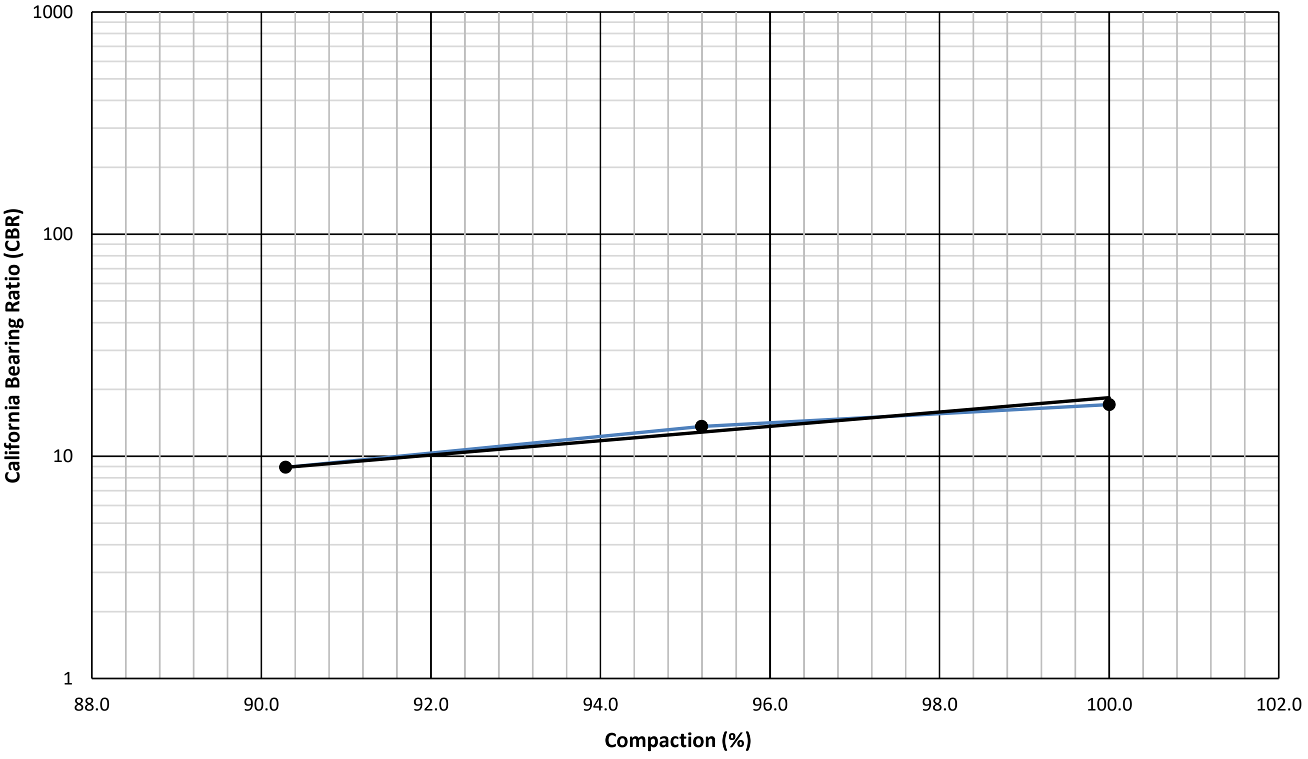
Client Name: BAV Consulting (Pty) Ltd
Project Name: Komati Power Station Repurposing
Sample: KTP44
Depth: (m) 0.1 - 2.6

Job Number: PVT-291
Lab Number: PVT-291-2065
Method: SANS 3001 GR40
Date: 26-Oct-23

CALIFORNIA BEARING RATIO

Sheet Reference:
R-STL-014 Rev01

Mod. AASHTO Values		Compaction Data: CBR			Swell	CBR at (mm)			CBR Values	
MDD	**OMC**	**Dry Dens.**	**MC**	**Comp.**						
(kg/m³)	(%)	(kg/m³)	(%)	(%)	(%)	2.5	5.0	7.5	Compaction (%)	CBR
1942	11.1	1935	11.9	100.0	0.0	17	16	15	100	**17**
									98	**16**
1942	11.1	1842	11.9	95.2	0.0	14	12	11	97	**15**
									95	**13**
1942	11.1	1747	11.9	90.3	0.0	9	7	6	93	**11**
									90	**9**



Client Name:	BAV Consulting (Pty) Ltd	**Job Number:**	PVT-291
Project Name:	Komati Power Station Repurposing	**Lab Number:**	PVT-291-2065
Sample:	KTP44	**Method:**	SANS 3001 GR30
Depth: (m)	0.1 - 2.6	**Date:**	26-Oct-23

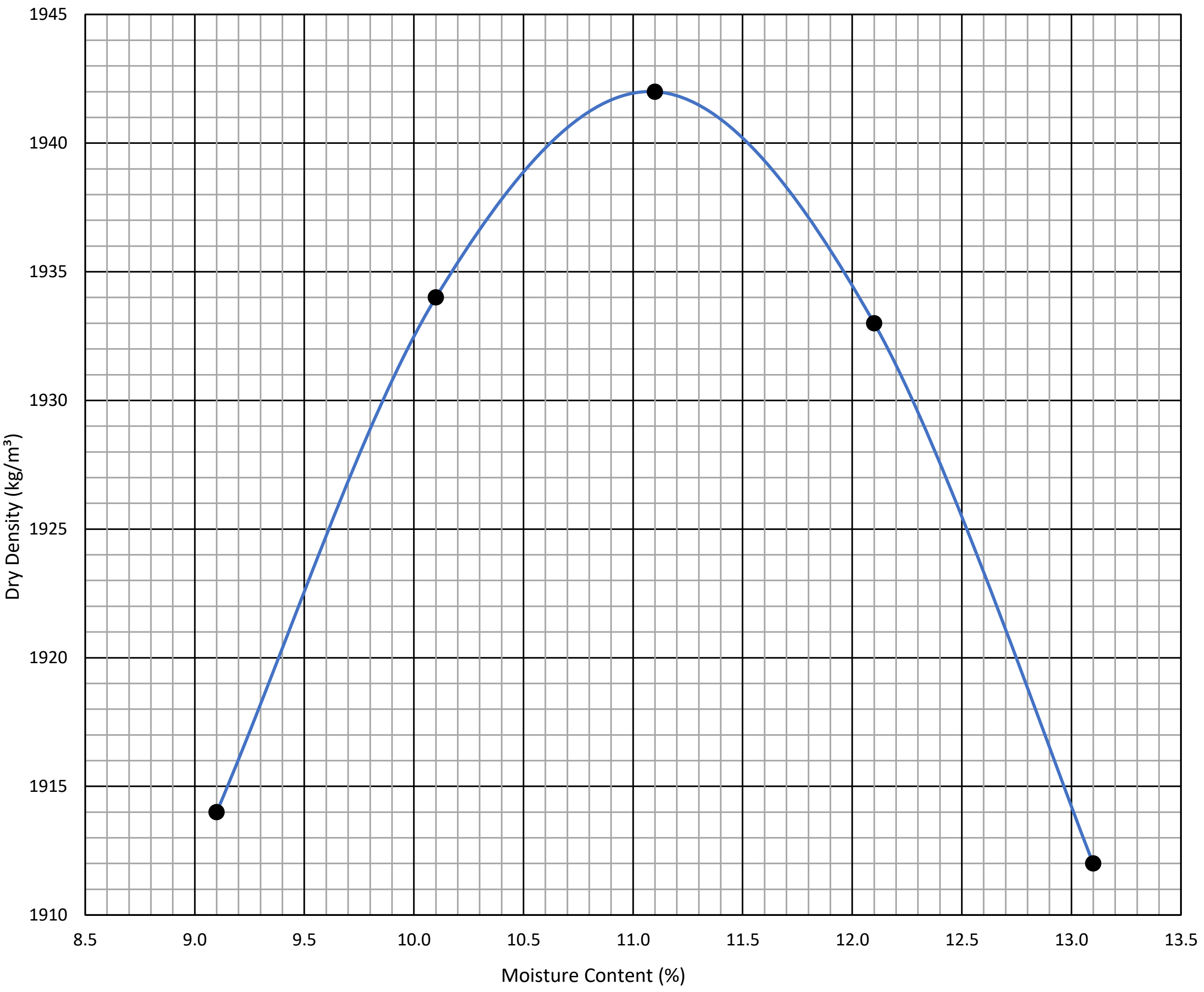
MDD & OMC DETERMINATION (Mod. AASHTO)

Sheet Reference: R-STL-013 Rev01

Maximum Dry Density: **1942** kg/m³

Optimum Moisture Content: **11.1** %

Moisture Content (%)	9.1	10.1	11.1	12.1	13.1			
Dry Density (kg/m³)	1914	1934	1942	1933	1912			



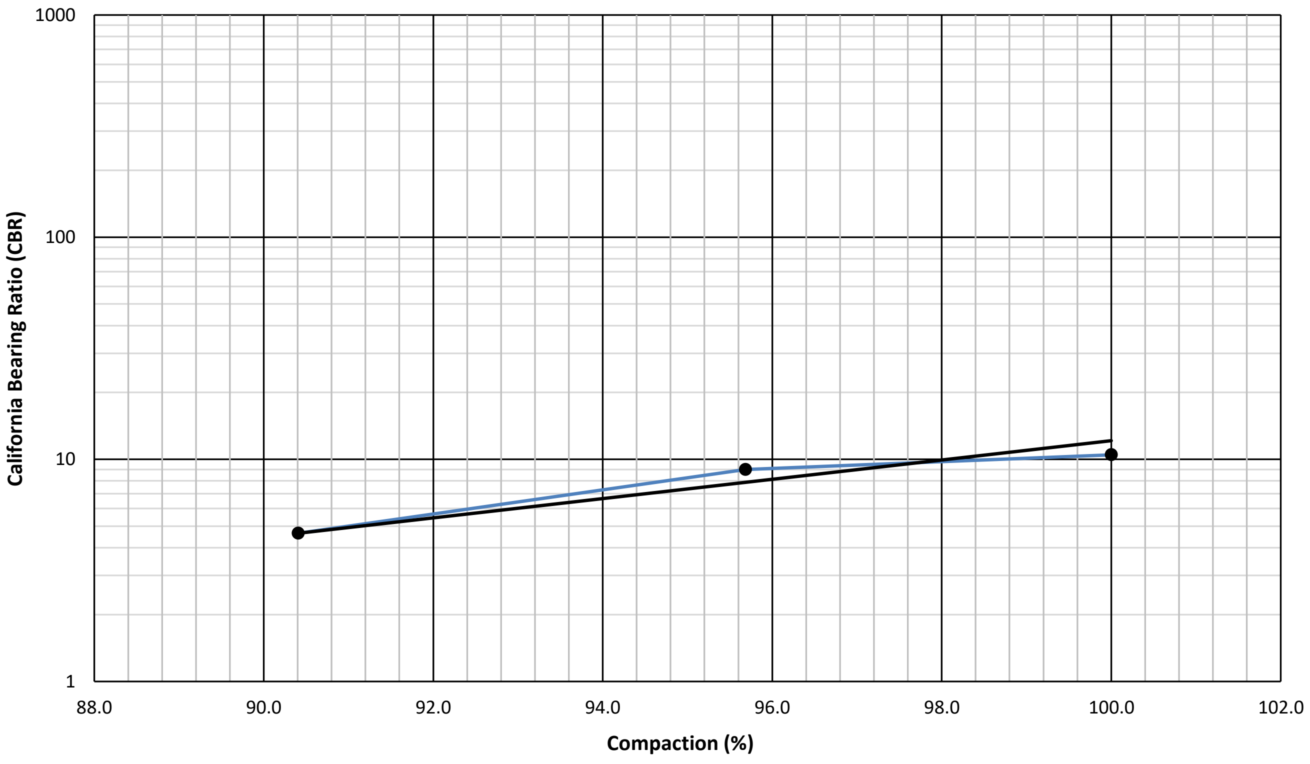
Unit 1, 13 Bloubokkie Street, Koedoespoort 0186
Roelof | 072 674 6343 | roelof@stlab.co.za
Gerrie | 082 309 4448 | gerrie@stlab.co.za
www.stlab.co.za

Client Name:	BAV Consulting (Pty) Ltd	**Job Number:**	PVT-291
Project Name:	Komati Power Station Repurposing	**Lab Number:**	PVT-291-2067
Sample:	KTP46	**Method:**	SANS 3001 GR40
Depth: (m)	1.0 - 2.3	**Date:**	26-Oct-23

CALIFORNIA BEARING RATIO

Sheet Reference:
R-STL-014 Rev01

Mod. AASHTO Values		**Compaction Data: CBR**			**Swell**	**CBR at (mm)**			**CBR Values**	
MDD	**OMC**	**Dry Dens.**	**MC**	**Comp.**						
(kg/m³)	(%)	(kg/m³)	(%)	(%)	(%)	2.5	5.0	7.5	Compaction (%)	CBR
1911	12.9	1876	13.0	100.0	0.1	10	9	8	100	**11**
									98	**10**
1911	12.9	1795	13.0	95.7	0.1	9	7	6	97	**9**
									95	**8**
1911	12.9	1696	13.0	90.4	0.1	5	4	3	93	**6**
									90	**4**



Client Name:	BAV Consulting (Pty) Ltd	**Job Number:**	PVT-291
Project Name:	Komati Power Station Repurposing	**Lab Number:**	PVT-291-2067
Sample:	KTP46	**Method:**	SANS 3001 GR30
Depth: (m)	1.0 - 2.3	**Date:**	26-Oct-23

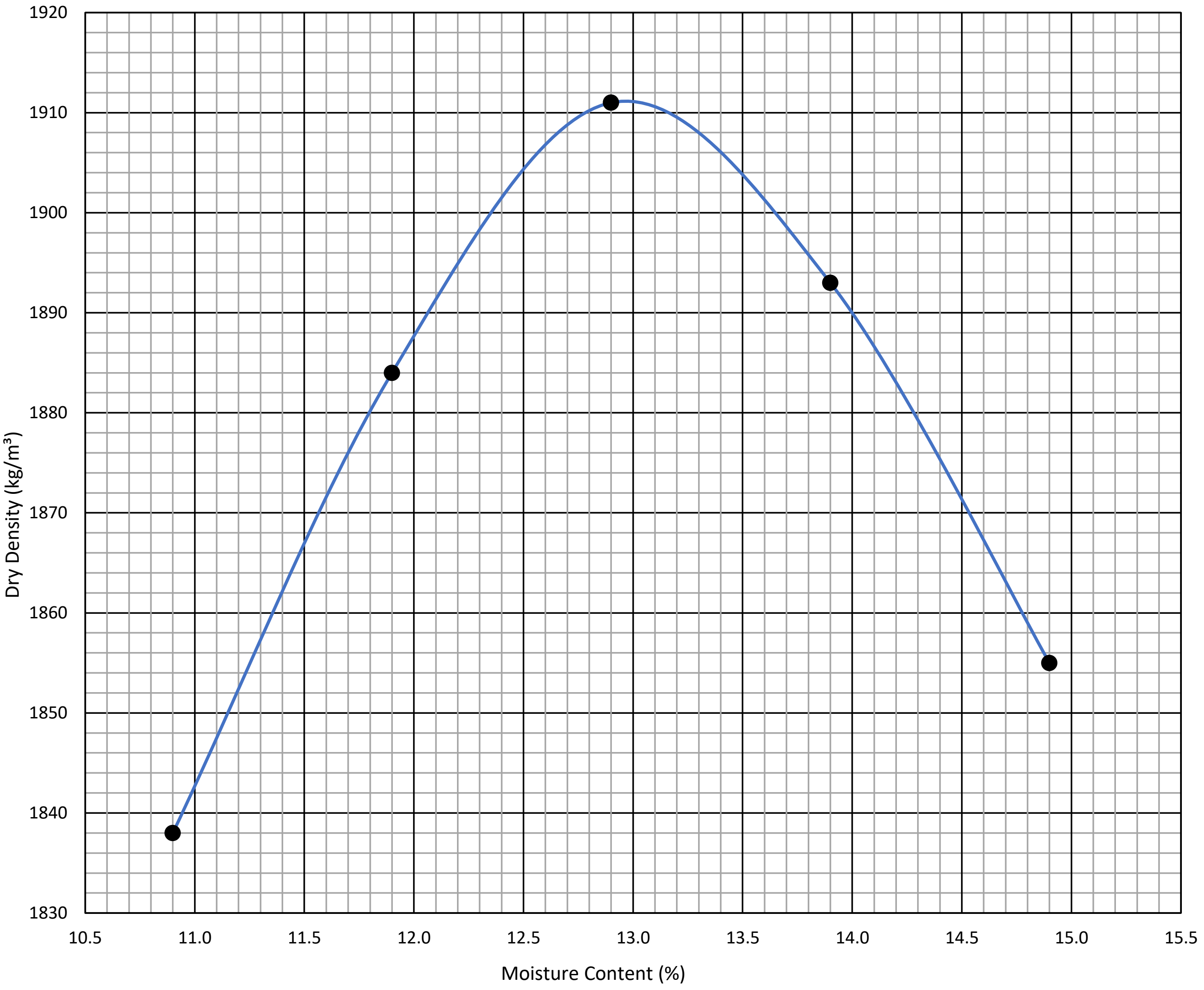
MDD & OMC DETERMINATION (Mod. AASHTO)

Sheet Reference: R-STL-013 Rev01

Maximum Dry Density: **1911** kg/m³

Optimum Moisture Content: **12.9** %

Moisture Content (%)	10.9	11.9	12.9	13.9	14.9			
Dry Density (kg/m³)	1838	1884	1911	1893	1855			



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23B De Havilland Crescent
Persequor Techno Park
Meiring Naudé Drive
Pretoria

P.O. Box 283
Persequor Park, 0020
Tel: +2712 – 349 – 1066
Fax: +2712 – 349 – 2064
e-mail: admin@waterlab.co.za

T0391

CERTIFICATE OF ANALYSES
BASSON INDEX

Date received: 2023-10-18
Project number: 1000
Report number: 125716
Date completed: 2023-10-30
Order number: T 050

Client name: Specialised Testing Laboratory
Address: Unit 1, 13 Bloubokkie Street, Koedoespoort, 0186
Telephone: ---
Contact person: Thinus Hofsink
Email: thinus@stlab.co.za
Cell: 082 309 4448 (Gerrie)

Analyses in mg/ℓ (Unless specified otherwise)	**Method Identification**	**Sample Identification:**	
		KTP6 0.0 - 1.0m PVT-291-2031	**KTP11 0.7 - 2.4m PVT-291-2034**
Sample Number		**23-25483**	**23-25484**
Leachate used	**WLAB075**	**Distilled Water**	**Distilled Water**
Mass Used (g)	---	**500**	**500**
Volume Used (mℓ)	---	**1000**	**1000**
pH Value at 25°C	WLAB001	6.4	6.7
pHs Value at 20°C (calc)	WLAB053b	9.5	9.8
Electrical Conductivity in mS/m at 25°C	WLAB002	10.7	3.4
Total Dissolved Solids (calc)	WLAB068	72	23
Total Alkalinity as $CaCO_3$	WLAB007	16	24
Total Hardness as $CaCO_3$ (calc)	WLAB051b	36	9
Calcium Hardness as $CaCO_3$ (calc)	WLAB051a	20	5
Calcium as Ca	WLAB015	8	2
Magnesium as Mg	WLAB015	4	1
Free & Saline Ammonia	WLAB046	<0.1	<0.1
Ammonium as NH_4 (calc)	WLAB068	<0.3	<0.3
Sulphate as SO_4	WLAB046	31	8
Chloride as Cl	WLAB046	4	<2
Langelier Index at 20°C (calc)	WLAB053c	-3.1	-3.1
Ryznar Index at 20°C (calc)	WLAB053d	12.5	13.0
Corrosivity Ratio (calc)	WLAB054	2.4	0.4
Leaching Index [LCSI] (calc)*	**---**	**2603**	**2645**
Spalling Index [SCSI] (calc)*	**---**	**4**	**1**
Aggressiveness Index [N_c] (calc)*	**---**	**2607**	**2646**

Please note:
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23B De Havilland Crescent
Persequor Techno Park
Meiring Naudé Drive
Pretoria

P.O. Box 283
Persequor Park, 0020
Tel: +2712 – 349 – 1066
Fax: +2712 – 349 – 2064
e-mail: admin@waterlab.co.za

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T0391

CERTIFICATE OF ANALYSES
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Date received: 2023-10-18
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Date completed: 2023-10-30
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Client name: Specialised Testing Laboratory
Address: Unit 1, 13 Bloubokkie Street, Koedoespoort, 0186
Telephone: ---

Contact person: Thinus Hofsink
Email: thinus@stlab.co.za
Cell: 082 309 4448 (Gerrie)

Analyses in mg/ℓ (Unless specified otherwise)	**Method Identification**	**Sample Identification:**	
		KTP17 0.2 - 2.2m **PVT-291-2039**	**KTP24 0.2 - 2.4m** **PVT-291-2045**
Sample Number		**23-25485**	**23-25486**
Leachate used	**WLAB075**	**Distilled Water**	**Distilled Water**
Mass Used (g)	---	**500**	**500**
Volume Used (mℓ)	---	**1000**	**1000**
pH Value at 25°C	WLAB001	6.1	6.6
pHs Value at 20°C (calc)	WLAB053b	10.4	9.9
Electrical Conductivity in mS/m at 25°C	WLAB002	1.4	8.4
Total Dissolved Solids (calc)	WLAB068	<10	5.6
Total Alkalinity as $CaCO_3$	WLAB007	12	12
Total Hardness as $CaCO_3$ (calc)	WLAB051b	7	26
Calcium Hardness as $CaCO_3$ (calc)	WLAB051a	2	10
Calcium as Ca	WLAB015	<1	4
Magnesium as Mg	WLAB015	<1	4
Free & Saline Ammonia	WLAB046	<0.1	<0.1
Ammonium as NH_4 (calc)	WLAB068	<0.3	<0.3
Sulphate as SO_4	WLAB046	<2	23
Chloride as Cl	WLAB046	2	2
Langelier Index at 20°C (calc)	WLAB053c	-4.3	-3.3
Ryznar Index at 20°C (calc)	WLAB053d	14.7	13.2
Corrosivity Ratio (calc)	WLAB054	0.3	2.2
Leaching Index [LCSI] (calc)*	**---**	**3462**	**2740**
Spalling Index [SCSI] (calc)*	**---**	**1**	**4**
Aggressiveness Index [N_c] (calc)*	**---**	**3463**	**2744**

Please note:

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Address: Unit 1, 13 Bloubokkie Street, Koedoespoort, 0186
Telephone: ---

Contact person: Thinus Hofsink
Email: thinus@stlab.co.za
Cell: 082 309 4448 (Gerrie)

Analyses in mg/ℓ (Unless specified otherwise)	**Method Identification**	**Sample Identification:**	
		KTP27 0.2 - 2.5m PVT-291-2048	**KTP34 0.4 - 2.1m PVT-291-2055**
Sample Number		**23-25487**	**23-25488**
Leachate used	**WLAB075**	**Distilled Water**	**Distilled Water**
Mass Used (g)	---	**500**	**500**
Volume Used (mℓ)	---	**1000**	**1000**
pH Value at 25°C	WLAB001	6.4	6.5
pHs Value at 20°C (calc)	WLAB053b	9.3	9.5
Electrical Conductivity in mS/m at 25°C	WLAB002	14.3	8.6
Total Dissolved Solids (calc)	WLAB068	96	58
Total Alkalinity as $CaCO_3$	WLAB007	16	20
Total Hardness as $CaCO_3$ (calc)	WLAB051b	61	31
Calcium Hardness as $CaCO_3$ (calc)	WLAB051a	32	15
Calcium as Ca	WLAB015	13	6
Magnesium as Mg	WLAB015	7	4
Free & Saline Ammonia	WLAB046	<0.1	<0.1
Ammonium as NH_4 (calc)	WLAB068	<0.3	<0.3
Sulphate as SO_4	WLAB046	44	23
Chloride as Cl	WLAB046	3	3
Langelier Index at 20°C (calc)	WLAB053c	-2.9	-3.0
Ryznar Index at 20°C (calc)	WLAB053d	12.1	12.5
Corrosivity Ratio (calc)	WLAB054	3.1	1.4
Leaching Index [LCSI] (calc)*	**---**	**2462**	**2546**
Spalling Index [SCSI] (calc)*	**---**	**6**	**4**
Aggressiveness Index [N_c] (calc)*	**---**	**2468**	**2549**

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Cell: 082 309 4448 (Gerrie)

Analyses in mg/ℓ (Unless specified otherwise)	**Method Identification**	**Sample Identification:**	
		KTP38 0.4 - 2.7m PVT-291-2059	**KTP40 0.1 - 1.1m PVT-291-2061**
Sample Number		**23-25489**	**23-25490**
Leachate used	**WLAB075**	**Distilled Water**	**Distilled Water**
Mass Used (g)	---	**500**	**500**
Volume Used (mℓ)	---	**1000**	**1000**
pH Value at 25°C	WLAB001	6.3	7.5
pHs Value at 20°C (calc)	WLAB053b	9.9	8.6
Electrical Conductivity in mS/m at 25°C	WLAB002	12.7	27.6
Total Dissolved Solids (calc)	WLAB068	85	185
Total Alkalinity as $CaCO_3$	WLAB007	12	52
Total Hardness as $CaCO_3$ (calc)	WLAB051b	26	66
Calcium Hardness as $CaCO_3$ (calc)	WLAB051a	10	50
Calcium as Ca	WLAB015	4	20
Magnesium as Mg	WLAB015	4	4
Free & Saline Ammonia	WLAB046	<0.1	<0.1
Ammonium as NH_4 (calc)	WLAB068	<0.3	<0.3
Sulphate as SO_4	WLAB046	47	75
Chloride as Cl	WLAB046	3	3
Langelier Index at 20°C (calc)	WLAB053c	-3.6	-1.1
Ryznar Index at 20°C (calc)	WLAB053d	13.5	9.7
Corrosivity Ratio (calc)	WLAB054	4.4	1.6
Leaching Index [LCSI] (calc)*	**---**	**2972**	**1195**
Spalling Index [SCSI] (calc)*	**---**	**6**	**9**
Aggressiveness Index [N_c] (calc)*	**---**	**2978**	**1204**

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Telephone: ---

Contact person: Thinus Hofsink
Email: thinus@stlab.co.za
Cell: 082 309 4448 (Gerrie)

Analyses in mg/ℓ (Unless specified otherwise)	**Method Identification**	**Sample Identification:** **KTP45 0.1 - 2.2m** **PVT-291-2066**
Sample Number		**23-25491**
Leachate used	**WLAB075**	**Distilled Water**
Mass Used (g)	---	**500**
Volume Used (mℓ)	---	**1000**
pH Value at 25°C	WLAB001	5.4
pHs Value at 20°C (calc)	WLAB053b	10.0
Electrical Conductivity in mS/m at 25°C	WLAB002	15.6
Total Dissolved Solids (calc)	WLAB068	105
Total Alkalinity as $CaCO_3$	WLAB007	<5
Total Hardness as $CaCO_3$ (calc)	WLAB051b	55
Calcium Hardness as $CaCO_3$ (calc)	WLAB051a	22
Calcium as Ca	WLAB015	9
Magnesium as Mg	WLAB015	8
Free & Saline Ammonia	WLAB046	<0.1
Ammonium as NH_4 (calc)	WLAB046	<0.3
Sulphate as SO_4	WLAB046	51
Chloride as Cl	WLAB046	5
Langelier Index at 20°C (calc)	WLAB053c	-4.6
Ryznar Index at 20°C (calc)	WLAB053d	14.7
Corrosivity Ratio (calc)	WLAB054	15
Leaching Index [LCSI] (calc)*	**---**	**3713**
Spalling Index [SCSI] (calc)*	**---**	**7**
Aggressiveness Index [N_c] (calc)*	**---**	**3720**

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Telephone: ---
Contact person: Thinus Hofsink
Email: thinus@stlab.co.za
Cell: 082 309 4448 (Gerrie)

Important notes (see table for corrections on p.8):

1. The above aggressiveness index is only applicable for conditions of laminar flow at a mean annual temperature of 20°C.
2. For stagnant/turbulent conditions the aggressiveness index must be corrected.
3. For wet/dry cycling conditions (for example in tidal zones) the aggressiveness index must be corrected.
4. For mean annual temperatures lower/higher than 20°C the aggressiveness index must be corrected.

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Telephone: ---
Contact person: Thinus Hofsink
Email: thinus@stlab.co.za
Cell: 082 309 4448 (Gerrie)

Guidelines for assessing overall aggressiveness (N_c):

N_c	Aggressiveness
Not greater than 300	None to mild
400-700	Mild to moderate
800-1000	High
= or > 1 100	Very high

Aggressiveness Towards *Concrete and Fibre Cement Pipes*			
Index	**Aggressive**	**Neutral**	**Non- Aggressive**
a) Stability pH (pHs)	> pH	= pH	<pH
b) Langelier Index	Neg. Value	Zero	Pos. Value
c) Ryznar Index	>7.5	6-7	<6

Corrosiveness Towards metals	
Corrosivity	>0.2

Sample Name	Sample Number	Corrosivity Indices	Basson Index
KTP6 0.0 - 1.0m PVT-291-2031	23-25483	Corrosive	Aggressive
KTP11 0.7 - 2.4m PVT-291-2034	23-25484	Corrosive	Aggressive
KTP17 0.2 - 2.2m PVT-291-2039	23-25485	Corrosive	Aggressive
KTP24 0.2 - 2.4m PVT-291-2045	23-25486	Corrosive	Aggressive
KTP27 0.2 - 2.5m PVT-291-2048	23-25487	Corrosive	Aggressive
KTP34 0.4 - 2.1m PVT-291-2055	23-25488	Corrosive	Aggressive
KTP38 0.4 - 2.7m PVT-291-2059	23-25489	Corrosive	Aggressive
KTP40 0.1 - 1.1m PVT-291-2061	23-25490	Corrosive	Aggressive
KTP45 0.1 - 2.2m PVT-291-2066	23-25491	Corrosive	Aggressive

S. Laubscher__________________
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WATERLAB (Pty) Ltd
Reg. No.: 1983/009165/07 V.A.T. No.: 4130107891

23B De Havilland Crescent
Persequor Techno Park
Meiring Naudé Drive
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P.O. Box 283
Persequor Park, 0020
Tel: +2712 – 349 – 1066
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Telephone: ---

Contact person: Thinus Hofsink
Email: thinus@stlab.co.za
Cell: 082 309 4448 (Gerrie)

To correct for:	**Multiply**	**By: (see Notes 2 to 5 below)**
Turbulence	LCSI	1.75
Stagnance	LCSI	0.5
Temperature	LCSI, SCSI, N7 Where N7=0.2 x Cl in mg/l	(1+ [0.05 x (T-20)])
Wet-dry cycles	SCSI	0.23 x 10^{-6} x TDS x DTF x CPA Where: DTF = Dry Time Fraction CPA = wet-dry cycles per annum

Note 1: Only if the concrete contains embedded steel.
Note 2: To preserve the correct logical relationships when dealing with the negative sub-indices (i.e. LCSI or SCSI having minus values) they should be multiplied by the reciprocal of the relevant factor indicated in this column
Note 3: If more than one correction is required, multiply by the product of the individual correction factors
Note 4: Use subscript c to indicate that the index has been corrected, e.g. for turbulent conditions $LCSI_c$ = LCSI x 1.75
Note 5: Round off corrected indices to the nearest 100.

S. Laubscher__________________
Technical Signatory

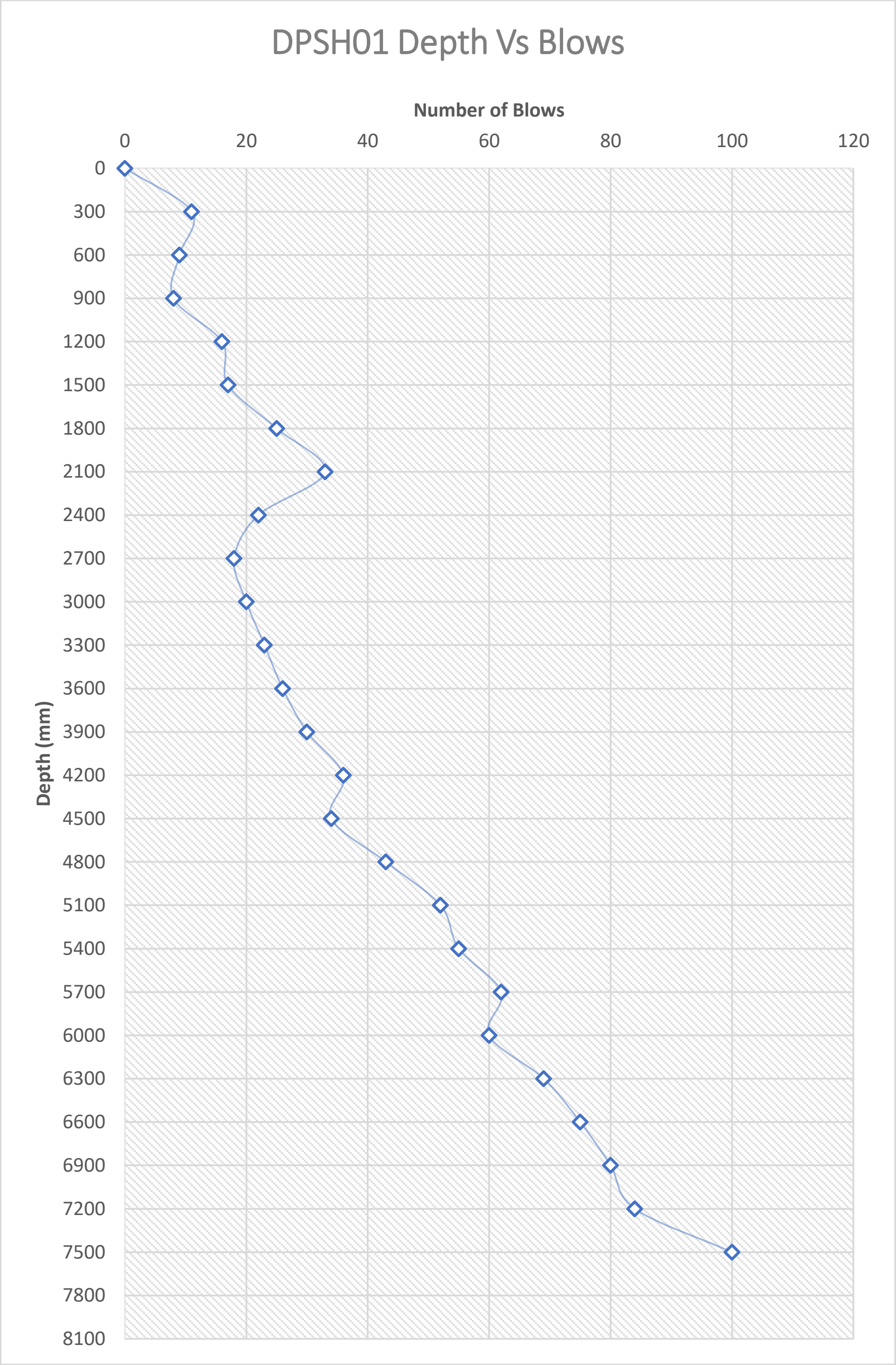
APPENDIX D: DYNAMIC PROBING TEST RESULTS (DPSH)

DYNAMIC PROPE SUPER HEAVY TEST (DPSH)

Project Name: Komati PS Geotech	**Clients: Eskom**	
Area: Komati Power Station		
Test Number: DPSH01	**Coordinates: 26.09107°S, 29.46028°E**	
Date: 04 October 2023	**Elevation (mamsl): 1614 m**	
Operator: Kleinboy Mahlangu	**Assistant: Caleb Wee**	**Depth (m): 7.5 m**

Depth (mm)	Blows per 300 mm increment
0	0
300	11
600	9
900	8
1200	16
1500	17
1800	25
2100	33
2400	22
2700	18
3000	20
3300	23
3600	26
3900	30
4200	36
4500	34
4800	43
5100	52
5400	55
5700	62
6000	60
6300	69
6600	75
6900	80
7200	84
7500	100
7800	
8100	
8400	
8700	
9000	
9300	
9600	
9900	
10200	
10500	
10800	
11100	
11400	
11700	
12000	

Graphical Representation of Field Data



Instructions: Test refuse with blows above 100 per 300 mm depth penetrated | DPSH LOG V2.0 | 19 JUNE 2023

DYNAMIC PROPE SUPER HEAVY TEST (DPSH)

Project Name: Komati PS Geotech

Clients: Eskom

Area: Komati Power Station

Test Number: DPSH02

Coordinates: 26.09215°S, 29.45657°E

Date: 05 October 2023

Elevation (mamsl): 1612 m

Operator: Kleinboy Mahlangu

Assistant: Caleb Wee

Depth (m): 4.8 m

Graphical Representation of Field Data

Depth (mm)	Blows per 300 mm increment
0	0
300	8
600	8
900	12
1200	8
1500	12
1800	14
2100	10
2400	14
2700	13
3000	12
3300	15
3600	16
3900	55
4200	75
4500	99
4800	100
5100	
5400	
5700	
6000	
6300	
6600	
6900	
7200	
7500	
7800	
8100	
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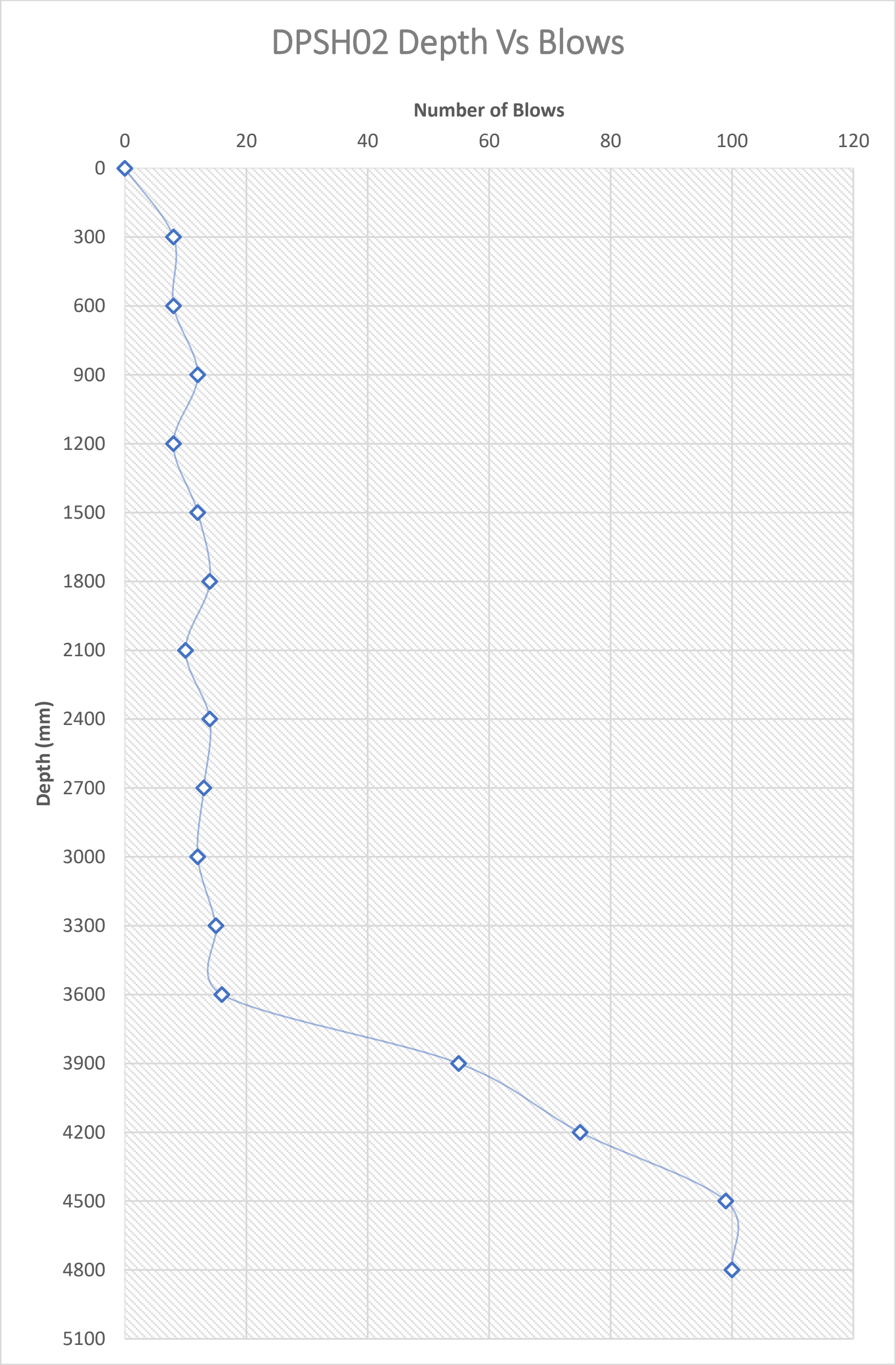
11100	
11400	
11700	
12000	



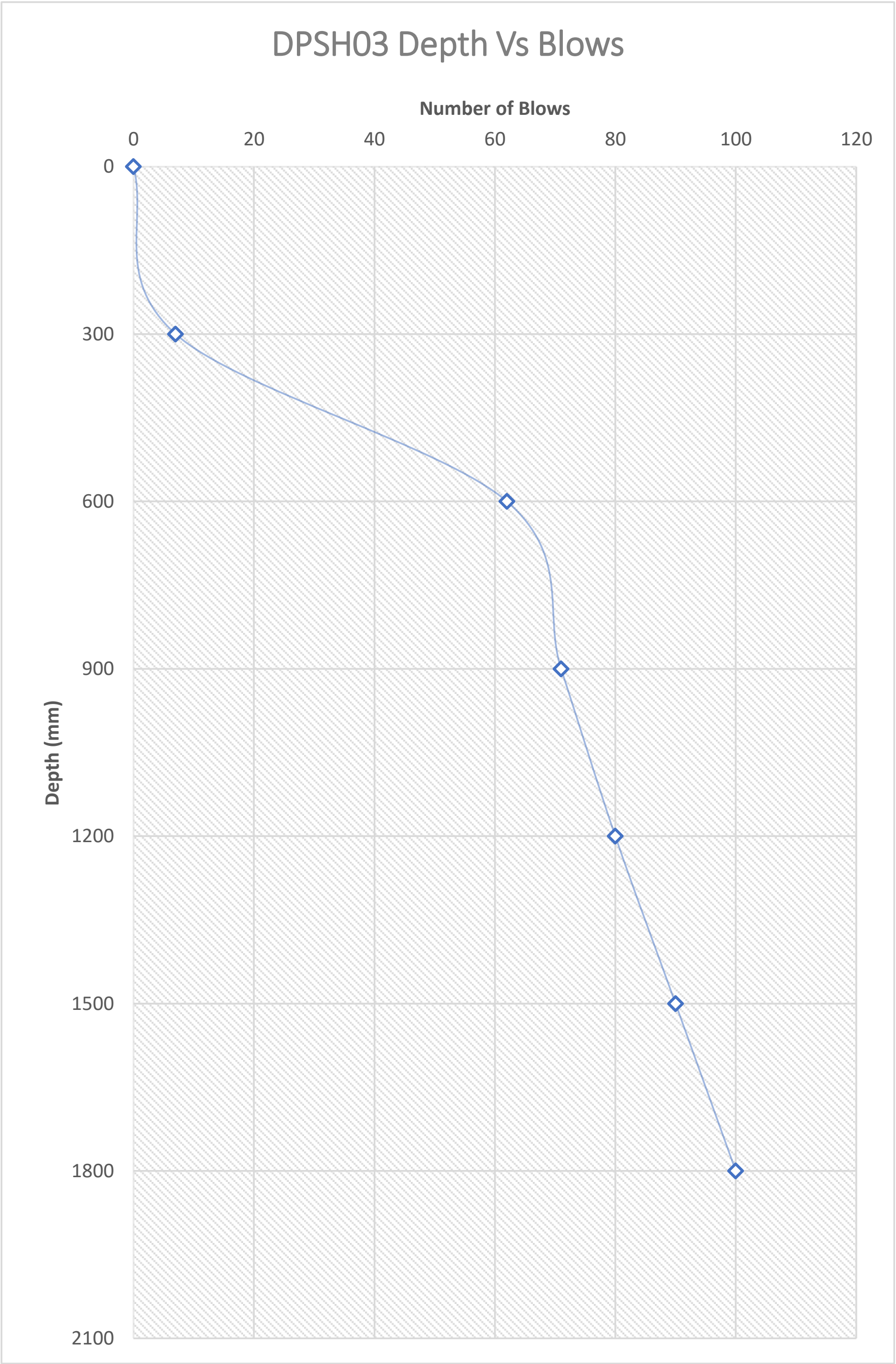
Instructions: Test refuse with blows above 100 per 300 mm depth penetrated | DPSH LOG V2.0 | 19 JUNE 2023

DYNAMIC PROPE SUPER HEAVY TEST (DPSH)

Project Name: Komati PS Geotech
Clients: Eskom
Area: Komati Power Station
Test Number: DPSH03
Coordinates: 26.09378°S, 29.45280°E
Date: 05 October 2023
Elevation (mamsl): 1617 m
Operator: Kleinboy Mahlangu
Assistant: Caleb Wee
Depth (m): 1.8 m

Depth (mm)	Blows per 300 mm increment
0	0
300	7
600	62
900	71
1200	80
1500	90
1800	100
2100	
2400	
2700	
3000	
3300	
3600	
3900	
4200	
4500	
4800	
5100	
5400	
5700	
6000	
6300	
6600	
6900	
7200	
7500	
7800	
8100	
8400	
8700	
9000	
9300	
9600	
9900	
10200	
10500	
10800	
11100	
11400	
11700	
12000	

Graphical Representation of Field Data



Instructions: Test refuse with blows above 100 per 300 mm depth penetrated | DPSH LOG V2.0 | 19 JUNE 2023

DYNAMIC PROPE SUPER HEAVY TEST (DPSH)

Project Name: Komati PS Geotech

Clients: Eskom

Area: Komati Power Station

Test Number: DPSH04

Coordinates: 26.09321°S, 29.45023°E

Date: 05 October 2023

Elevation (mamsl): 1616 m

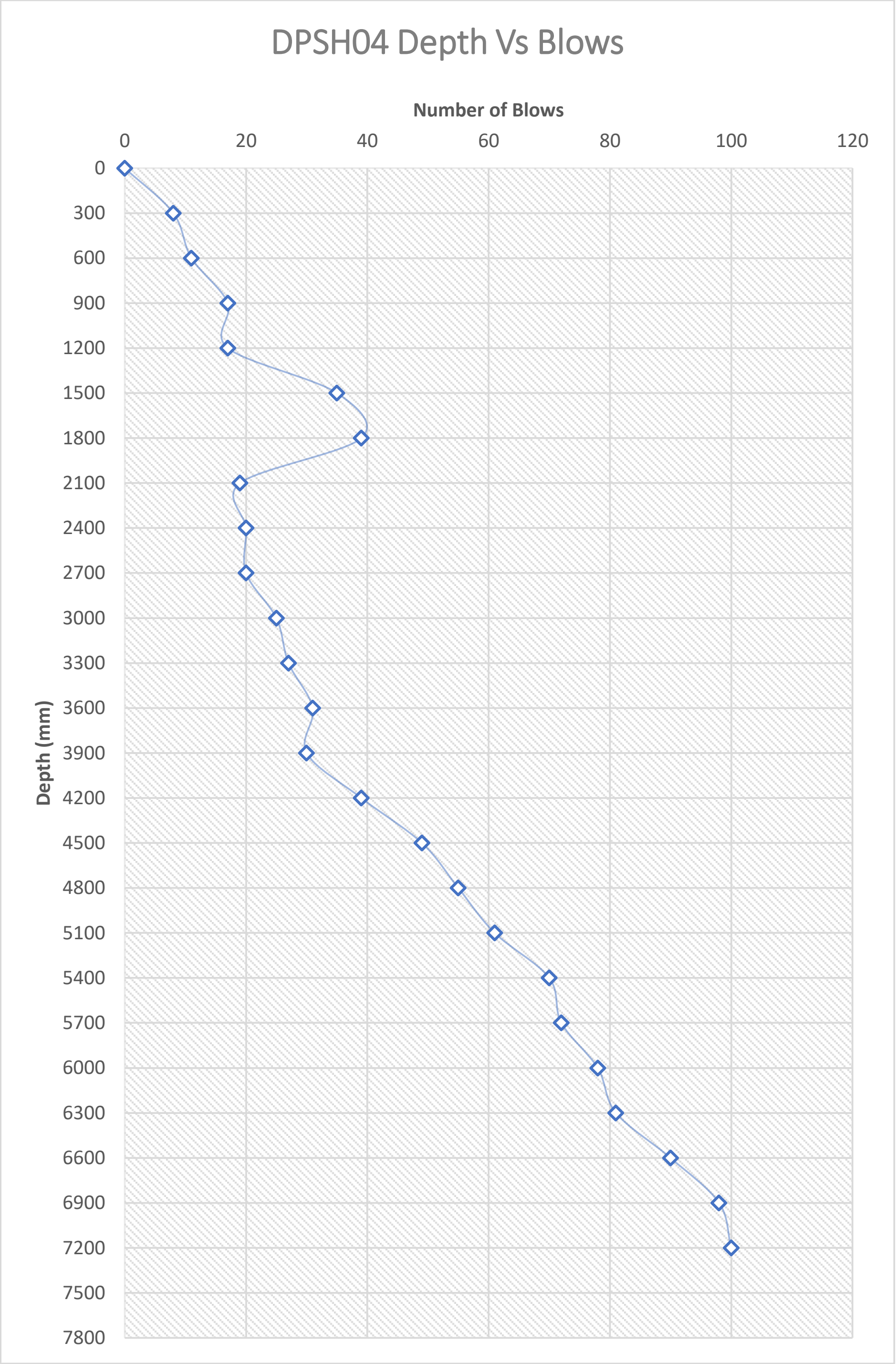
Operator: Kleinboy Mahlangu

Assistant: Caleb Wee

Depth (m): 7.2 m

Depth (mm)	Blows per 300 mm increment
0	0
300	8
600	11
900	17
1200	17
1500	35
1800	39
2100	19
2400	20
2700	20
3000	25
3300	27
3600	31
3900	30
4200	39
4500	49
4800	55
5100	61
5400	70
5700	72
6000	78
6300	81
6600	90
6900	98
7200	100
7500	
7800	
8100	
8400	
8700	
9000	
9300	
9600	
9900	
10200	
10500	
10800	
11100	
11400	
11700	
12000	

Graphical Representation of Field Data



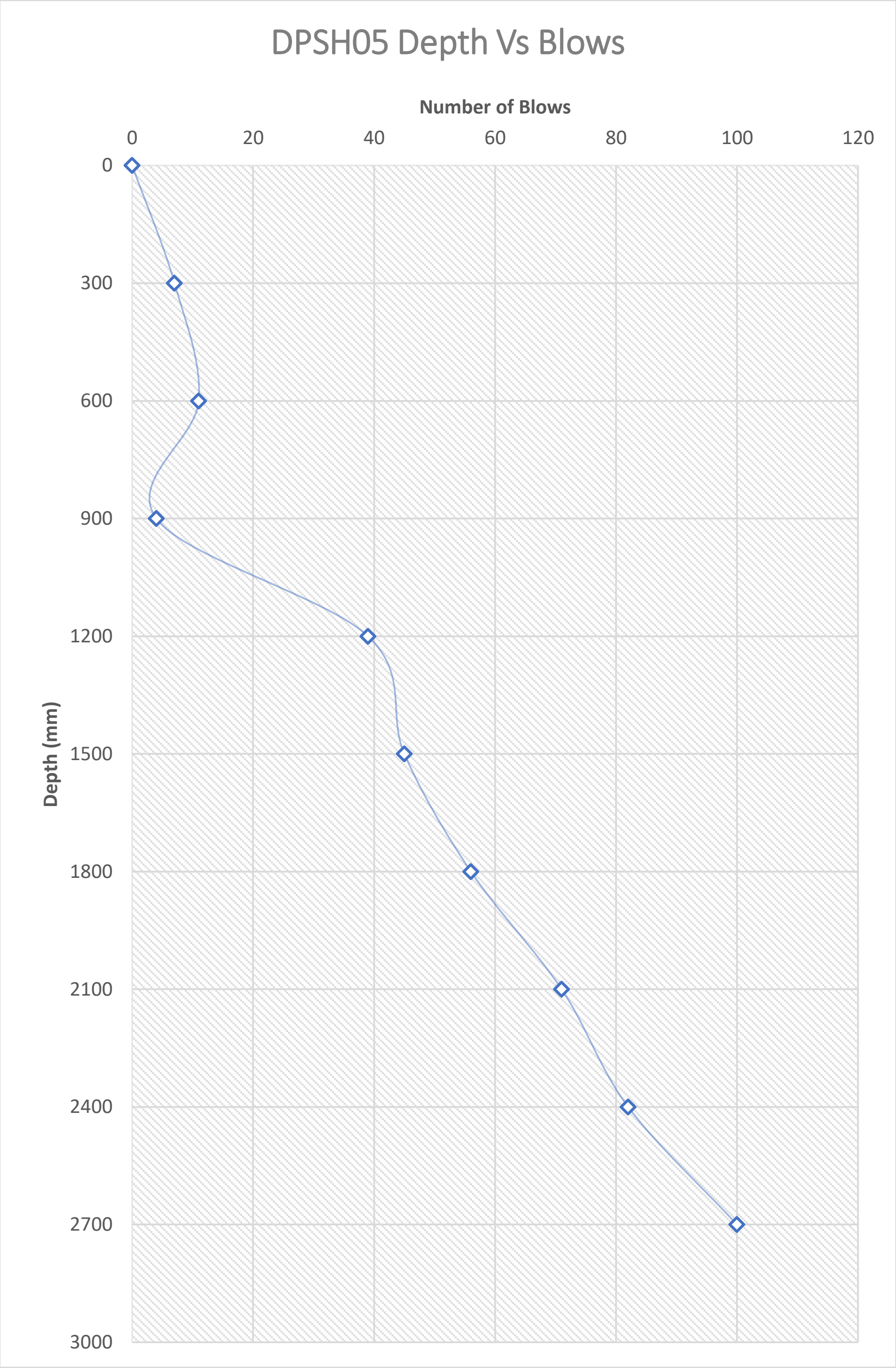
Instructions: Test refuse with blows above 100 per 300 mm depth penetrated | DPSH LOG V2.0 | 19 JUNE 2023

DYNAMIC PROPE SUPER HEAVY TEST (DPSH)

Project Name: Komati PS Geotech
Clients: Eskom
Area: Komati Power Station
Test Number: DPSH05
Coordinates: 26.09496°S, 29.45018°E
Date: 05 October 2023
Elevation (mamsl): 1618 m
Operator: Kleinboy Mahlangu
Assistant: Caleb Wee
Depth (m): 2.7 m

Depth (mm)	Blows per 300 mm increment
0	0
300	7
600	11
900	4
1200	39
1500	45
1800	56
2100	71
2400	82
2700	100
3000	
3300	
3600	
3900	
4200	
4500	
4800	
5100	
5400	
5700	
6000	
6300	
6600	
6900	
7200	
7500	
7800	
8100	
8400	
8700	
9000	
9300	
9600	
9900	
10200	
10500	
10800	
11100	
11400	
11700	
12000	

Graphical Representation of Field Data



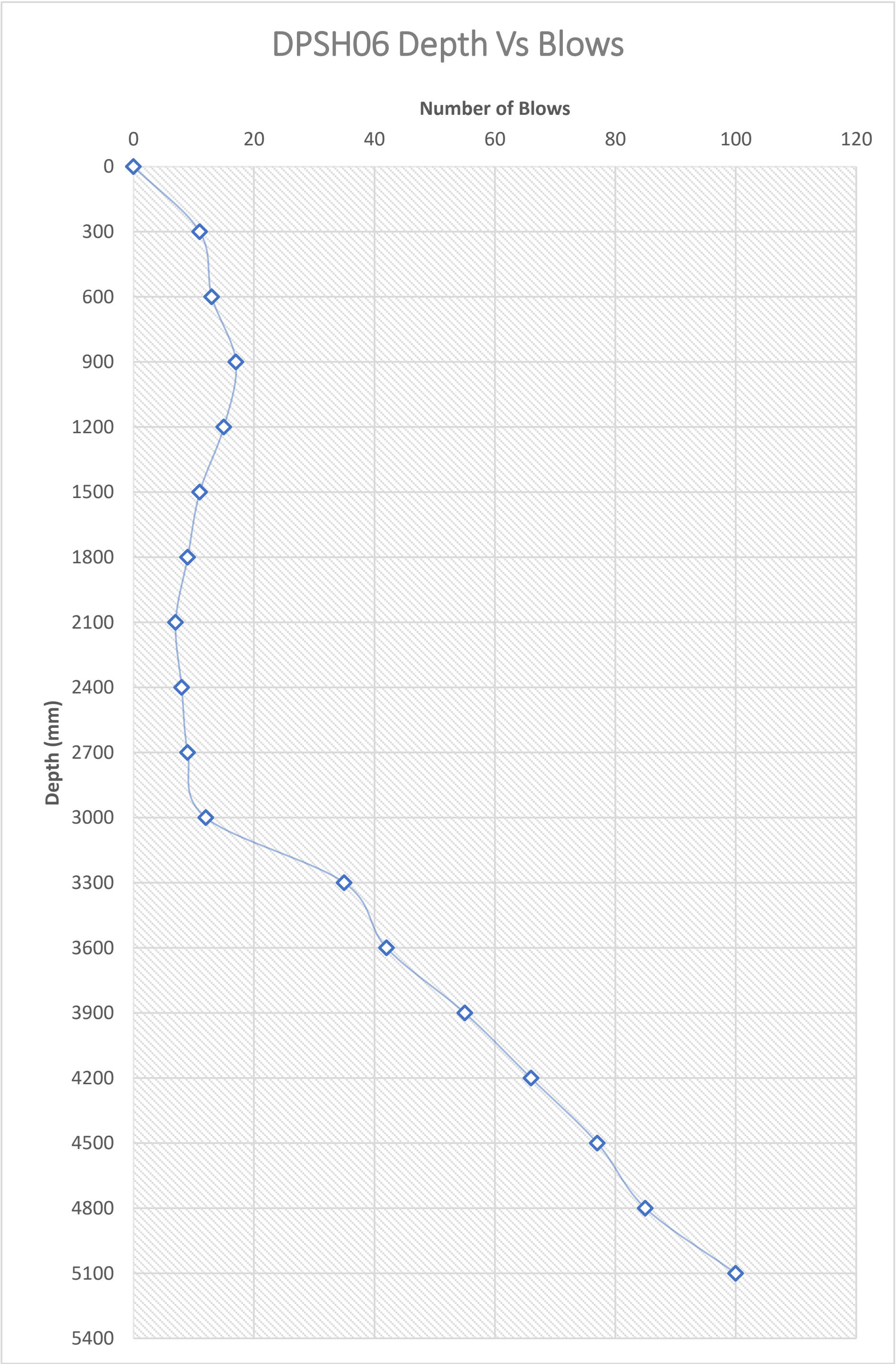
Instructions: Test refuse with blows above 100 per 300 mm depth penetrated | DPSH LOG V2.0 | 19 JUNE 2023

DYNAMIC PROPE SUPER HEAVY TEST (DPSH)

Project Name: Komati PS Geoteech
Clients: Eskom
Area: Komati Power Station
Test Number: DPSH06
Coordinates: 26.09265°S, 29.45761°E
Date: 05 October 2023
Elevation (mamsl): 1607 m
Operator: Kleinboy Mahlangu
Assistant: Claeb Wee
Depth (m): 5.1 m

Depth (mm)	Blows per 300 mm increment
0	0
300	11
600	13
900	17
1200	15
1500	11
1800	9
2100	7
2400	8
2700	9
3000	12
3300	35
3600	42
3900	55
4200	66
4500	77
4800	85
5100	100
5400	
5700	
6000	
6300	
6600	
6900	
7200	
7500	
7800	
8100	
8400	
8700	
9000	
9300	
9600	
9900	
10200	
10500	
10800	
11100	
11400	
11700	
12000	

Graphical Representation of Field Data



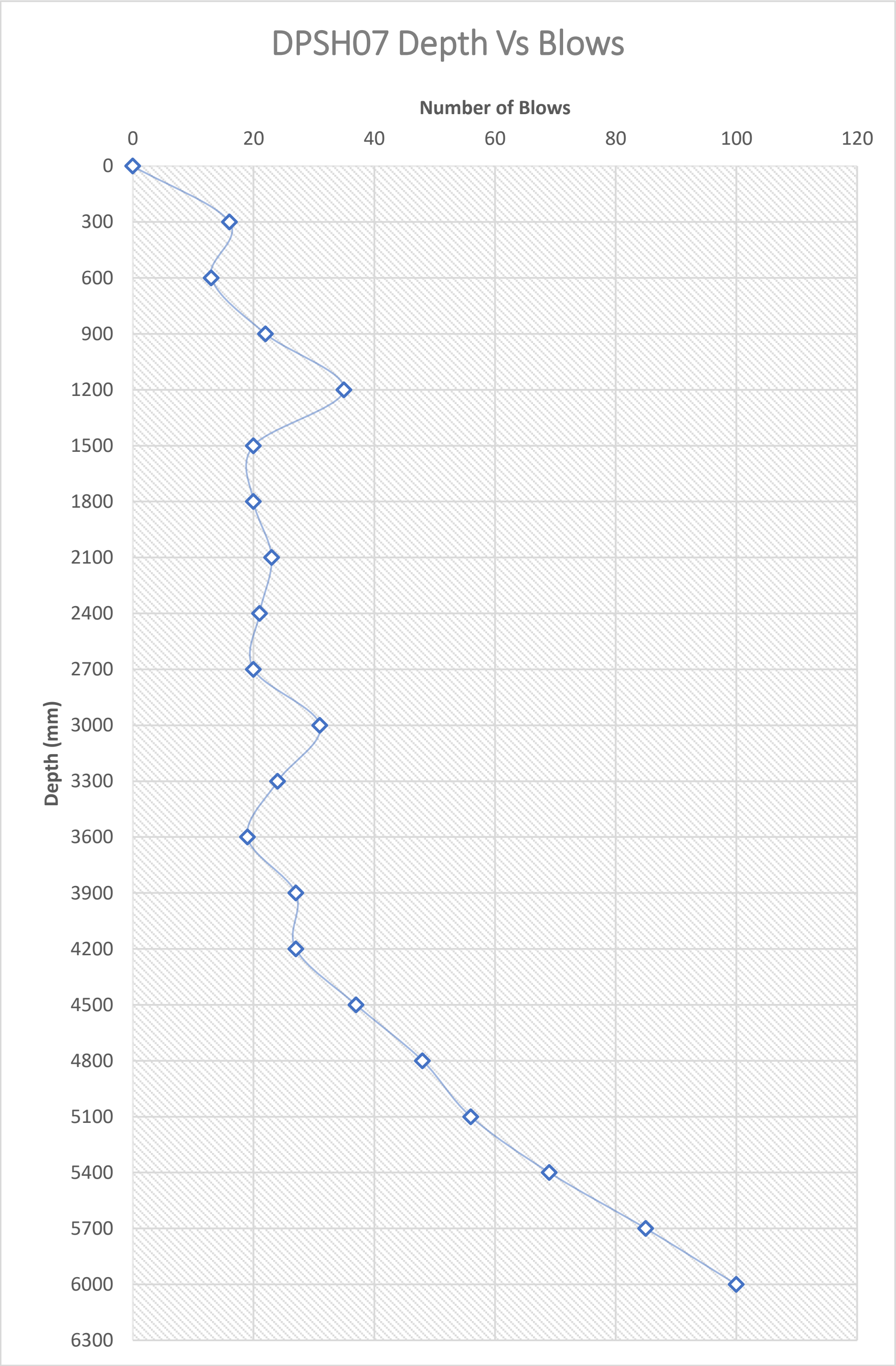
Instructions: Test refuse with blows above 100 per 300 mm depth penetrated | DPSH LOG V2.0 | 19 JUNE 2023

DYNAMIC PROPE SUPER HEAVY TEST (DPSH)

Project Name: Komati PS Geotech
Clients: Eskom
Area: Komati Power Station
Test Number: DPSH07
Coordinates: 26.09468°S, 29.45374°E
Date: 05 October 2023
Elevation (mamsl): 1620 m
Operator: Kleinboy Mahlangu
Assistant: Clab Wee
Depth (m): 6.0 m

Depth (mm)	Blows per 300 mm increment
0	0
300	16
600	13
900	22
1200	35
1500	20
1800	20
2100	23
2400	21
2700	20
3000	31
3300	24
3600	19
3900	27
4200	27
4500	37
4800	48
5100	56
5400	69
5700	85
6000	100
6300	
6600	
6900	
7200	
7500	
7800	
8100	
8400	
8700	
9000	
9300	
9600	
9900	
10200	
10500	
10800	
11100	
11400	
11700	
12000	

Graphical Representation of Field Data



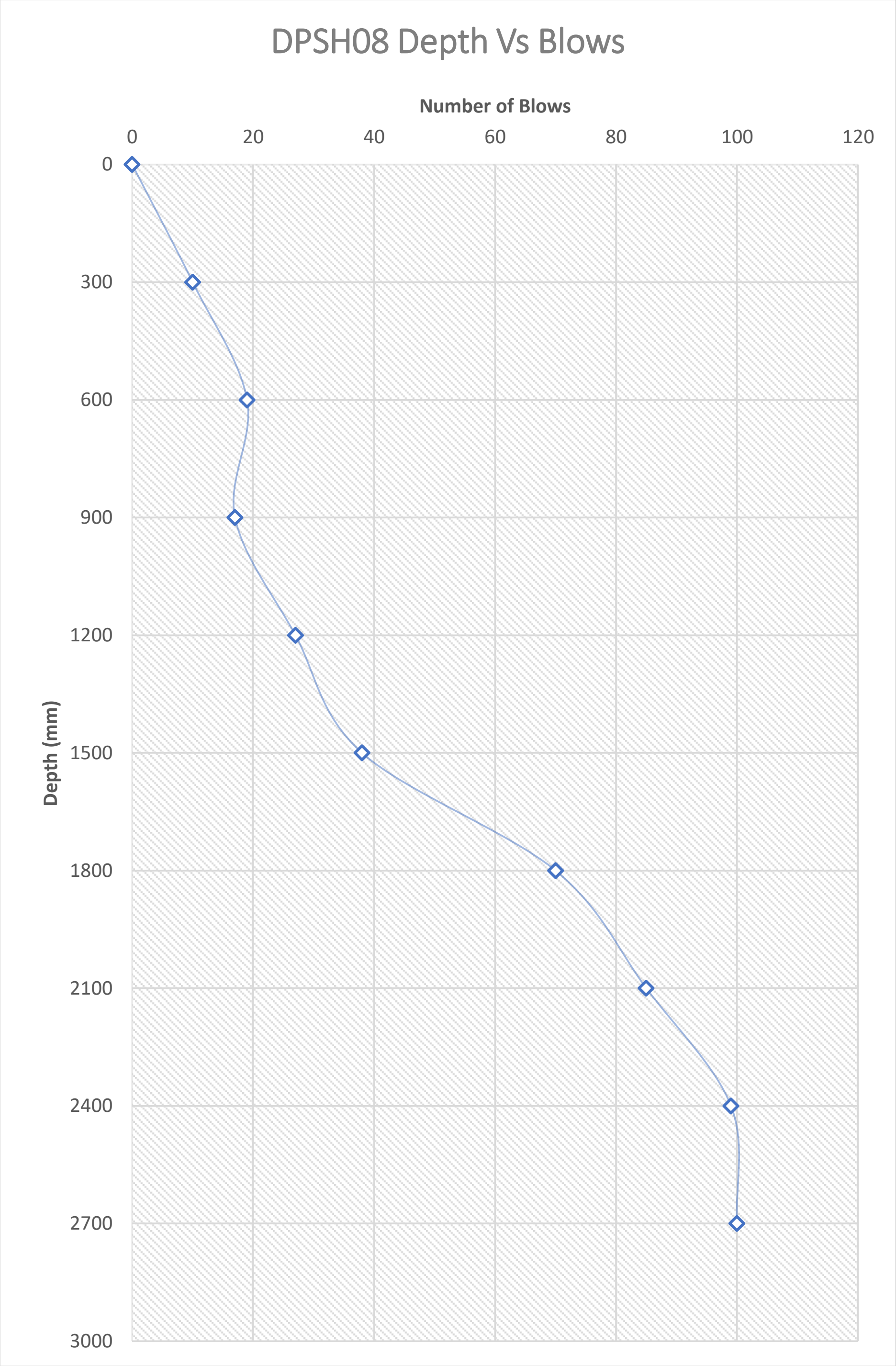
Instructions: Test refuse with blows above 100 per 300 mm depth penetrated | DPSH LOG V2.0 | 19 JUNE 2023

DYNAMIC PROPE SUPER HEAVY TEST (DPSH)

Project Name: Komati PS Geotech
Clients: Eskom
Area: Komati Power Station
Test Number: DPSH08
Coordinates: 22.09339°S, 29.45657°E
Date: 05 October 2023
Elevation (mamsl): 1616 m
Operator: Kleinboy Mahlangu
Assistant: Caleb Wee
Depth (m): 2.7 m

Depth (mm)	Blows per 300 mm increment
0	0
300	10
600	19
900	17
1200	27
1500	38
1800	70
2100	85
2400	99
2700	100
3000	
3300	
3600	
3900	
4200	
4500	
4800	
5100	
5400	
5700	
6000	
6300	
6600	
6900	
7200	
7500	
7800	
8100	
8400	
8700	
9000	
9300	
9600	
9900	
10200	
10500	
10800	
11100	
11400	
11700	
12000	

Graphical Representation of Field Data



Instructions: Test refuse with blows above 100 per 300 mm depth penetrated | DPSH LOG V2.0 | 19 JUNE 2023

DYNAMIC PROPE SUPER HEAVY TEST (DPSH)

Project Name: Komati PS Geotech
Clients: Eskom
Area: Komati Power Station
Test Number: DPSH09
Coordinates: 26.09813°S, 29.45227°E
Date: 06 October 2023
Elevation (mamsl): 1624 m
Operator: Kleinboy Mahlangu
Assistant: Caleb Wee
Depth (m): 3.3 m

Graphical Representation of Field Data

Depth (mm)	Blows per 300 mm increment
0	0
300	6
600	8
900	20
1200	20
1500	22
1800	24
2100	22
2400	35
2700	72
3000	93
3300	100
3600	
3900	
4200	
4500	
4800	
5100	
5400	
5700	
6000	
6300	
6600	
6900	
7200	
7500	
7800	
8100	
8400	
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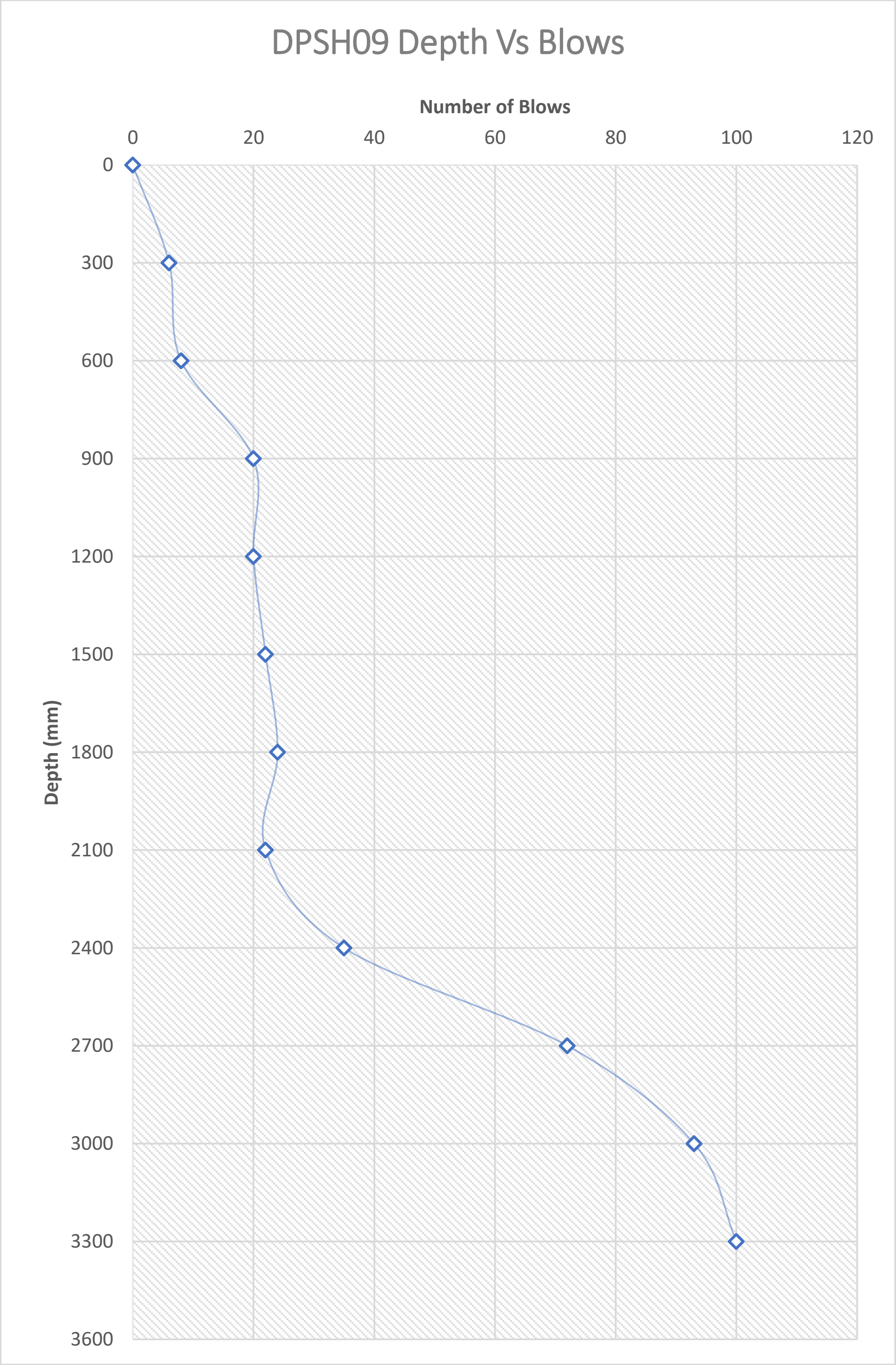
11100	
11400	
11700	
12000	



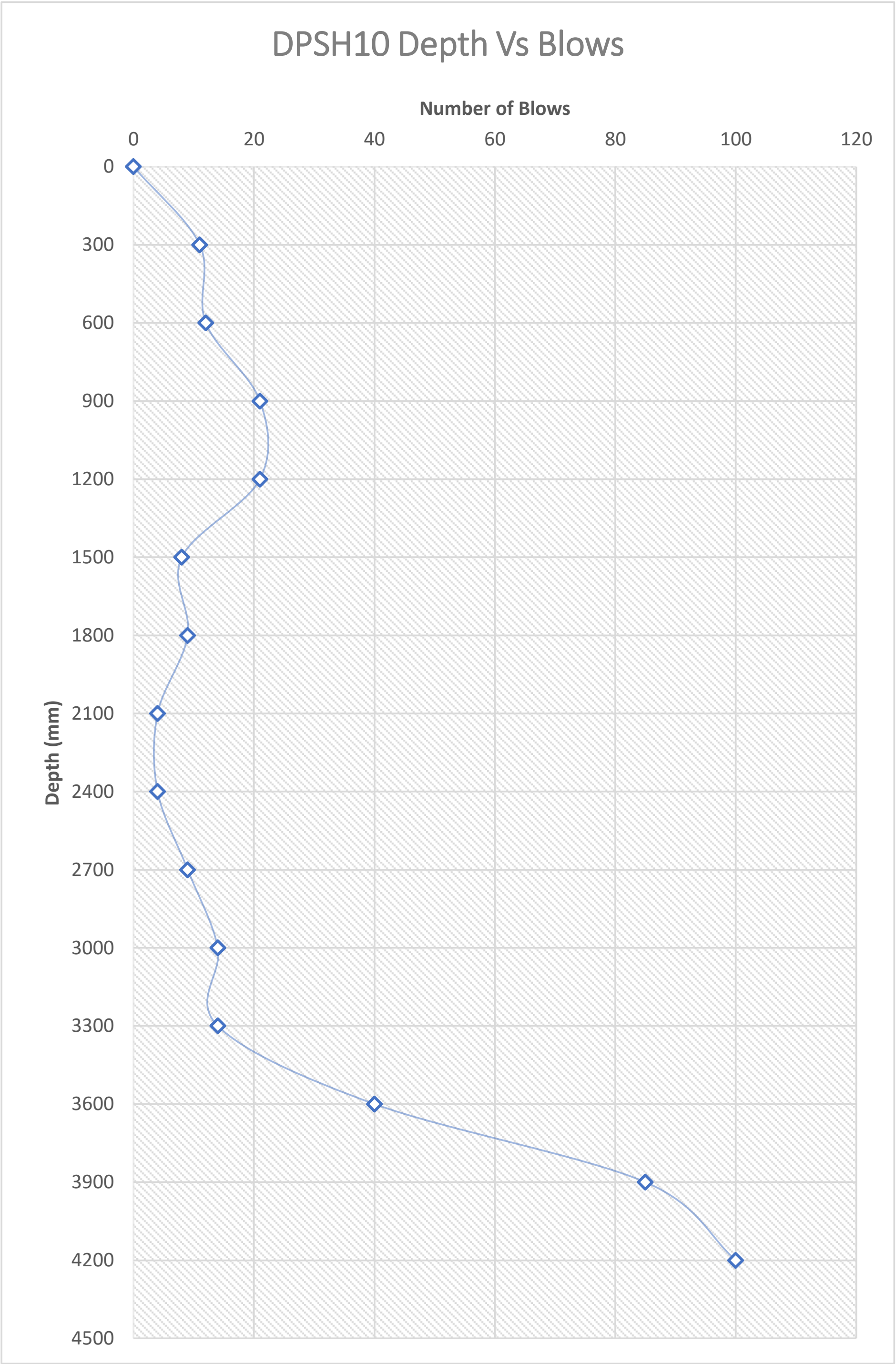
Instructions: Test refuse with blows above 100 per 300 mm depth penetrated | DPSH LOG V2.0 | 19 JUNE 2023

DYNAMIC PROPE SUPER HEAVY TEST (DPSH)

Project Name: Komati PS Geotch
Clients: Eskom
Area: Komati Power Station
Test Number: DPSH10
Coordinates: 26.10127°S, 29.45122°E
Date: 06 October 2023
Elevation (mamsl): 1632 m
Operator: Kleinboy Mahlangu
Assistant: Caleb Wee
Depth (m): 4.2 m

Depth (mm)	Blows per 300 mm increment
0	0
300	11
600	12
900	21
1200	21
1500	8
1800	9
2100	4
2400	4
2700	9
3000	14
3300	14
3600	40
3900	85
4200	100
4500	
4800	
5100	
5400	
5700	
6000	
6300	
6600	
6900	
7200	
7500	
7800	
8100	
8400	
8700	
9000	
9300	
9600	
9900	
10200	
10500	
10800	
11100	
11400	
11700	
12000	

Graphical Representation of Field Data



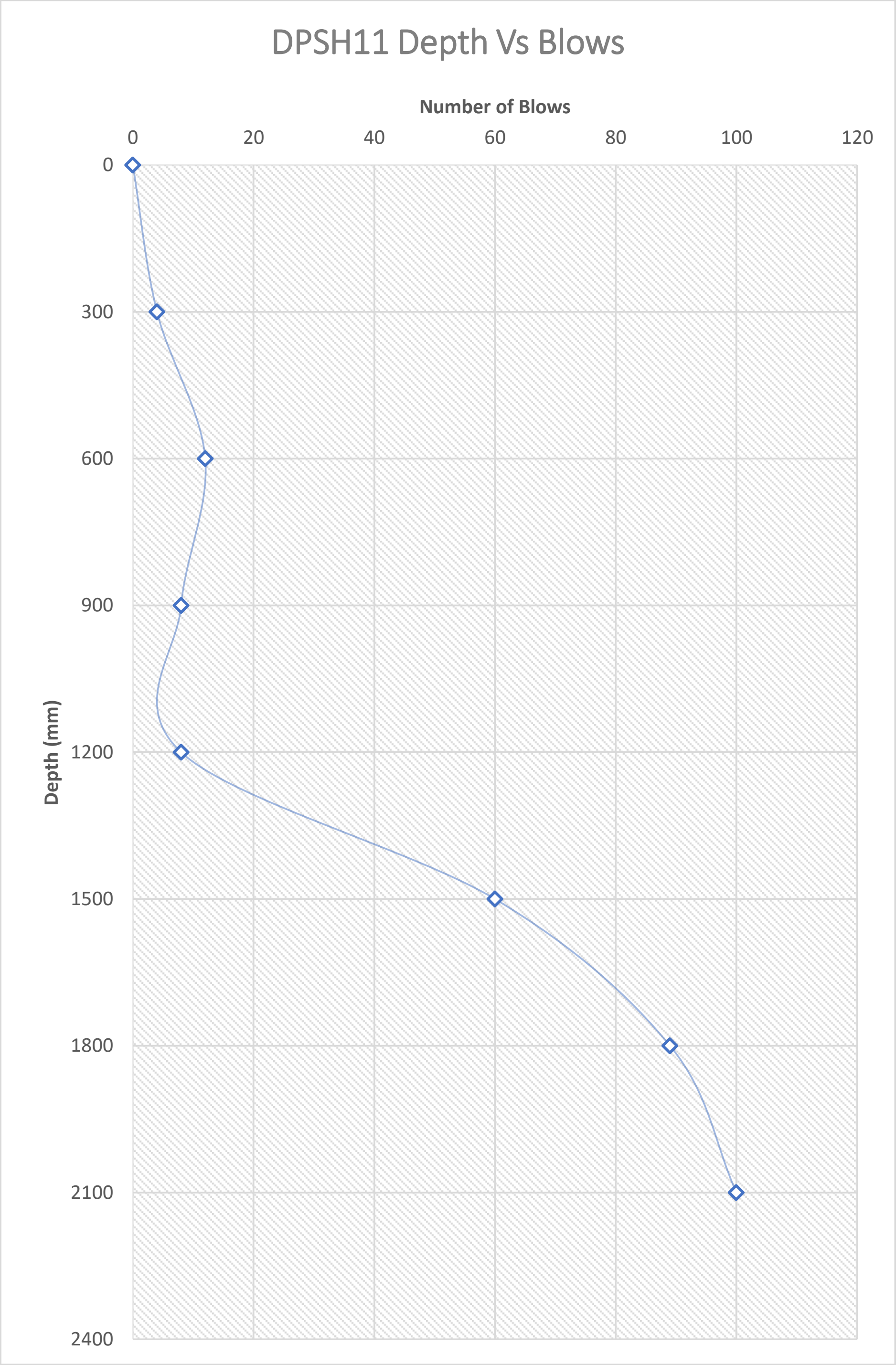
Instructions: Test refuse with blows above 100 per 300 mm depth penetrated | DPSH LOG V2.0 | 19 JUNE 2023

DYNAMIC PROPE SUPER HEAVY TEST (DPSH)

Project Name: Komati PS Geotech
Clients: Eskom
Area: Komati Power Station
Test Number: DPSH11
Coordinates: 26.10517°S, 29.45193°E
Date: 06 October 2023
Elevation (mamsl): 1629 m
Operator: Kleinboy Mahlangu
Assistant: Caleb Wee
Depth (m): 2.1 m

Depth (mm)	Blows per 300 mm increment
0	0
300	4
600	12
900	8
1200	8
1500	60
1800	89
2100	100
2400	
2700	
3000	
3300	
3600	
3900	
4200	
4500	
4800	
5100	
5400	
5700	
6000	
6300	
6600	
6900	
7200	
7500	
7800	
8100	
8400	
8700	
9000	
9300	
9600	
9900	
10200	
10500	
10800	
11100	
11400	
11700	
12000	

Graphical Representation of Field Data



Instructions: Test refuse with blows above 100 per 300 mm depth penetrated | DPSH LOG V2.0 | 19 JUNE 2023

DYNAMIC PROPE SUPER HEAVY TEST (DPSH)

Project Name: Komati PS Geotech

Clients: Eskom

Area: Komati Power Station

Test Number: DPSH12

Coordinates: 26.10551°S, 29.45532°E

Date: 06 October 2023

Elevation (mamsl): 1648 m

Operator: Kleinboy Mahlangu

Assistant: Caleb Wee

Depth (m): 2.1 m

Graphical Representation of Field Data

Depth (mm)	Blows per 300 mm increment
0	0
300	6
600	5
900	6
1200	7
1500	40
1800	86
2100	100
2400	
2700	
3000	
3300	
3600	
3900	
4200	
4500	
4800	
5100	
5400	
5700	
6000	
6300	
6600	
6900	
7200	
7500	
7800	
8100	
8400	
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10500	
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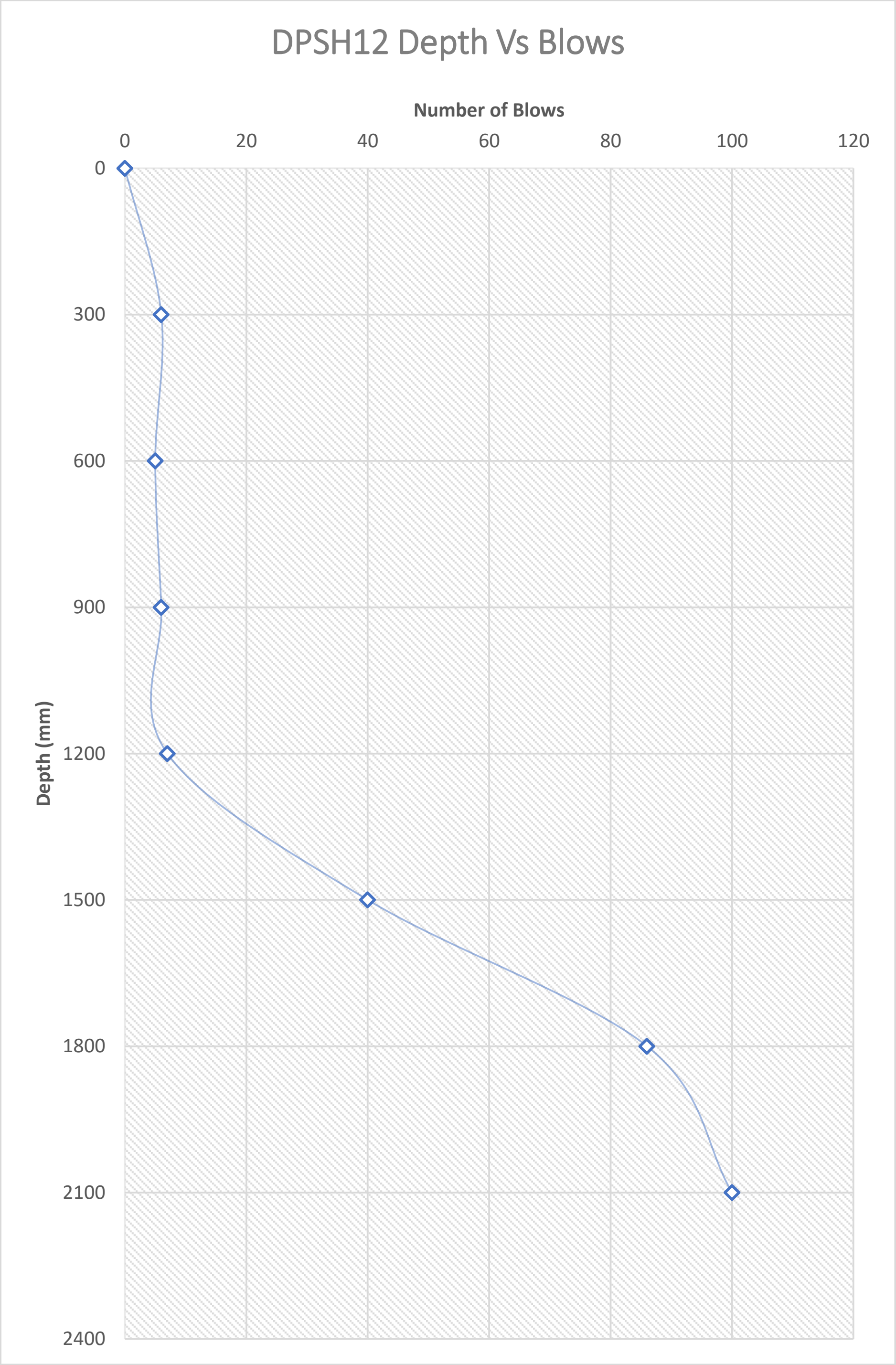
11400	
11700	
12000	



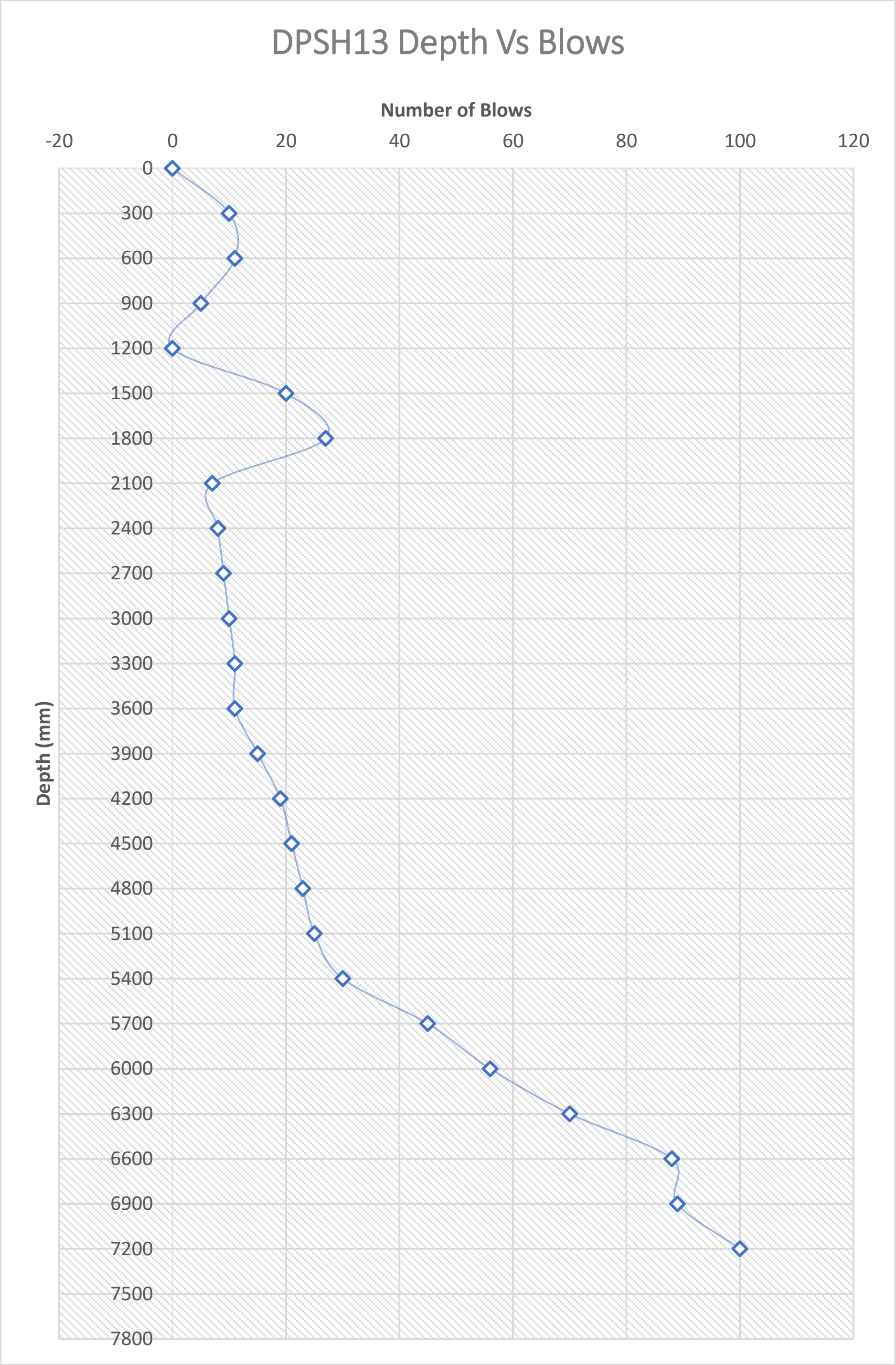
Instructions: Test refuse with blows above 100 per 300 mm depth penetrated | DPSH LOG V2.0 | 19 JUNE 2023

DYNAMIC PROPE SUPER HEAVY TEST (DPSH)

Project Name: Komati PS Geotech	**Clients: Eskom**	
Area: Komati Power Station		
Test Number: DPSH13	**Coordinates: 26.10467°S, 29.45968°E**	
Date: 06 October 2023	**Elevation (mamsl): 1646 m**	
Operator: Kleinboy Mahlangu	**Assistant: Caleb Wee**	**Depth (m): 7.2 m**

Depth (mm)	Blows per 300 mm increment
0	0
300	10
600	11
900	5
1200	0
1500	20
1800	27
2100	7
2400	8
2700	9
3000	10
3300	11
3600	11
3900	15
4200	19
4500	21
4800	23
5100	25
5400	30
5700	45
6000	56
6300	70
6600	88
6900	89
7200	100
7500	
7800	
8100	
8400	
8700	
9000	
9300	
9600	
9900	
10200	
10500	
10800	
11100	
11400	
11700	
12000	

Graphical Representation of Field Data



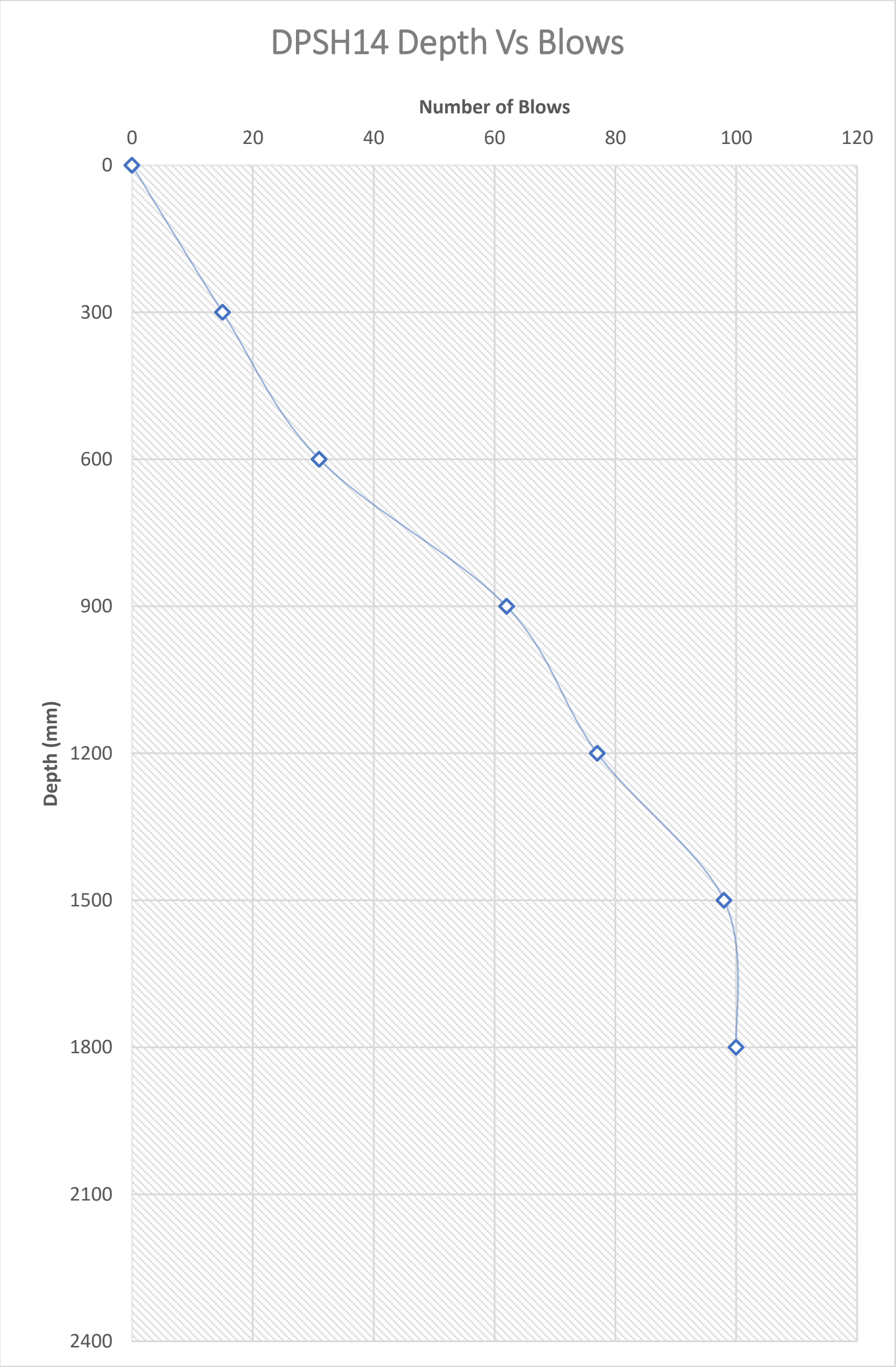
Instructions: Test refuse with blows above 100 per 300 mm depth penetrated | DPSH LOG V2.0 | 19 JUNE 2023

DYNAMIC PROPE SUPER HEAVY TEST (DPSH)

Project Name: Komati PS Geotech
Clients: Eskom
Area: Komati Power Station
Test Number: DPSH14
Coordinates: 26.10458°S, 29.46482°E
Date: 06 October 2023
Elevation (mamsl): 1647 m
Operator: Kleinboy Mahlangu
Assistant: Caleb Wee
Depth (m): 1.8 m

Depth (mm)	Blows per 300 mm increment
0	0
300	15
600	31
900	62
1200	77
1500	98
1800	100
2100	
2400	
2700	
3000	
3300	
3600	
3900	
4200	
4500	
4800	
5100	
5400	
5700	
6000	
6300	
6600	
6900	
7200	
7500	
7800	
8100	
8400	
8700	
9000	
9300	
9600	
9900	
10200	
10500	
10800	
11100	
11400	
11700	
12000	

Graphical Representation of Field Data



Instructions: Test refuse with blows above 100 per 300 mm depth penetrated | DPSH LOG V2.0 | 19 JUNE 2023

DYNAMIC PROPE SUPER HEAVY TEST (DPSH)

Project Name: Komati PS Geotech
Clients: Eskom
Area: Komati Power Station
Test Number: DPSH15
Coordinates: 26.10772°S, 29.46569°E
Date: 07 October 2023
Elevation (mamsl): 1641 m
Operator: Kleinboy Mahlangu
Assistant: Caleb Wee
Depth (m): 6.9 m

Graphical Representation of Field Data

Depth (mm)	Blows per 300 mm increment
0	0
300	7
600	0
900	0
1200	27
1500	34
1800	13
2100	15
2400	19
2700	25
3000	27
3300	26
3600	32
3900	37
4200	38
4500	40
4800	46
5100	50
5400	58
5700	67
6000	70
6300	81
6600	90
6900	100
7200	
7500	
7800	
8100	
8400	
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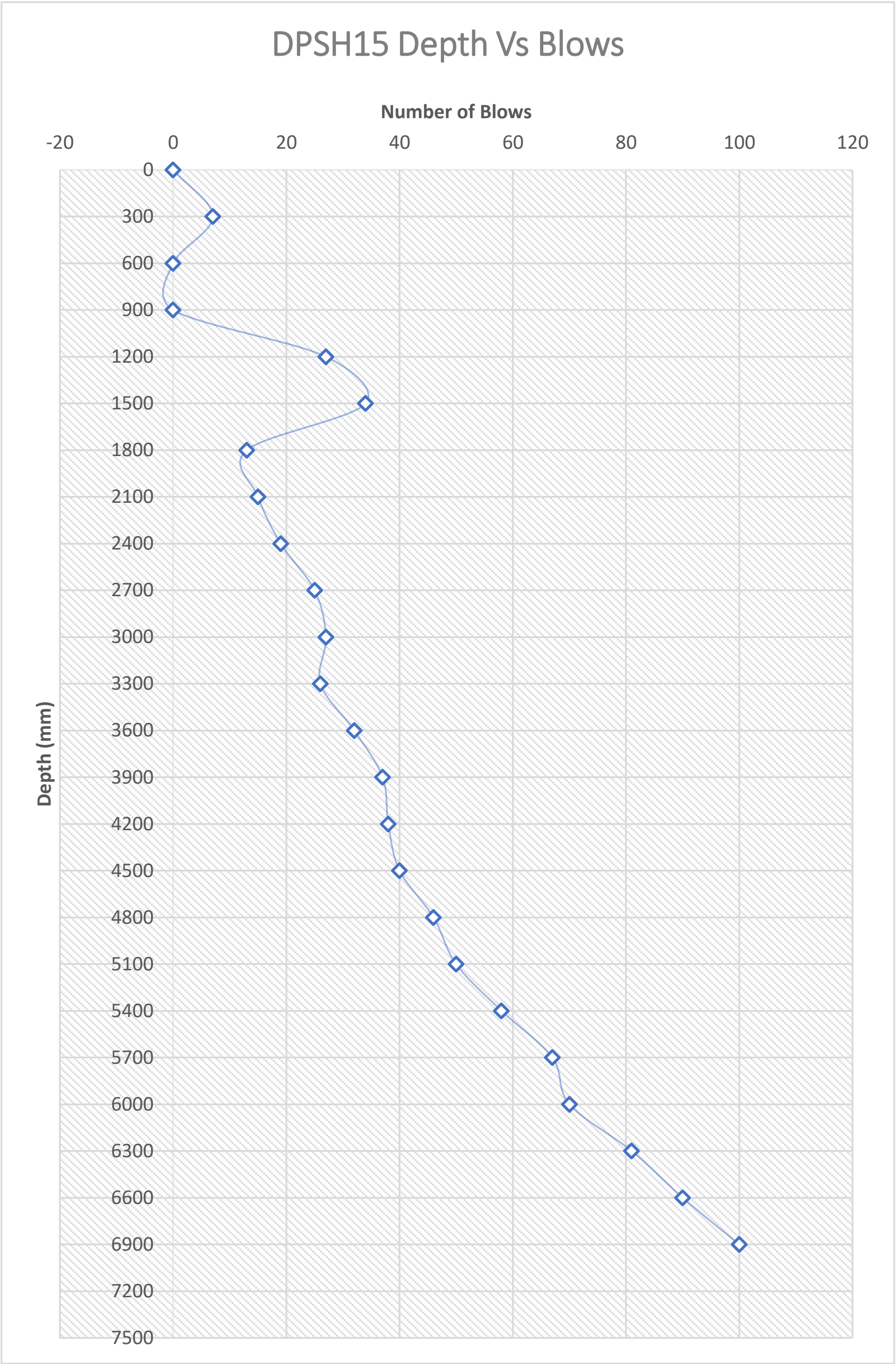
11100	
11400	
11700	
12000	



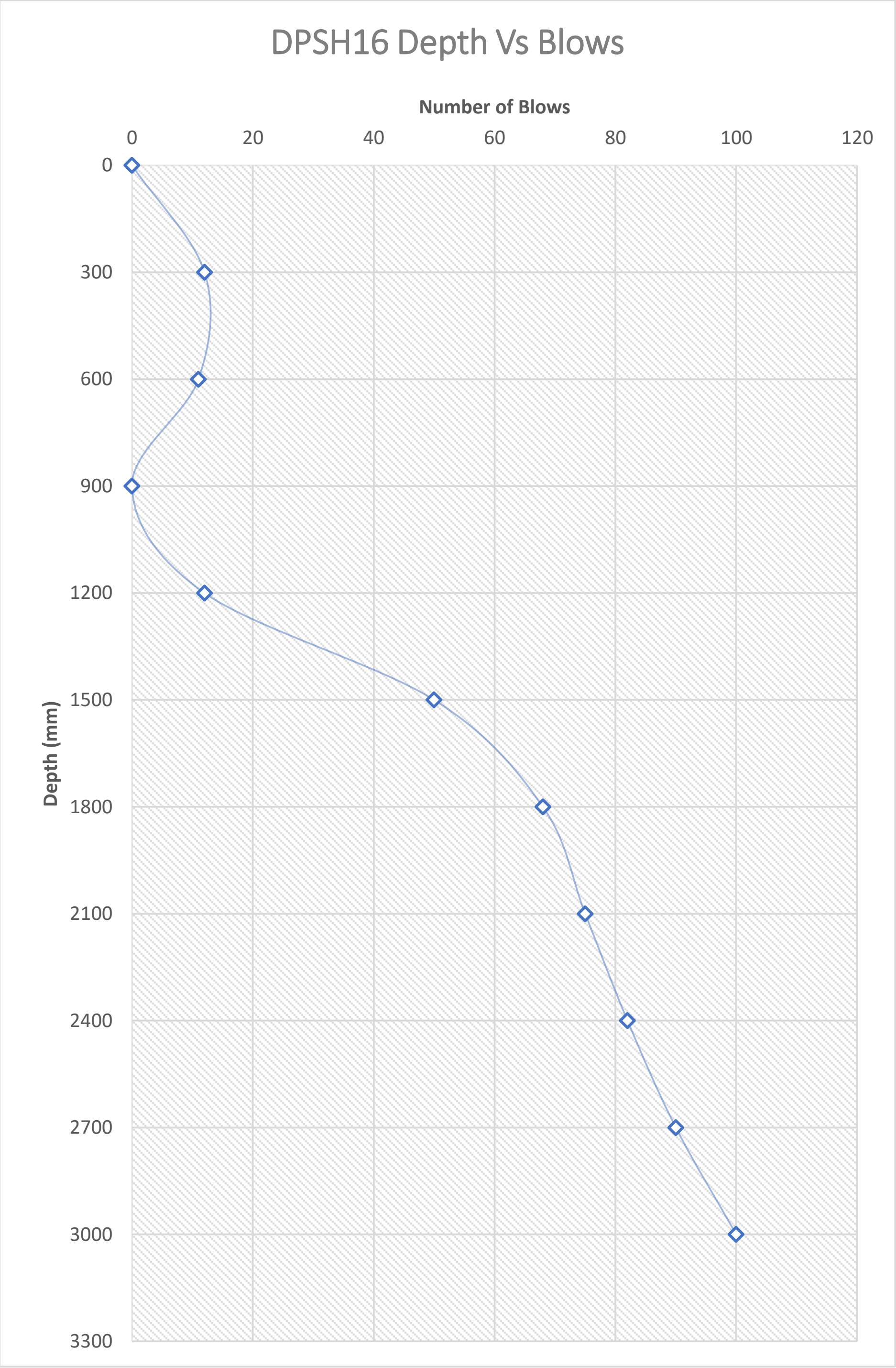
Instructions: Test refuse with blows above 100 per 300 mm depth penetrated | DPSH LOG V2.0 | 19 JUNE 2023

DYNAMIC PROPE SUPER HEAVY TEST (DPSH)

Project Name: Komati PS Geotech	**Clients: Eskom**	
Area: Komati Power Station		
Test Number: DPSH16	**Coordinates: 26.11037°S, 29.46495°E**	
Date: 07 October 2023	**Elevation (mamsl): 1658 m**	
Operator: Kleinboy Mahlangu	**Assistant: Caleb Wee**	**Depth (m): 3.0 m**

Depth (mm)	Blows per 300 mm increment
0	0
300	12
600	11
900	0
1200	12
1500	50
1800	68
2100	75
2400	82
2700	90
3000	100
3300	
3600	
3900	
4200	
4500	
4800	
5100	
5400	
5700	
6000	
6300	
6600	
6900	
7200	
7500	
7800	
8100	
8400	
8700	
9000	
9300	
9600	
9900	
10200	
10500	
10800	
11100	
11400	
11700	
12000	

Graphical Representation of Field Data



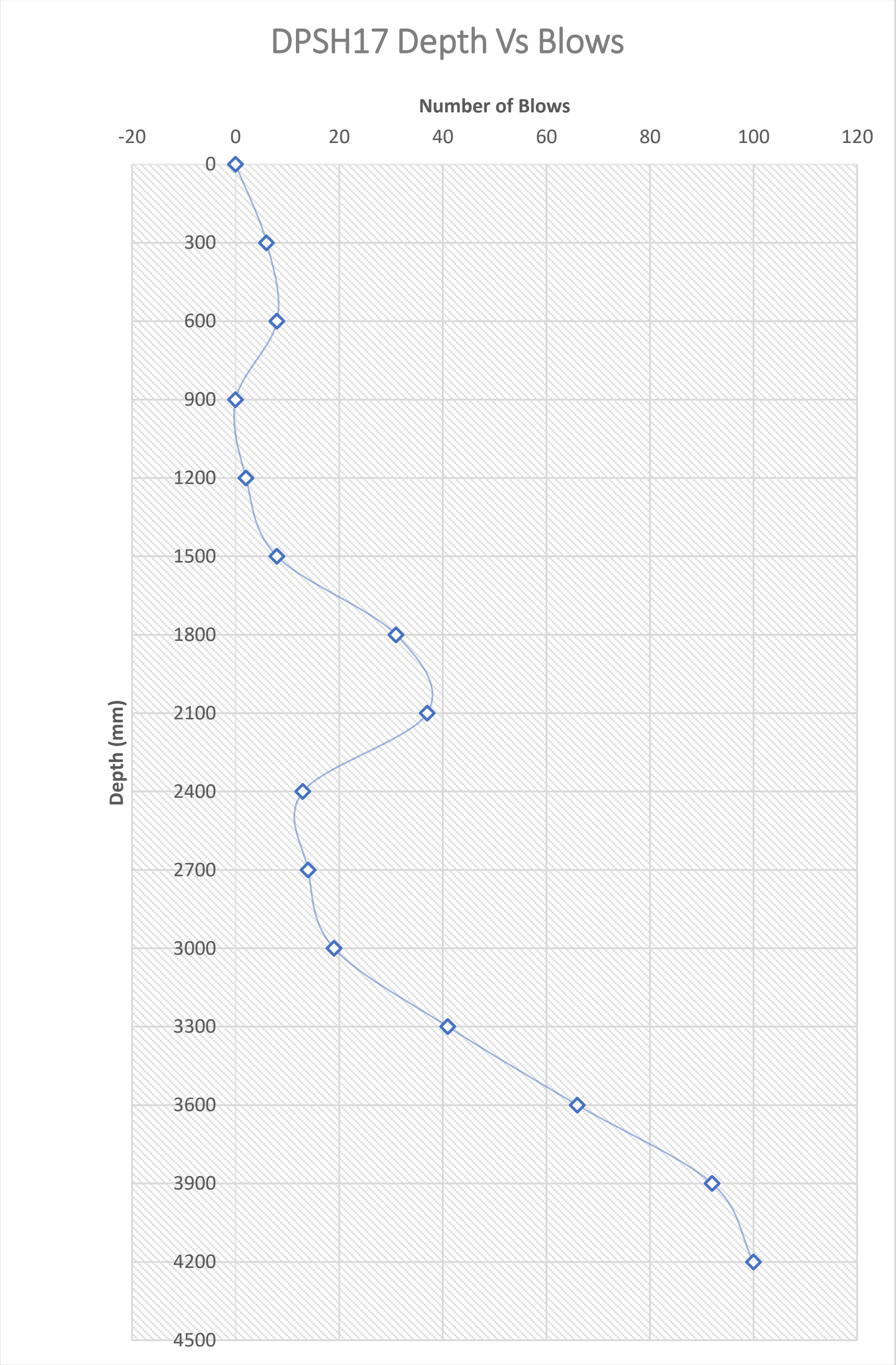
Instructions: Test refuse with blows above 100 per 300 mm depth penetrated | DPSH LOG V2.0 | 19 JUNE 2023

DYNAMIC PROPE SUPER HEAVY TEST (DPSH)

Project Name: Komati PS Geotech	**Clients: Eskom**	
Area: Komati Power Station		
Test Number: DPSH17	**Coordinates: 26.10674°S, 29.46276°E**	
Date: 07 October 2023	**Elevation (mamsl): 1656 m**	
Operator: Kleinboy Mahlangu	**Assistant: Caleb Wee**	**Depth (m): 4.2 m**

Graphical Representation of Field Data

Depth (mm)	Blows per 300 mm increment
0	0
300	6
600	8
900	0
1200	2
1500	8
1800	31
2100	37
2400	13
2700	14
3000	19
3300	41
3600	66
3900	92
4200	100
4500	
4800	
5100	
5400	
5700	
6000	
6300	
6600	
6900	
7200	
7500	
7800	
8100	
8400	
8700	
9000	
9300	
9600	
9900	
10200	
10500	
10800	
11100	
11400	
11700	
12000	



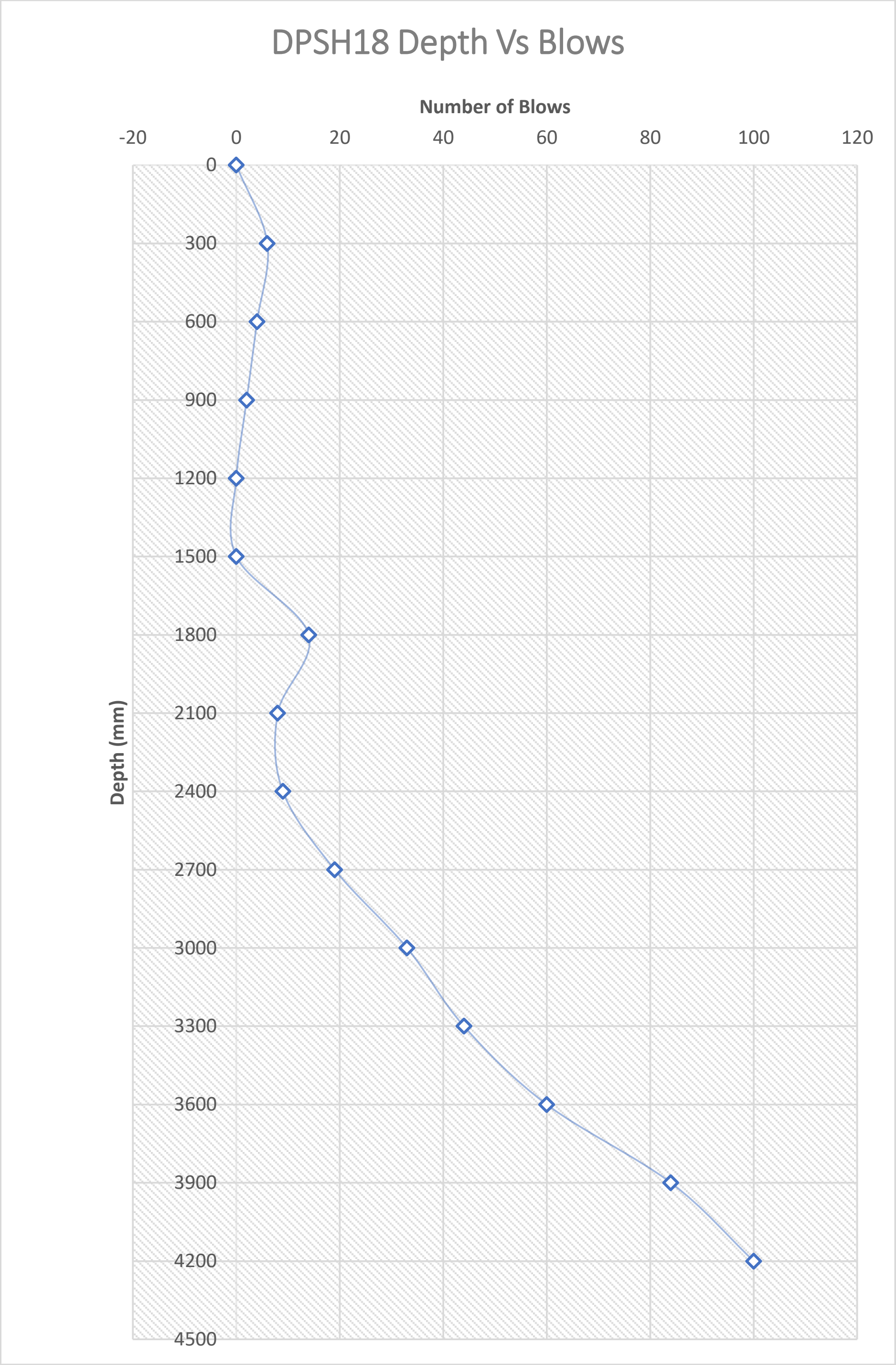
Instructions: Test refuse with blows above 100 per 300 mm depth penetrated | DPSH LOG V2.0 | 19 JUNE 2023

DYNAMIC PROPE SUPER HEAVY TEST (DPSH)

Project Name: Komati PS Geotech
Clients: Eskom
Area: Komati Power Station
Test Number: DPSH18
Coordinates: 26.10965°S, 29.45988°E
Date: 07 October 2023
Elevation (mamsl): 1657 m
Operator: Kleinboy Mahlangu
Assistant: Caleb Wee
Depth (m): 4.2 m

Depth (mm)	Blows per 300 mm increment
0	0
300	6
600	4
900	2
1200	0
1500	0
1800	14
2100	8
2400	9
2700	19
3000	33
3300	44
3600	60
3900	84
4200	100
4500	
4800	
5100	
5400	
5700	
6000	
6300	
6600	
6900	
7200	
7500	
7800	
8100	
8400	
8700	
9000	
9300	
9600	
9900	
10200	
10500	
10800	
11100	
11400	
11700	
12000	

Graphical Representation of Field Data



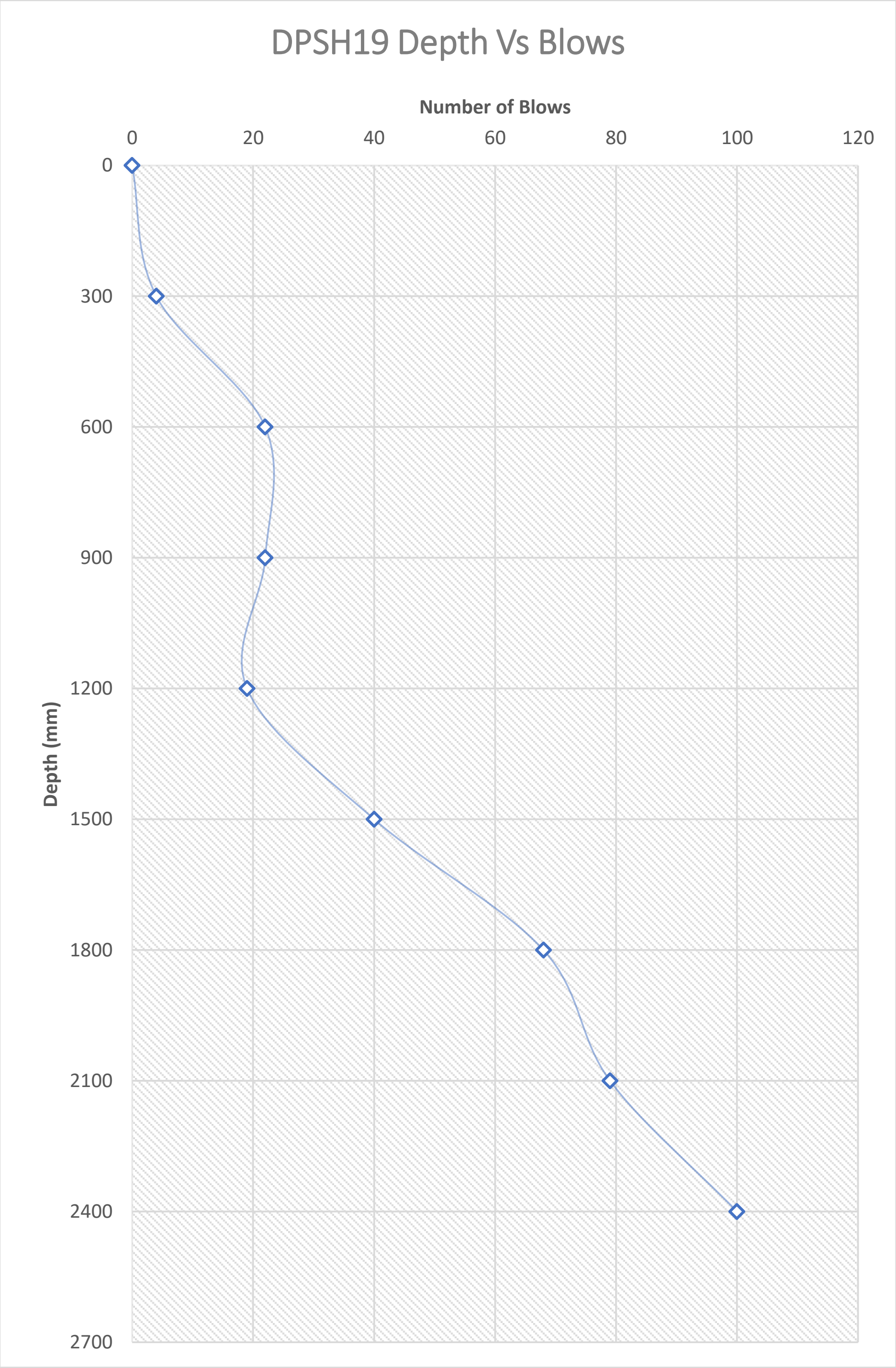
Instructions: Test refuse with blows above 100 per 300 mm depth penetrated | DPSH LOG V2.0 | 19 JUNE 2023

DYNAMIC PROPE SUPER HEAVY TEST (DPSH)

Project Name: Komati PS Geotech
Clients: Eskom
Area: Komati Power Station
Test Number: DPSH19
Coordinates: 26.10741°S, 29.45742°E
Date: 06 October 2023
Elevation (mamsl):1656 m
Operator: Kleinboy Mahlangu
Assistant: Caleb Wee
Depth (m): 2.4 m

Depth (mm)	Blows per 300 mm increment
0	0
300	4
600	22
900	22
1200	19
1500	40
1800	68
2100	79
2400	100
2700	
3000	
3300	
3600	
3900	
4200	
4500	
4800	
5100	
5400	
5700	
6000	
6300	
6600	
6900	
7200	
7500	
7800	
8100	
8400	
8700	
9000	
9300	
9600	
9900	
10200	
10500	
10800	
11100	
11400	
11700	
12000	

Graphical Representation of Field Data



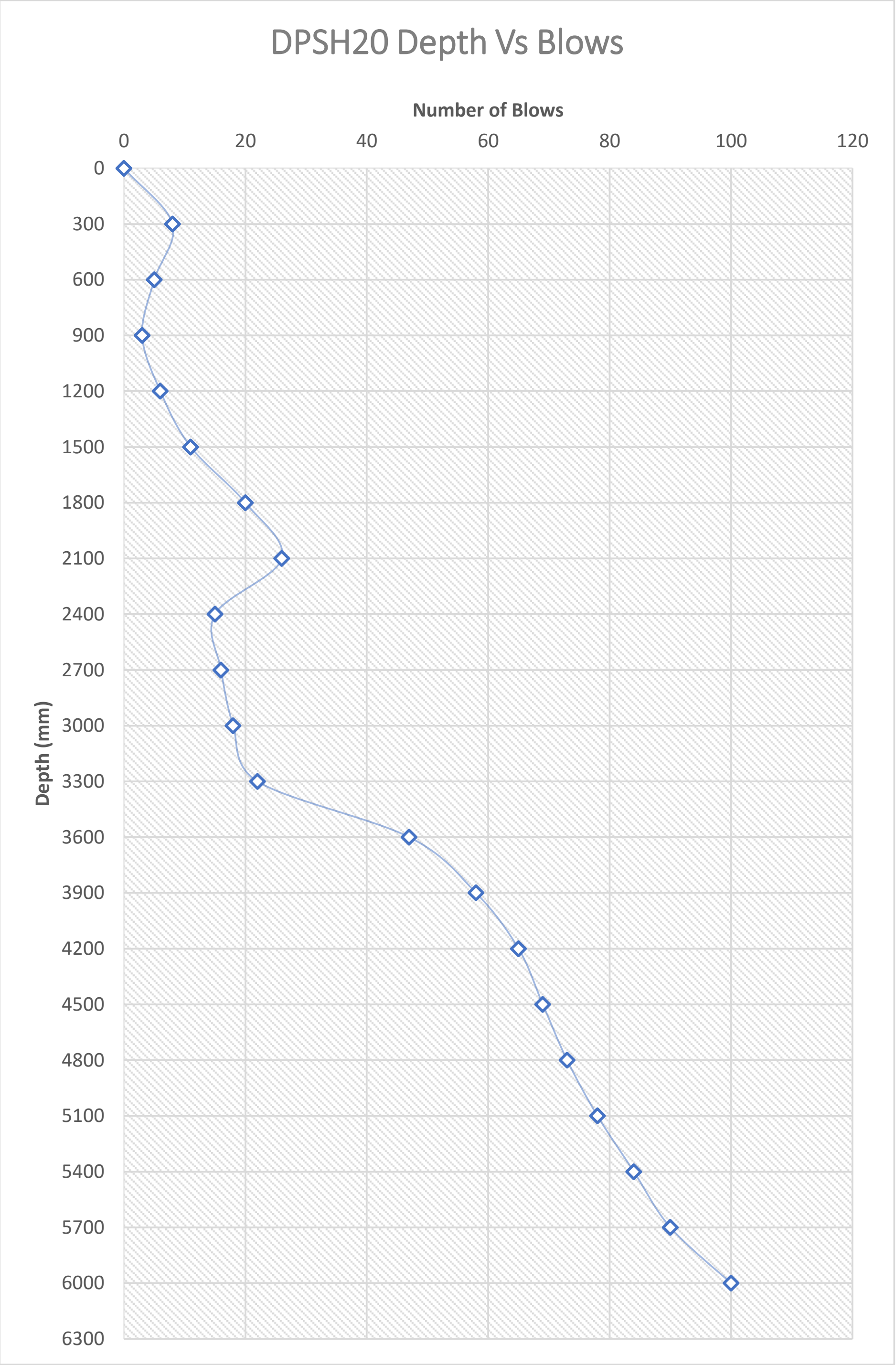
Instructions: Test refuse with blows above 100 per 300 mm depth penetrated | DPSH LOG V2.0 | 19 JUNE 2023

DYNAMIC PROPE SUPER HEAVY TEST (DPSH)

Project Name: Komati PS Geotech	**Clients: Eskom**
Area: Komati Power Station	
Test Number: DPSH20	**Coordinates: 26.10827°S, 29.45312°E**
Date: 07 October 2023	**Elevation (mamsl): 1641 m**
Operator: Kleinboy Mahlangu	**Assistant: Caleb Wee**
	Depth (m): 6.3 m

Graphical Representation of Field Data

Depth (mm)	Blows per 300 mm increment
0	0
300	8
600	5
900	3
1200	6
1500	11
1800	20
2100	26
2400	15
2700	16
3000	18
3300	22
3600	47
3900	58
4200	65
4500	69
4800	73
5100	78
5400	84
5700	90
6000	100
6300	
6600	
6900	
7200	
7500	
7800	
8100	
8400	
8700	
9000	
9300	
9600	
9900	
10200	
10500	
10800	
11100	
11400	
11700	
12000	



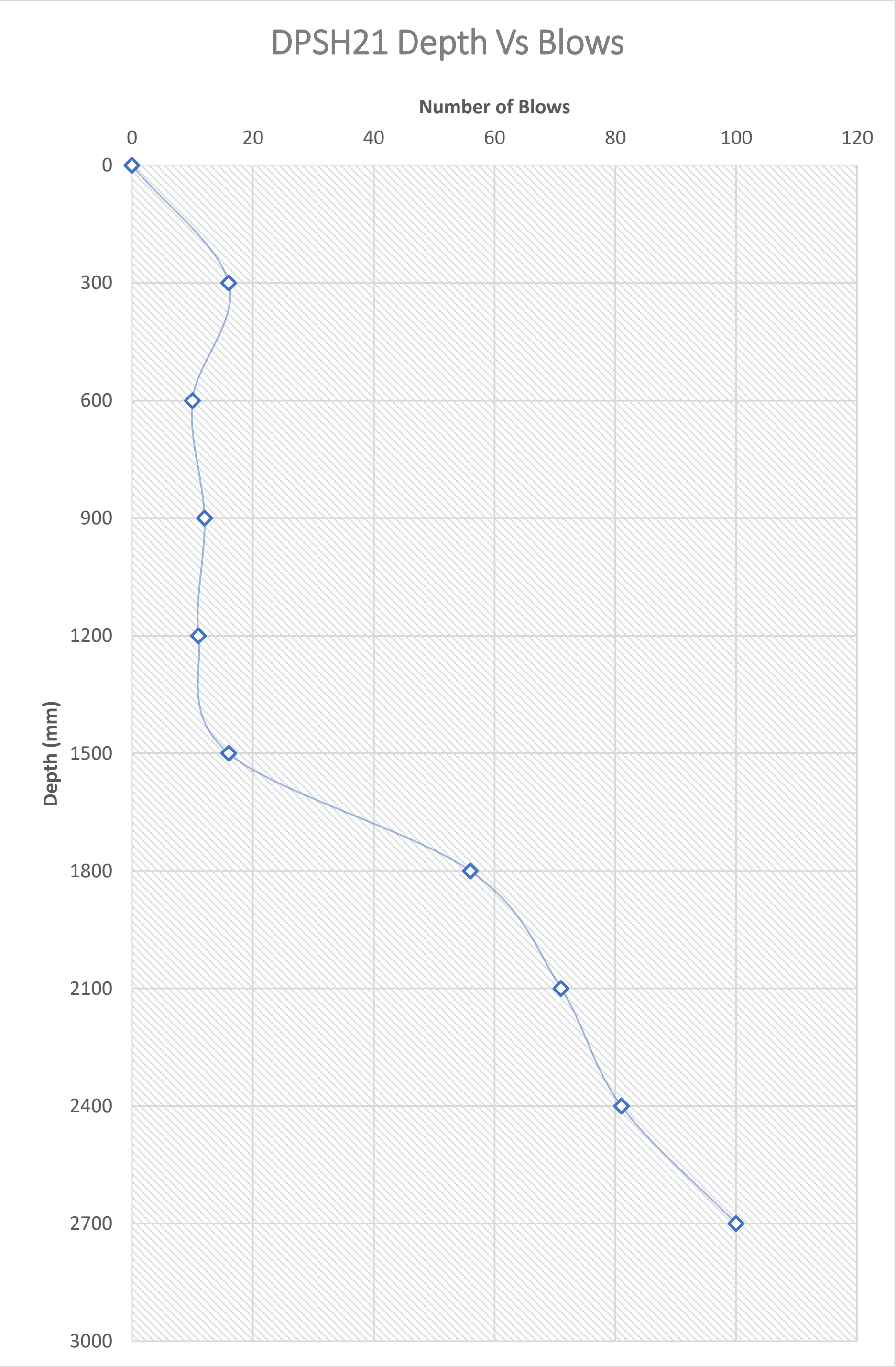
Instructions: Test refuse with blows above 100 per 300 mm depth penetrated | DPSH LOG V2.0 | 19 JUNE 2023

DYNAMIC PROPE SUPER HEAVY TEST (DPSH)

Project Name: Komati PS Geotech	**Clients: Eskom**	
Area: Komati Power Station		
Test Number: DPSH21	**Coordinates: 26.09178°S, 29.47637°E**	
Date: 06 October 2023	**Elevation (mamsl): 1617 m**	
Operator: Kleinboy Mahlangu	**Assistant: Caleb Wee**	**Depth (m): 2.7 m**

Graphical Representation of Field Data

Depth (mm)	Blows per 300 mm increment
0	0
300	16
600	10
900	12
1200	11
1500	16
1800	56
2100	71
2400	81
2700	100
3000	
3300	
3600	
3900	
4200	
4500	
4800	
5100	
5400	
5700	
6000	
6300	
6600	
6900	
7200	
7500	
7800	
8100	
8400	
8700	
9000	
9300	
9600	
9900	
10200	
10500	
10800	
11100	
11400	
11700	
12000	



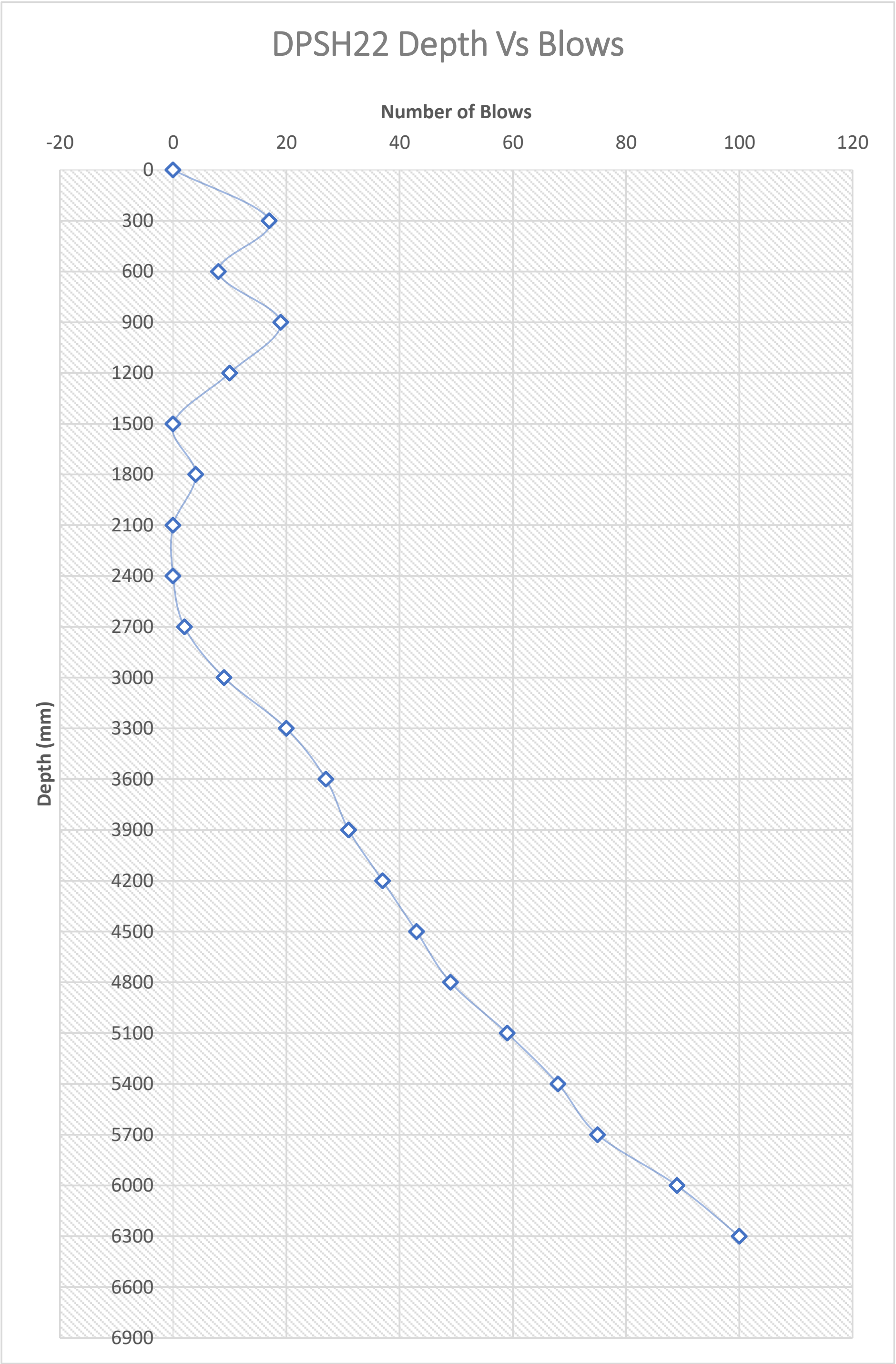
Instructions: Test refuse with blows above 100 per 300 mm depth penetrated | DPSH LOG V2.0 | 19 JUNE 2023

DYNAMIC PROPE SUPER HEAVY TEST (DPSH)

Project Name: Komati PS Geotech
Clients: Eskom
Area: Komati Power Station
Test Number: DPSH22
Coordinates: 26.09131°S, 29.46805°E
Date: 06 October 2023
Elevation (mamsl): 1616 m
Operator: Kleinboy Mahlangu
Assistant: Caleb Wee
Depth (m): 6.3 m

Graphical Representation of Field Data

Depth (mm)	Blows per 300 mm increment
0	0
300	17
600	8
900	19
1200	10
1500	0
1800	4
2100	0
2400	0
2700	2
3000	9
3300	20
3600	27
3900	31
4200	37
4500	43
4800	49
5100	59
5400	68
5700	75
6000	89
6300	100
6600	
6900	
7200	
7500	
7800	
8100	
8400	
8700	
9000	
9300	
9600	
9900	
10200	
10500	
10800	
11100	
11400	
11700	
12000	



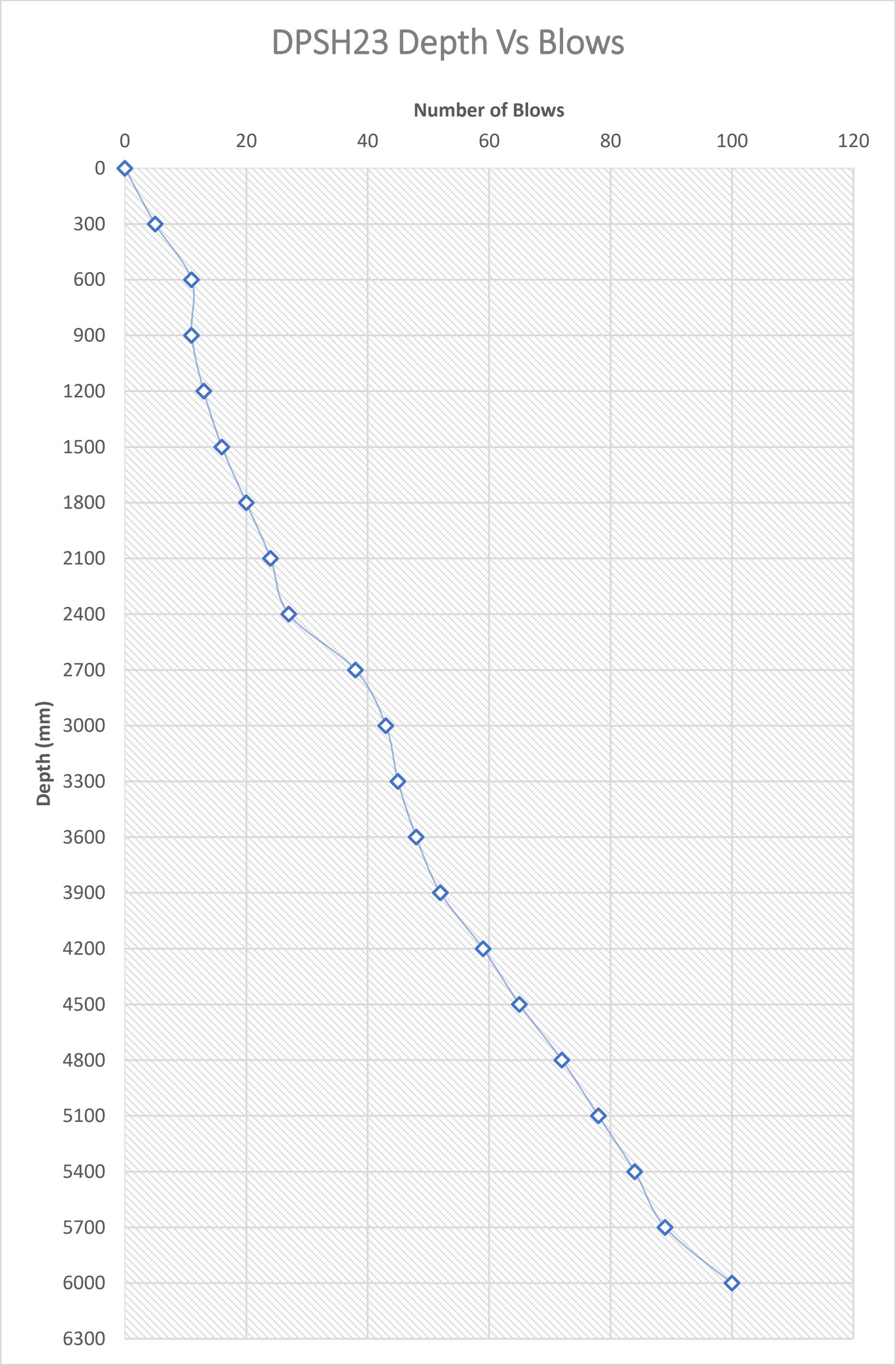
Instructions: Test refuse with blows above 100 per 300 mm depth penetrated | DPSH LOG V2.0 | 19 JUNE 2023

DYNAMIC PROPE SUPER HEAVY TEST (DPSH)

Project Name: Komati PS Geotech
Clients: Eskom
Area: Komati Power Station
Test Number: DPSH23
Coordinates: 26.09233°S, 29.46656°E
Date: 07 October 2023
Elevation (mamsl): 1610 m
Operator: Kleinboy Mahlangu
Assistant: Caleb Wee
Depth (m): 6.0 m

Depth (mm)	Blows per 300 mm increment
0	0
300	5
600	11
900	11
1200	13
1500	16
1800	20
2100	24
2400	27
2700	38
3000	43
3300	45
3600	48
3900	52
4200	59
4500	65
4800	72
5100	78
5400	84
5700	89
6000	100
6300	
6600	
6900	
7200	
7500	
7800	
8100	
8400	
8700	
9000	
9300	
9600	
9900	
10200	
10500	
10800	
11100	
11400	
11700	
12000	

Graphical Representation of Field Data



Instructions: Test refuse with blows above 100 per 300 mm depth penetrated | DPSH LOG V2.0 | 19 JUNE 2023

APPENDIX E: PERCUSSION DRILLING LOGS

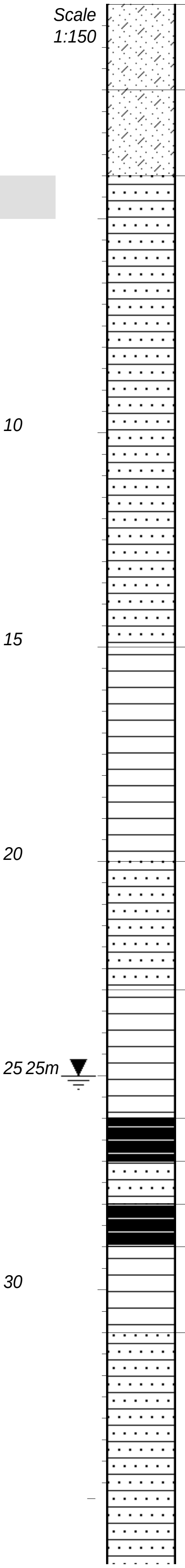
ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: K-BH1
Sheet 1 of 2

JOB NUMBER: MAK152.08.23

Scale 1:150

REDUCED LEVEL	Sample Recovery (%)	Air Loss (%)	Penetration Rate (min/metre)
1615	100	0	1.09
	100	0	1.10
	100	0	1.07
	100	0	2.16
	100	0	12.07
1610	100	0	8.52
	100	0	6.44
	100	0	3.44
	100	0	3.15
	100	0	1.39
1605	100	0	2.04
	100	0	2.30
	100	0	1.03
	100	0	1.11
	100	0	3.10
1600	100	0	0.40
	100	0	1.24
	100	0	2.45
	100	0	1.10
	100	0	1.25
1595	100	0	1.42
	100	0	1.42
	100	0	1.28
	100	0	3.11
	100	0	0.44
1590	100	0	2.22
	100	0	1.25
	100	0	1.28
	100	0	1.48
	100	0	2.01
1585	100	0	2.18
	100	0	2.07
	100	0	2.20
	100	0	2.58
	100	0	5.53



0.00	Brown clayey sand. Transported soil.
2.00	Grey clayey sand .Residual soil.
4.00	Brown, highly weathered, medium hard rock sandstone. Vryheid Formation.
15.00	Grey, moderately weathered, medium hard rock mudrock. Vryheid Formation.
20.00	Brown, highly weathered, medium hard rock sandstone. Vryheid Formation.
23.00	Grey, moderately weathered, medium hard rock mudrock. Vryheid Formation.
26.00	Black, highly weathered, soft rock coal. Vryheid Formation.
27.00	Greyish white, highly weathered, medium hard rock sandstone. Vryheid Formation.
28.00	Black, moderately weathered, soft rock shaly coal. Vryheid Formation.
29.00	

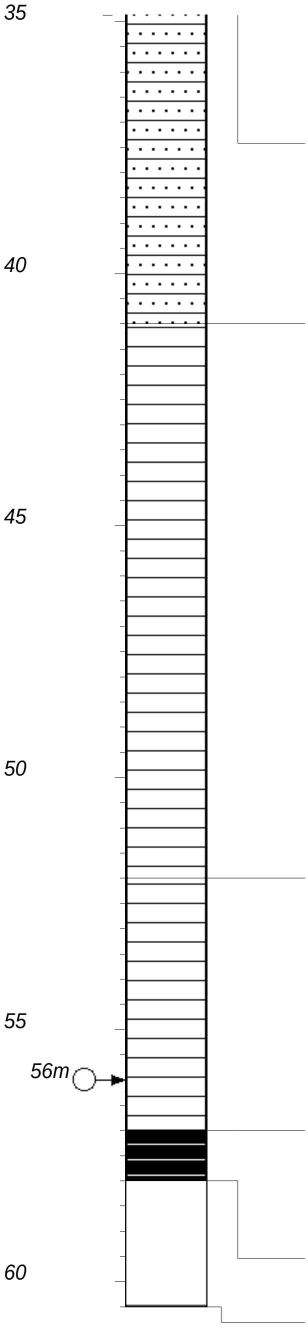
ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION: KOMATI POWER STATION

HOLE No: K-BH1
Sheet 2 of 2

JOB NUMBER: MAK152.08.23

REDUCED LEVEL: 1580, 1575, 1570, 1565, 1560

Sample Recovery (%)	*Air Loss (%)*	*Penetration Rate (min/metre)*
100	0	3.42
100	0	2.30
100	0	5.45
100	0	4.44
100	0	4.03
100	0	4.09
100	0	1.17
100	0	1.29
100	0	0.56
100	0	1.57
100	0	1.29
100	0	0.58
100	0	1.55
100	0	1.54
100	0	1.32
100	0	2.10
100	0	2.30
100	0	2.18
100	0	2.25
100	0	2.06
100	0	2.13
100	0	3.58
100	0	3.42
0	100	0.05
0	100	0.05
0	100	



	Grey , moderately weathered, medium rock mudrock. Vryheid Formation.
31.00	Grey, highly weathered, medium hard rock sandstone. Vryheid Formation.
41.00	Black, moderately weathered, medium hard rock mudrock. Vryheid Formation.
52.00	Black, moderately weathered, soft rock carbonaceous shale. Vryheid Formation.
57.00	Black, moderately weathered, soft rock coal. Vryheid Formation.
58.00	Cavity.
60.50	

NOTES

1) Water strike at at 56m.

2) Groundwater table after twenty-four hours: 25m.

3) Borehole terminated at 60.5m due to drilling difficulties.

CONTRACTOR : BAV Consulting
MACHINE : Thor 5000 Drill Rig
DRILLED BY : Zakhele Zaca
PROFILED BY : Andries Vukeya

TYPE SET BY : Andries Vukeya
SETUP FILE : STANDARD.SET

INCLINATION : Vertical
DIAM : 165 mm
DATE : 11/08/2023
DATE : 11/08/2023

DATE : 06/12/2023 13:53
TEXT : ..ussionBoreholes\KBH1.TXT

ELEVATION : 1616 m
X-COORD : 29.452354´°E
Y-COORD : 26.093280´°S

HOLE No: K-BH1

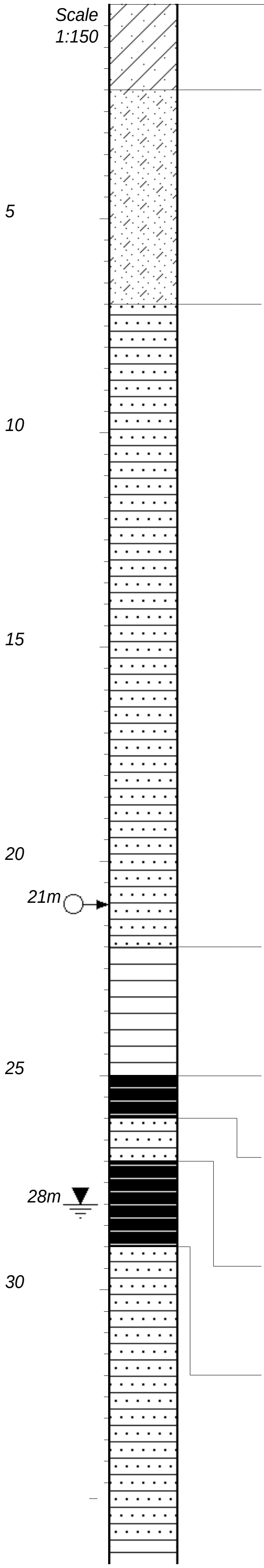
MAKHUMA CONSULTING

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION: KOMATI POWER STATION

HOLE No: K-BH2
Sheet 1 of 2

JOB NUMBER: MAK152.08.23

REDUCED LEVEL	*Sample Recovery (%)*	*Air Loss (%)*	*Penetration Rate (min/metre)*
1615	100	0	0.14
	100	0	0.35
	100	0	0.44
	100	0	2.14
	100	0	5.27
1610	100	0	5.56
	100	0	4.18
	100	0	4.06
	100	0	3.29
	100	0	2.40
1605	100	0	3.58
	100	0	1.54
	100	0	2.29
	100	0	0.51
	100	0	0.58
1600	100	0	0.54
	100	0	0.50
	100	0	1.44
	100	0	1.27
	100	0	1.06
1595	100	0	1.09
	100	0	0.39
	100	0	0.49
	100	0	0.55
	100	0	1.04
1590	100	0	0.47
	100	0	1.33
	100	0	0.46
	100	0	0.39
	100	0	1.24
1585	100	0	1.07
	100	0	1.20
	100	0	2.40
	100	0	0.51
	100	0	1.31



0.00	Brown sandy clay.Transported soil.
2.00	Kakhi clayey sand. Residual soil.
7.00	Yellowish brown, highly weathered, medium hard rock sandstone. Vryheid Formation.
22.00	Black, moderately weathered, soft rock carbonecous shale. Vryheid Formation.
25.00	Black, slightly weathered, soft rock coal. Vryheid Formation.
26.00	Grey, moderately weathered, medium hard rock, sandstone. Vryheid Formation.
27.00	Black, moderately weathered, soft rock coal. Vryheid Formation.
29.00	Grey, highly weathered, medium hard sandstone. Vryheid Formation.

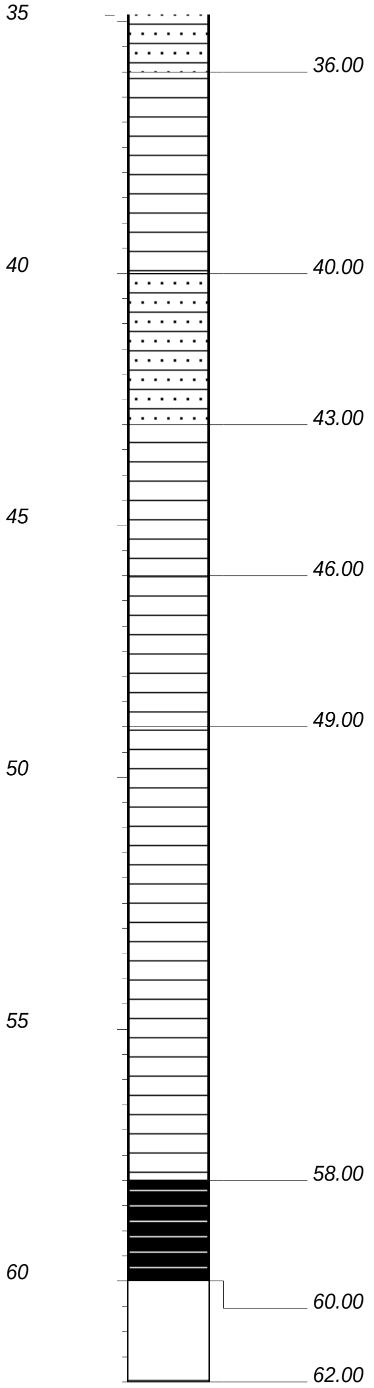
MAKHUMA CONSULTING

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION: KOMATI POWER STATION

HOLE No: K-BH2
Sheet 2 of 2

JOB NUMBER: MAK152.08.23

REDUCED LEVEL	Sample Recovery (%)	Air Loss (%)	Penetration Rate (min/metre)
1580	100	0	1.48
	100	0	1.23
	100	0	1.12
	100	0	1.25
	100	0	1.10
1575	100	0	1.55
	100	0	1.51
	100	0	1.54
	100	0	0.41
	100	0	1.14
1570	100	0	1.20
	100	0	0.30
	100	0	1.10
	100	0	1.32
	100	0	1.35
1565	100	0	1.17
	100	0	1.06
	100	0	1.30
	100	0	1.13
	100	0	1.01
1560	100	0	0.53
	100	0	1.09
	100	0	1.09
	100	0	1.24
	100	0	0.39
1555	0	100	
	0	100	



36.00 – 40.00	Black, slightly weathered, soft rock mudrock. Vryheid Formation.
40.00 – 43.00	Grey, highly weathered, medium hard rock sandstone. Vryheid Formation.
43.00 – 46.00	Grey, moderately weathered, soft rock mudrock. Vryheid Formation.
46.00 – 49.00	Brown, slightly weathered, soft rock shale. Vryheid Formation.
49.00 – 58.00	Black, moderately weathered, soft rock mudrock. Vryheid Formation.
58.00 – 60.00	Black, moderately weathered, soft rock coal. Vryheid Formation.
60.00 – 62.00	Cavity.

NOTES

1) Water strike at 21m.

2) Groundwater table after twenty-four hours: 28m.

3) Borehole terminated at 62m due to drilling difficulties.

CONTRACTOR : BAV Consulting
MACHINE : Thor 5000 Drill Rig
DRILLED BY : Zakhele Zaca
PROFILED BY : Andries Vukeya

INCLINATION : Vertical
DIAM : 165 mm
DATE : 31/08/2023
DATE : 31/08/2023

ELEVATION : 1616 m
X-COORD : 29.45026´°E
Y-COORD : 26.09327´°S

TYPE SET BY : Andries Vukeya
SETUP FILE : STANDARD.SET

DATE : 06/12/2023 13:54
TEXT : ..ussionBoreholes\KBH2.TXT

HOLE No: K-BH2

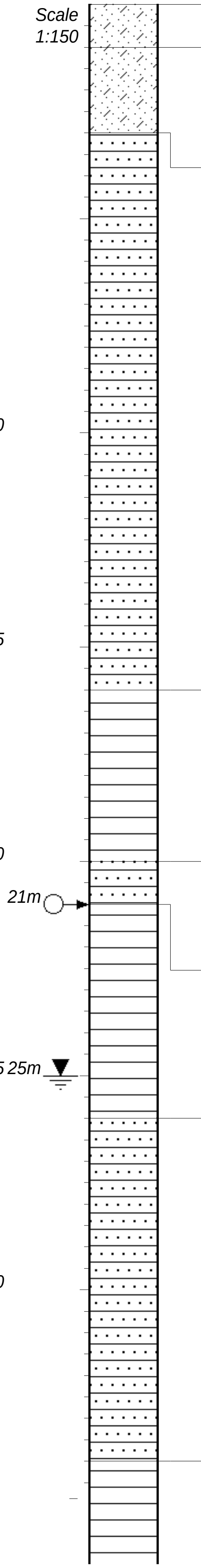
MAKHUMA CONSULTING

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION: KOMATI POWER STATION

HOLE No: K-BH3
Sheet 1 of 3

JOB NUMBER: MAK152.08.23

REDUCED LEVEL	Sample Recovery (%)	Air Loss (%)	Penetration Rate (min/metre)	
	100	0	0.34	
1610	100	0	0.38	
	100	0	1.14	
	100	0	1.20	
	100	0	1.34	5
	100	0	1.16	
1605	100	0	1.17	
	100	0	1.05	
	100	0	1.01	
	100	0	1.15	10
	100	0	0.54	
1600	100	0	1.14	
	100	0	1.03	
	100	0	1.24	
	100	0	2.04	15
	100	0	0.45	
1595	100	0	1.01	
	100	0	0.59	
	100	0	1.02	
	100	0	0.59	20
	100	0	1.15	
1590	100	0	1.19	
	100	0	0.56	
	100	0	1.57	
	100	0	1.33	25
	100	0	2.14	
1585	100	0	1.58	
	100	0	2.40	
	100	0	2.05	
	100	0	1.42	30
	100	0	5.44	
1580	100	0	1.58	
	100	0	2.02	
	100	0	2.30	
	100	0	1.55	



Depth	Description
0.00	Brown clayey sand. Transported soil.
1.00	Grey clayey sand. Residual soil.
3.00	Brown, moderately weathered, medium hard rock sandstone. Vryheid Formation.
16.00	Grey, slightly weathered, soft rock mudrock. Vryheid Formation.
20.00	Grey, highly weathered, medium hard rock sandstone. Vryheid Formation.
21.00	Grey, moderately weathered, soft rock mudrock. Vryheid Formation.
26.00	Grey, highly weathered, medium hard rock sandstone. Vryheid Formation.
34.00	

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: K-BH3
Sheet 2 of 3

JOB NUMBER: MAK152.08.23

REDUCED LEVEL	Sample Recovery (%)	Air Loss (%)	Penetration Rate (min/metre)	
	100	0	2.44	35
1575	100	0	4.00	
	100	0	1.20	
	100	0	2.08	
	100	0	2.02	
	100	0	1.57	40
1570	100	0	1.38	
	100	0	1.38	
	100	0	1.47	
	100	0	2.30	
	100	0	1.59	45
1565	100	0	1.29	
	100	0	1.48	
	100	0	2.20	
	100	0	2.17	
	100	0	1.53	50
1560	100	0	1.43	
	100	0	1.55	
	100	0	1.16	
	100	0	1.52	
	0	100		55
1555	0	100		
	0	100		

Black, slightly weathered, soft rock mudrock. Vryheid Formation.

55.00

Cavity.

58.00

NOTES

1) Water strike at 21m.

2) Groundwater table after twenty-four hours: 25m.

3) Borehole terminated at 58m due to drilling difficulties.

REDUCED LEVEL	Sample Recovery (%)	Air Loss (%)	Penetration Rate (min/metre)

CONTRACTOR : BAV Consulting
MACHINE : Thor 5000 Drill Rig
DRILLED BY : Zakhele Zaca
PROFILED BY : Andries Vukeya

INCLINATION : Vertical
DIAM : 165 mm
DATE : 11/08/2023
DATE : 11/08/2023

ELEVATION : 1612 m
X-COORD : 29.45448´°E
Y-COORD : 26.09316´°S

HOLE No: K-BH3

TYPE SET BY : Andries Vukeya
SETUP FILE : STANDARD.SET

DATE : 06/12/2023 13:54
TEXT : ..ussionBoreholes\KBH3.TXT

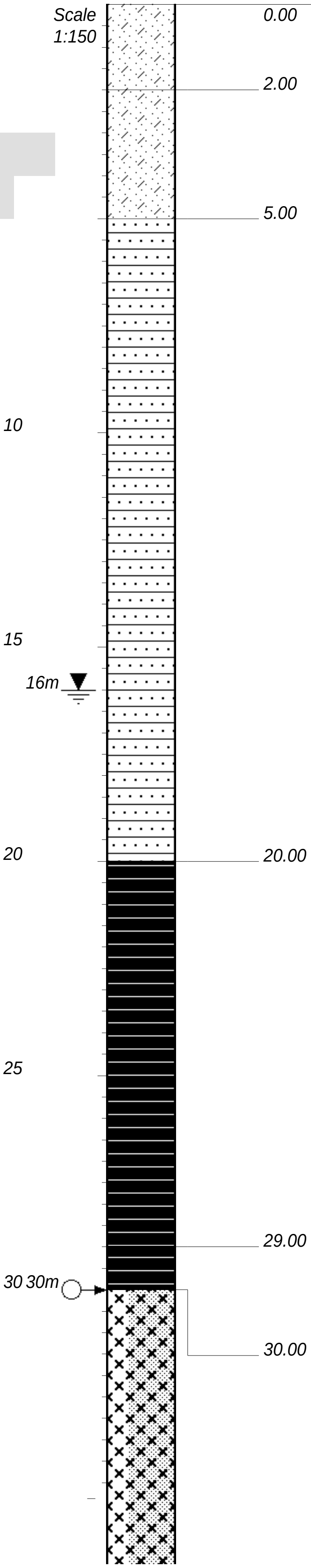
MAKHUMA CONSULTING

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: K-BH4
Sheet 1 of 2

JOB NUMBER: MAK152.08.23

REDUCED LEVEL	Sample Recovery (%)	Air Loss (%)	Penetration Rate (min/metre)
	100	0	0.33
	100	0	0.30
	100	0	3.38
	100	0	12.02
1615	100	0	9.59
	100	0	6.33
	100	0	4.48
	100	0	4.37
	100	0	1.18
1610	100	0	0.55
	100	0	0.58
	100	0	0.55
	100	0	0.57
	100	0	0.56
1605	100	0	0.54
	100	0	1.06
	100	0	1.00
	100	0	2.08
	100	0	1.25
1600	100	0	1.08
	100	0	1.10
	100	0	1.22
	100	0	1.09
	100	0	0.59
1595	100	0	0.57
	100	0	1.06
	100	0	2.03
	100	0	2.18
	100	0	2.22
1590	100	0	2.03
	100	0	1.25
	100	0	2.08
	100	0	2.44
	100	0	4.29
	100	0	3.08



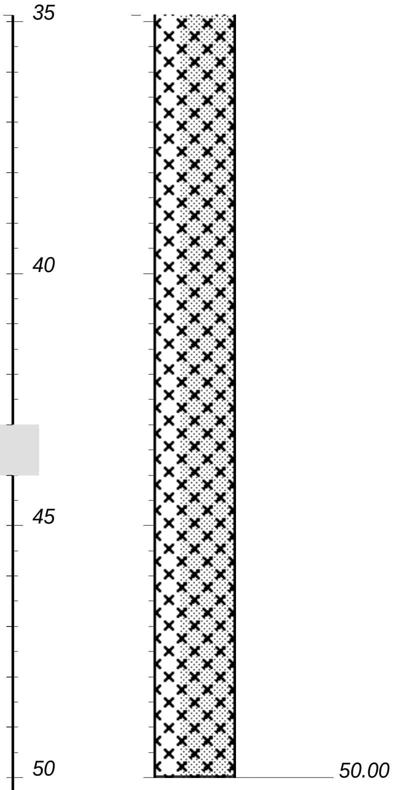
0.00	Brown clayey sand. Transported soil.
2.00	Kakhi clayey sand. Residual soil.
5.00	Brown, moderately weathered, medium hard rock sandstone. Vryheid Formation.
20.00	Black, slightly weathered, soft rock shaly coal. Vryheid Formation.
29.00	Black, moderately weathered, soft rock coal. Vryheid Formation.
30.00	Black, slightly weathered, hard rock dolerite. Karoo Supergroup.

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: K-BH4
Sheet 2 of 2

JOB NUMBER: MAK152.08.23

REDUCED LEVEL	Sample Recovery (%)	Air Loss (%)	Penetration Rate (min/metre)
1585	100	0	2.01
	100	0	1.54
	100	0	1.40
	100	0	2.07
	100	0	5.17
1580	100	0	4.51
	100	0	7.03
	100	0	6.33
	100	0	9.31
1575	100	0	5.44
	100	0	6.08
	100	0	5.15
	100	0	6.12
	100	0	6.08
	100	0	5.55
1570			



NOTES

1) Water strike at 30m.
2) Groundwater table after twenty-four hours: 16m.
3) Borehole terminated at 50m on hard rock dolerite.

CONTRACTOR : BAV Consulting
MACHINE : Thor 5000 Drill Rig
DRILLED BY : Zakhele Zaca
PROFILED BY : Andries Vukeya

INCLINATION : Vertical
DIAM : 165 mm
DATE : 10/08/2023
DATE : 10/08/2023

ELEVATION : 1620 m
X-COORD : 29.45725´°E
Y-COORD : 26.09212´°S

HOLE No: K-BH4

TYPE SET BY : Andries Vukeya
SETUP FILE : STANDARD.SET

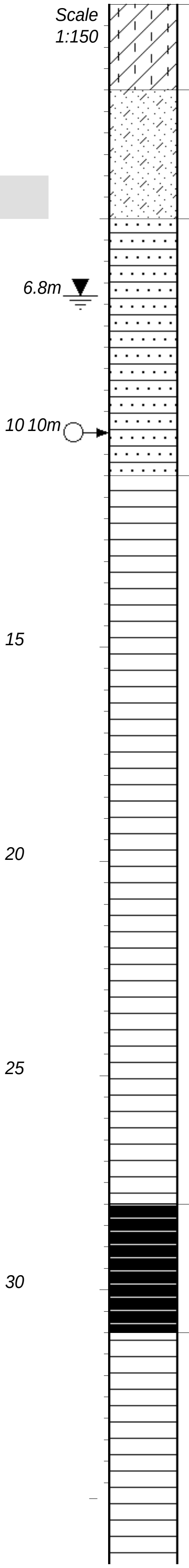
DATE : 06/12/2023 13:55
TEXT : ..ussionBoreholes\KBH4.TXT

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: K-BH5
Sheet 1 of 2

JOB NUMBER: MAK152.08.23

REDUCED LEVEL	Sample Recovery (%)	Air Loss (%)	Penetration Rate (min/metre)
	100	0	1.02
	100	0	1.07
1620	100	0	2.30
	100	0	1.04
	100	0	11.52
	100	0	5.42
	100	0	1.01
1615	100	0	1.03
	100	0	1.18
	100	0	1.15
	100	0	2.17
	100	0	3.22
1610	100	0	1.50
	100	0	1.16
	100	0	1.04
	100	0	1.08
	100	0	1.17
1605	100	0	1.13
	100	0	1.06
	100	0	1.14
	100	0	1.05
	100	0	1.10
1600	100	0	1.10
	100	0	1.11
	100	0	1.05
	100	0	1.09
	100	0	1.02
1595	100	0	1.05
	100	0	1.05
	100	0	1.07
	100	0	1.18
	100	0	1.18
1590	100	0	1.58
	100	0	4.58
	100	0	6.11



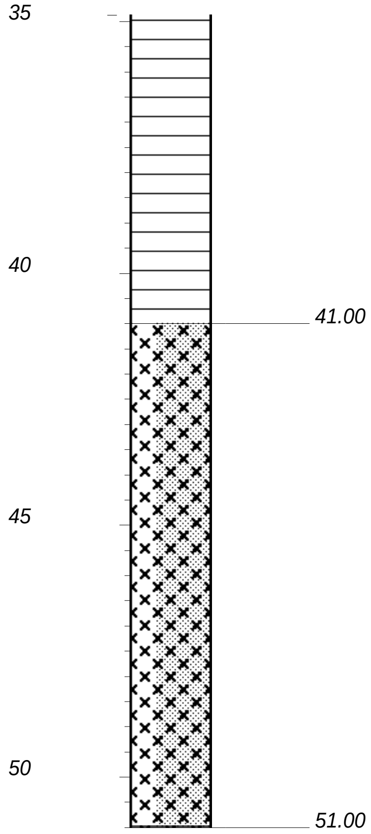
0.00	Brown silty clay. Transported soil.
2.00	Brown clayey sand. Residual soil.
5.00	Brown, moderately weathered, medium hard rock sandstone. Vryheid Formation.
11.00	Black, slightly weathered, soft rock carbonecous shale. Vryheid Formation.
28.00	Black, moderately weathered, soft rock shaly coal. Vryheid Formation.
31.00	Black, slightly weathered, soft rock mudrock. Vryheid Formation.

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION: KOMATI POWER STATION

HOLE No: K-BH5
Sheet 2 of 2

JOB NUMBER: MAK152.08.23

REDUCED LEVEL	*Sample Recovery (%)*	*Air Loss (%)*	*Penetration Rate (min/metre)*
	100	0	3.02
	100	0	5.05
1585	100	0	4.10
	100	0	7.12
	100	0	6.11
	100	0	5.27
	100	0	6.10
1580	100	0	6.20
	100	0	6.10
	100	0	6.12
	100	0	8.41
	100	0	7.35
1575	100	0	6.19
	100	0	7.35
	100	0	7.20
	100	0	7.13



Black, slightly weathered, hard rock dolerite.

NOTES

1) Water strike at 10m.
2) Groundwater table after twenty-four hours: 6.8m.
3) Borehole terminated at 51m on hard rock dolerite.

CONTRACTOR : BAV Consulting
MACHINE : Thor 5000 Drill Rig
DRILLED BY : Zakhele Zaca
PROFILED BY : Andries Vukeya

INCLINATION : Vertical
DIAM : 165 mm
DATE : 09/08/2023
DATE : 09/08/2023

ELEVATION : 1623 m
X-COORD : 29.46039´°E
Y-COORD : 26.09102´°S

HOLE No: K-BH5

TYPE SET BY : Andries Vukeya
SETUP FILE : STANDARD.SET

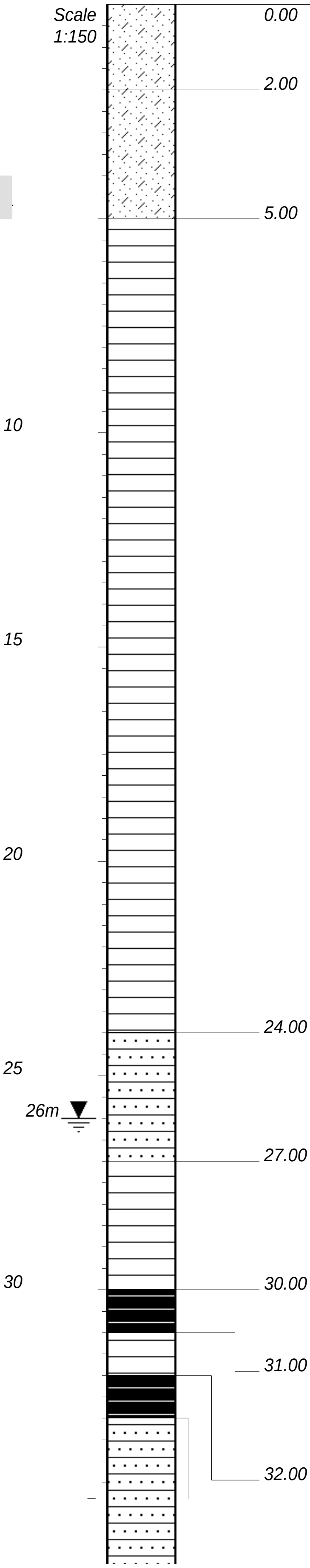
DATE : 06/12/2023 13:56
TEXT : ..ussionBoreholes\KBH5.TXT

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: K-BH6
Sheet 1 of 4

JOB NUMBER: MAK152.08.23

REDUCED LEVEL	Sample Recovery (%)	Air Loss (%)	Penetration Rate (min/metre)
	100	0	1.29
	100	0	1.25
1615	100	0	6.45
	100	0	7.26
	100	0	9.46
	100	0	4.15
	100	0	4.39
1610	100	0	2.46
	100	0	1.58
	100	0	1.33
	100	0	1.16
	100	0	0.59
1605	100	0	1.10
	100	0	1.14
	100	0	1.29
	100	0	1.15
	100	0	1.04
1600	100	0	1.25
	100	0	1.22
	100	0	1.49
	100	0	3.00
	100	0	7.03
1595	100	0	1.46
	100	0	1.58
	100	0	1.23
	100	0	3.04
	100	0	1.00
1590	100	0	0.49
	100	0	1.07
	100	0	1.00
	100	0	0.43
	100	0	1.57
1585	100	0	0.39
	100	0	0.49
	100	0	1.37



0.00	Brown clayey sand. Transported soil.
2.00	kakhi clayey sand. Residual soil.
5.00	Brown, moderately weathered, soft rock shale. Vryheid Formation.
24.00	Brown, moderately weathered, medium rock sandstone. Vryheid Formation.
27.00	Black, moderately weathered, soft rock carbonecous shale. Vryheid Formation.
30.00	Black, highly weathered, soft rock coal. Vryheid Formation.
31.00	Black, moderately weathered, soft rock carbonecous shale. Vryheid Formation.
32.00	

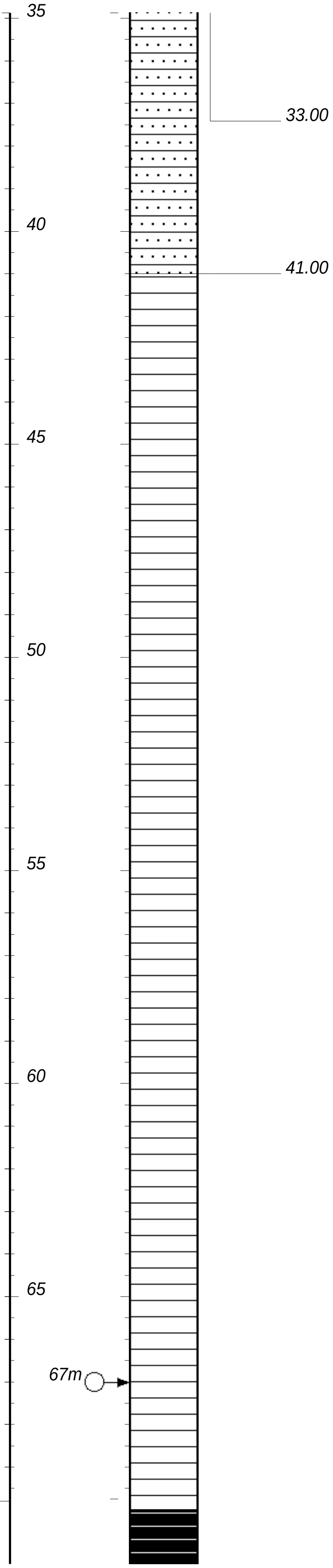
ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: K-BH6
Sheet 2 of 4

JOB NUMBER: MAK152.08.23

REDUCED LEVEL: 1580, 1575, 1570, 1565, 1560, 1555, 1550

Sample Recovery (%)	*Air Loss (%)*	*Penetration Rate (min/metre)*
100	0	1.57
100	0	2.01
100	0	1.48
100	0	1.46
100	0	2.39
100	0	2.19
100	0	2.01
100	0	1.20
100	0	1.25
100	0	1.07
100	0	1.32
100	0	0.53
100	0	1.10
100	0	1.36
100	0	0.52
100	0	1.45
100	0	1.32
100	0	1.34
100	0	2.43
100	0	1.32
100	0	1.48
100	0	1.28
100	0	1.24
100	0	1.10
100	0	1.20
100	0	1.40
100	0	0.54
100	0	0.37
100	0	0.40
100	0	0.38
100	0	0.37
100	0	0.37
100	0	1.33
100	0	0.38
100	0	0.44



Black, moderately weathered, soft rock coal. Vryheid Formation.

Grey, highly weathered, medium hard rock sandstone. Vryheid Formation.

Black, slightly , soft rock mudrock. Vryheid Formation.

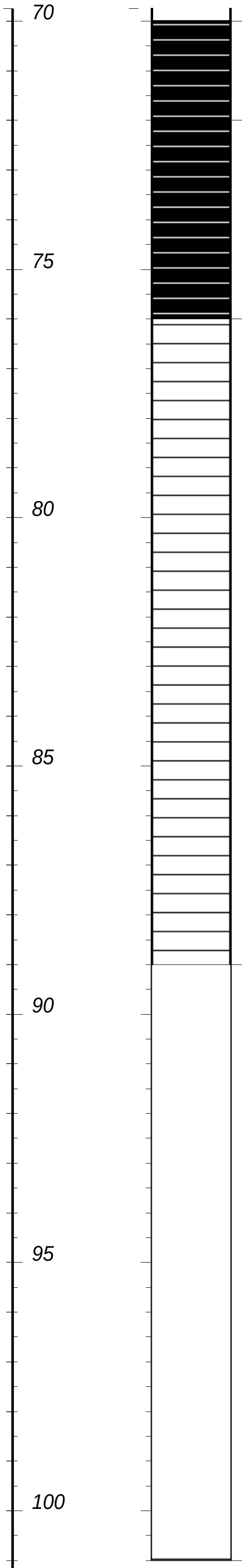
ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: K-BH6
Sheet 3 of 4

JOB NUMBER: MAK152.08.23

REDUCED LEVEL
1545
1540
1535
1530
1525
1520

Sample Recovery (%)	*Air Loss (%)*	*Penetration Rate (min/metre)*
100	0	1.57
100	0	1.19
100	0	1.00
100	0	0.55
100	0	1.30
100	0	2.03
100	0	1.29
100	0	1.32
100	0	1.40
100	0	1.45
100	0	2.08
100	0	1.42
100	0	1.45
100	0	1.47
100	0	1.56
100	0	2.02
100	0	1.27
100	0	2.01
100	0	1.52
100	0	1.49
100	0	1.52
100	0	1.42
100	0	1.51
100	0	1.46
100	0	1.46
100	0	1.51
100	0	1.41
100	0	1.47
100	0	1.53
100	0	1.42
100	0	1.50



70.00	Black, slightly weathered , soft rock shaly coal. Vryheid Formation.
72.00	Black, highly weathered, soft rock coal. Vryheid Formation.
76.00	Grey, slightly , soft rock mudrock. Vryheid Formation.
89.00	greyish pink, fresh, medium hard rock diamictite. Dwyka Group.
101.00	

NOTES

1) Water strike at 67m.

2) Groundwater table after twenty-four hours: 26m.

3) Borehole terminated at 101m due to required depth.

REDUCED LEVEL	*Sample Recovery (%)*	*Air Loss (%)*	*Penetration Rate (min/metre)*

CONTRACTOR : BAV Consulting
MACHINE : Thor 5000 Drill Rig
DRILLED BY : Zakhele Zaca
PROFILED BY : Andries Vukeya

TYPE SET BY : Andries Vukeya
SETUP FILE : STANDARD.SET

INCLINATION : Vertical
DIAM : 165 mm
DATE : 14/08/2023
DATE : 14/08/2023

DATE : 06/12/2023 13:58
TEXT : ..ussionBoreholes\KBH6.TXT

ELEVATION : 1618 m
X-COORD : 29.45138´°E
Y-COORD : 26.09426´°S

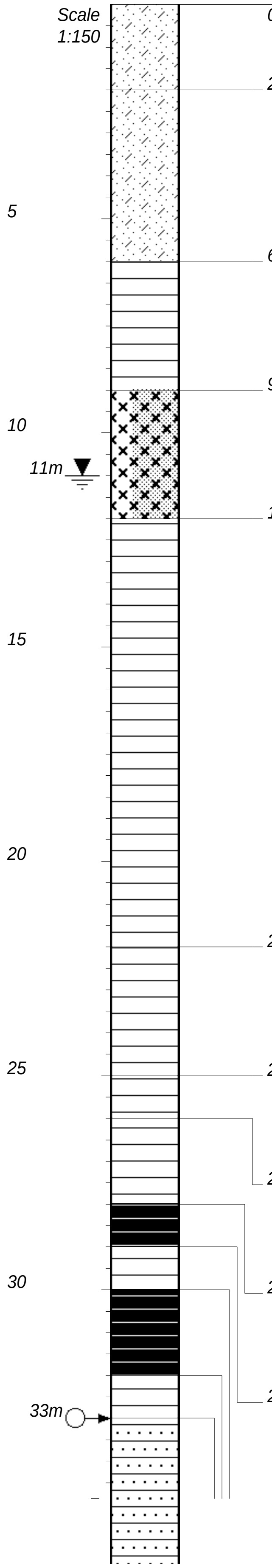
HOLE No: K-BH6

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: K-BH7
Sheet 1 of 3

JOB NUMBER: MAK152.08.23

REDUCED LEVEL	Sample Recovery (%)	Air Loss (%)	Penetration Rate (min/metre)
	100	0	0.21
	100	0	1.00
	100	0	3.29
	100	0	4.01
1615	100	0	2.52
	100	0	1.29
	100	0	2.00
	100	0	2.09
	100	0	1.59
1610	100	0	3.02
	100	0	4.09
	100	0	2.01
	100	0	1.00
	100	0	1.01
1605	100	0	1.00
	100	0	2.00
	100	0	3.04
	100	0	4.02
	100	0	4.03
1600	100	0	4.09
	100	0	4.03
	100	0	3.39
	100	0	2.04
	100	0	4.09
1595	100	0	3.10
	100	0	3.02
	100	0	1.33
	100	0	0.32
	100	0	1.00
1590	100	0	0.59
	100	0	0.57
	100	0	0.48
	100	0	0.49
	100	0	0.42
	100	0	0.28



Depth	Description
0.00	Brown clayey sand. Transported soil.
2.00	Kakhi clayey sand. Residual soil.
6.00	Brown, moderately weathered, soft rock shale. Vryheid Formation.
9.00	Black, slightly weathered, hard rock dolerite. Karoo Supergroup.
12.00	Brown, highly weathered, soft rock shale. Vryheid Formation.
22.00	Grey, highly weathered, soft rock shale. Vryheid Formation.
25.00	Grey, highly weathered, soft rock carbonecous shale. Vryheid Formation.
26.00	Grey, slightly weathered, medium hard rock mudrock. Vryheid Formation.
28.00	Black, moderately weathered, soft rock coal. Vryheid Formation.
29.00	

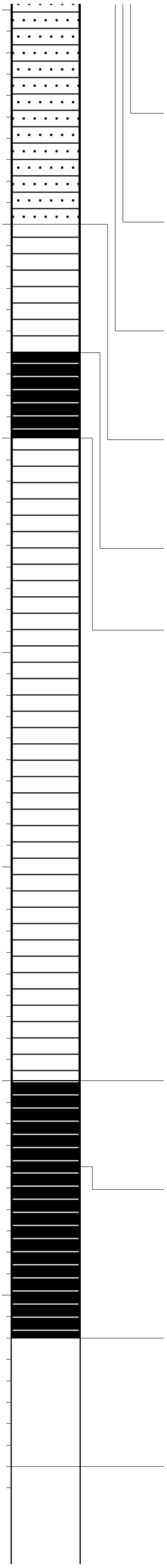
MAKHUMA CONSULTING

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: K-BH7
Sheet 2 of 3

JOB NUMBER: MAK152.08.23

REDUCED LEVEL	Sample Recovery (%)	Air Loss (%)	Penetration Rate (min/metre)	
1585	100	0	0.30	35
	100	0	0.31	
	100	0	0.40	
	100	0	0.55	
	100	0	0.50	
1580	100	0	0.16	40
	100	0	1.15	
	100	0	0.24	
	100	0	1.28	
	100	0	1.00	
1575	100	0	1.38	45
	100	0	1.29	
	100	0	1.20	
	100	0	1.01	
	100	0	0.50	
1570	100	0	0.21	50
	100	0	1.21	
	100	0	1.01	
	100	0	1.02	
	100	0	1.21	
1565	100	0	1.55	55
	100	0	1.58	
	100	0	1.59	
	100	0	1.20	
	100	0	1.02	
1560	100	0	1.20	60
	100	0	1.23	
	100	0	1.40	
	100	0	1.41	
	100	0	1.02	
1555	100	0	0.19	65
	100	0	0.29	
	100	0	0.28	
	100	0	0.30	
	100	0	1.05	



Grey, slightly weathered, medium hard rock mudrock. Vryheid Formation.	30.00
Black, moderately weathered, soft rock, coal. Vryheid Formation.	32.00
Grey, slightly weathered, medium hard rock mudrock. Vryheid Formation.	33.00
Grey, highly weathered, medium hard rock sandstone. Vryheid Formation.	40.00
Grey, slightly weathered, medium hard rock mudrock. Vryheid Formation.	43.00
Black, highly weathered, soft rock coal. Vryheid Formation.	45.00
Grey, slightly weathered, medium hard rock mudrock. Vryheid Formation.	60.00
Black, slightly weathered, soft rock shaly coal. Vryheid Formation.	62.00
Black, moderately weathered, soft rock coal. Vryheid Formation.	66.00
Blackish Grey, slightly weathered, medium hard rock diamictite. Dwyka Group.	69.00

REDUCED LEVEL	Sample Recovery (%)	Air Loss (%)	Penetration Rate (min/metre)	Depth
1550	100	0	1.09	70
	100	0	1.00	
	100	0	1.30	
	100	0	1.40	
1545	100	0	1.50	75
	100	0	1.43	
	100	0	1.44	
	100	0	1.09	
	100	0	1.08	
1540	100	0	1.09	80
	100	0	1.20	

Greyish pink, slightly weathered, medium hard rock diamictite. Dwyka Group.

81.00

NOTES

1) Water strike at 33m.

2) Groundwater table after twenty-four hours: 11m.

3) Borehole terminated at 81m due to required depth.

CONTRACTOR : BAV Consulting
MACHINE : Thor 5000 Drill Rig
DRILLED BY : Zakhele Zaca
PROFILED BY : Andries Vukeya

INCLINATION : Vertical
DIAM : 165 mm
DATE : 02/09/2023
DATE : 02/09/2023

ELEVATION : 1620 m
X-COORD : 29.45370´°E
Y-COORD : 26.09443´°S

HOLE No: K-BH7

TYPE SET BY : Andries Vukeya
SETUP FILE : STANDARD.SET

DATE : 06/12/2023 13:58
TEXT : ..ussionBoreholes\KBH7.TXT

MAKHUMA CONSULTING

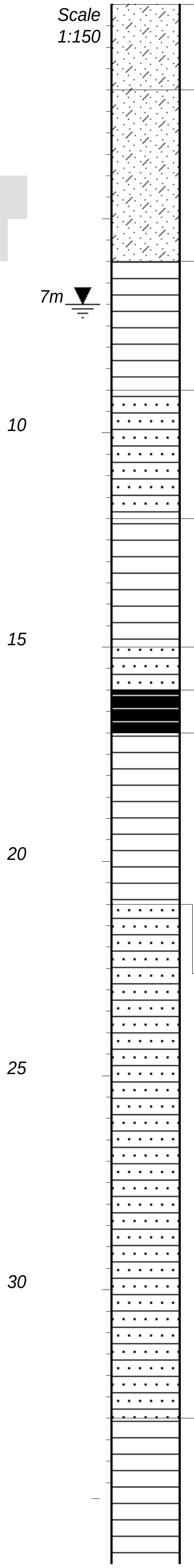
ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: K-BH8
Sheet 1 of 2

JOB NUMBER: MAK152.08.23

Sample Recovery (%)	Air Loss (%)	Penetration Rate (min/metre)
100	0	2.33
100	0	2.48
100	0	4.37
100	0	5.46
100	0	10.13
100	0	9.00
100	0	6.35
100	0	6.45
100	0	1.23
100	0	0.49
100	0	1.19
100	0	0.28
100	0	1.15
100	0	0.56
100	0	0.49
100	0	0.28
100	0	0.50
100	0	1.11
100	0	0.34
100	0	0.57
100	0	0.54
100	0	0.45
100	0	0.33
100	0	0.50
100	0	0.51
100	0	0.49
100	0	0.53
100	0	0.41
100	0	0.55
100	0	1.47
100	0	0.31
100	0	0.43
100	0	0.55
100	0	0.59
100	0	1.07

REDUCED LEVEL: 1615, 1610, 1605, 1600, 1595, 1590, 1585



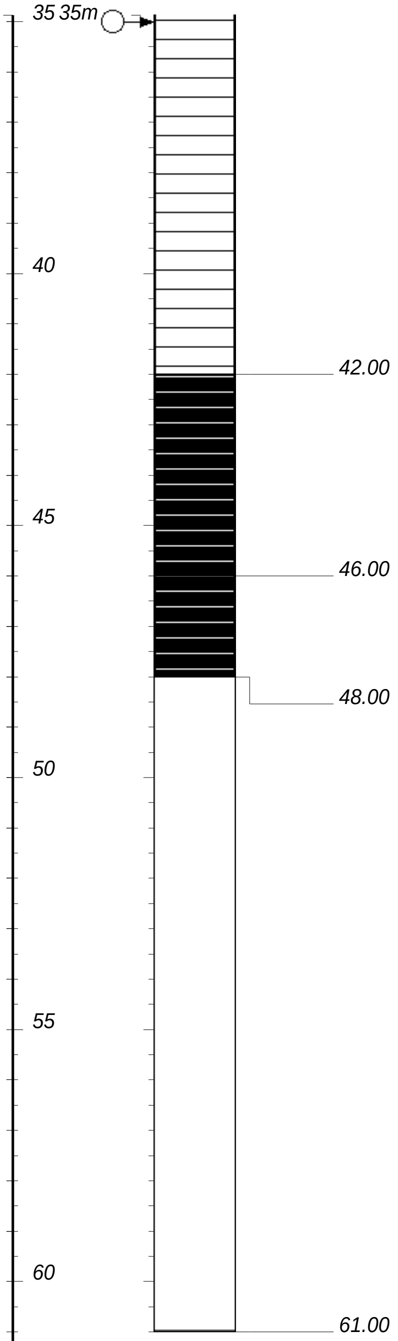
0.00	Brown clayey sand .Transported soil.
2.00	Kakhi clayey sand. Residual soil.
6.00	Brown, highly weathered, soft rock shale. Vryheid Formation.
9.00	Brown, moderately weathered, medium hard rock sandstone. Vryheid Formation.
12.00	Grey, highly weathered, soft rock carbonecous shale. Vryheid Formation.
15.00	Grey, highly weathered, medium. hard rock sandstone. Vryheid Formation.
16.00	Black, highly weathered, soft rock shaly coal. Vryheid Formation.
17.00	Grey, highly weathered, soft rock carbonecous shale. Vryheid Formation.
21.00	Grey, highly weathered, medium hard rock sandstone. Vryheid Formation.
33.00	

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: K-BH8
Sheet 2 of 2

JOB NUMBER: MAK152.08.23

REDUCED LEVEL	Sample Recovery (%)	Air Loss (%)	Penetration Rate (min/metre)
	100	0	1.13
1580	100	0	1.05
	100	0	1.08
	100	0	0.37
	100	0	0.43
1575	100	0	0.50
	100	0	0.27
	100	0	0.34
	100	0	0.16
	100	0	0.33
1570	100	0	0.30
	100	0	0.25
	100	0	0.52
	100	0	1.06
	100	0	0.58
1565	100	0	1.12
	100	0	1.47
	100	0	1.37
	100	0	1.33
	100	0	0.59
1560	100	0	1.07
	100	0	1.40
	100	0	1.05
	100	0	1.10
	100	0	1.11
1555	100	0	0.58



Black, slightly weathered, soft rock mudrock. Vryheid Formation.

Black, moderately weathered, soft rock coal. Vryheid Formation.

Black, slightly weathered, soft rock shaly coal. Vryheid Formation.

Pinkish grey, slightly weathered, medium hard rock diamictite. Dwyka Group.

NOTES

1) Water strike at 35m.

2) Groundwater table after twenty-four hours: 7m.

3) Borehole terminated at 61m due to required depth.

CONTRACTOR : BAV Consulting
MACHINE : Thor 5000 Drill Rig
DRILLED BY : Zakhele Zaca
PROFILED BY : Andries Vukeya

INCLINATION : Vertical
DIAM : 165 mm
DATE : 05/09?2023
DATE : 05/09/2023

ELEVATION : 1616 m
X-COORD : 29.45657´°E
Y-COORD : 26.09339´°S

HOLE No: K-BH8

TYPE SET BY : Andries Vukeya
SETUP FILE : STANDARD.SET

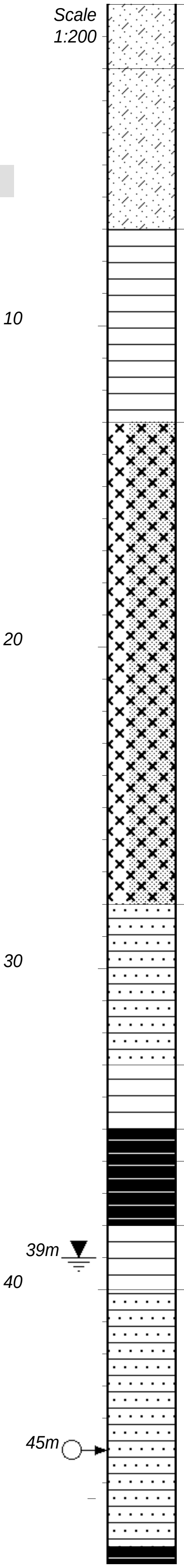
DATE : 06/12/2023 13:59
TEXT : ..ussionBoreholes\KBH8.TXT

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: K-BH9
Sheet 1 of 2

JOB NUMBER: MAK152.08.23

REDUCED LEVEL	Sample Recovery (%)	Air Loss (%)	Penetration Rate (min/metre)
	100	0	1.28
	100	0	0.45
	100	0	4.03
1620	100	0	4.29
	100	0	2.51
	100	0	9.59
	100	0	1.59
	100	0	2.52
	100	0	2.56
	100	0	1.24
	100	0	2.24
	100	0	1.22
	100	0	1.14
1610	100	0	3.42
	100	0	4.39
	100	0	3.03
	100	0	4.12
	100	0	3.47
	100	0	3.27
	100	0	2.41
	100	0	3.41
	100	0	4.12
	100	0	4.57
1600	100	0	4.37
	100	0	2.41
	100	0	4.29
	100	0	5.10
	100	0	3.58
	100	0	1.23
	100	0	0.47
	100	0	0.53
	100	0	0.46
	100	0	0.52
1590	100	0	0.49
	100	0	0.55
	100	0	0.47
	100	0	0.21
	100	0	0.30
	100	0	0.52
	100	0	0.54
	100	0	1.16
	100	0	1.07
	100	0	1.08
1580	100	0	0.50
	100	0	1.15
	100	0	1.37



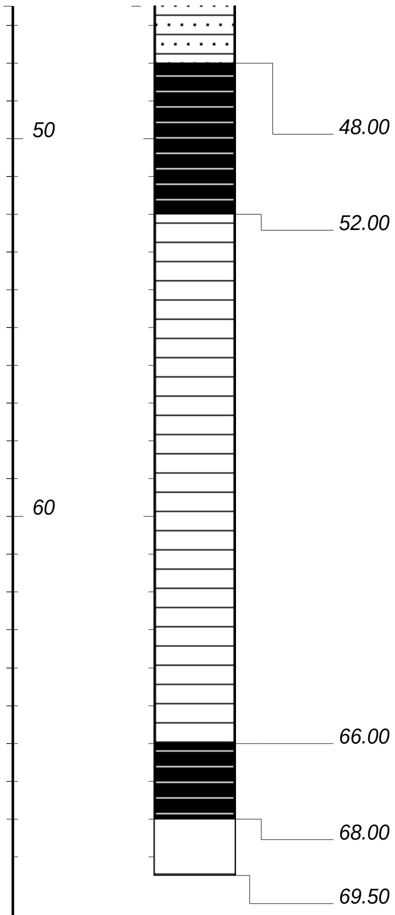
0.00	Brown clayey sand. Transported soil.
2.00	Kakhi clayey sand. Residual soil.
7.00	Brown, slightly weathered, medium hard rock shale. Vryheid Formation.
13.00	Black, fresh, hard rock, dolerite. Karoo Supergroup.
28.00	Grey, highly weathered, medium hard rock sandstone. Vryheid Formation.
33.00	Grey, slightly weathered soft rock mudrock. Vryheid Formation.
35.00	Black, slightly weathered, soft rock shaly coal. Vryheid Formation.
36.00	Black, slightly weathered, soft rock coal. Vryheid Formation.
38.00	Black, slightly weathered, soft rock mudrock. Vryheid Formation.
40.00	

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: K-BH9
Sheet 2 of 2

JOB NUMBER: MAK152.08.23

REDUCED LEVEL	Sample Recovery (%)	Air Loss (%)	Penetration Rate (min/metre)
	100	0	1.32
	100	0	1.41
	100	0	0.57
	100	0	0.20
	100	0	0.43
	100	0	0.22
	100	0	0.55
1570	100	0	1.15
	100	0	1.02
	100	0	1.01
	100	0	1.21
	100	0	1.21
	100	0	0.55
	100	0	0.58
	100	0	1.48
	100	0	1.06
	100	0	1.07
1560	100	0	1.16
	100	0	0.53
	100	0	1.20
	100	0	0.46
	100	0	0.51
	0	100	
	0	100	



Grey, highly weathered, medium hard rock sandstone. Vryheid Formation.

Black, slightly weathered, soft rock coal. Vryheid Formation.

Grey, slightly weathered, soft rock mudrock. Vryheid Formation.

Black, slightly weathered, soft rock coal. Vryheid Formation.

Cavity.

NOTES

1) Water strike at 45m.
2) Groundwater table after twenty-four hours: 39m.
3) Borehole terminated at 69.5m due to drilling difficulties.

CONTRACTOR : BAV Consulting
MACHINE : Thor 5000 Drill Rig
DRILLED BY : Zakhele Zaca
PROFILED BY : Andries Vukeya

TYPE SET BY : Andries Vukeya
SETUP FILE : STANDARD.SET

INCLINATION : Vertical
DIAM : 165 mm
DATE : 02/09/2023
DATE : 02/09/2023

DATE : 06/12/2023 13:59
TEXT : ..ussionBoreholes\KBH9.TXT

ELEVATION : 1624 m
X-COORD : 29.45039´°E
Y-COORD : 26.09622´°S

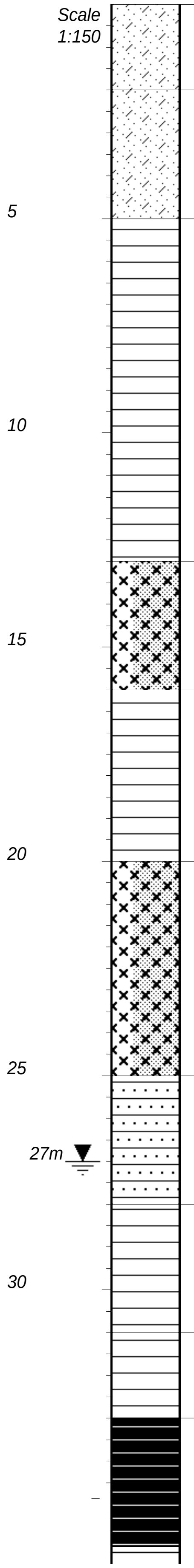
HOLE No: K-BH9

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION: KOMATI POWER STATION

HOLE No: K-BH10
Sheet 1 of 3

JOB NUMBER: MAK152.08.23

REDUCED LEVEL	Sample Recovery (%)	Air Loss (%)	Penetration Rate (min/metre)
1620	100	0	0.22
	100	0	0.40
	100	0	1.48
	100	0	0.28
	100	0	1.58
1615	100	0	1.23
	100	0	3.02
	100	0	2.09
	100	0	1.10
	100	0	1.41
1610	100	0	1.33
	100	0	0.48
	100	0	0.37
	100	0	3.01
	100	0	3.50
1605	100	0	3.48
	100	0	2.17
	100	0	1.54
	100	0	1.22
	100	0	3.25
1600	100	0	4.27
	100	0	3.10
	100	0	3.01
	100	0	4.50
	100	0	3.29
1595	100	0	1.07
	100	0	0.49
	100	0	1.47
	100	0	0.53
	100	0	0.53
1590	100	0	0.49
	100	0	0.45
	100	0	0.44
	100	0	1.00
	100	0	1.02



0.00	Brown clayey sand. Transported soil.
2.00	Kakhi clayey sand. Residual soil.
5.00	Brown, highly weathered, soft rock shale. Vryheid Formation.
13.00	Grey, slightly weathered, hard rock dolerite. Karoo Supergroup.
16.00	Brown, moderately weathered, soft rock shale. Vryheid Formation.
20.00	Grey, slightly weathered, hard rock dolerite. Karoo Supergroup.
25.00	Grey, highly weathered, medium hard rock sandstone. Vryheid Formation..
28.00	Grey, highly weathered, soft rock carbonecous shale. Vryheid Formation..
31.00	Grey, slightly weathered, soft rock mudrock. Vryheid Formation.
33.00	

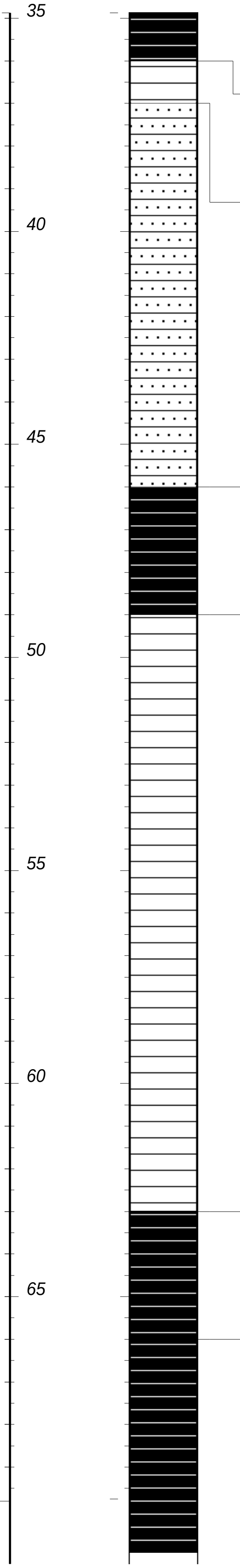
ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: K-BH10
Sheet 2 of 3

JOB NUMBER: MAK152.08.23

REDUCED LEVEL
1585
1580
1575
1570
1565
1560
1555

Sample Recovery (%)	Air Loss (%)	Penetration Rate (min/metre)
100	0	0.39
100	0	0.57
100	0	1.16
100	0	1.21
100	0	1.09
100	0	0.55
100	0	1.45
100	0	1.04
100	0	1.32
100	0	1.47
100	0	1.40
100	0	0.42
100	0	0.34
100	0	0.44
100	0	1.35
100	0	0.58
100	0	1.05
100	0	1.08
100	0	1.16
100	0	1.20
100	0	1.24
100	0	1.52
100	0	1.38
100	0	2.10
100	0	1.22
100	0	1.30
100	0	1.36
100	0	1.32
100	0	1.15
100	0	0.43
100	0	0.38
100	0	0.57
100	0	0.30
100	0	0.37
100	0	1.01



Black, slightly weathered, soft rock coal. Vryheid Formation.

36.00

Black, slightly weathered, soft rock mudrock. Vryheid Formation.

37.00

Grey, highly weathered, medium hard rock sandstone. Vryheid Formation.

46.00

Black, moderately weathered, soft rock coal. Vryheid Formation.

49.00

Grey, slightly weathered, soft rock mudrock. Vryheid Formation.

63.00

Black, moderately weathered, soft rock coal. Vryheid Formation.

66.00

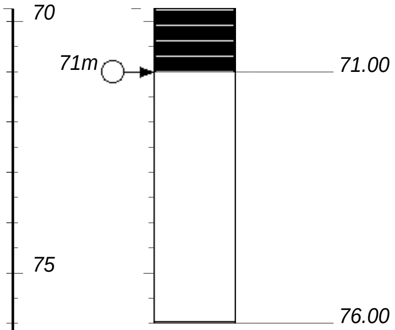
Black, slightly weathered, soft rock shaly coal. Vryheid Formation.

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION: KOMATI POWER STATION

HOLE No: K-BH10
Sheet 3 of 3

JOB NUMBER: MAK152.08.23

REDUCED LEVEL	Sample Recovery (%)	Air Loss (%)	Penetration Rate (min/metre)
	100	0	1.35
1550	100	0	1.18
	100	0	1.19
	100	0	1.27
	100	0	1.08
1545	100	0	1.51



71.00

pinkish grey, slightly weathered, medium hard rock diamictitie. Dwyka Group.

76.00

NOTES

1) Water strike at 71m.

2) Groundwater table after twenty-four hours: 27m.

3) Borehole terminated at 76m due to required depth.

CONTRACTOR : BAV Consulting
MACHINE : Thor 5000 Drill Rig
DRILLED BY : Zakhele Zaca
PROFILED BY : Andries Vukeya

INCLINATION : Vertical
DIAM : 165 mm
DATE : 07/09/2023
DATE : 07/09/2023

ELEVATION : 1621 m
X-COORD : 29.45269´°E
Y-COORD : 26.09587´°S

HOLE No: K-BH10

TYPE SET BY : Andries Vukeya
SETUP FILE : STANDARD.SET

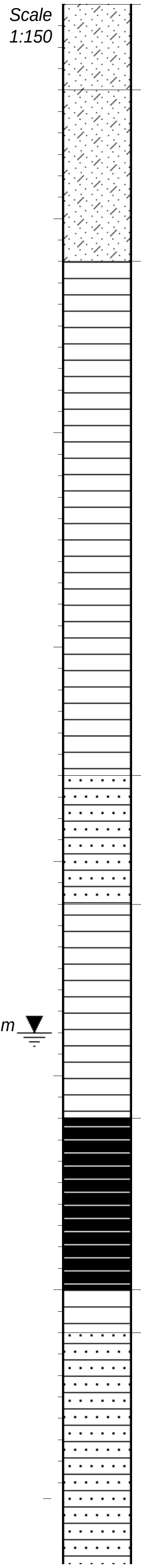
DATE : 06/12/2023 14:00
TEXT : ..ssionBoreholes\KBH10.TXT

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: K-BH11
Sheet 1 of 2

JOB NUMBER: MAK152.08.23

REDUCED LEVEL	Sample Recovery (%)	Air Loss (%)	Penetration Rate (min/metre)	
1620	100	0	0.36	
	100	0	0.29	
	100	0	0.19	
	100	0	0.33	
	100	0	1.33	5
1615	100	0	3.19	
	100	0	0.47	
	100	0	1.22	
	100	0	1.26	
	100	0	0.49	10
1610	100	0	0.58	
	100	0	0.35	
	100	0	1.09	
	100	0	0.59	
	100	0	1.15	15
1605	100	0	0.56	
	100	0	0.59	
	100	0	1.12	
	100	0	2.58	
	100	0	0.22	20
1600	100	0	0.32	
	100	0	0.57	
	100	0	1.02	
	100	0	0.59	
	100	0	0.43	25
1595	100	0	0.50	
	100	0	0.45	
	100	0	1.16	
	100	0	0.50	
	100	0	0.33	30
1590	100	0	0.59	
	100	0	0.47	
	100	0	1.12	
	100	0	1.05	
	100	0	1.22	



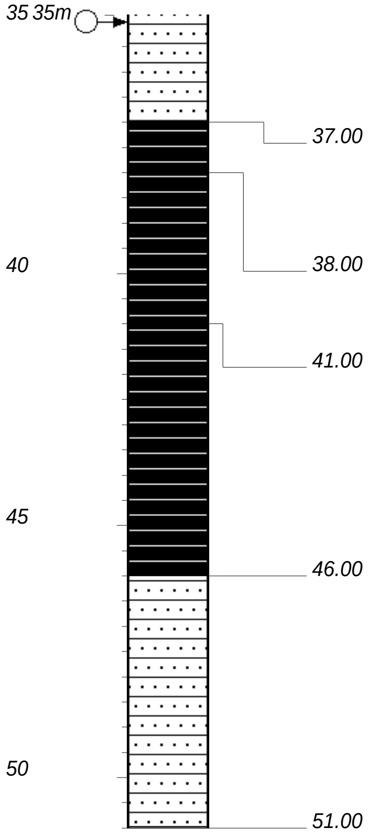
0.00	Brown clayey sand. Transported soil.
2.00	Kakhi clayey sand. Residual soil.
6.00	Brown, slightly weathered, soft rock shale. Vryheid Formation.
18.00	Yellowish Grey, highly weathered, medium rock sandstone. Vryheid Formation.
21.00	Grey, highly weathered, soft rock mudrock. Vryheid Formation.
26.00	Black, moderately weathered, soft rock coal. Vryheid Formation.
30.00	Black, moderately weathered, soft rock mudrock. Vryheid Formation.
31.00	

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: K-BH11
Sheet 2 of 2

JOB NUMBER: MAK152.08.23

REDUCED LEVEL	Sample Recovery (%)	Air Loss (%)	Penetration Rate (min/metre)
1585	100	0	1.33
	100	0	0.50
	100	0	0.53
	100	0	0.44
	100	0	0.22
1580	100	0	0.52
	100	0	0.52
	100	0	0.53
	100	0	0.57
	100	0	1.13
1575	100	0	0.45
	100	0	1.29
	100	0	1.06
	100	0	1.13
	100	0	1.19
1570	100	0	1.47



Grey, moderately weathered, medium hard rock sandstone. Vryheid Formation.

Black, moderately weathered, soft rock shaly coal. Vryheid Formation.

Black, slightly weathered, soft rock coal. Vryheid Formation.

Black, slightly weathered, soft rock shaly coal. Vryheid Formation.

Grey, moderately weathered, medium hard rock sandstone. Vryheid Formation.

NOTES

1) Water strike at 35m.

2) Groundwater table after twenty-four hours: 24m.

3) Borehole terminated at 51m due to drilling difficulties.

CONTRACTOR : BAV Consulting
MACHINE : Thor 5000 Drill Rig
DRILLED BY : Zakhele Zaca
PROFILED BY : Andries Vukeya

INCLINATION : Vertical
DIAM : 165 mm
DATE : 05/08/2023
DATE : 05/08/2023

ELEVATION : 1621 m
X-COORD : 29.45511´°E
Y-COORD : 26.09521´°S

HOLE No: K-BH11

TYPE SET BY : Andries Vukeya
SETUP FILE : STANDARD.SET

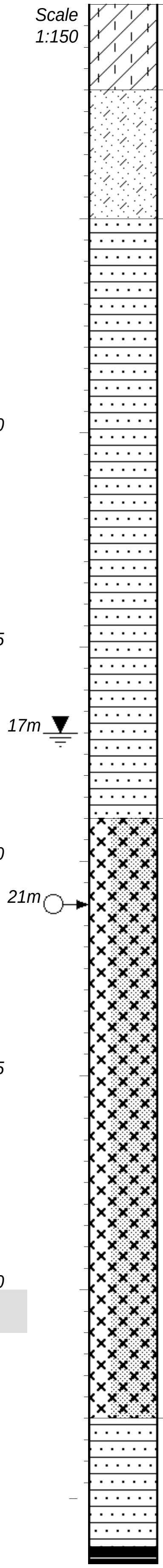
DATE : 06/12/2023 14:01
TEXT : ..ssionBoreholes\KBH11.TXT

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: K-BH12
Sheet 1 of 4

JOB NUMBER: MAK152.08.23

REDUCED LEVEL	Sample Recovery (%)	Air Loss (%)	Penetration Rate (min/metre)	
	100	0	0.43	
	100	0	0.35	
	100	0	0.53	
	100	0	3.44	
1620	100	0	5.39	5
	100	0	2.42	
	100	0	1.05	
	100	0	1.10	
	100	0	1.13	
1615	100	0	0.51	10
	100	0	0.45	
	100	0	0.43	
	100	0	0.50	
	100	0	0.48	
1610	100	0	2.33	15
	100	0	2.07	
	100	0	1.20	
	100	0	1.25	
	100	0	5.39	
1605	100	0	5.34	20
	100	0	6.27	
	100	0	4.10	
	100	0	5.17	
	100	0	5.27	
1600	100	0	4.14	25
	100	0	6.58	
	100	0	5.23	
	100	0	6.56	
	100	0	8.11	
1595	100	0	5.24	30
	100	0	11.44	
	100	0	5.41	
	100	0	2.44	
	100	0	2.08	
	100	0	1.25	



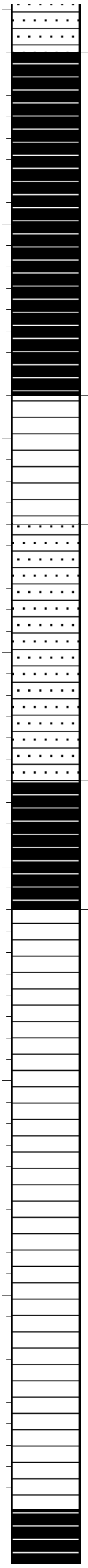
0.00	Brown silty clay. Transported soil.
2.00	Kakhi clayey sand. Residual soil.
5.00	Brown, highly weathered, medium hard rock sandstone. Vryheid Formation.
19.00	Black, slightly weathered, hard rock dolerite. Karoo Supergroup.
33.00	

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION: KOMATI POWER STATION

HOLE No: K-BH12
Sheet 2 of 4

JOB NUMBER: MAK152.08.23

REDUCED LEVEL	Sample Recovery (%)	Air Loss (%)	Penetration Rate (min/metre)	
1590	100	0	1.43	35
	100	0	1.03	
	100	0	1.22	
	100	0	2.14	
	100	0	1.20	
1585	100	0	1.21	40
	100	0	1.20	
	100	0	1.02	
	100	0	1.01	
	100	0	1.19	
1580	100	0	2.03	45
	100	0	1.57	
	100	0	2.09	
	100	0	1.31	
	100	0	2.12	
1575	100	0	2.29	50
	100	0	2.12	
	100	0	2.00	
	100	0	0.36	
	100	0	0.39	
1570	100	0	0.33	55
	100	0	1.28	
	100	0	1.17	
	100	0	2.00	
	100	0	1.22	
1565	100	0	0.39	60
	100	0	1.42	
	100	0	1.45	
	100	0	1.12	
	100	0	1.28	
1560	100	0	1.23	65
	100	0	1.40	
	100	0	1.01	
	100	0	0.58	
	100	0	0.46	



Grey, highly weathered, medium hard rock sandstone. Vryheid Formation.

36.00

Black, moderately weathered, soft rock shaly coal. Vryheid Formation.

44.00

Grey, highly weathered, soft rock mudrock. Vryheid Formation.

47.00

Grey, highly weathered, medium hard rock sandstone. Vryheid Formation.

53.00

Black, highly weathered, soft rock coal. Vryheid Formation.

56.00

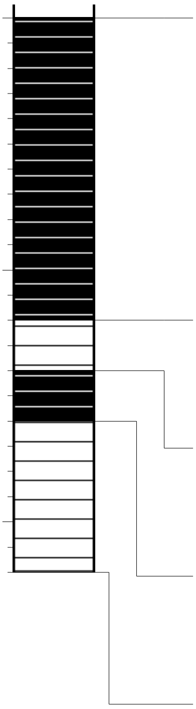
Black, moderately weathered, soft rock carbonecous shale. Vryheid Formation.

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: K-BH12
Sheet 3 of 4

JOB NUMBER: MAK152.08.23

REDUCED LEVEL	Depth	Sample Recovery (%)	Air Loss (%)	Penetration Rate (min/metre)
1555	70	100	0	0.39
		100	0	0.38
		100	0	0.25
		100	0	0.39
1550	75	100	0	1.53
		100	0	1.45
		100	0	2.00
		100	0	4.26
		100	0	7.09
1545	80	100	0	5.03
		100	0	4.37



70.00	Black, highly weathered, soft rock coal. Vryheid Formation.
76.00	Black, slightly weathered, soft rock mudrock. Vryheid Formation.
77.00	Black, moderately weathered, soft rock shaly coal. Vryheid Formation.
78.00	Black , slightly weathered, soft rock carbonecous shale. Vryheid Formation.
81.00	

NOTES

1) Water strike at 21m.

2) Groundwater table after twenty-four hours: 17m.

3) Borehole terminated at 81m due to required depth.

REDUCED LEVEL	Sample Recovery (%)	Air Loss (%)	Penetration Rate (min/metre)

CONTRACTOR : BAV Consulting
MACHINE : Thor 5000 Drill Rig
DRILLED BY : Zakhele Zaca
PROFILED BY : Andries Vukeya

TYPE SET BY : Andries Vukeya
SETUP FILE : STANDARD.SET

INCLINATION : Vertical
DIAM : 165 mm
DATE : 10/09/2023
DATE : 10/09/2023

DATE : 06/12/2023 14:01
TEXT : ..ssionBoreholes\KBH12.TXT

ELEVATION : 1625 m
X-COORD : 29.44029´°E
Y-COORD : 26.09774´°S

HOLE No: K-BH12

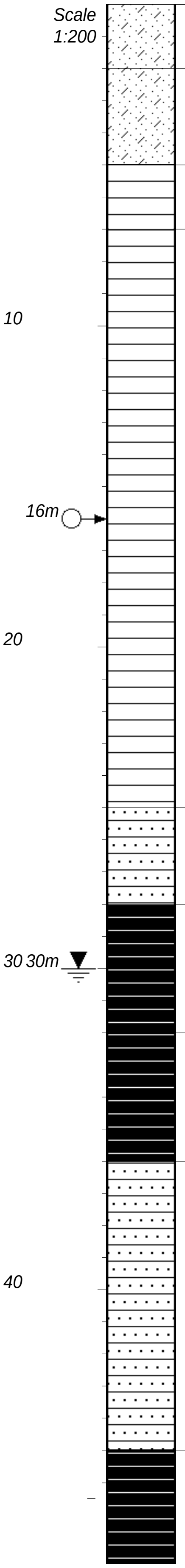
MAKHUMA CONSULTING

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION: KOMATI POWER STATION

HOLE No: K-BH13
Sheet 1 of 2

JOB NUMBER: MAK152.08.23

REDUCED LEVEL	Sample Recovery (%)	Air Loss (%)	Penetration Rate (min/metre)
	100	0	0.11
	100	0	0.28
	100	0	0.43
	100	0	2.08
	100	0	2.58
1620	100	0	1.54
	100	0	2.25
	100	0	3.37
	100	0	3.56
	100	0	1.42
	100	0	3.36
	100	0	1.23
	100	0	3.25
	100	0	5.45
	100	0	4.42
1610	100	0	4.47
	100	0	4.47
	100	0	5.24
	100	0	1.40
	100	0	5.42
	100	0	4.16
	100	0	5.12
	100	0	5.49
	100	0	4.06
	100	0	3.17
1600	100	0	1.53
	100	0	1.25
	100	0	1.38
	100	0	1.14
	100	0	1.19
	100	0	1.42
	100	0	0.53
	100	0	1.41
	100	0	1.07
	100	0	0.44
1590	100	0	1.36
	100	0	1.47
	100	0	2.12
	100	0	2.06
	100	0	1.21
	100	0	1.43
	100	0	2.31
	100	0	1.50
	100	0	3.37
	100	0	2.18
1580	100	0	3.50



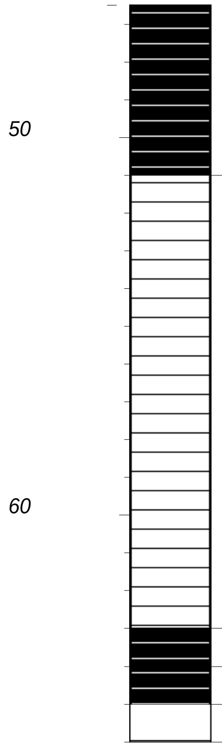
Depth	Description
0.00	Brown clayey sand. Transported soil.
2.00	Kakhi clayey sand. Residual soil.
5.00	Brown, moderately weathered, soft rock shale. Vryheid Formation.
7.00	Grey, slightly weathered, soft rock mudrock. Vryheid Formation.
25.00	Grey, highly weathered, medium hard rock sandstone. Vryheid Formation.
28.00	Balck, slightly weathered, soft rock shaly coal. Vryheid Formation.
32.00	Black, moderately weathered, soft rock coal. Vryheid Formation.
36.00	Grey, highly weathered, medium hard rock sandstone. Vryheid Formation.
45.00	

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: K-BH13
Sheet 2 of 2

JOB NUMBER: MAK152.08.23

REDUCED LEVEL	Sample Recovery (%)	Air Loss (%)	Penetration Rate (min/metre)
	100	0	1.13
	100	0	0.50
	100	0	1.04
	100	0	1.12
	100	0	1.47
	100	0	1.27
	100	0	1.11
	100	0	1.39
	100	0	1.10
1570	100	0	2.00
	100	0	1.17
	100	0	1.40
	100	0	1.35
	100	0	1.33
	100	0	1.33
	100	0	1.39
	100	0	0.57
	100	0	0.57
	100	0	0.54
1560	0	100	



	Black, slightly weathered, soft rock shaly coal. Vryheid Formation.
51.00	Black, slightly weathered, soft rock mudrock. Vryheid Formation.
63.00	Black, slightly weathered, soft rock shaly coal. Vryheid Formation.
64.00	Black, slightly weathered, soft rock coal. Vryheid Formation.
65.00	Cavity.
66.00	

NOTES

1) Water strike at 16m.

2) Groundwater table after twenty-four hours: 30m.

3) Borehole terminated at 66m due to drilling difficulties.

CONTRACTOR : BAV Consulting
MACHINE : Thor 5000 Drill Rig
DRILLED BY : Zakhele Zaca
PROFILED BY : Andries Vukeya

TYPE SET BY : Andries Vukeya
SETUP FILE : STANDARD.SET

INCLINATION : Vertical
DIAM : 165 mm
DATE : 04/09/2023
DATE : 04/09/2023

DATE : 06/12/2023 14:02
TEXT : ..ssionBoreholes\KBH13.TXT

ELEVATION : 1626 m
X-COORD : 29.45139´°E
Y-COORD : 26.09559´°S

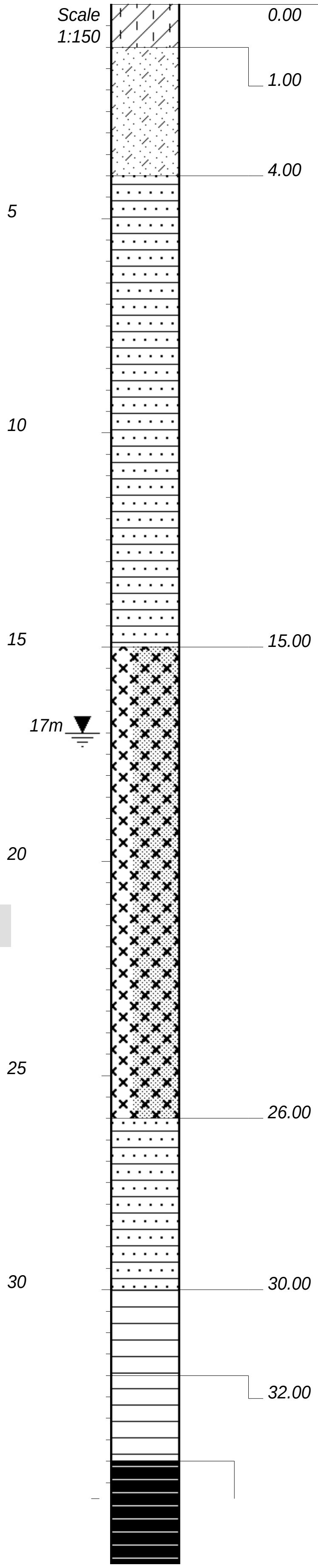
HOLE No: K-BH13

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: K-BH14
Sheet 1 of 2

JOB NUMBER: MAK152.08.23

REDUCED LEVEL	Sample Recovery (%)	Air Loss (%)	Penetration Rate (min/metre)
	100	0	0.19
	100	0	0.21
	100	0	0.25
	100	0	0.22
1620	100	0	0.33
	100	0	0.31
	100	0	0.55
	100	0	1.22
	100	0	2.40
1615	100	0	3.56
	100	0	1.42
	100	0	1.05
	100	0	1.57
	100	0	2.37
1610	100	0	4.21
	100	0	3.49
	100	0	4.56
	100	0	3.18
	100	0	4.06
1605	100	0	4.36
	100	0	6.36
	100	0	9.23
	100	0	3.46
	100	0	1.11
1600	100	0	4.06
	100	0	1.03
	100	0	1.16
	100	0	1.06
	100	0	1.17
1595	100	0	1.09
	100	0	0.41
	100	0	0.39
	100	0	1.02
	100	0	0.56
	100	0	1.09



Brown silty clay. Transported soil.

Kakhi clayey sand. Residual soil.

Brown, highly weathered, medium hard rock sandstone. Vryheid Formation.

Grey, slightly weathered, hard rock dolerite. Karoo Supergroup.

Grey, highly weathered, medium hard rock sandstone. Vryheid Formation.

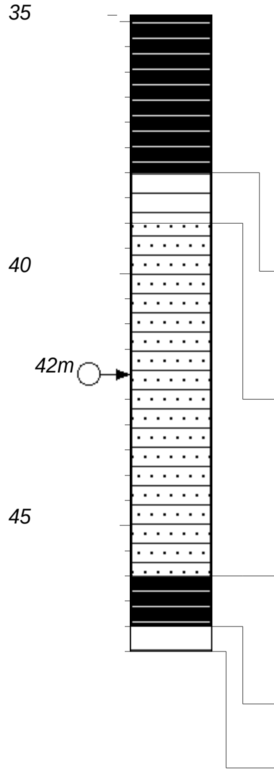
Grey, highly weathered, soft rock carbonecous shale. Vryheid Formation.

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: K-BH14
Sheet 2 of 2

JOB NUMBER: MAK152.08.23

REDUCED LEVEL	Sample Recovery (%)	Air Loss (%)	Penetration Rate (min/metre)
1590	100	0	1.25
	100	0	0.48
	100	0	0.45
	100	0	1.04
	100	0	1.17
1585	100	0	1.42
	100	0	2.19
	100	0	4.39
	100	0	2.59
	100	0	4.14
1580	100	0	4.14
	100	0	1.05
	0	100	0.12



Grey, slightly weathered, medium hard rock mudrock. Vryheid Formation.

34.00

Black, slightly weathered, soft rock shaly coal. Vryheid Formation.

38.00

Grey, moderately weathered , soft rock mudrock. Vryheid Formation.

39.00

Grey, moderately weathered, medium hard rock sandstone. Vryheid Formation.

46.00

Brown, slightly, weathered soft rock coal. Vryheid Formation.

47.00

Cavity

47.50

NOTES

1) Water strike at 42m.

2) Groundwater table after twenty-four hours: 17m.

3) Borehole terminated at 47.5m due to drilling difficulties.

CONTRACTOR : BAV Consulting
MACHINE : Thor 5000 Drill Rig
DRILLED BY : Zakhele Zaca
PROFILED BY : Andries Vukeya

INCLINATION : Vertical
DIAM : 165 mm
DATE : 08/09/2023
DATE : 08/09/2023

ELEVATION : 1625 m
X-COORD : 29.45394´°E
Y-COORD : 26.09684´°S

HOLE No: K-BH14

TYPE SET BY : Andries Vukeya
SETUP FILE : STANDARD.SET

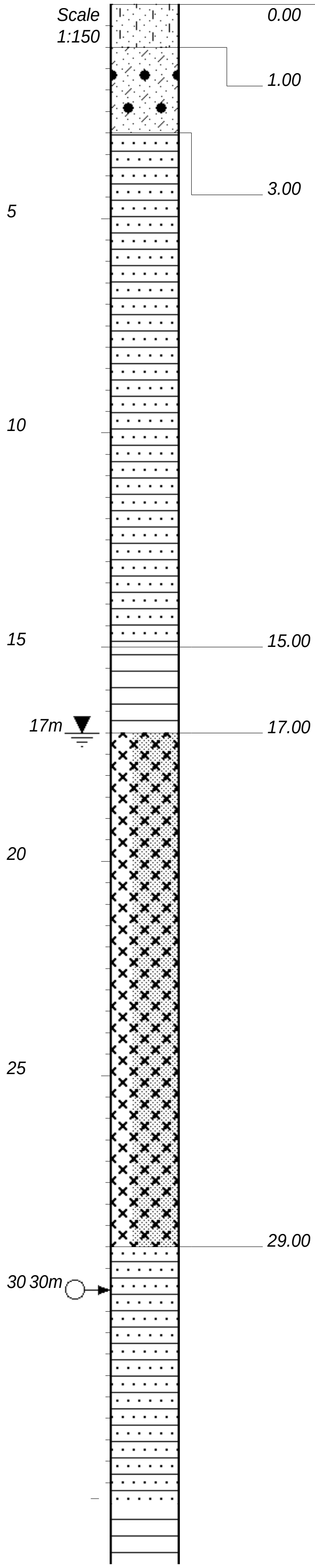
DATE : 06/12/2023 14:03
TEXT : ..ssionBoreholes\KBH14.TXT

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: K-BH15
Sheet 1 of 3

JOB NUMBER: MAK152.08.23

REDUCED LEVEL	Sample Recovery (%)	Air Loss (%)	Penetration Rate (min/metre)
	100	0	0.10
	100	0	1.10
	100	0	1.30
	100	0	1.58
1620	100	0	0.48
	100	0	0.59
	100	0	1.00
	100	0	0.50
	100	0	0.49
1615	100	0	0.49
	100	0	0.58
	100	0	1.19
	100	0	1.24
	100	0	1.09
1610	100	0	1.27
	100	0	0.27
	100	0	0.19
	100	0	2.20
	100	0	7.04
1605	100	0	2.07
	100	0	6.09
	100	0	4.14
	100	0	3.15
	100	0	4.45
1600	100	0	3.25
	100	0	4.14
	100	0	4.04
	100	0	4.41
	100	0	5.12
1595	100	0	2.49
	100	0	1.28
	100	0	1.02
	100	0	0.55
	100	0	1.02
	100	0	1.00



Brown silty sand. Transported soil.

Reddish brown clayey sand with minor ferricrete. Residual soil.

Yellowish brown, highly weathered, medium hard rock sandstone. Vryheid Formation.

Grey, highly weathered, soft rock shale. Vryheid Formation.

Grey, slightly weathered, hard rock dolerite. Karoo Supergroup.

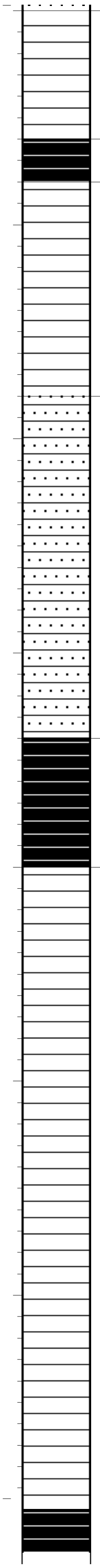
Grey, slightly weathered, medium hard rock sandstone. Vryheid Formation.

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: K-BH15
Sheet 2 of 3

JOB NUMBER: MAK152.08.23

REDUCED LEVEL	Sample Recovery (%)	Air Loss (%)	Penetration Rate (min/metre)	
1590	100	0	1.15	35
	100	0	1.06	
	100	0	0.56	
	100	0	0.33	
	100	0	1.20	
1585	100	0	0.42	40
	100	0	0.56	
	100	0	1.07	
	100	0	1.29	
	100	0	0.56	
1580	100	0	1.29	45
	100	0	1.47	
	100	0	1.24	
	100	0	1.39	
	100	0	1.21	
1575	100	0	1.23	50
	100	0	1.27	
	100	0	0.43	
	100	0	0.38	
	100	0	0.29	
1570	100	0	1.00	55
	100	0	1.16	
	100	0	0.59	
	100	0	0.57	
	100	0	0.57	
1565	100	0	1.00	60
	100	0	1.09	
	100	0	2.09	
	100	0	1.25	
	100	0	1.05	
1560	100	0	1.22	65
	100	0	1.22	
	100	0	1.14	
	100	0	1.06	
	100	0	0.57	



35.00	Grey, slightly weathered, soft rock mudrock. Vryheid Formation.
38.00	Balck, slightly weathered, soft rock shaly coal. Vryheid Formation.
39.00	Grey, slightly weathered, soft rock mudrock. Vryheid Formation.
44.00	Grey, moderately weathered, medium hard rock sandstone. Vryheid Formation.
52.00	Balck, slightly weathered, soft rock coal. Vryheid Formation.
55.00	Grey, slightly weathered, soft rock mudrock. Vryheid Formation.

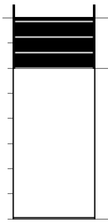
ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: K-BH15
Sheet 3 of 3

JOB NUMBER: MAK152.08.23

REDUCED LEVEL	*Sample Recovery (%)*	*Air Loss (%)*	*Penetration Rate (min/metre)*
1555	100	0	0.49
	0	100	
	0	100	
	0	100	

70



70.00	Black, slightly weathered, soft rock coal. Vryheid Formation.
71.00	Cavity.
74.00	

NOTES

1) Water strike at 30m.
2) Groundwater table after twenty-four hours: 17m.
3) Borehole terminated at 74m due to drilling difficulties.

CONTRACTOR : BAV Consulting
MACHINE : Thor 5000 Drill Rig
DRILLED BY : Zakhele Zaca
PROFILED BY : Andries Vukeya

TYPE SET BY : Andries Vukeya
SETUP FILE : STANDARD.SET

INCLINATION : Vertical
DIAM : 165 mm
DATE : 08/09/2023
DATE : 08/09/2023

DATE : 06/12/2023 14:03
TEXT : ..ssionBoreholes\KBH15.TXT

ELEVATION : 1625 m
X-COORD : 29.45257´°E
Y-COORD : 26.09741´°S

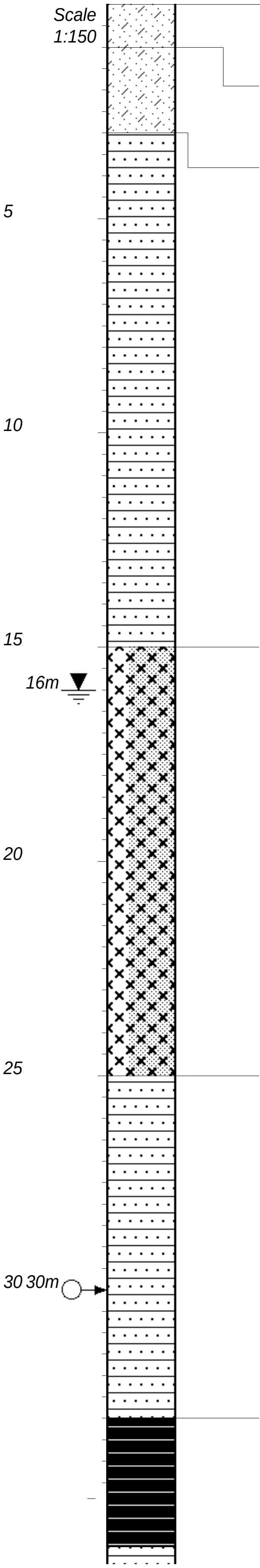
HOLE No: K-BH15

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: K-BH16
Sheet 1 of 3

JOB NUMBER: MAK152.08.23

REDUCED LEVEL	Sample Recovery (%)	Air Loss (%)	Penetration Rate (min/metre)
	100	0	0.32
	100	0	0.22
	100	0	2.53
	100	0	1.37
1620	100	0	1.16
	100	0	1.03
	100	0	2.14
	100	0	4.14
	100	0	4.30
1615	100	0	2.36
	100	0	2.19
	100	0	2.05
	100	0	1.38
	100	0	1.45
1610	100	0	2.10
	100	0	3.54
	100	0	3.33
	100	0	3.18
	100	0	4.40
1605	100	0	2.56
	100	0	3.55
	100	0	4.23
	100	0	4.36
	100	0	4.19
1600	100	0	1.37
	100	0	1.40
	100	0	2.10
	100	0	1.50
	100	0	1.24
1595	100	0	0.48
	100	0	0.51
	100	0	0.47
	100	0	1.09
	100	0	0.57
	100	0	1.17



0.00	Brown clayey sand. Transported soil.
1.00	Grey clayey sand. Residual soil.
3.00	Brown, highly weathered, medium hard rock sandstone. Vryheid Formation.
15.00	Grey, fresh, hard rock dolerite. Karoo Supergroup.
25.00	Grey, highly weathered, medium hard rock sandstone. Vryheid Formation.
33.00	

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: K-BH16
Sheet 2 of 3

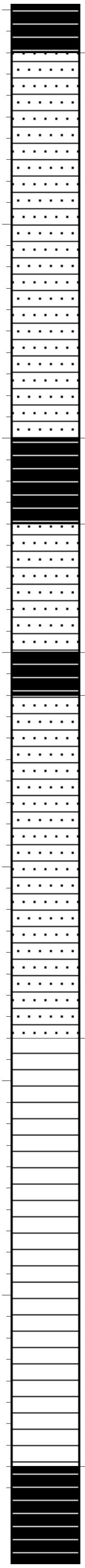
JOB NUMBER: MAK152.08.23

1590 *1585* *1580* *1575* *1570* *1565* *1560*

35 *40* *45* *50* *55* *60* *65*

Sample Recovery (%)	Air Loss (%)	Penetration Rate (min/metre)
100	0	1.08
100	0	1.30
100	0	1.12
100	0	1.36
100	0	1.06
100	0	1.26
100	0	1.03
100	0	1.27
100	0	1.32
100	0	1.10
100	0	1.06
100	0	0.59
100	0	1.04
100	0	1.24
100	0	1.12
100	0	1.19
100	0	1.07
100	0	1.09
100	0	1.20
100	0	1.09
100	0	1.12
100	0	1.09
100	0	1.06
100	0	1.12
100	0	0.55
100	0	1.25
100	0	1.28
100	0	1.40
100	0	1.19
100	0	1.16
100	0	1.28
100	0	1.01
100	0	1.20
100	0	1.06
100	0	0.44

REDUCED LEVEL



	Black, slightly weathered, soft rock coal. Vryheid Formation.
36.00	Grey, highly weathered, medium hard rock sandstone. Vryheid Formation.
45.00	Black, slightly weathered, soft rock coal. Vryheid Formation.
47.00	Grey, highly weathered, medium hard rock sandstone. Vryheid Formation.
50.00	Black, slightly weathered, soft rock coal. Vryheid Formation.
51.00	Grey, highly weathered, medium hard rock sandstone. Vryheid Formation.
59.00	Grey, moderately weathered, soft rock mudrock. Vryheid Formation.
69.00	

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: K-BH16
Sheet 3 of 3

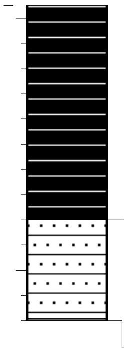
JOB NUMBER: MAK152.08.23

1555
1550

70
75

Sample Recovery (%)	Air Loss (%)	Penetration Rate (min/metre)
100	0	0.51
100	0	0.30
100	0	0.49
100	0	0.31
100	0	1.08
100	0	1.39

REDUCED LEVEL



Black, moderately weathered, soft rock coal. Vryheid Formation.

74.00

Grey, highly weathered, medium hard rock sandstone. Vryheid Formation.

76.00

NOTES

1) Water strike at 30m.

2) Groundwater table after twenty-four hours: 16m.

3) Borehole terminated at 76m due to required depth.

CONTRACTOR : BAV Consulting
MACHINE : Thor 5000 Drill Rig
DRILLED BY : Zakhele Zaca
PROFILED BY : Andries Vukeya

TYPE SET BY : Andries Vukeya
SETUP FILE : STANDARD.SET

INCLINATION : Vertical
DIAM : 165 mm
DATE : 08/09/2023
DATE : 08/09/2023

DATE : 06/12/2023 14:04
TEXT : ..ssionBoreholes\KBH16.TXT

ELEVATION : 1625 m
X-COORD : 29.45489´°E
Y-COORD : 26.09797´°S

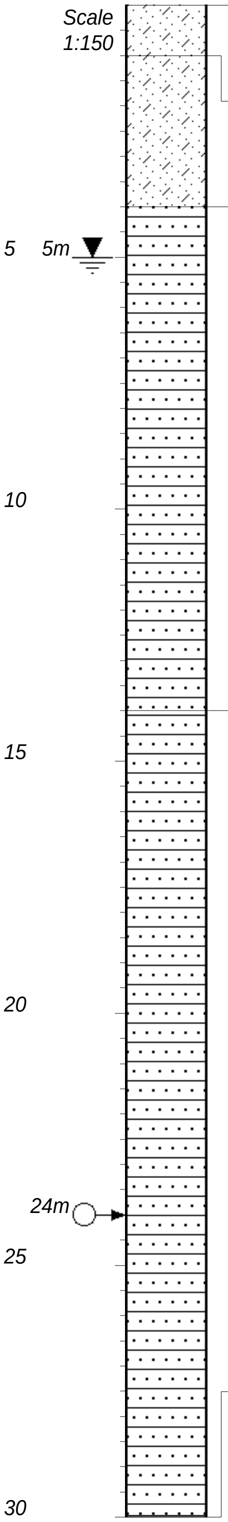
HOLE No: K-BH16

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: K-BH17
Sheet 1 of 1

JOB NUMBER: MAK152.08.23

REDUCED LEVEL	Sample Recovery (%)	Air Loss (%)	Penetration Rate (min/metre)
	100	0	0.13
	100	0	0.22
1630	100	0	0.55
	100	0	0.58
	100	0	1.01
	100	0	1.10
	100	0	1.32
1625	100	0	1.22
	100	0	0.59
	100	0	0.59
	100	0	1.20
	100	0	1.07
1620	100	0	1.18
	100	0	1.38
	100	0	1.46
	100	0	0.54
	100	0	1.24
1615	100	0	1.29
	100	0	1.42
	100	0	1.57
	100	0	1.36
	100	0	1.38
1610	100	0	1.10
	100	0	1.26
	100	0	1.09
	100	0	1.13
	100	0	1.04
1605	100		1.18
	100	0	1.10
	100	0	0.58
	100	0	1.03



0.00 Brown clayey sand. Transported soil.

1.00 Kakhi clayey sand. Residual soil.

4.00 Brown, highly weathered, medium hard rock sandstone. Vryheid Formation.

14.00 Grey, highly weathered, medium hard sandstone. Vryheid Formation.

30.00

NOTES

1) Water strike at 24m.

2) Groundwater table after twenty-four hours: 5m.

3) Borehole terminated at 40m due to drilling difficulties.

CONTRACTOR : BAV Consulting
MACHINE : Thor 5000 Drill Rig
DRILLED BY : Zakhele Zaca
PROFILED BY : Andries Vukeya

INCLINATION : Vertical
DIAM : 165 mm
DATE : 11/09/2023
DATE : 11/09/2023

ELEVATION : 1632 m
X-COORD : 29.45122´°E
Y-COORD : 26.10133´°S

HOLE No: K-BH17

TYPE SET BY : Andries Vukeya
SETUP FILE : STANDARD.SET

DATE : 06/12/2023 14:05
TEXT : ..ssionBoreholes\KBH17.TXT

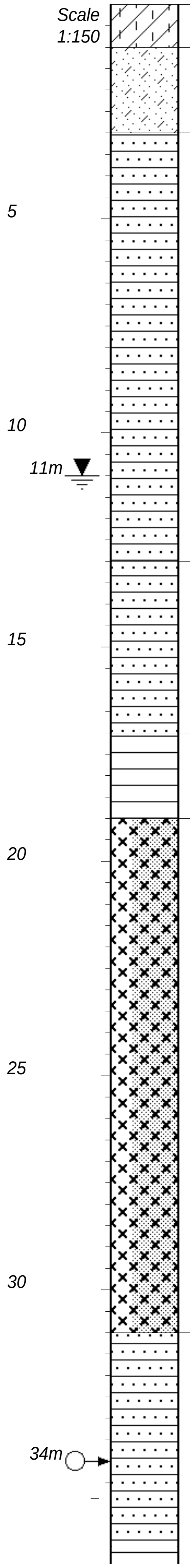
MAKHUMA CONSULTING

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION: KOMATI POWER STATION

HOLE No: K-BH18
Sheet 1 of 3

JOB NUMBER: MAK152.08.23

REDUCED LEVEL	Sample Recovery (%)	Air Loss (%)	Penetration Rate (min/metre)
	100	0	0.13
1610	100	0	0.44
	100	0	1.02
	100	0	1.00
	100	0	1.07
	100	0	1.03
1605	100	0	2.53
	100	0	4.14
	100	0	1.52
	100	0	1.13
	100	0	1.40
1600	100	0	2.03
	100	0	2.36
	100	0	1.32
	100	0	1.38
	100	0	1.36
1595	100	0	1.00
	100	0	1.03
	100	0	1.30
	100	0	4.15
	100	0	3.58
1590	100	0	4.00
	100	0	4.09
	100	0	3.52
	100	0	4.17
	100	0	3.09
1585	100	0	6.10
	100	0	4.15
	100	0	5.58
	100	0	5.08
	100	0	3.12
1580	100	0	2.17
	100	0	1.59
	100	0	0.58
	100	0	1.29



0.00 – 1.00	Brown silty clay. Transported soil.
1.00 – 3.00	Kakhi clayey sand. Residual soil.
3.00 – 13.00	Brown, highly weathered, medium hard rock sandstone. Vryheid Formation.
13.00 – 17.00	Grey, highly weathered, medium hard rock sandstone. Vryheid Formation.
17.00 – 19.00	Grey, highly weathered, soft rock shale. Vryheid Formation.
19.00 – 31.00	Grey, moderately weathered, hard rock dolerite. Karoo Supergroup.
31.00 –	Grey, highly weathered, medium hard rock sandstone. Vryheid Formation.

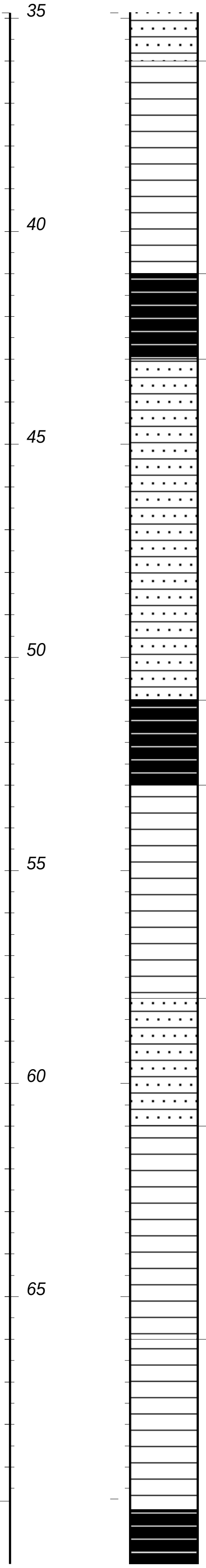
ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: K-BH18
Sheet 2 of 3

JOB NUMBER: MAK152.08.23

REDUCED LEVEL
1575
1570
1565
1560
1555
1550
1545

Sample Recovery (%)	*Air Loss (%)*	*Penetration Rate (min/metre)*
100	0	1.49
100	0	1.30
100	0	1.29
100	0	0.59
100	0	0.58
100	0	1.01
100	0	0.59
100	0	0.50
100	0	1.34
100	0	1.15
100	0	1.45
100	0	1.39
100	0	1.33
100	0	1.36
100	0	1.26
100	0	1.35
100	0	1.01
100	0	0.33
100	0	0.47
100	0	1.20
100	0	1.21
100	0	1.21
100	0	1.23
100	0	1.19
100	0	1.28
100	0	1.38
100	0	1.13
100	0	1.09
100	0	1.56
100	0	0.49
100	0	1.19
100	0	0.45
100	0	1.12
100	0	1.11
100	0	1.13



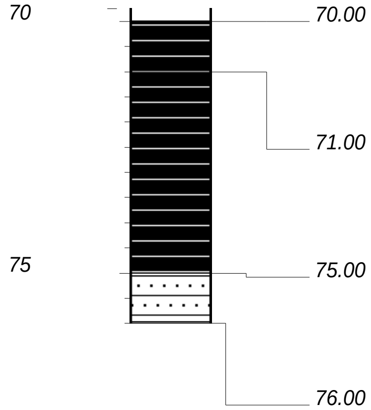
36.00	Grey, moderately weathered, soft rock mudrock. Vryheid Formation.
41.00	Black, moderately weathered, soft rock coal. Vryheid Formation.
43.00	Grey, highly weathered, medium hard rock sandstone. Vryheid Formation.
51.00	Black, moderately weathered, soft rock coal. Vryheid Formation.
53.00	Grey, moderately weathered, soft rock mudrock. Vryheid Formation.
58.00	Grey, slightly weathered, medium hard rock sandstone. Vryheid Formation.
61.00	Grey, slightly weathered, soft rock mudrock. Vryheid Formation.
66.00	Black, moderately weathered, soft rock carbonecous shale. Vryheid Formation.

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: K-BH18
Sheet 3 of 3

JOB NUMBER: MAK152.08.23

REDUCED LEVEL	Sample Recovery (%)	Air Loss (%)	Penetration Rate (min/metre)
	100	0	1.15
1540	100	0	0.49
	100	0	0.51
	100	0	0.35
	100	0	0.40
	100	0	0.57



70.00 – 71.00	Black, highly weathered, soft rock shaly coal. Vryheid Formation.
71.00 – 75.00	Black, moderately weathered, soft rock coal. Vryheid Formation.
75.00 – 76.00	Grey, moderately weathered, medium hard rock sandstone. Vryheid Formation.

NOTES

1) Water strike at 34m.

2) Groundwater table after twenty-four hours: 11m.

3) Borehole terminated at 58m due to drilling difficulties.

CONTRACTOR : BAV Consulting
MACHINE : Thor 5000 Drill Rig
DRILLED BY : Zakhele Zaca
PROFILED BY : Andries Vukeya

INCLINATION : Vertical
DIAM : 165 mm
DATE : 12/09/2023
DATE : 12/09/2023

ELEVATION : 1612 m
X-COORD : 29.45352´°E
Y-COORD : 26.09799´°S

HOLE No: K-BH18

TYPE SET BY : Andries Vukeya
SETUP FILE : STANDARD.SET

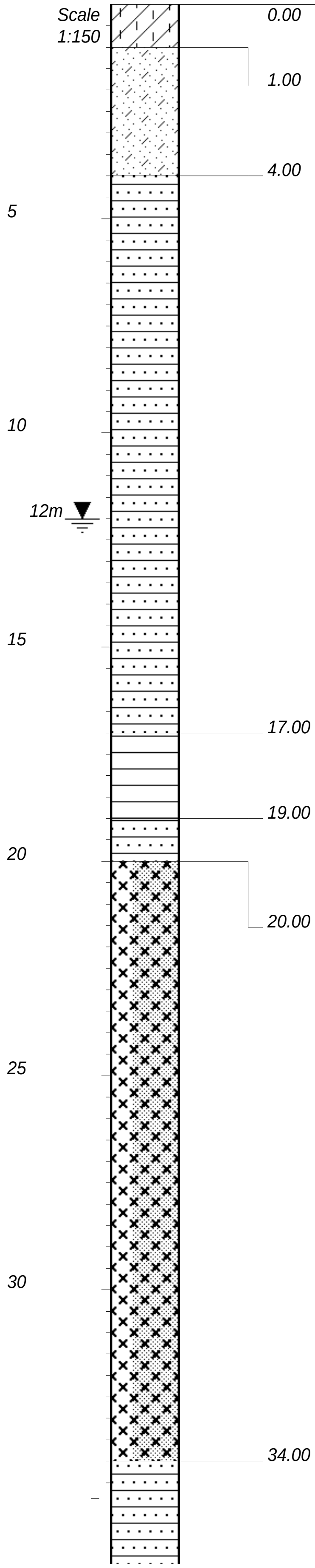
DATE : 06/12/2023 14:06
TEXT : ..ssionBoreholes\KBH18.TXT

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: K-BH19
Sheet 1 of 3

JOB NUMBER: MAK152.08.23

REDUCED LEVEL	Sample Recovery (%)	Air Loss (%)	Penetration Rate (min/metre)
	100	0	0.22
	100	0	0.44
	100	0	0.50
	100	0	1.15
1620	100	0	1.13
	100	0	0.44
	100	0	0.55
	100	0	0.54
	100	0	0.58
1615	100	0	0.55
	100	0	1.00
	100	0	0.52
	100	0	0.59
	100	0	1.12
1610	100	0	1.00
	100	0	1.32
	100	0	1.27
	100	0	1.44
	100	0	1.18
1605	100	0	2.22
	100	0	2.18
	100	0	3.00
	100	0	3.41
	100	0	6.27
1600	100	0	5.50
	100	0	3.49
	100	0	3.18
	100		3.14
	100	0	3.19
1595	100	0	3.34
	100	0	3.24
	100	0	3.31
	100	0	3.59
	100	0	3.55
1590	100	0	1.49



Brown silty clay. Transported soil.

Kakhi clayey sand. Residual soil.

Brown, highly weathered, medium hard rock sandstone. Vryheid Formation.

Grey, highly weathered, soft rock shale. Vryheid Formation.

Grey, highly weathered, medium hard rock sandstone. Vryheid Formation.

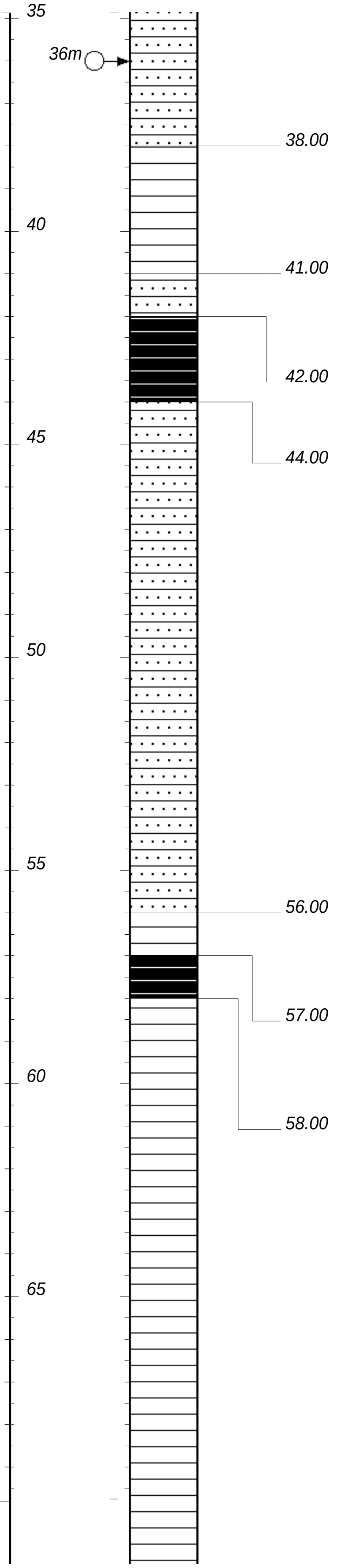
Grey, slightly weathered, hard rock dolerite. Vryheid Formation.

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: K-BH19
Sheet 2 of 3

JOB NUMBER: MAK152.08.23

REDUCED LEVEL	Sample Recovery (%)	Air Loss (%)	Penetration Rate (min/metre)
	100	0	1.36
	100	0	1.18
	100	0	1.11
1585	100	0	0.58
	100	0	1.14
	100	0	1.01
	100	0	1.09
	100	0	1.14
1580	100	0	1.16
	100	0	1.36
	100	0	1.16
	100	0	1.03
	100	0	1.09
1575	100	0	1.20
	100	0	1.11
	100	0	1.17
	100	0	1.24
	100	0	1.31
1570	100	0	0.58
	100	0	0.55
	100	0	0.47
	100	0	0.22
	100	0	0.45
1565	100	0	0.47
	100	0	0.55
	100	0	0.59
	100	0	0.49
	100	0	1.37
1560	100	0	1.45
	100	0	2.00
	100	0	1.58
	100	0	1.11
	100	0	1.09
1555	100	0	1.21
	100	0	1.13



Grey, highly weathered, medium hard rock sandstone. Vryheid Formation.

38.00

Grey, slightly weathered, soft rock mudrock. Vryheid Formation.

41.00

Grey, moderately weathered, medium hard rock sandstone. Vryheid Formation.

42.00

Black, slightly weathered shaly coal. Vryheid Formation.

44.00

Grey, moderately weathered, medium hard rock Sandstone. Vryheid Formation.

56.00

Grey, slightly weathered, soft rock mudrock. Vryheid Formation.

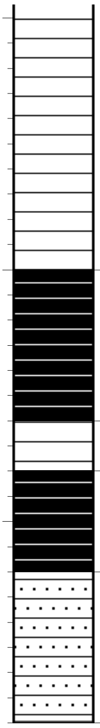
57.00

Black, slightly weathered, soft rock shaly coal. Vryheid Formation.

58.00

Grey, slightly weathered, soft rock mudrock. Vryheid Formation.

REDUCED LEVEL	Sample Recovery (%)	Air Loss (%)	Penetration Rate (min/metre)	
	100	0	1.09	70
	100	0	1.17	
	100	0	1.02	
1550	100	0	1.18	
	100	0	0.48	75
	100	0	0.57	
	100	0	0.50	
	100	0	0.40	
1545	100	0	0.41	
	100	0	0.33	80
	100	0 0	0.59	
	100	0	1.12	
	100		1.40	
1540	100	0	1.15	



75.00	Black, highly weathered, soft rock coal. Vryheid Formation.
78.00	Grey, highly weathered, soft rock shale. Vryheid Formation.
79.00	Black, highly weathered, soft rock coal. Vryheid Formation.
81.00	Grey, slightly weathered, medium hard rock sandstone. Vryheid Formation.
84.00	

NOTES

1) Water strike at 36m.

2) Groundwater table after twenty-four hours: 12m.

3) Borehole terminated at 84m due to required depth.

CONTRACTOR : BAV Consulting
MACHINE : Thor 5000 Drill Rig
DRILLED BY : Zakhele Zaca
PROFILED BY : Andries Vukeya

INCLINATION : Vertical
DIAM : 165 mm
DATE : 12/09/2023
DATE : 12/09/2023

ELEVATION : 1624 m
X-COORD : 29.45159´°E
Y-COORD : 26.09822´°S

HOLE No: K-BH19

TYPE SET BY : Andries Vukeya
SETUP FILE : STANDARD.SET

DATE : 06/12/2023 14:07
TEXT : ..ssionBoreholes\KBH19.TXT

MAKHUMA CONSULTING

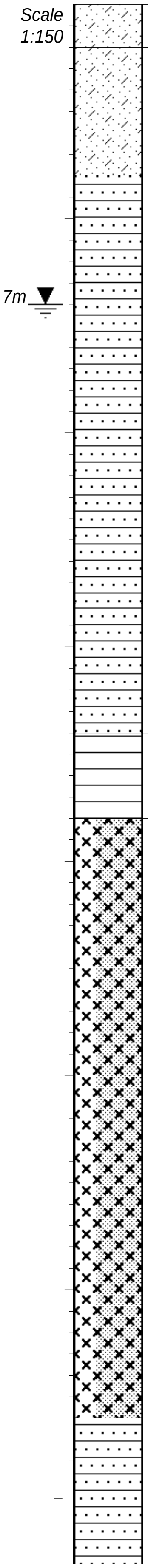
ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: K-BH20
Sheet 1 of 3

JOB NUMBER: MAK152.08.23

REDUCED LEVEL	Sample Recovery (%)	Air Loss (%)	Penetration Rate (min/metre)	
	100	0	0.20	
1625	100	0	0.33	
	100	0	0.58	
	100	0	1.10	
	100	0	1.27	
	100	0	0.55	5
1620	100	0	0.55	
	100	0	0.44	
	100	0	1.04	
	100	0	0.58	
	100	0	0.50	10
1615	100	0	1.19	
	100	0	0.25	
	100	0	0.55	
	100	0	0.54	
	100	0	1.09	15
1610	100	0	0.53	
	100	0	0.44	
	100	0	0.49	
	100	0	3.58	
	100	0	4.03	20
1605	100	0	6.13	
	100	0	6.43	
	100	0	3.30	
	100	0	4.28	
	100	0	3.50	25
1600	100	0	4.15	
	100		3.42	
	100	0	5.00	
	100	0	4.40	
	100	0	5.09	30
1595	100	0	4.45	
	100	0	2.21	
	100	0	1.23	
	100	0	1.06	

Scale
1:150



0.00	Brown clayey sand. Transported soil.
1.00	Kakhi clayey sand. Residual soil.
4.00	Yellowish brown, highly weathered, medium hard rock sandstone. Vryheid Formation.
14.00	Grey, highly weathered, medium hard rock sandstone. Vryheid Formation.
17.00	Black, slightly weathered, soft rock mudrock. Vryheid Formation.
19.00	Grey, slightly weathered, hard rock dolerite. Vryheid Formation.
33.00	

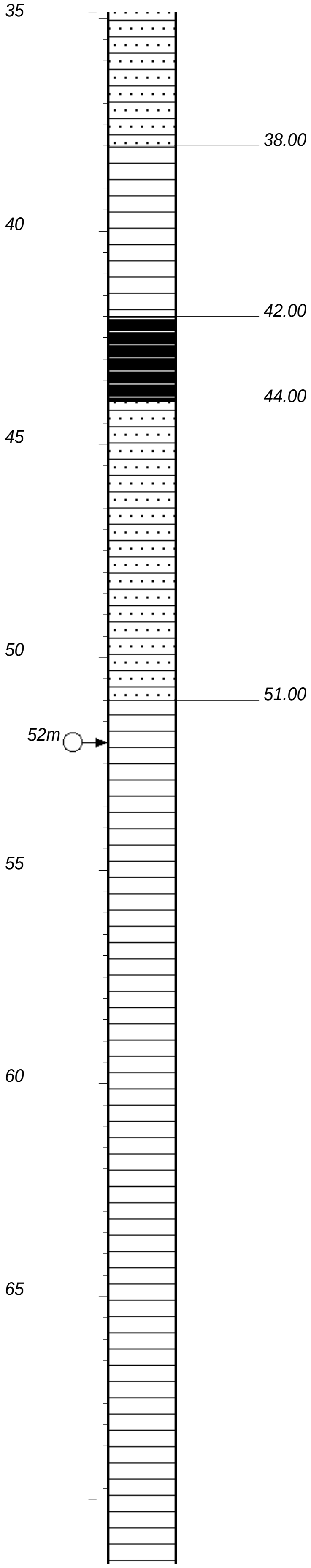
ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: K-BH20
Sheet 2 of 3

JOB NUMBER: MAK152.08.23

REDUCED LEVEL
1590
1585
1580
1575
1570
1565
1560

Sample Recovery (%)	Air Loss (%)	Penetration Rate (min/metre)
100	0	1.13
100	0	1.21
100	0	1.35
100	0	1.20
100	0	1.12
100	0	1.12
100	0	1.25
100	0	1.39
100	0	0.43
100	0	0.51
100	0	1.53
100	0	1.53
100	0	1.59
100	0	2.03
100	0	1.59
100	0	3.33
100	0	2.14
100	0	3.03
100	0	2.08
100	0	1.16
100	0	2.30
100	0	2.16
100	0	1.26
100	0	1.28
100	0	1.12
100	0	1.24
100	0	1.10
100	0	1.39
100	0	1.19
100	0	1.03
100	0	1.53
100	0	1.59
100	0	1.37
100	0	1.39
100	0	2.16



Grey, highly weathered, medium hard rock sandstone. Vryheid Formation.

38.00

Black, slightly weathered, soft rock mudrock. Vryheid Formation.

42.00

Black, slightly weathered, soft rock coal. Vryheid Formation.

44.00

Grey, highly weathered l, medium hard rock sandstone. Vryheid Formation.

51.00

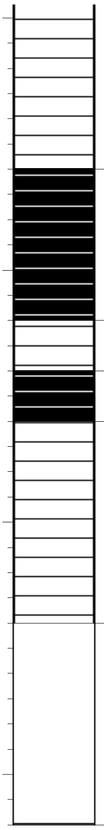
Grey, moderately weathered, soft rock mudrock. Vryheid Formation.

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: K-BH20
Sheet 3 of 3

JOB NUMBER: MAK152.08.23

REDUCED LEVEL	Sample Recovery (%)	Air Loss (%)	Penetration Rate (min/metre)	Depth
	100	0	2.10	70
1555	100	0	2.14	
	100	0	1.10	
	100	0	1.07	
	100	0	0.26	75
1550	100	0	0.29	
	100	0	0.34	
	100	0	0.38	
	100	0	0.46	
	100	0	0.36	80
1545	100	0	1.53	
	100	0	2.16	
	100	0	1.45	
	100	0	1.53	
	100	0	1.13	85
1540	100	0	1.12	



Depth	Description
73.00	Black, highly weathered, soft rock coal. Vryheid Formation.
76.00	Black, highly weathered, soft rock carbonecous shale. Vryheid Formation.
77.00	Black, highly weathered, soft rock coal. Vryheid Formation.
78.00	Black, moderately weathered, soft rock mudrock. Vryheid Formation.
82.00	pinkish grey, slightly weathered , medium hard rock diamictitie. Dwyka Group.
86.00	

NOTES

1) Water strike at 52m.

2) Groundwater table after twenty-four hours: 7m.

3) Borehole terminated at 86m due to required depth.

CONTRACTOR : BAV Consulting
MACHINE : Thor 5000 Drill Rig
DRILLED BY : Zakhele Zaca
PROFILED BY : Andries Vukeya

INCLINATION : Vertical
DIAM : 165 mm
DATE : 11/09/2023
DATE : 11/09/2023

ELEVATION : 1626 m
X-COORD : 29.45272´°E
Y-COORD : 26.09837´°S

HOLE No: K-BH20

TYPE SET BY : Andries Vukeya
SETUP FILE : STANDARD.SET

DATE : 06/12/2023 14:07
TEXT : ..ssionBoreholes\KBH20.TXT

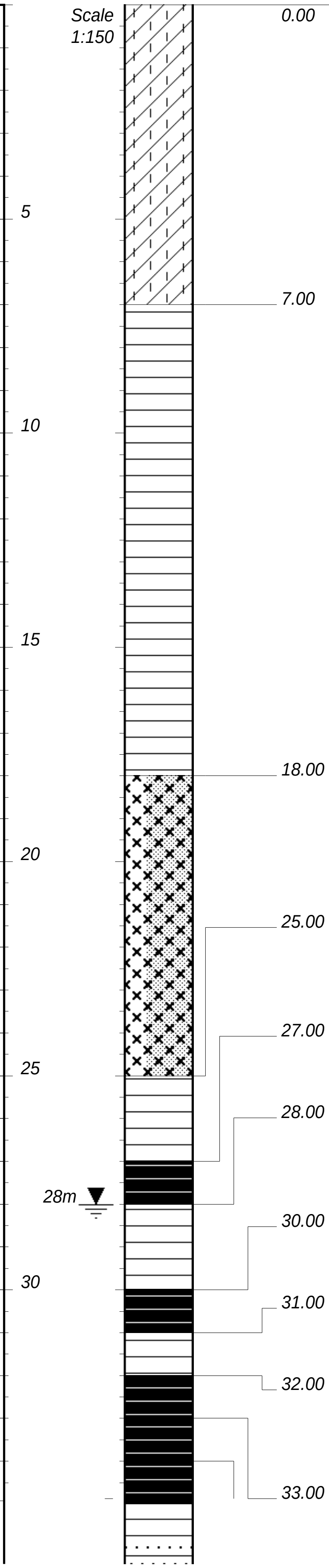
ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

MAKHUMA CONSULTING

HOLE No: K-BH21
Sheet 1 of 2

JOB NUMBER: MAK152.08.23

REDUCED LEVEL	Sample Recovery (%)	Air Loss (%)	Penetration Rate (min/metre)
	100	0	0.09
	100	0	0.23
1615	100	0	0.28
	100	0	3.12
	100	0	2.30
	100	0	3.31
	100	0	7.53
1610	100	0	2.16
	100	0	1.40
	100	0	0.54
	100	0	1.40
	100	0	0.59
1605	100	0	1.07
	100	0	1.00
	100	0	0.51
	100	0	1.26
	100	0	1.05
1600	100	0	3.10
	100	0	3.58
	100	0	3.30
	100	0	3.26
	100	0	5.00
1595	100	0	4.48
	100	0	3.35
	100	0	1.49
	100	0	1.10
	100	0	1.05
1590	100		0.48
	100	0	0.46
	100	0	1.01
	100	0	0.54
	100	0	1.19
1585	100	0	1.01
	100	0	0.34
	100	0	1.00



0.00	Brown, silty clay. Transported soil.
7.00	Brown, moderately weathered, soft rock shale. Vryheid Formation.
18.00	Grey, slightly weathered, hard rock dolerite. Karoo Supergroup.
25.00	Brown, slightly weathered, soft rock shale. Vryheid Formation.
27.00	Black, highly weathered, soft rock coal. Vryheid Formation.
28.00	Grey, moderately weathered, soft rock shale. Vryheid Formation.
30.00	Black, highly weathered, soft rock coal. Vryheid Formation.
31.00	Grey, highly weathered, soft rock shale. Vryheid Formation.
32.00	Black, moderately weathered, soft rock coal. Vryheid Formation.
33.00	

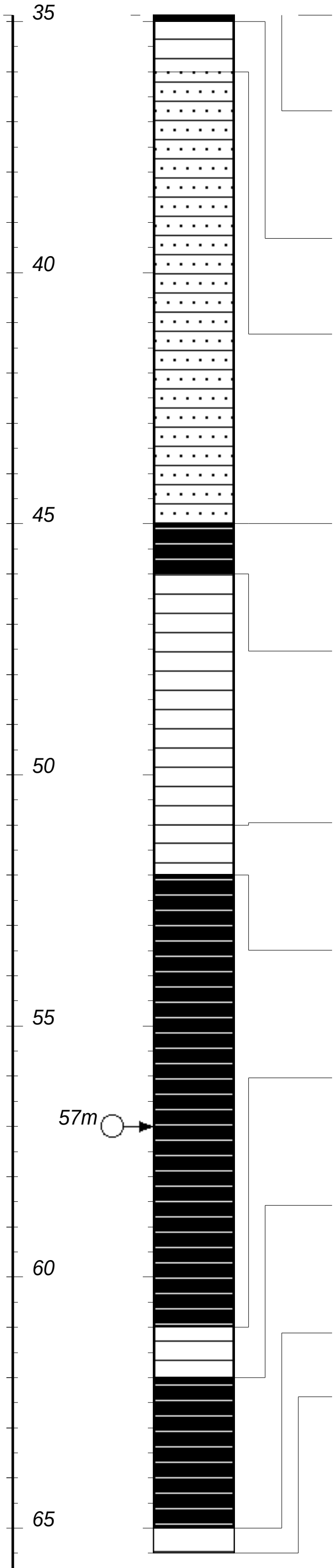
MAKHUMA CONSULTING

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION: KOMATI POWER STATION

HOLE No: K-BH21
Sheet 2 of 2

JOB NUMBER: MAK152.08.23

REDUCED LEVEL	Sample Recovery (%)	Air Loss (%)	Penetration Rate (min/metre)
	100	0	1.07
	100	0	1.17
1580	100	0	1.44
	100	0	1.23
	100	0	1.42
	100	0	1.41
	100	0	1.59
1575	100	0	1.04
	100	0	1.14
	100	0	0.57
	100	0	1.05
	100	0	0.43
1570	100	0	0.53
	100	0	0.40
	100	0	1.19
	100	0	1.32
	100	0	0.41
1565	100	0	0.53
	100	0	1.05
	100	0	1.40
	100	0	1.52
	100	0	1.51
1560	100	0	1.50
	100	0	1.25
	100	0	0.51
	100	0	2.15
	100	0	1.00
1555	100	0	1.53
	100	0	1.27
	100	0	1.35
	0	100	



33.00	Black, slightly weathered, soft rock coal. Vryheid Formation.
34.00	Black, slightly weathered, soft rock shaly coal. Vryheid Formation.
35.00	Grey, slightly weathered, soft rock shale. Vryheid Formation.
36.00	Grey, slightly weathered, medium hard rock sandstone. Vryheid Formation.
45.00	Black, moderately weathered, soft rock coal. Vryheid Formation.
46.00	Grey, slightly weathered, soft rock mudrock. Vryheid Formation.
51.00	Black, slightly weathered, soft rock mudrock. Vryheid Formation.
52.00	Grey, slightly weathered, soft rock shaly coal. Vryheid Formation.
61.00	Black, slightly weathered, soft rock mudrock. Vryheid Formation.
62.00	Black, moderately weathered, soft rock coal. Vryheid Formation.
65.00	Cavity.
65.50	

NOTES

1) Water strike at 57m.

2) Groundwater table after twenty-four hours: 28m.

3) Borehole terminated at 65.5m due to drilling difficulties.

CONTRACTOR : BAV Consulting
MACHINE : Thor 5000 Drill Rig
DRILLED BY : Zakhele Zaca
PROFILED BY : Andries Vukeya

TYPE SET BY : Andries Vukeya
SETUP FILE : STANDARD.SET

INCLINATION : Vertical
DIAM : 165 mm
DATE : 01/09/2023
DATE : 01/09/2023

DATE : 06/12/2023 14:08
TEXT : ..ssionBoreholes\KBH21.TXT

ELEVATION : 1618 m
X-COORD : 29.45028´°E
Y-COORD : 26.09487´°S

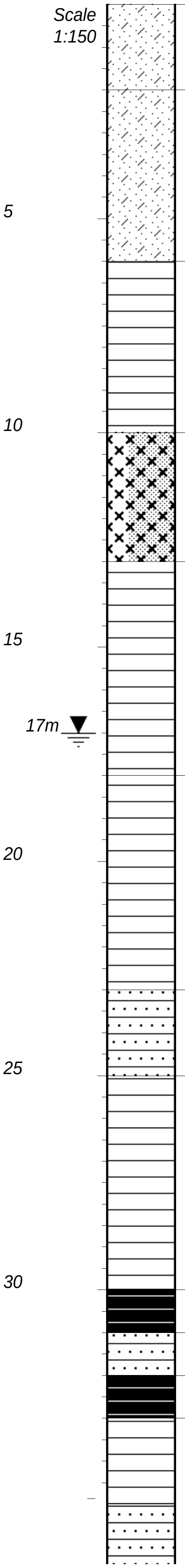
HOLE No: K-BH21

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: K-BH22
Sheet 1 of 3

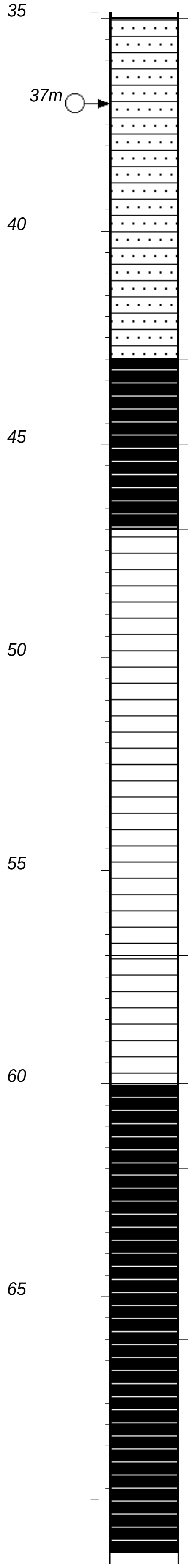
JOB NUMBER: MAK152.08.23

REDUCED LEVEL	Sample Recovery (%)	Air Loss (%)	Penetration Rate (min/metre)
	100	0	0.17
1620	100	0	0.26
	100	0	0.40
	100	0	1.59
	100	0	1.44
	100	0	1.03
1615	100	0	1.29
	100	0	1.56
	100	0	1.04
	100	0	1.46
	100	0	1.46
1610	100	0	2.11
	100	0	2.46
	100	0	2.53
	100	0	0.52
	100	0	1.12
1605	100	0	1.57
	100	0	2.36
	100	0	2.32
	100	0	3.24
	100	0	4.58
1600	100	0	2.43
	100	0	2.36
	100	0	2.12
	100	0	1.47
	100	0	1.43
1595	100	0	0.42
	100		0.36
	100	0	0.46
	100	0	0.42
	100	0	0.31
1590	100	0	1.07
	100	0	0.33
	100	0	0.54
	100	0	0.50



0.00	Brown clayey sand. Transported soil.
2.00	Kakhi clayey sand. Residual soil.
6.00	Brown, highly weathered, soft rock shale. Vryheid Formation.
10.00	Black, slightly weathered, hard rock dolerite. Karoo Supergroup.
13.00	Brown, slightly weathered, soft rock shale. Vryheid Formation.
18.00	Grey, slightly weathered, soft rock mudrock. Vryheid Formation.
23.00	Grey, highly weathered, medium rock sandstone. Vryheid Formation.
25.00	Grey, highly weathered, soft rock shale. Vryheid Formation.
30.00	Black, moderately weathered, soft rock coal. Vryheid Formation.
31.00	

REDUCED LEVEL	Sample Recovery (%)	Air Loss (%)	Penetration Rate (min/metre)
	100	0	1.21
	100	0	1.03
1585	100	0	1.20
	100	0	1.15
	100	0	1.19
	100	0	1.33
	100	0	1.23
1580	100	0	1.23
	100	0	1.02
	100	0	0.54
	100	0	0.42
	100	0	0.48
1575	100	0	0.44
	100	0	1.16
	100	0	0.46
	100	0	0.48
	100	0	1.22
1570	100	0	1.07
	100	0	1.30
	100	0	0.58
	100	0	1.14
	100	0	1.17
1565	100	0	1.14
	100	0	1.13
	100	0	0.47
	100	0	1.19
	100	0	0.54
1560	100	0	0.52
	100	0	0.41
	100	0	0.27
	100	0	0.33
	100	0	0.24
1555	100	0	0.29
	100	0	1.10
	100	0	1.17



	Grey, slightly weathered, medium hard rock sandstone. Vryheid Formation.
32.00	Black, moderately weathered, soft rock coal. Vryheid Formation.
33.00	Grey, slightly weathered, soft rock mudrock. Vryheid Formation.
35.00	Grey, highly weathered, medium hard rock sandstone. Vryheid Formation.
43.00	Grey, highly weathered, soft rock shaly coal. Vryheid Formation.
45.00	Balck, moderately weathered, soft rock coal. Vryheid Formation.
47.00	Grey, slightly weathered, soft rock mudrock. Vryheid Formation.
57.00	Grey, highly weathered carbonecous shale. Vryheid Formation.
60.00	Black, slightly weathered, soft rock shaly coal. Vryheid Formation.
62.00	Black, moderately weathered, soft rock coal. Vryheid Formation.
66.00	Black, slightly weathered, soft rock shaly coal. Vryheid Formation.

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION: KOMATI POWER STATION

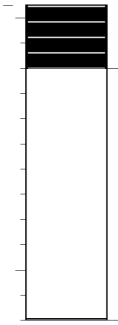
HOLE No: K-BH22
Sheet 3 of 3

JOB NUMBER: MAK152.08.23

REDUCED LEVEL	*Sample Recovery (%)*	*Air Loss (%)*	*Penetration Rate (min/metre)*
	100	0	2.36
	100	0	1.16
1550	100	0	1.32
	100	0	1.33
	100	0	1.20
	100	0	2.12

70

75



71.00

Greyish pink, slightly weathered, medium hard rock diamictite. Dwyka Group.

76.00

NOTES

1) Water strike at 37m.

2) Groundwater table after twenty-four hours: 17m.

3) Borehole terminated at 76m due to required depth.

CONTRACTOR : BAV Consulting
MACHINE : Thor 5000 Drill Rig
DRILLED BY : Zakhele Zaca
PROFILED BY : Andries Vukeya

INCLINATION : Vertical
DIAM : 165 mm
DATE : 04/09/2023
DATE : 04/09/2023

ELEVATION : 1622 m
X-COORD : 29.45245´°E
Y-COORD : 26.09507´°S

HOLE No: K-BH22

TYPE SET BY : Andries Vukeya
SETUP FILE : STANDARD.SET

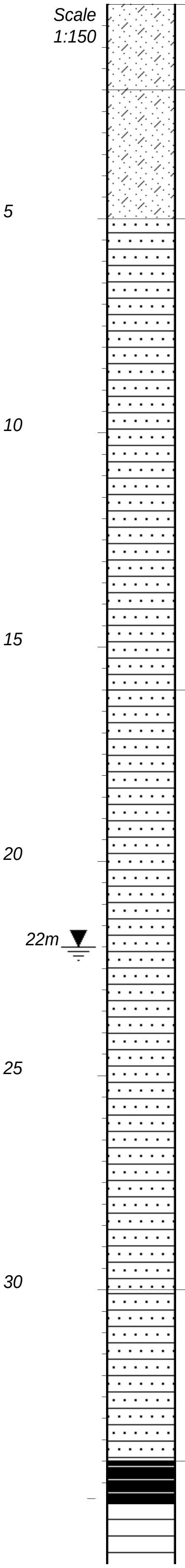
DATE : 06/12/2023 14:10
TEXT : ..ssionBoreholes\KBH22.TXT

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: K-BH23
Sheet 1 of 3

JOB NUMBER: MAK152.08.23

REDUCED LEVEL	Sample Recovery (%)	Air Loss (%)	Penetration Rate (min/metre)
	100	0	0.21
	100	0	0.19
1620	100	0	0.39
	100	0	0.48
	100	0	7.59
	100	0	6.43
	100	0	2.02
1615	100	0	3.05
	100	0	3.24
	100	0	2.17
	100	0	2.08
	100	0	2.02
1610	100	0	1.21
	100	0	0.45
	100	0	1.14
	100	0	1.24
	100	0	3.58
1605	100	0	4.22
	100	0	3.43
	100	0	4.00
	100	0	4.19
	100	0	3.24
1600	100	0	4.00
	100	0	4.37
	100	0	3.21
	100	0	4.58
	100	0	5.51
1595	100		4.42
	100	0	4.23
	100	0	4.11
	100	0	1.11
	100	0	1.03
1590	100	0	1.18
	100	0	1.01
	100	0	0.58



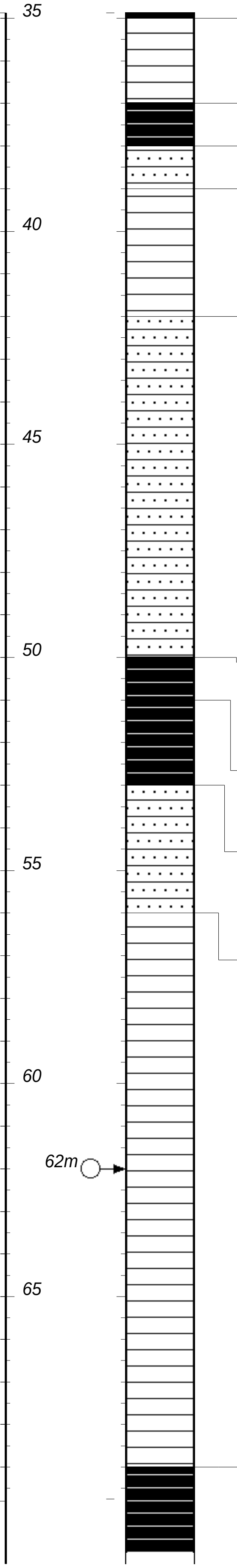
0.00 – 2.00	Brown clayey sand. Transported soil.
2.00 – 5.00	Kakhi clayey sand. Residual soil.
5.00 – 16.00	Brown, highly weathered, medium hard rock sandstone. Vryheid Formation.
16.00 – 30.00	Grey, slightly weathered, medium hard rock sandstone. Vryheid Formation.
30.00 – 34.00	Grey, highly weathered, medium hard rock sandstone. Vryheid Formation.

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: K-BH23
Sheet 2 of 3

JOB NUMBER: MAK152.08.23

REDUCED LEVEL	Sample Recovery (%)	Air Loss (%)	Penetration Rate (min/metre)
	100	0	0.45
	100	0	1.28
	100	0	2.09
1585	100	0	1.11
	100	0	1.35
	100	0	0.58
	100	0	0.59
	100	0	1.15
1580	100	0	1.50
	100	0	1.49
	100	0	1.50
	100	0	2.14
	100	0	2.36
1575	100	0	1.57
	100	0	1.47
	100	0	1.11
	100	0	0.58
	100	0	0.41
1570	100	0	1.43
	100	0	1.29
	100	0	1.46
	100	0	1.56
	100	0	2.02
1565	100	0	2.43
	100	0	2.12
	100	0	3.03
	100	0	1.57
	100	0	1.37
1560	100	0	2.02
	100	0	1.55
	100	0	2.03
	100	0	1.49
	100	0	1.14
1555	100	0	1.00
	100	0	1.33



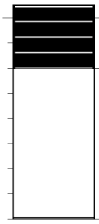
Black, moderately weathered, soft rock shaly coal. Vryheid Formation.	35.00
Grey, moderately weathered, soft rock mudrock. Vryheid Formation.	37.00
Black, moderately weathered, soft rock coal. Vryheid Formation.	38.00
Grey, slightly weathered, medium hard rock sandstone. Vryheid Formation.	39.00
Black, moderately weathered, soft rock mudrock. Vryheid Formation.	42.00
Grey, highly weathered, medium hard rock sandstone. Vryheid Formation.	50.00
Black, slightly weathered, soft rock haly coal. Vryheid Formation.	51.00
Black, highly weathered, soft rock coal. Vryheid Formation.	53.00
Grey, highly weathered, medium hard rock sandstone. Vryheid Formation.	56.00
Black, slightly weathered, soft rock mudrock. Vryheid Formation.	69.00

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

JOB NUMBER: MAK152.08.23

REDUCED LEVEL	Sample Recovery (%)	Air Loss (%)	Penetration Rate (min/metre)
	100	0	1.24
	0	100	
1550	0	100	
	0	100	

70



70.00
Black, moderately weathered, soft rock shaly coal. Vryheid Formation.

71.00
Black, slightly weathered, soft rock coal. Vryheid Formation.

74.00
Cavity.

NOTES

1) Water strike at 62m.

2) Groundwater table after twenty-four hours: 22m.

3) Borehole terminated at 74m due to drilling difficulties.

CONTRACTOR : BAV Consulting
MACHINE : Thor 5000 Drill Rig
DRILLED BY : Zakhele Zaca
PROFILED BY : Andries Vukeya

TYPE SET BY : Andries Vukeya
SETUP FILE : STANDARD.SET

INCLINATION : Vertical
DIAM : 165 mm
DATE : 09/09/2023
DATE : 09/09/2023

DATE : 06/12/2023 14:10
TEXT : ..ssionBoreholes\KBH23.TXT

ELEVATION : 1623 m
X-COORD : 29.45125´°E
Y-COORD : 26.09694´°S

HOLE No: K-BH23

MAKHUMA CONSULTING

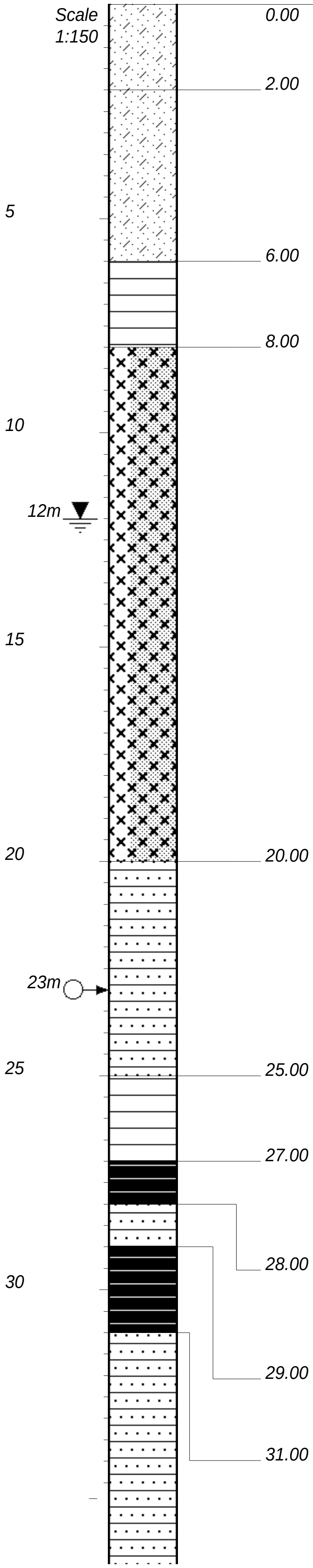
ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: K-BH24
Sheet 1 of 2

JOB NUMBER: MAK152.08.23

REDUCED LEVEL: 1620, 1615, 1610, 1605, 1600, 1595, 1590

Sample Recovery (%)	Air Loss (%)	Penetration Rate (min/metre)
100	0	0.31
100	0	0.32
100	0	0.39
100	0	3.26
100	0	3.36
100	0	1.42
100	0	2.03
100	0	3.39
100	0	4.16
100	0	2.41
100	0	3.36
100	0	2.23
100	0	2.56
100	0	1.49
100	0	1.41
100	0	4.00
100	0	5.18
100	0	4.09
100	0	1.07
100	0	1.23
100	0	1.30
100	0	1.30
100	0	1.28
100	0	0.59
100	0	1.55
100	0	1.04
100	0	1.35
100		1.01
100	0	1.15
100	0	1.20
100	0	1.28
100	0	1.29
100	0	1.18
100	0	1.27
100	0	1.24



0.00	Brown clayey sand. Transported soil.
2.00	Kakhi clayey sand. Residual soil.
6.00	Brown, highly weathered, soft rock shale. Vryheid Formation.
8.00	Grey, slightly weathered, hard rock dolerite. Karoo Supergroup.
20.00	Grey, highly weathered, medium hard rock sandstone.Vryheid Formation.
25.00	Grey, highly weathered, soft rock shale. Vryheid Formation.
27.00	Black, highly Weathered, soft rock shaly coal. Vryheid Formation.
28.00	Grey, highly weathered, medium hard rock sandstone. Vryheid Formation.
29.00	Black, highly weathered, soft rock coal. Vryheid Formation.
31.00	

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

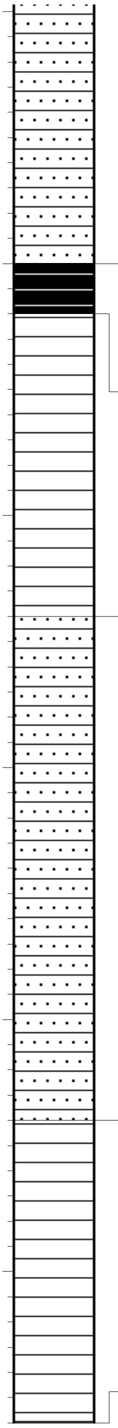
HOLE No: K-BH24
Sheet 2 of 2

JOB NUMBER: MAK152.08.23

Sample Recovery (%)	Air Loss (%)	Penetration Rate (min/metre)
100	0	2.20
100	0	1.38
100	0	1.12
100	0	0.22
100	0	1.01
100	0	1.20
100	0	0.32
100	0	1.28
100	0	1.19
100	0	1.01
100	0	1.28
100	0	1.20
100	0	1.16
100	0	1.33
100	0	1.42
100	0	1.30
100	0	1.32
100	0	1.39
100	0	1.17
100	0	1.28
100	0	1.28
100	0	1.21
100	0	1.21
100	0	2.01
100	0	1.25
100	0	1.43
100	0	1.26
100	0	1.34

REDUCED LEVEL: 1585, 1580, 1575, 1570, 1565, 1560

Depth: 35, 40, 45, 50, 55, 60



Grey, highly weathered, medium hard rock sandstone. Vryheid Formation.

40.00

Black, moderately weathered, soft rock coal. Vryheid Formation.

41.00

Grey, highly weathered, soft rock shale. Vryheid Formation.

47.00

Grey, highly weathered, medium hard rock sandstone. Vryheid Formation.

57.00

Grey, moderately weathered, soft rock mudrock. Vryheid Formation.

63.00

NOTES

1) Water strike at 23m.
2) Groundwater table after twenty-four hours: 12m.
3) Borehole terminated at 63m due to required depth.

CONTRACTOR : BAV Consulting
MACHINE : Thor 5000 Drill Rig
DRILLED BY : Zakhele Zaca
PROFILED BY : Andries Vukeya

INCLINATION : Vertical
DIAM : 165 mm
DATE : 14/09/2023
DATE : 14/09/2023

ELEVATION : 1623 m
X-COORD : 29.45520´°E
Y-COORD : 26.09635´°S

HOLE No: K-BH24

TYPE SET BY : Andries Vukeya
SETUP FILE : STANDARD.SET

DATE : 06/12/2023 14:11
TEXT : ..ssionBoreholes\KBH24.TXT

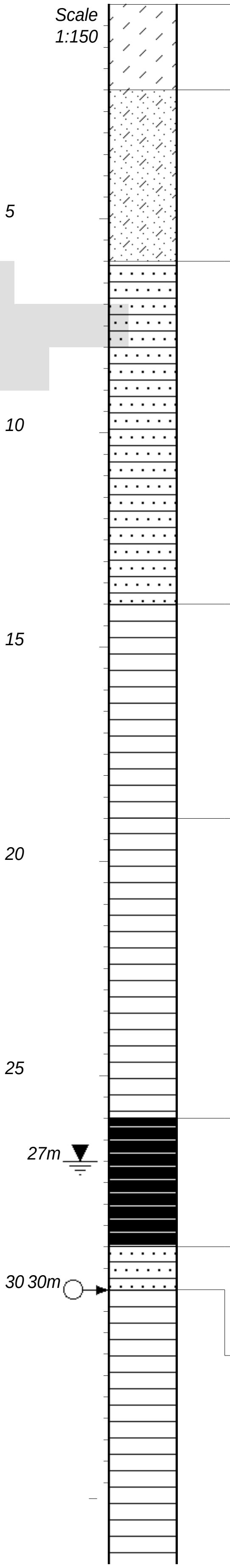
MAKHUMA CONSULTING

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: K-BH25
Sheet 1 of 2

JOB NUMBER: MAK152.08.23

REDUCED LEVEL	Sample Recovery (%)	Air Loss (%)	Penetration Rate (min/metre)
	100	0	0.13
	100	0	0.42
1610	100	0	3.35
	100	0	3.21
	100	0	6.41
	100	0	4.23
	100	0	9.55
1605	100	0	16.27
	100	0	11.57
	100	0	1.03
	100	0	1.25
	100	0	1.13
1600	100	0	2.55
	100	0	2.30
	100	0	2.14
	100	0	1.23
	100	0	1.05
1595	100	0	1.17
	100	0	1.25
	100	0	1.05
	100	0	1.11
	100	0	0.53
1590	100	0	1.23
	100	0	1.32
	100	0	1.05
	100	0	1.34
	100	0	0.56
1585	100		1.43
	100	0	1.23
	100	0	1.36
	100	0	3.23
	100	0	1.09
1580	100	0	2.55
	100	0	2.05
	100	0	1.23



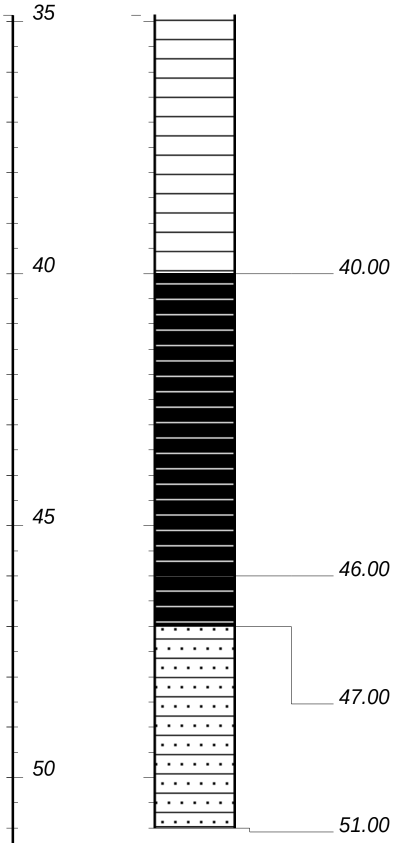
0.00	Brown clayey sand. Transported soil.
2.00	Kakhi clayey sand. Residual soil.
6.00	Brown, moderately weathered, medium hard rock sandstone. Vryheid Formation.
14.00	Black, highly weathered, soft rock carbonecous shale. Vryheid Formation.
19.00	Grey, highly weathered, soft rock shale. Vryheid Formation.
26.00	Black, moderately weathered, soft rock coal. Vryheid Formation.
29.00	Grey, highly weathered, medium hard rock sandstone. Vryheid Formation.
30.00	Grey, moderately weathered, soft rock, mudrock. Vryheid Formation..

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: K-BH25
Sheet 2 of 2

JOB NUMBER: MAK152.08.23

REDUCED LEVEL	Sample Recovery (%)	Air Loss (%)	Penetration Rate (min/metre)
	100	0	1.13
	100	0	1.19
1575	100	0	1.11
	100	0	1.15
	100	0	1.11
	100	0	1.05
	100	0	0.40
1570	100	0	0.39
	100	0	0.47
	100	0	0.34
	100	0	0.48
	100	0	1.03
1565	100	0	1.37
	100	0	1.17
	100	0	1.28
	100	0	1.20



40.00 – 46.00: Black, moderately weathered, soft rock coal. Vryheid Formation.

46.00 – 47.00: Black, moderately weathered, soft rock shaly coal. Vryheid Formation.

47.00 – 51.00: Highly weathered, medium hard rock sandstone. Vryheid Formation.

NOTES

1) Water strike at 30m.

2) Groundwater table after twenty-four hours: 27m.

3) Borehole terminated at 51m due to drilling difficulties.

CONTRACTOR : BAV Consulting
MACHINE : Thor 5000 Drill Rig
DRILLED BY : Zakhele Zaca
PROFILED BY : Andries Vukeya

INCLINATION : Vertical
DIAM : 165 mm
DATE : 12/09/2023
DATE : 12/09/2023

ELEVATION : 1613 m
X-COORD : 29.45604´°E
Y-COORD : 26.09251´°S

HOLE No: K-BH25

TYPE SET BY : Andries Vukeya
SETUP FILE : STANDARD.SET
DATE : 06/12/2023 14:12
TEXT : ..ssionBoreholes\KBH25.TXT

APPENDIX F: ROTARY CORE DRILLING LOGS

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

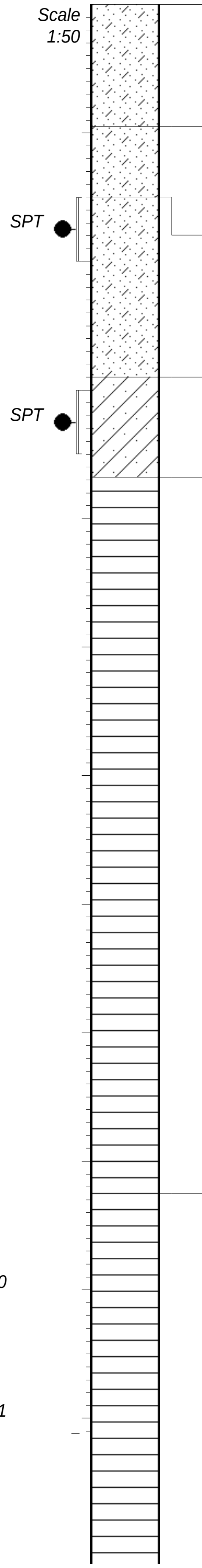
HOLE No: BH-01
Sheet 1 of 2

JOB NUMBER: MAK1520823

Scale 1:50

Drilling Method & Size	Mat. Recovery (%)	Core Recovery (%)	RQD (%)	Fracture Frequency (j/m)	Test or Sample	Value
NXC	62	62		-		
NXC	57	57		-		
NXC	100	100			SPT	n=77
NXC	75	75		-		
NWD-4	100	100	46	-	SPT	n=12
NWD-4	75	75	100	-		
NWD-4	100	100	84	-		
NWD-4	100	100	60	-		
NWD-4	87	87	87	-		
NWD-4	100	100	53	-		
NWD-4	80	80	<25	-		

REDUCED LEVEL	Depth
1617	1
1616	2
1615	3
1614	4
1613	5
1612	6
1611	7
1610	8
1609	9
1608	10
1607	11



0.00	Dark grey, clayey sand. **Transported soil**.
0.95	Grey, clayey sand with ferricrete gravel. **Residual soil**.
1.50	Grey blotched brown and black, clayey sand with minor ferricrete. **Residual soil**.
2.90	Olive grey, sandy clay. **Residual soil**.
3.68	Light grey, moderately weathered, coarse-grained, jointed and medium to thickly bedded, medium hardrock, siltstone. **Vryheid Formation**. Closely to medium fractured, filled with clayey sand, dipping at 10°.
9.25	Dark grey, highly weathered, fine-grained, thinly layered, highly fractured, soft rock, carbonaceous shale. **Vryheid Formation**. Fractures are closed, smooth, dipping at 10°.

MAKHUMA CONSULTING

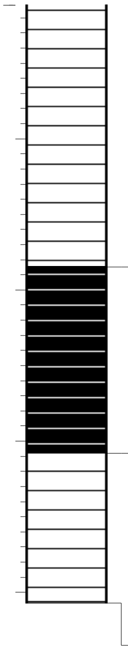
ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION: KOMATI POWER STATION

HOLE No: BH-01
Sheet 2 of 2

JOB NUMBER: MAK1520823

REDUCED LEVEL	Drilling Method & Size	Mat. Recovery (%)	Core Recovery (%)	RQD (%)	Fracture Frequency (j/m)	Test or Sample	Value
1606					-		
	NWD-4	100	100	<25	-		
1605					-		
1604	NWD-4	83	83	<25			
1603	NWD-4	75	75	<25	-		

Depth (m): 12, 13, 14, 15



12.85

Black, highly weathered, thinly layered, highly fractured, very soft rock, shaly coal Vryheid Formation**.**

14.08

Dark grey, highly weathered, very thinly layered, highly fractured, soft rock, carbonaceous shale. **Vryheid Formation**.

15.07

NOTES

1) Sh = Shelby sample.
2) Ref = Refusal.
3) Disturbed SPT sample taken at 1.50--2.00 m.
4) Disturbed SPT sample taken at 3.00--3.50 m.
5) End of hole at 15.07 m.

CONTRACTOR : BAV Consulting Pty Ltd
MACHINE : ROCKDRILL TRD-300
DRILLED BY : Philip Mahlangu
PROFILED BY : Hudson Mabelane Pr.Sci.Nat

INCLINATION : Vertical
DIAM : NWD-4 & NXC
DATE : 18/09/2023
DATE : 17/11/2023

ELEVATION : 1618m
X-COORD : 26.09088°S
Y-COORD : 29.46033°E

TYPE SET BY : Fumani Vukeya Cand.Sci.Nat
SETUP FILE : STANDARD.SET

DATE : 06/12/2023 14:22
TEXT : ..eholes\Boreholes\BH1.TXT

HOLE No: BH-01
Komati Power Station

MAKHUMA CONSULTING

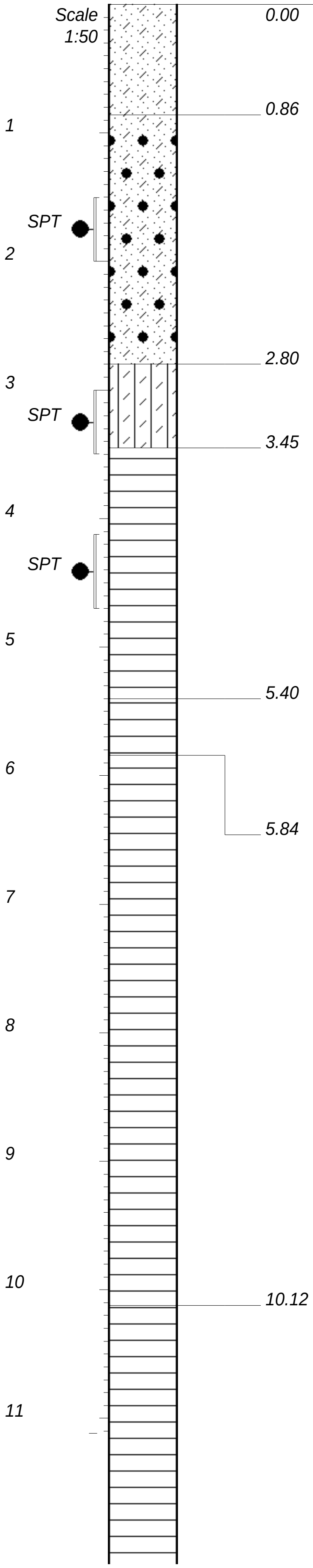
ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: BH-02
Sheet 1 of 2

JOB NUMBER: MAK1520823

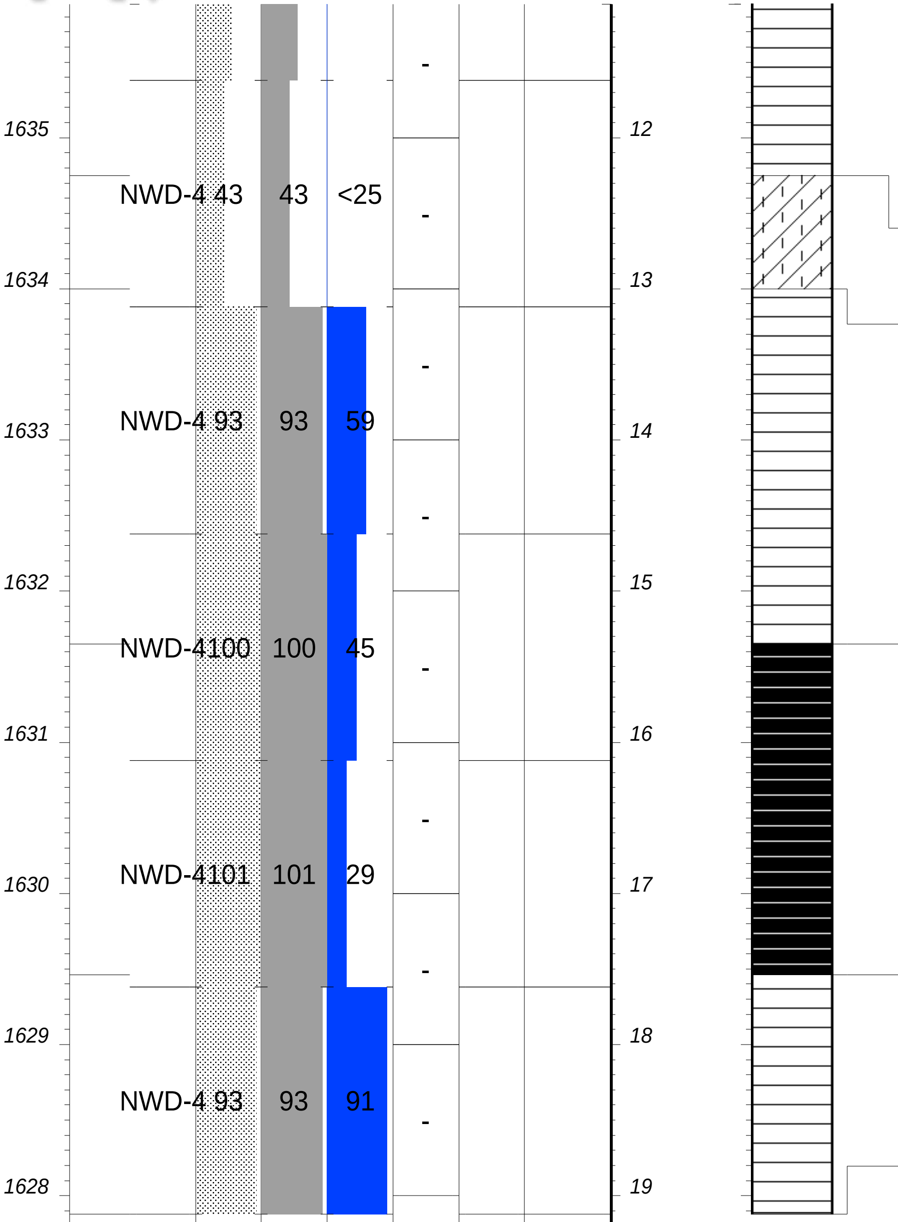
REDUCED LEVEL
1646
1645
1644
1643
1642
1641
1640
1639
1638
1637
1636

Drilling Method & Size	*Mat. Recovery (%)*	*Core Recovery (%)*	*RQD (%)*	*Fracture Frequency (j/m)*	*Test or Sample*	*Value*
NXC	87	87	<25	-		
NXC	56	56	<25	-		
SPT	74	74	<25	-	SPT	n=16
NXC	92	92	<25	-		
SPT	100	100	<25	-	SPT	n=17
NWD-4	132	132	<25	-		
SPT	34	34	<25	-	SPT	Ref
NWD-4	81	81	<25	-		
NWD-4	89	89	60	-		
NWD-4	100	100	64	-		
NWD-4	100	100	<25	-		
NWD-4	55	55	<25	-		



0.00	Dark grey, clayey sand. **Transported soil**.
0.86	Yellowish brown blotched grey, clayey sand with ferricrete gravel. **Residual soil**.
2.80	Olive grey mottled black, clayey silt. **Residual soil**.
3.45	Light grey, highly weathered, fine-grained, intensely laminated, soft rock, siltstone. **Vryheid Formation**.
5.40	Grey blotched red, highly weathered, fine-grained, fractured, very soft rock, Siltstone. **Vryheid Formation**.
5.84	Light grey speckled black, moderately weathered, fine to medium grained, jointed and layered, medium hardrock, siltstone. **Vryheid Formation**.
10.12	

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION



Drilling Method & Size	Mat. Recovery (%)	Core Recovery (%)	RQD (%)	Fracture Frequency (j/m)	Test or Sample	Value
NWD-4	43	43	<25	-		
NWD-4	93	93	59	-		
NWD-4	100	100	45	-		
NWD-4	101	101	29	-		
NWD-4	93	93	91	-		

REDUCED LEVEL

Light grey blotched yellowish brown, highly weathered, fine-grained, intensely laminated and layered, soft rock, siltstone. **Vryheid Formation**.

12.25

Black, silty clay/clayey silt. **Peat**.

13.00

Light grey speckled black, moderately weathered, fine to medium grained, layered, medium hardrock, siltstone. **Vryheid Formation**.

15.35

Dark grey to black, moderately weathered, fine to medium grained, intensely laminated and layered, very soft to soft rock, carbonaceous shale interlayed with coal. **Vryheid Formation**.

17.54

Grey, moderately to sligthly weathered, fine-grained, layered, medium hardrock, siltstone. **Vryheid Formation**.

19.12

NOTES

1) Sh = Shelby sample.
2) Ref = Refusal.
3) Disturbed SPT sample taken at 1.50--2.00 m.
4) Disturbed SPT sample taken at 3.00--3.50 m.
5) Disturbed SPT sample refused at 4.12--4.70 m.
6) End of hole at 19.12 m.

CONTRACTOR : BAV Consulting Pty Ltd
MACHINE : ROCKDRILL TRD-300
DRILLED BY : Philip Mahlangu
PROFILED BY : Hudson Mabelane Pr.Sci.Nat

TYPE SET BY : Fumani Vukeya Cand.Sci.Nat
SETUP FILE : STANDARD.SET

INCLINATION : Vertical
DIAM : NWD-4 & NXC
DATE : 04/10/2023
DATE : 17/11/2023

DATE : 06/12/2023 14:23
TEXT : ..eholes\Boreholes\BH2.TXT

ELEVATION : 1647m
X-COORD : 26.09243°S
Y-COORD : 29.45800°E

HOLE No: BH-02
Komati Power Station

MAKHUMA CONSULTING

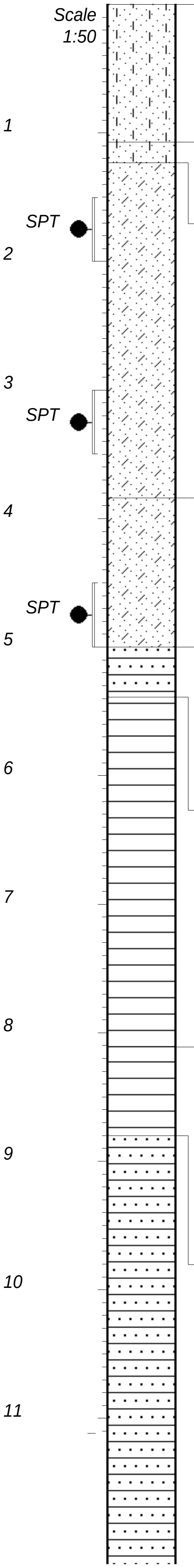
ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION: KOMATI POWER STATION

HOLE No: BH-03
Sheet 1 of 2

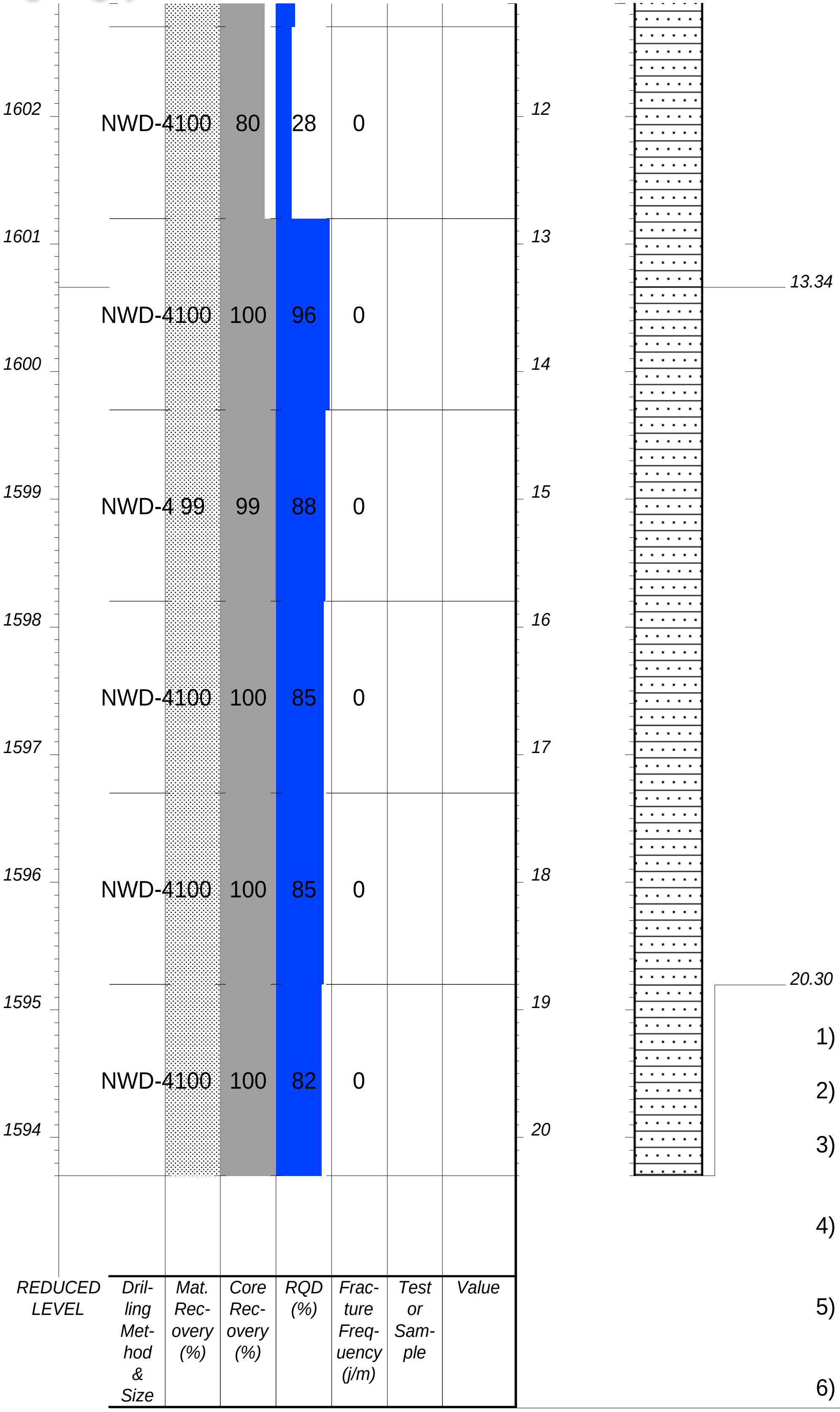
JOB NUMBER: MAK1520823

REDUCED LEVEL	Drilling Method & Size	Mat. Recovery (%)	Core Recovery (%)	RQD (%)	Fracture Frequency (j/m)	Test or Sample	Value
	NXC	65	65	<25	0		
	NXC	110	110	<25	0		
	SPT	100	100	<25	0	SPT	n=13
	NXC	15	15	<25	0		
	SPT	100	100	<25	0	SPT	n=11
	NWD-4	88	88	<25	0		
	NWD-4	88	88	<25	0		
	SPT	100	100	<25	0	SPT	n=26
	NWD-4	100	73	<25	0		
	NWD-4	107	<25	<25	0		
	NWD-4	107	91	31	0		
	NWD-4	85	51	<25	0		
	NWD-4	107	80	34	0		

1613
1612
1611
1610
1609
1608
1607
1606
1605
1604
1603



0.00	Dark grey, silty sand. **Transported soil**.
1.07	Brown, silty sand. **Transported soil**.
1.23	Grey blotched orange, clayey sand. **Residual soil**.
3.84	Dark grey blotched orange, clayey sand. **Residual soil**.
5.00	Grey, moderate to highly weathered, medium grained, jointed and layered, medium hardrock, sandstone. **Vryheid Formation**.
5.39	Dark grey, moderately weathered, fine to grained, soft rock, carbonaceous shale. **Vryheid Formation**.
8.11	Dark grey to black, moderately weathered, fine grained, intensely laminated and layered, soft rock, cabonaceous shale interlayed with fine siltstone. **Vryheid Formation**.
8.80	Grey, moderately weathered, coarse grained, layered, medium hardrock, sandstone. **Vryheid Formation**.



REDUCED LEVEL	Drilling Method & Size	Mat. Recovery (%)	Core Recovery (%)	RQD (%)	Fracture Frequency (j/m)	Test or Sample	Value
	NWD-4100		80	28	0		
	NWD-4100		100	96	0		
	NWD-4 99		99	88	0		
	NWD-4100		100	85	0		
	NWD-4100		100	85	0		
	NWD-4100		100	82	0		

13.34

Dark grey, fresh, coarse grained, layered, medium hardrock, sandstone. **Vryheid Formation**.

20.30

NOTES

1) Sh = Shelby sample.
2) Ref = Refusal.
3) Disturbed SPT sample taken at 1.50--2.00 m.
4) Disturbed SPT sample taken at 3.00--3.50 m.
5) Disturbed SPT sample taken at 4.50--5.00 m.
6) End of hole at 20.30 m.

CONTRACTOR : BAV Consulting Pty Ltd
MACHINE : ROCKDRILL TRD-300
DRILLED BY : Philip Mahlangu
PROFILED BY : Andries Vukeya Cand.Sci.Nat

TYPE SET BY : Andries Vukeya Cand.Sci.Nat
SETUP FILE : STANDARD.SET

INCLINATION : Vertical
DIAM : NWD-4 & NXC
DATE : 02/10/2023
DATE : 17/11/2023

DATE : 06/12/2023 14:24
TEXT : ..eholes\Boreholes\BH3.TXT

ELEVATION : 1614m
X-COORD : 26.09292°S
Y-COORD : 29.45524°E

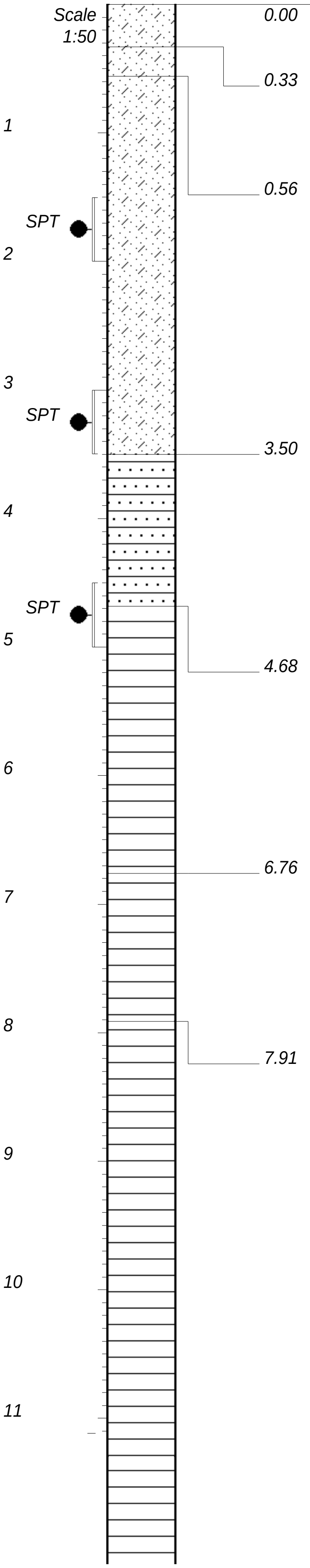
HOLE No: BH-03
Komati Power Station

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: BH-04
Sheet 1 of 2

JOB NUMBER: MAK1520823

REDUCED LEVEL	Drilling Method & Size	Mat. Recovery (%)	Core Recovery (%)	RQD (%)	Fracture Frequency (j/m)	Test or Sample	Value
	NXC	79	79		-		
1613	NXC	88	88		-		
	NXC	100	100			SPT	n=11
1612	NXC	85	85		-		
1611	NWD-4	60	60		-	SPT	n=10
1610	NWD-4	112	112				
	NWD-4	125	125		-		
	NWD-4	36	36			SPT	Ref
1609	NWD-4	100	100		-		
1608	NWD-4	95	95		-		
1607	NWD-4	106	106		-		
1606					-		
1605	NWD-4	106	106	<25	-		
1604	NWD-4	103	103	<25	-		
1603							



Depth (m)	Description
0.00 – 0.33	Dark grey, clayey sand. **Transported soil**.
0.33 – 0.56	Yellowish orange, clayey sand with ferricrete. **Transported soil**.
0.56 – 3.50	Grey blotched orange and black, clayey sand, **Residual soil**.
3.50 – 4.68	Olive grey blotched orange, highly to completely weathered, fine to medium grained, thinly layered and highly fractured, very soft rock, sandstone. **Vryheid Formation**.
4.68 – 6.76	Grey stained orange, highly weathered, fine-grained, thinly layered, soft rock, siltstone. **Vryheid Formation**.
6.76 – 7.91	Yellowish orange speckled grey, highly weathered, fine-grained, thinly layered, soft rock, siltstone. **Vryheid Formation**. Fractures are closed, dipping at 30°.
7.91 –	Grey speckled black, highly weathered, fine-grained, thinly layered, soft rock, micaceous siltstone. **Vryheid Formation**.

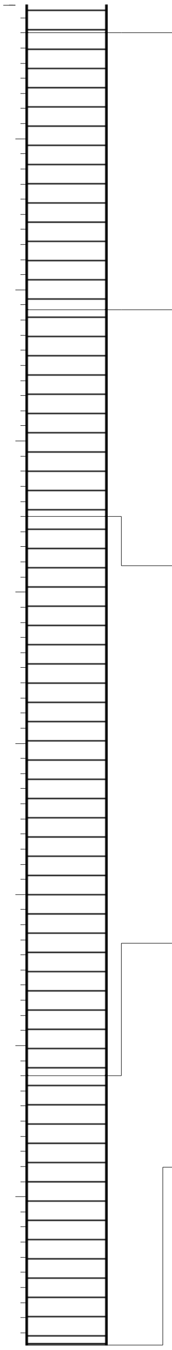
ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION: KOMATI POWER STATION

HOLE No: BH-04
Sheet 2 of 2

JOB NUMBER: MAK1520823

REDUCED LEVEL	Dril-ling Met-hod & Size	Mat. Rec-overy (%)	Core Rec-overy (%)	RQD (%)	Frac-ture Freq-uency (j/m)	Test or Sam-ple	Value
1602	NWD-4	100	100	25	- -		
1601 1600	NWD-4	100	100	93	- -		
1599	NWD-4	100	100	97	- -		
1598 1597	NWD-4	101	101	70	- -		
1596	NWD-4	100	100	73	- -		
1595 1594	NWD-4	104	104	101	- -		

Depth scale: 12, 13, 14, 15, 16, 17, 18, 19, 20



11.30

Orangey brown streaked grey, highly weathered, fine-grained, thinly laminated and layered, soft rock, siltstone. **Vryheid Formation**.

13.13

Light grey streaked black, moderately to highly weathered, fine-grained, thinly layered, fractured along bedding plain, soft to medium hardrock, siltstone. **Vryheid Formation**.

14.50

Dark grey streaked black, moderately weathered, fine-grained, thinly layered, medium hardrock, siltstone with streaks of carbonaceous shale. **Vryheid Formation**. Fractures are closed, rough, stained with shaly coal, dipping at 30°.

18.20

Orangey grey, moderately weathered, fine-grained, thinly layered, medium hardrock, siltstone. **Vryheid Formation**. Fractures are closed, narrow, stained, dipping at 30°.

19.98

NOTES

1) Sh = Shelby sample.
2) Ref = Refusal.
3) Disturbed SPT sample taken at 1.50--2.00 m.
4) Disturbed SPT sample taken at 3.00--3.50 m.
5) Disturbed SPT sample refused at 4.50--5.00 m.
6) End of hole at 19.98 m.

CONTRACTOR : BAV Consulting Pty Ltd
MACHINE : ROCKDRILL TRD-300
DRILLED BY : Philip Mahlangu
PROFILED BY : Hudson Mabelane Pr.Sci.Nat

INCLINATION : Vertical
DIAM : NWD-4 & NXC
DATE : 04/10/2023
DATE : 17/11/2023

ELEVATION : 1614m
X-COORD : 26.09311°S
Y-COORD : 29.45172°E

TYPE SET BY : Fumani Vukeya Cand.Sci.Nat
SETUP FILE : STANDARD.SET

DATE : 06/12/2023 14:24
TEXT : ..eholes\Boreholes\BH4.TXT

HOLE No: BH-04
Komati Power Station

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

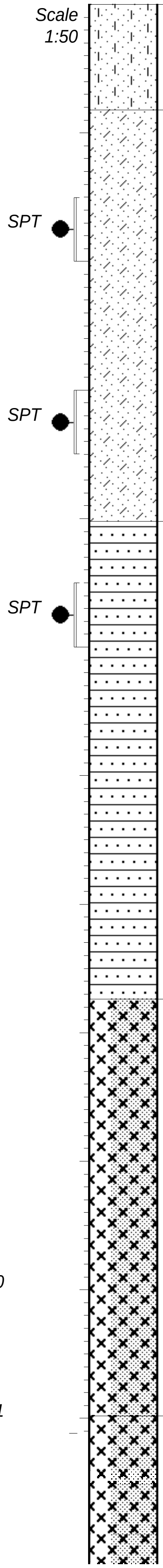
HOLE No: BH-05
Sheet 1 of 2

JOB NUMBER: MAK1520823

Drilling Method & Size	Mat. Recovery (%)	Core Recovery (%)	RQD (%)	Fracture Frequency (j/m)	Test or Sample	Value
NXC	44	0	<25	0		
NXC	74	0	<25	0		
SPT	100	0	<25	0	SPT	n=14
NXC	95	0	<25	0		
SPT	100	0	<25	0	SPT	n=30
NW-D4	90	0	<25	0		
SPT	100	0	<25	0	SPT	n=24
NW-D4	77	0	<25	0		
NW-D4	93	0	<25	0		
NW-D4	100	0	<25	0		
NW-D4	100	53	<25	0		
NW-	104	44	<25	0		

REDUCED LEVEL: 1626, 1625, 1624, 1623, 1622, 1621, 1620, 1619, 1618, 1617, 1616

Scale 1:50

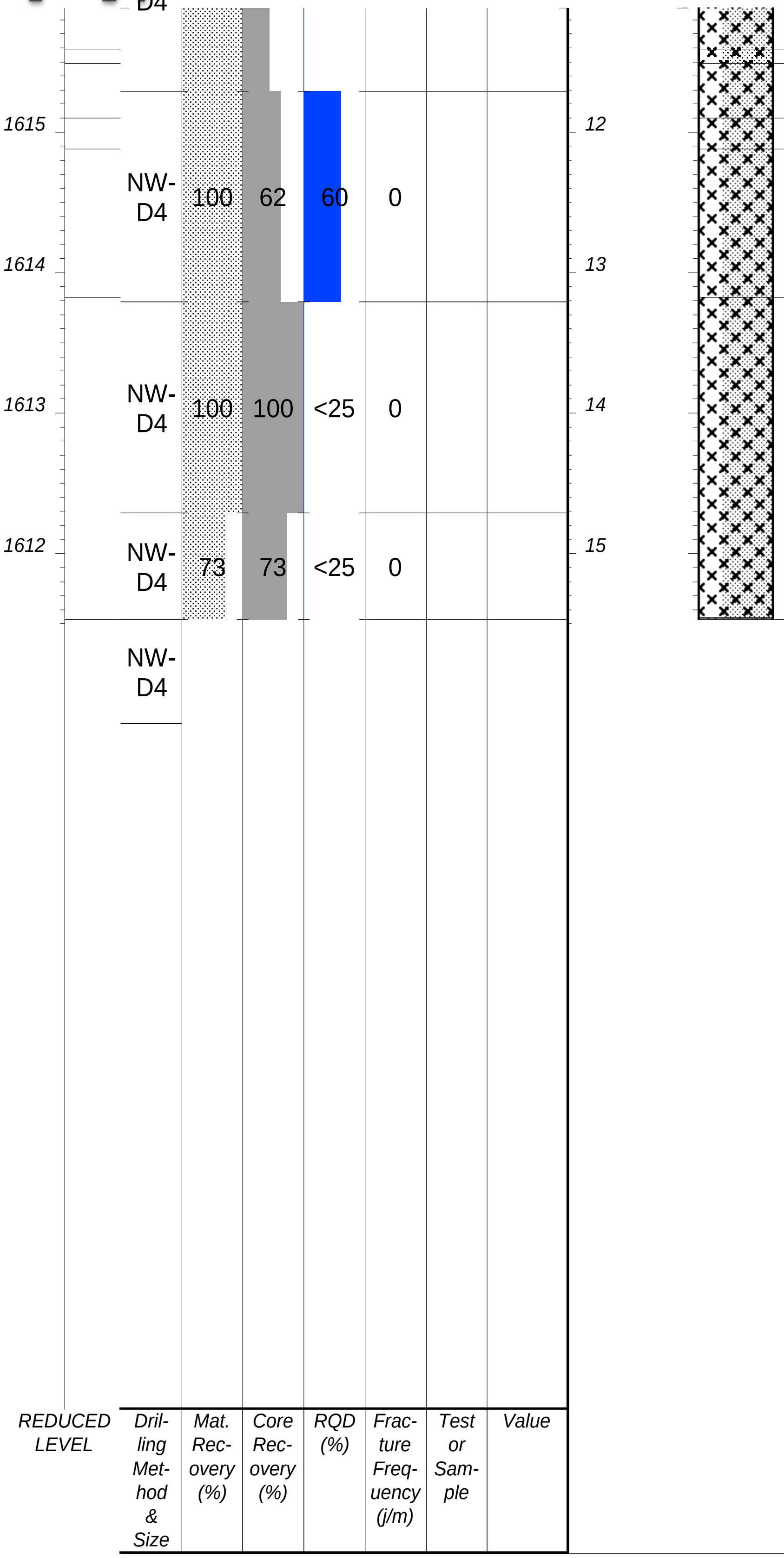


0.00	Dark brown, silty sand. **Transported soil**.
0.82	Brown blotched grey, clayey sand. **Residual soil**.
4.02	Kakhi, highly weathered, soft rock, sandstone. **Residual sandstone**.
7.74	Brownish grey, highy weathered, coarse grained, hard rock, dolerite.
10.98	

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: BH-05
Sheet 2 of 2

JOB NUMBER: MAK1520823



REDUCED LEVEL	Drilling Method & Size	Mat. Recovery (%)	Core Recovery (%)	RQD (%)	Fracture Frequency (j/m)	Test or Sample	Value
	D4						
1615	NW-D4	100	62	60	0		
1614 / 1613	NW-D4	100	100	<25	0		
1612	NW-D4	73	73	<25	0		
	NW-D4						

Depth (m)	Description
11.41	Grey, moderately weathered, coarse grained, hard rock, dolerite.
11.51	Brownish grey, highy weathered, coarse grained, hard rock, dolerite.
11.90	Grey, moderately weathered, coarse grained, hard rock, dolerite.
12.12	Brownish grey, highy weathered, coarse grained, hard rock, dolerite.
13.18	Grey, moderately weathered, coarse grained, hard rock, dolerite.
15.47	Brownish grey, highy weathered, coarse grained, hard rock, dolerite.

NOTES

1) No water strike encountered.
2) Sh = Shelby sample.
3) Ref = Refusal.
4) Disturbed SPT sample taken at 1.50--2.00 m.
5) Disturbed SPT sample taken at 3.00--3.50 m.
6) Disturbed SPT sample taken at 4.50--5.00 m.
7) End of hole at 15.26 m.

CONTRACTOR : BAV Consulting Pty Ltd
MACHINE : ROCKDRILL TRD-300
DRILLED BY : Philip Mahlangu
PROFILED BY : Andries Vukeya Cand.Sci.Nat

INCLINATION : Vertical
DIAM : NWD-4 & NXC
DATE : 09/10/2023
DATE : 02/12/2023

ELEVATION : 1627m
X-COORD : 26.09509°S
Y-COORD : 29.45090°E

TYPE SET BY : Andries Vukeya Cand.Sci.Nat
SETUP FILE : STANDARD.SET

DATE : 06/12/2023 14:25
TEXT : ..eholes\Boreholes\BH5.TXT

HOLE No: BH-05
Komati Power Station

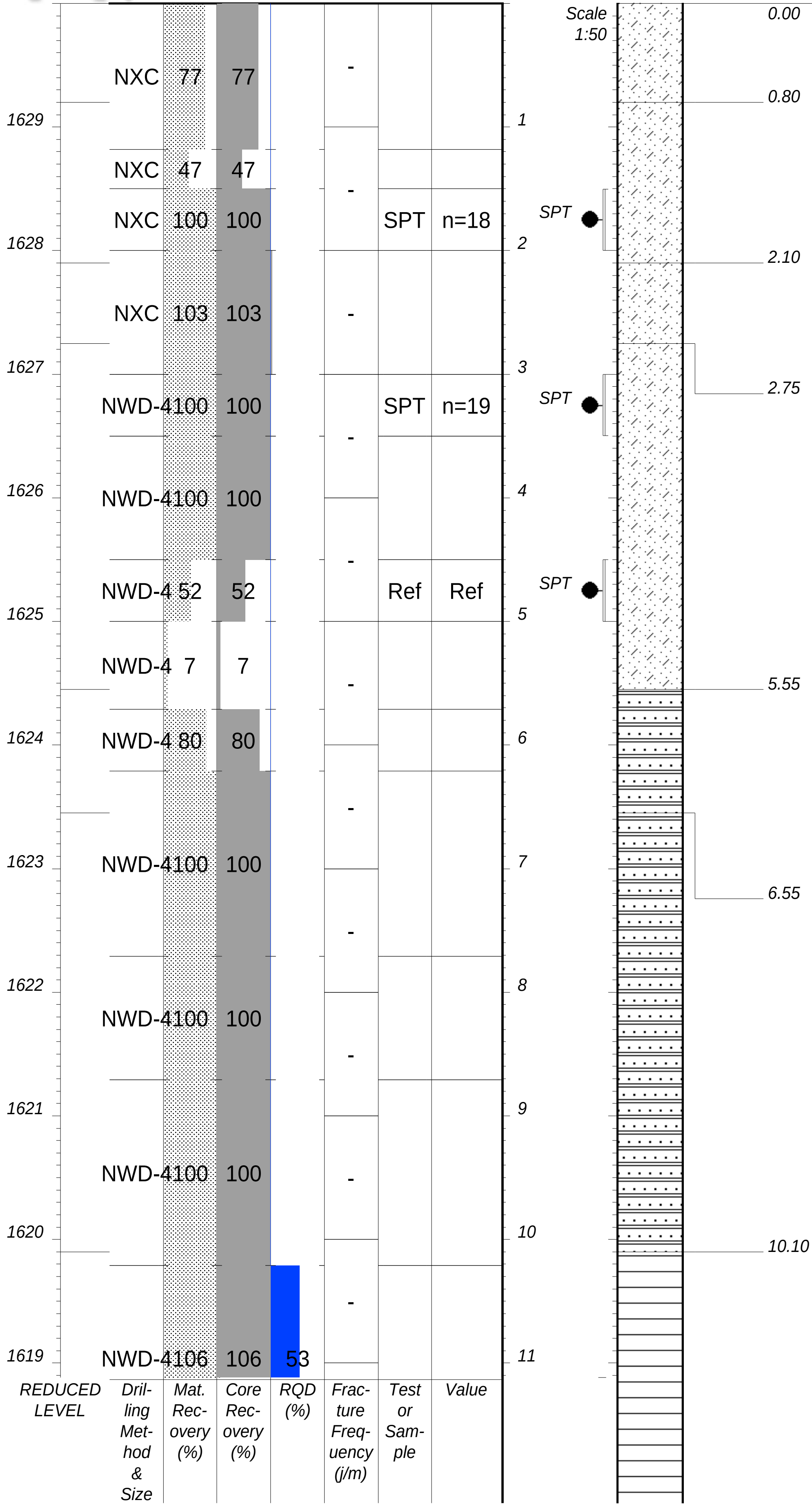
MAKHUMA CONSULTING

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: BH-06
Sheet 1 of 2

JOB NUMBER: MAK1520823

Dril-ling Met-hod & Size	Mat. Rec-overy (%)	Core Rec-overy (%)	RQD (%)	Frac-ture Freq-uency (j/m)	Test or Sam-ple	Value
NXC	77	77		-		
NXC	47	47		-		
NXC	100	100			SPT	n=18
NXC	103	103		-		
NWD-4	100	100		-	SPT	n=19
NWD-4	100	100				
NWD-4	52	52		-	Ref	Ref
NWD-4	7	7		-		
NWD-4	80	80				
NWD-4	100	100		-		
NWD-4	100	100		-		
NWD-4	100	100		-		
NWD-4	106	106	53	-		



Depth (m)	
0.00	Dark grey, clayey sand. **Transported soil**.
0.80	Yellowish grey blotched red and black, clayey sand with ferricrete gravel. **Residual soil**.
2.10	Reddish brown blotched grey and black, clayey sand with abundant ferricrete gravel. **Residual soil**.
2.75	Grey blotched red, clayey sand. **Residual siltstone**.
5.55	Light yellowish brown blotched grey, highly weathered, very thinly layered, highly fractured, fine-grained, soft rock, sandstone interlayered with siltstone. **Vryheid Formation**.
6.55	Yellowish brown, moderately to highly weathered, very thinly layered, fine-grained, soft rock, sandstone interlayered with siltstone. **Vryheid Formation**.
10.10	

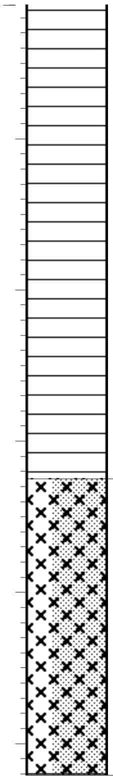
ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: BH-06
Sheet 2 of 2

JOB NUMBER: MAK1520823

REDUCED LEVEL	Depth
1618	12
1617	13
1616	14
1615	15
1614	16

Drilling Method & Size	Mat. Recovery (%)	Core Recovery (%)	RQD (%)	Fracture Frequency (j/m)	Test or Sample	Value
				-		
NWD-4	97	97	<25	- -		
NWD-4	103	103	30	- -		
NWD-4	91	91	<25	-		



Dark grey, highly weathered, thinly layered, fine-grained, soft rock, siltstone. **Vryheid Formation**.

14.25

Dark grey, sligthly weathered, thinly layered, fine to medium grained, hard rock, dolerite. **Vryheid Formation**.

16.21

NOTES

1) Sh = Shelby sample.
2) Ref = Refusal.
3) Disturbed SPT sample taken at 1.50--2.00 m.
4) Disturbed SPT sample taken at 3.00--3.50 m.
5) Disturbed SPT sample refused at 4.50--5.00 m.
6) End of hole at 16.21 m.

CONTRACTOR : BAV Consulting Pty Ltd
MACHINE : ROCKDRILL TRD-300
DRILLED BY : Philip Mahlangu
PROFILED BY : Hudson Mabelane Pr.Sci.Nat

INCLINATION : Vertical
DIAM : NWD-4 & NXC
DATE : 12/10/2023
DATE : 18/11/2023

ELEVATION : 1630m
X-COORD : 26.09667°S
Y-COORD : 29.45204°E

TYPE SET BY : Fumani Vukeya Cand.Sci.Nat
SETUP FILE : STANDARD.SET

DATE : 06/12/2023 14:25
TEXT : ..eholes\Boreholes\BH6.TXT

HOLE No: BH-06
Komati Power Station

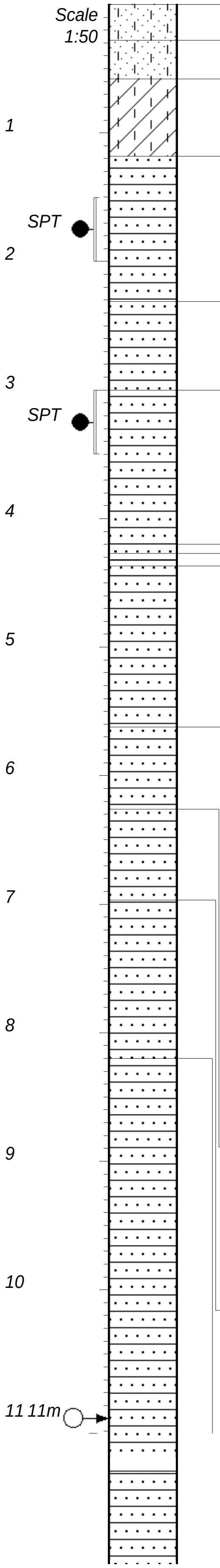
ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION: KOMATI POWER STATION

HOLE No: BH-07
Sheet 1 of 3

JOB NUMBER: MAK1520823

REDUCED LEVEL
1619
1618
1617
1616
1615
1614
1613
1612
1611
1610
1609

Drilling Method & Size	*Mat. Recovery (%)*	*Core Recovery (%)*	*RQD (%)*	*Fracture Frequency (j/m)*	*Test or Sample*	*Value*
NXC	80	0	<25	0		
NXC	135	0	<25	0		
SPT	100	0	<25	0	SPT	n=8
NXC	100	0	<25	0		
SPT	100	0	<25	0	SPT	n=17
NW-D4	115	67	27	0		
NW-D4	113	67	<25	0		
NW-D4	100	41	<25	0		
NW-D4	100	75	<25	0		
NW-D4	99	45	<25	0		
NW-D4	87	87	<25	0		



0.00

Dark brown, silty sand. **Transported soil**.

0.28

Light brown, silty sand. **Transported soil**.

0.58

Orange brown, silty clay. **Transported soil**.

1.18

Grey, highly weathered, medium hard rock, sandstone. **Residual sandstone**.

2.31

Brown, slightly cemented, soft rock, ferruginised sandstone. **Pedogenic**.

3.00

Brown, highly weathered, soft rock, sandstone. **Residual sandstone**.

4.20

Grey, highly weathered, coarse grained, medium hard rock, sandstone. **Vryheid Formation**.

4.27

Grey, highly weathered, fine to medium grained, medium hard rock, sandstone. **Vryheid Formation**.

4.37

Pinkish grey, medium to highly weathered, medium grained, medium hard rock, sandstone. **Vryheid Formation**.

5.62

Grey, highly weathered, fine to medium grained, medium hard rock, sandstone. **Vryheid Formation**.

6.26

Pinkish grey, medium to highly weathered, fine to medium grained, laminated, medium hard rock, sandstone. **Vryheid Formation**.

6.97

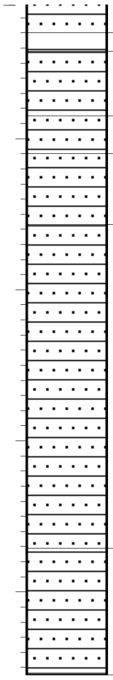
MAKHUMA CONSULTING

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION: KOMATI POWER STATION

HOLE No: BH-07
Sheet 2 of 3

JOB NUMBER: MAK1520823

REDUCED LEVEL	Drilling Method & Size	Mat. Recovery (%)	Core Recovery (%)	RQD (%)	Fracture Frequency (j/m)	Test or Sample	Value	Depth
1608	NW-D4	91	91	91	0			12
1607	NW-D4	90	90	90	0			13
1606	NW-D4	107	107	100	0			14
1605	NW-D4	86	86	86	0			15



Grey, medium to highly weathered, medium grained, laminated, medium hard rock, sandstone. **Vryheid Formation**.	8.20
Grey, medium to highly weathered, medium grained, medium hard rock, sandstone. **Vryheid Formation**.	11.30
Dark grey, slightly weathered, fine grained, soft rock, shale. **Vryheid Formation**.	11.42
Pinkish grey, moderately weathered, medium grained, laminated, medium hard rock, sandstone. **Vryheid Formation**.	11.85
Grey, highly weathered, fine grained, laminated, soft to medium hard rock, sandstone. **Vryheid Formation**.	12.10
Grey, slightly weathered, very coarse grained, medium hard rock, sandstone. **Vryheid Formation**.	12.57
Grey, slightly weathered, medium grained, laminated, medium hard rock, sandstone. **Vryheid Formation**.	14.71
Grey, slightly weathered, medium grained, laminated, medium hard rock, sandstone. **Vryheid Formation**.	15.55

NOTES

1) Possible water strike encountered at 11m.

2) Sh = Shelby sample.

3) Ref = Refusal.

4) Disturbed SPT sample taken at 1.50--2.00 m.

5) Disturbed SPT sample taken at 3.00--3.50 m.

6) End of hole at 15.55 m.

REDUCED LEVEL	Drilling Method & Size	Mat. Recovery (%)	Core Recovery (%)	RQD (%)	Fracture Frequency (j/m)	Test or Sample	Value

CONTRACTOR : BAV Consulting Pty Ltd
MACHINE : ROCKDRILL TRD-300
DRILLED BY : Philip Mahlangu
PROFILED BY : Andries Vukeya Cand.Sci.Nat

INCLINATION : Vertical
DIAM : NWD-4 & NXC
DATE : 14/10/2023
DATE : 30/11/2023

ELEVATION : 1620m
X-COORD : 26.09992°S
Y-COORD : 29.45487°E

TYPE SET BY : Andries Vukeya Cand.Sci.Nat
SETUP FILE : STANDARD.SET

DATE : 06/12/2023 14:25
TEXT : ..eholes\Boreholes\BH7.TXT

HOLE No: BH-07
Komati Power Station

MAKHUMA CONSULTING

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

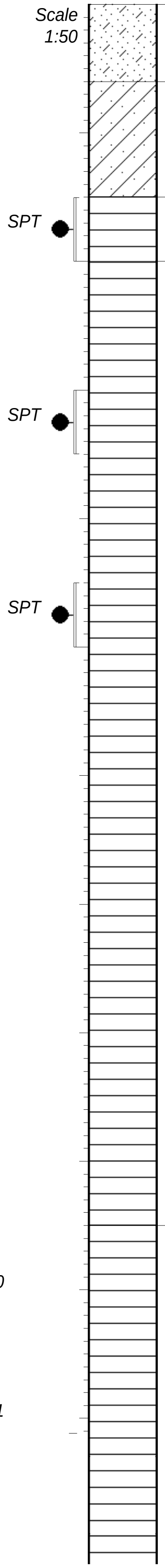
HOLE No: BH-08
Sheet 1 of 2

JOB NUMBER: MAK1520823

Drilling Method & Size	Mat. Recovery (%)	Core Recovery (%)	RQD (%)	Fracture Frequency (j/m)	Test or Sample	Value
NXC	88	88		-		
NXC	104	104		-		
NXC	68	68			SPT	Ref
NXC	87	87		-		
NWD-4	90	90		-	SPT	n=17
NWD-4	102	102				
NWD-4	100	100		-		
NWD-4	100	100			SPT	n=34
NWD-4	126	126	77	-		
NWD-4	70	70	42	-		
NWD-4	97	97	39	- -		
NWD-4	103	103	27	-		
NWD-4	87	87	10	-		

REDUCED LEVEL	Depth
1646	1
1645	2
1644	3
1643	4
1642	5
1641	6
1640	7
1639	8
1638	9
1637	10
1636	11

Scale 1:50

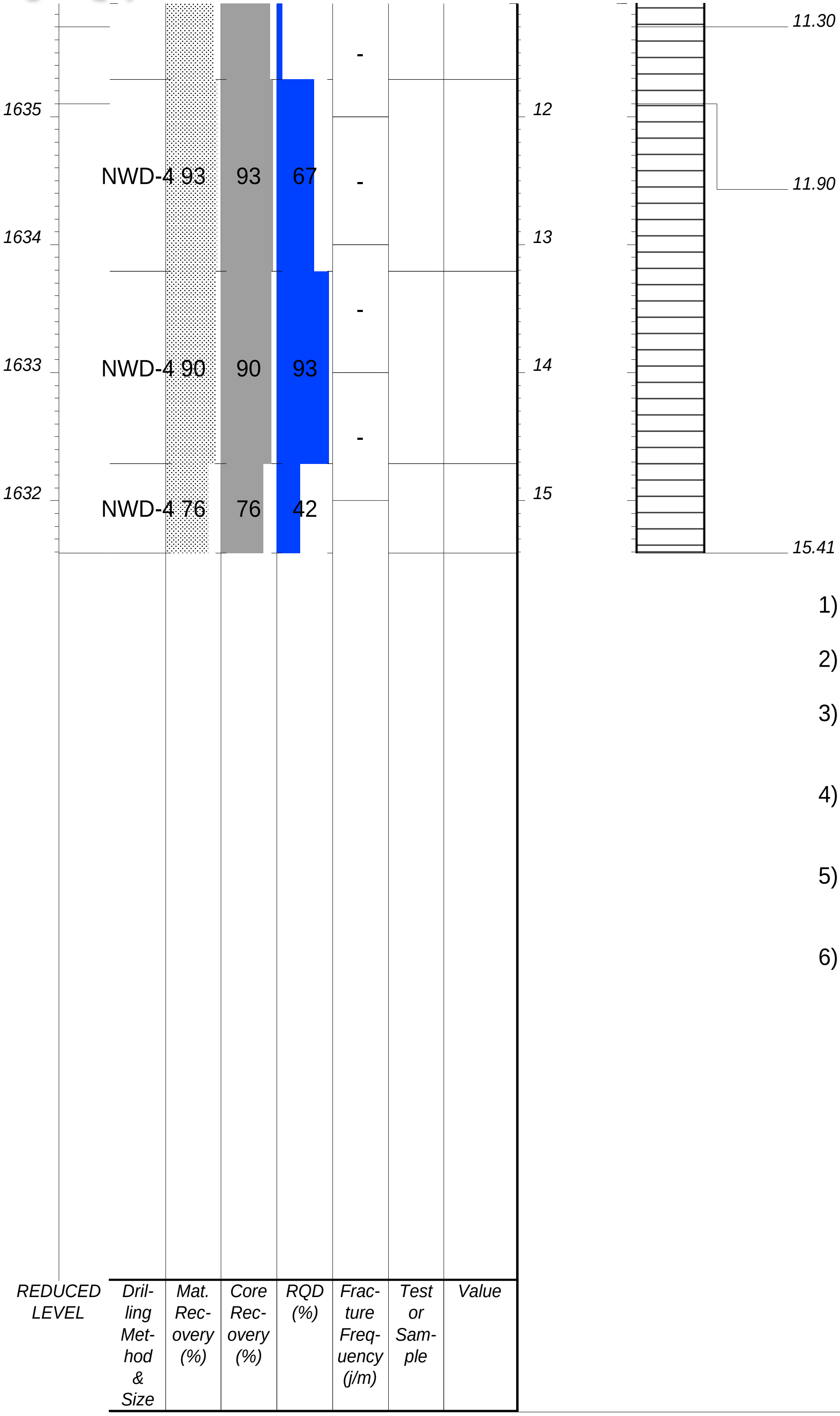


Depth	Description
0.00 – 0.60	Greyish brown, clayey sand. **Transported soil**.
0.60 – 1.50	Reddish brown, sandy clay. **Transported soil**.
1.50 – 2.00	Light yellowish grey blotched reddish brown, highly weathered, fine-grained, soft rock, mudrock**.** Vryheid Formation**.**
2.00 – 9.50	Light yellowish grey, highly weathered, intensely laminated/thinly layered, soft to medium hardrock, siltstone. **Vryheid Formation**.
9.50	Light grey mottled black, highly weathered, intensely laminated/thinly layered, soft rock, siltstone. **Vryheid Formation**.

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: BH-08
Sheet 2 of 2

JOB NUMBER: MAK1520823



Dark grey, moderately to highly weathered, fine to medium grained, thinly layered, soft rock, siltstone. **Vryheid Formation**.

Light grey, moderately weathered, thinly layered medium grained, medium hardrock, siltstone. **Vryheid Formation**.

NOTES

1) Sh = Shelby sample.

2) Ref = Refusal.

3) Disturbed SPT sample refused at 1.50--2.00 m.

4) Disturbed SPT sample taken at 3.00--3.50 m.

5) Disturbed SPT sample taken at 4.50--5.00 m.

6) End of hole at 15.41 m.

CONTRACTOR : BAV Consulting Pty Ltd
MACHINE : ROCKDRILL TRD-300
DRILLED BY : Philip Mahlangu
PROFILED BY : Hudson Mabelane Pr.Sci.Nat

INCLINATION : Vertical
DIAM : NWD-4 & NXC
DATE : 17/10/2023
DATE : 17/11/2023

ELEVATION : 1647m
X-COORD : 26.10565°S
Y-COORD : 29.45343°E

TYPE SET BY : Fumani Vukeya Cand.Sci.Nat
SETUP FILE : STANDARD.SET

DATE : 06/12/2023 14:26
TEXT : ..eholes\Boreholes\BH8.TXT

HOLE No: BH-08
Komati Power Station

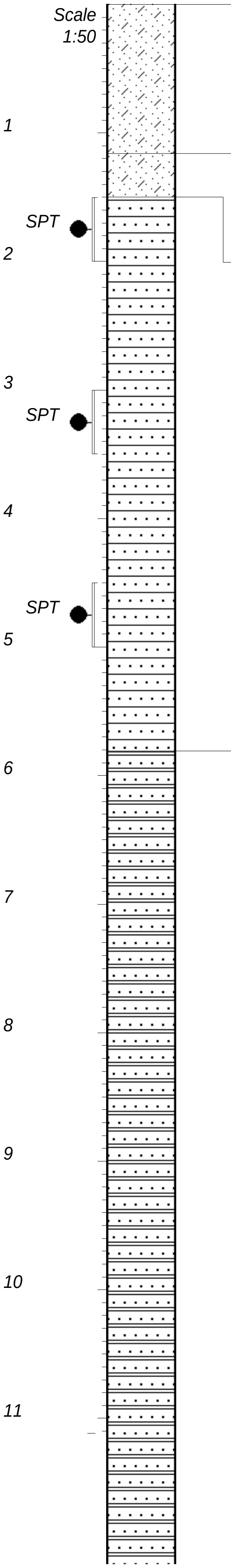
MAKHUMA CONSULTING

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: BH-09
Sheet 1 of 2

JOB NUMBER: MAK1520823

REDUCED LEVEL	*Drilling Method & Size*	*Mat. Recovery (%)*	*Core Recovery (%)*	*RQD (%)*	*Fracture Frequency (j/m)*	*Test or Sample*	*Value*
	NXC	45	0	<25	0		
1643	NXC	92	0	<25	0		
	SPT	90	0	<25	0	SPT	n=20
1642	NXC	85	0	<25	0		
1641	SPT	80	0	<25	0	SPT	n=28
1640	NW-D4	100	0	<25	0		
	SPT	70	0	<25	0	SPT	n=9
1639	NW-D4	77	0	<25	0		
1638 1637	NW-D4	63	63	40	0		
1636	NW-D4	105	105	71	0		
1635 1634	NW-D4	97	97	60	0		
1633	NW-	100	100	68	0		



0.00

Dark brown, clayey sand. **Transported soil**.

1.16

Reddish brown mottled black, clayey sand with minor ferricerete. **Residual soil**.

1.50

Grey, highly weathered, soft rock, sandstone. **Residual sandstone**.

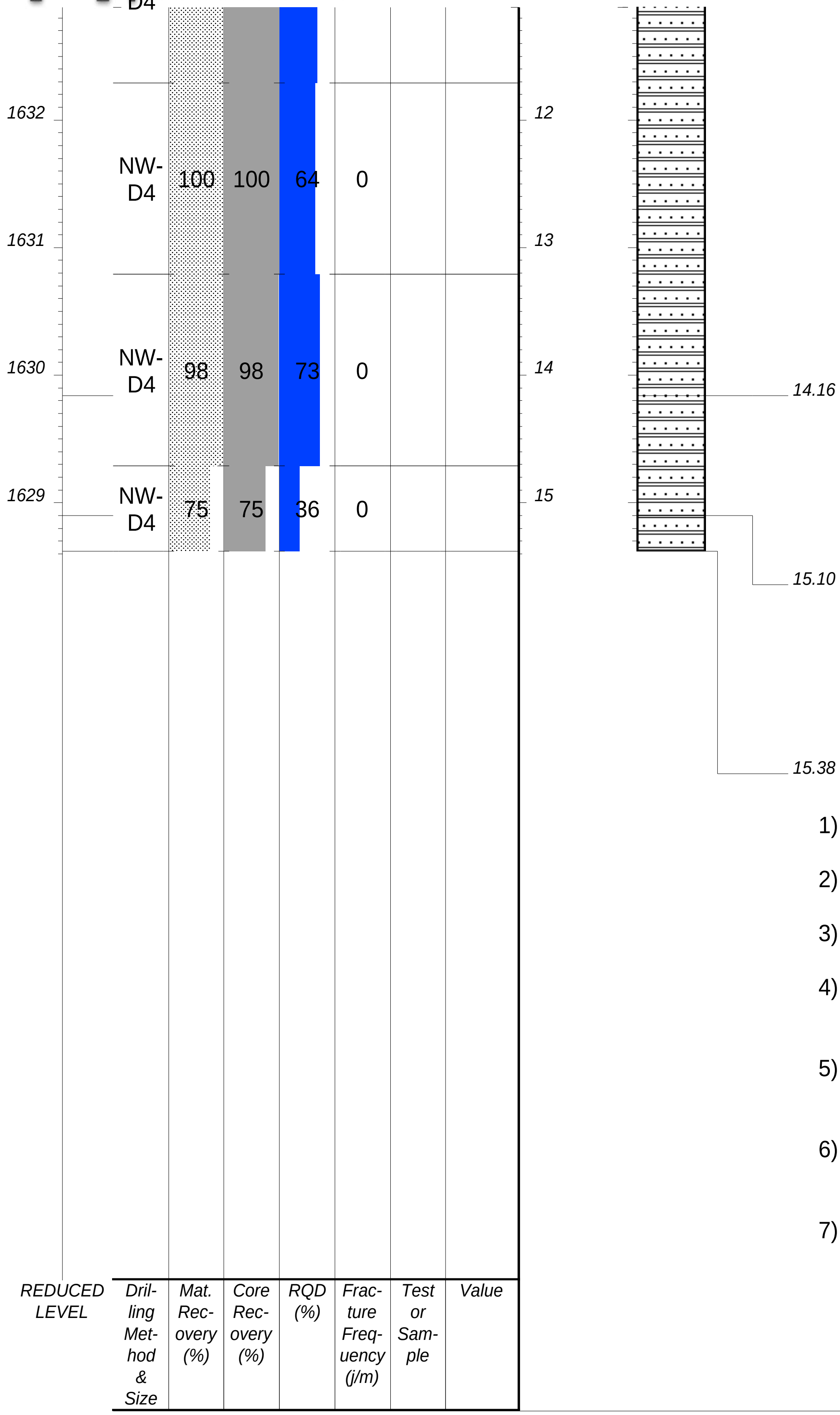
5.81

Grey, moderately weathered, laminated, fine grained, soft rock, sandstone interlayered with siltstone. **Vryheid Formation**.

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION: KOMATI POWER STATION

HOLE No: BH-09
Sheet 2 of 2

JOB NUMBER: MAK1520823



Grey streaked black, moderately weathered, intensly laminated, fine grained, soft rock, sandstone interlayered with carbonaceos shale. **Vryheid Formation**.

Brown streaked black, highly weathered, intensly laminated, fine grained, soft rock, sandstone interlayered with carbonaceos shale. **Vryheid Formation**.

NOTES

1) No water strike encountered.
2) Sh = Shelby sample.
3) Ref = Refusal.
4) Disturbed SPT sample taken at 1.50--2.00 m.
5) Disturbed SPT sample taken at 3.00--3.50 m.
6) Disturbed SPT sample taken at 4.50--5.00 m.
7) End of hole at 15.38 m.

CONTRACTOR : BAV Consulting Pty Ltd
MACHINE : ROCKDRILL TRD-300
DRILLED BY : Philip Mahlangu
PROFILED BY : Andries Vukeya Cand.Sci.Nat

INCLINATION : Vertical
DIAM : NWD-4 & NXC
DATE : 19/10/2023
DATE : 30/11/2023

ELEVATION : 1644m
X-COORD : 26.10875°S
Y-COORD : 29.45487°E

TYPE SET BY : Andries Vukeya Cand.Sci.Nat
SETUP FILE : STANDARD.SET

DATE : 06/12/2023 14:26
TEXT : ..eholes\Boreholes\BH9.TXT

HOLE No: BH-09
Komati Power Station

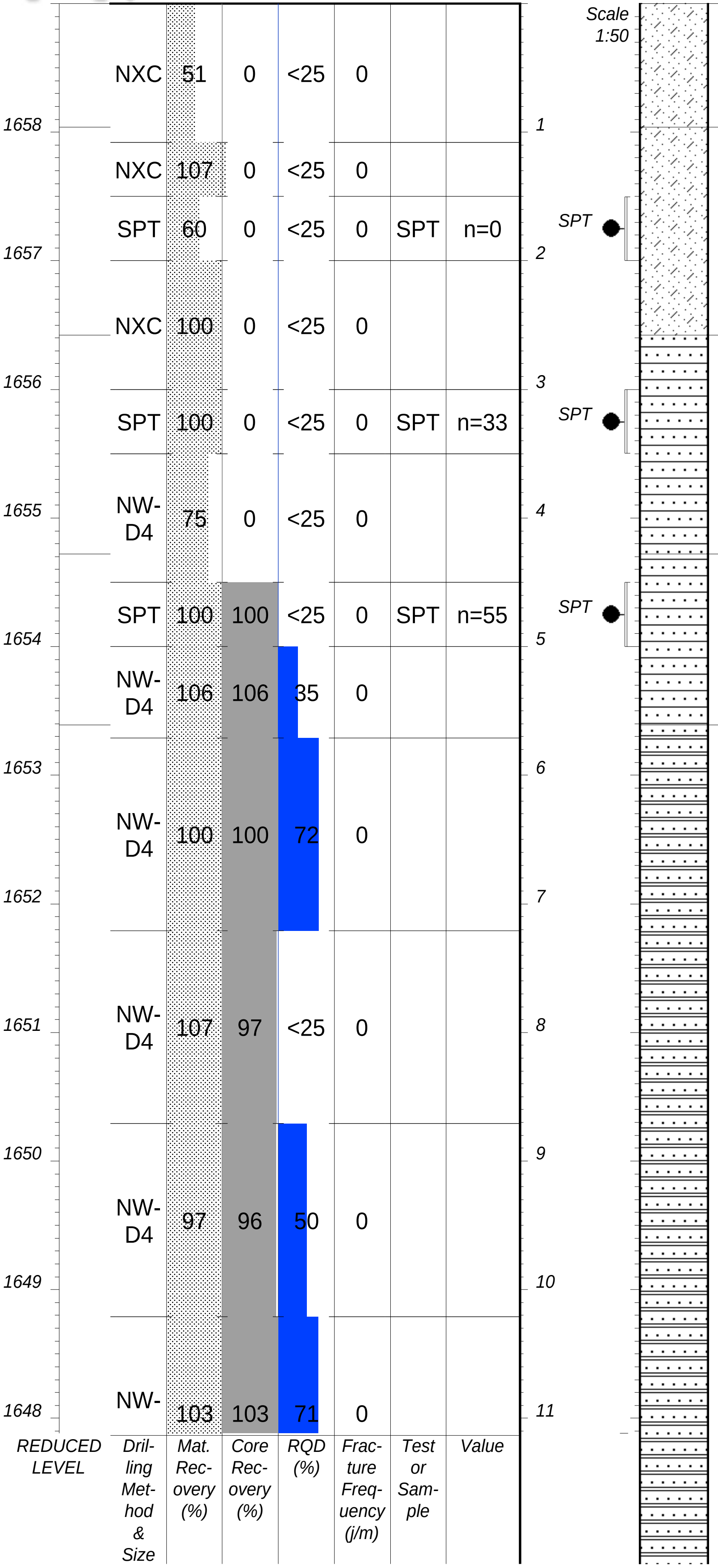
MAKHUMA CONSULTING

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION: KOMATI POWER STATION

HOLE No: BH-10
Sheet 1 of 2

JOB NUMBER: MAK1520823

REDUCED LEVEL	Drilling Method & Size	Mat. Recovery (%)	Core Recovery (%)	RQD (%)	Fracture Frequency (j/m)	Test or Sample	Value
	NXC	51	0	<25	0		
	NXC	107	0	<25	0		
	SPT	60	0	<25	0	SPT	n=0
	NXC	100	0	<25	0		
	SPT	100	0	<25	0	SPT	n=33
	NW-D4	75	0	<25	0		
	SPT	100	100	<25	0	SPT	n=55
	NW-D4	106	106	35	0		
	NW-D4	100	100	72	0		
	NW-D4	107	97	<25	0		
	NW-D4	97	96	50	0		
	NW-	103	103	71	0		



0.00

Dark brown, clayey sand. **Transported soil**.

0.96

Reddish brown mottled black, clayey sand with minor ferricerete. **Residual soil**.

2.58

Grey, highly weathered, soft rock, sandstone. **Residual**.

4.28

Grey, moderately weathered, fine grained, soft rock, sandstone. **Vryheid Formation**.

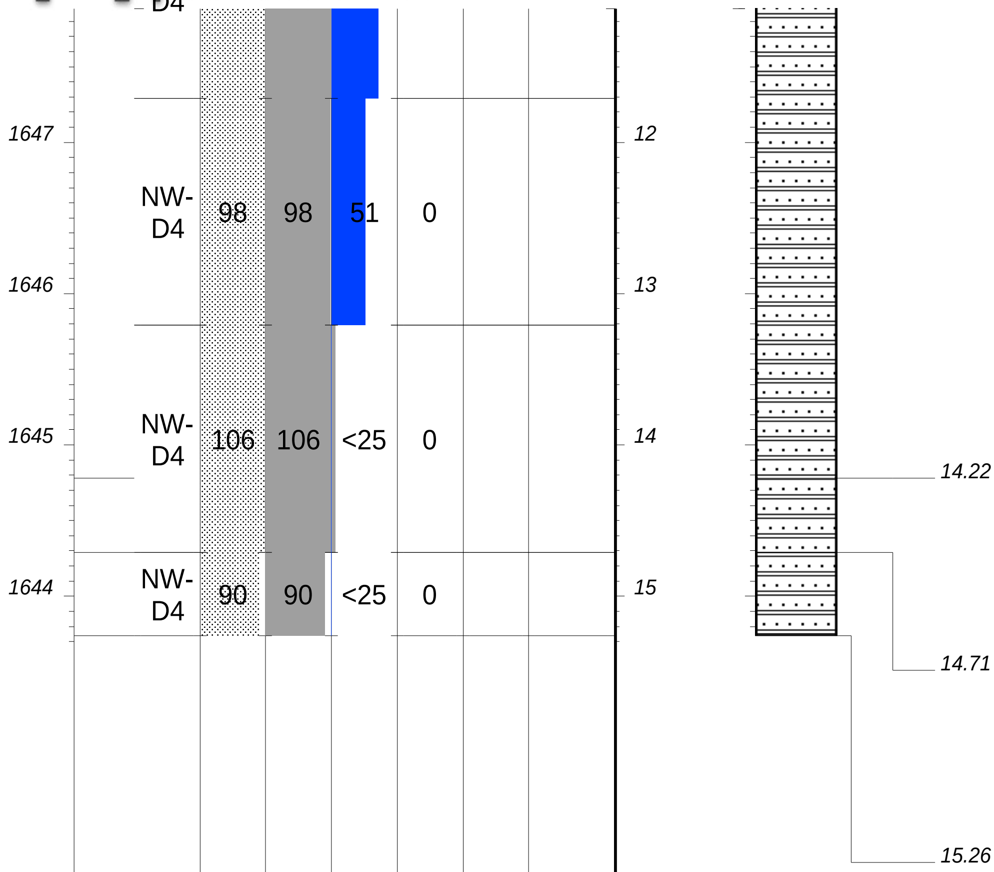
5.61

Grey blotched red, moderately weathered, intensly laminated, fine grained, soft rock, sandstone interlayered with siltstone. **Vryheid Formation**.

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: BH-10
Sheet 2 of 2

JOB NUMBER: MAK1520823



REDUCED LEVEL	Drilling Method & Size	Mat. Recovery (%)	Core Recovery (%)	RQD (%)	Fracture Frequency (j/m)	Test or Sample	Value
	D4						
	NW-D4	98	98	51	0		
	NW-D4	106	106	<25	0		
	NW-D4	90	90	<25	0		

14.22

Grey blotched red, highly weathered, intensly laminated, fine grained, soft rock, sandstone interlayered with siltstone. **Vryheid Formation.**

14.71

Grey blotched red, moderately weathered, intensly laminated, fine grained, soft rock, sandstone interlayered with siltstone. **Vryheid Formation.**

15.26

NOTES

1) No water strike encountered.

2) Sh = Shelby sample.

3) Ref = Refusal.

4) Disturbed SPT sample taken at 1.50--2.00 m.

5) Disturbed SPT sample taken at 3.00--3.50 m.

6) Disturbed SPT sample taken at 4.50--5.00 m.

7) End of hole at 15.26 m.

CONTRACTOR : BAV Consulting Pty Ltd
MACHINE : ROCKDRILL TRD-300
DRILLED BY : Philip Mahlangu
PROFILED BY : Andries Vukeya Cand.Sci.Nat

TYPE SET BY : Andries Vukeya Cand.Sci.Nat
SETUP FILE : STANDARD.SET

INCLINATION : Vertical
DIAM : NWD-4 & NXC
DATE : 25/10/2023
DATE : 01/12/2023

DATE : 06/12/2023 14:27
TEXT : ..holes\Boreholes\BH10.TXT

ELEVATION : 1659m
X-COORD : 26.10836°S
Y-COORD : 29.45707°E

HOLE No: BH-10
Komati Power Station

MAKHUMA CONSULTING

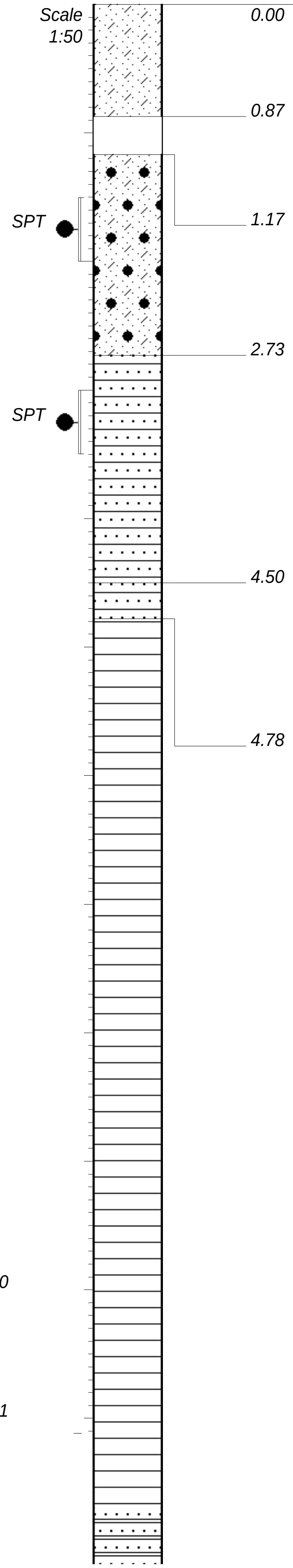
ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: BH-11
Sheet 1 of 2

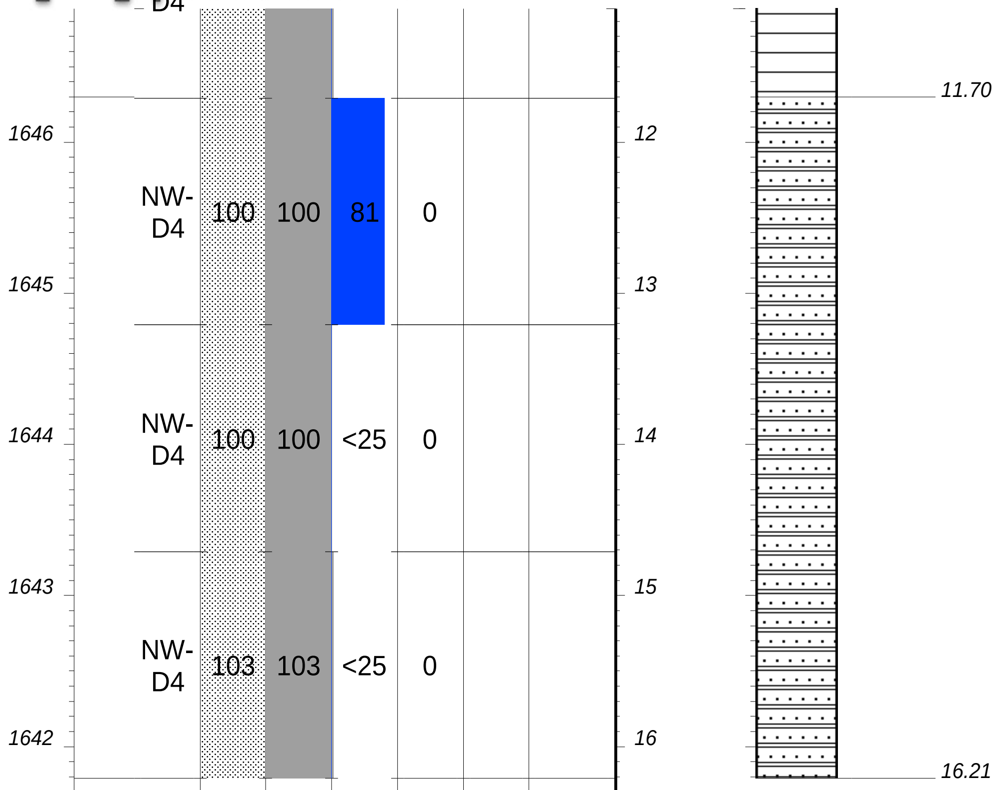
JOB NUMBER: MAK1520823

Dril-ling Met-hod & Size	Mat. Rec-overy (%)	Core Rec-overy (%)	RQD (%)	Frac-ture Freq-uency (j/m)	Test or Sam-ple	Value
NXC	34	0	<25	0		
NXC	83	0	<25	0		
SPT	80	0	<25	0	SPT	n=14
NXC	130	17	<25	0	SPT	
SPT NW-D4	116	116	75			n=Ref
NW-D4	77	77	<25	0		
NW-D4	91	91	<25	0		
NW-D4	103	103	<25	0		
NW-D4	107	107	<25	0		
NW-	103	103	<25	0		

REDUCED LEVEL: 1657, 1656, 1655, 1654, 1653, 1652, 1651, 1650, 1649, 1648, 1647



0.00	Dark brown, clayey sand. **Transported soil**.
0.87	Brown mottled black, sligthly cemented, soft rock, ferricerete. **Pedogenic**.
1.17	Brown, clayey sand with minor ferricrete. **Residual soil**.
2.73	Pinkish brown, moderately to highly weathered, medium to coarse grained, medium hard rock rock, sandstone. **Vryheid Formation**.
4.50	Pinkish brown, moderately to highly weathered, fine grained, soft to medium hard rock rock, sandstone. **Vryheid Formation**.
4.78	Grey, highly weathered, intensly laminated, fine grained, soft rock, mudrock. **Vryheid Formation**.



REDUCED LEVEL	Drilling Method & Size	Mat. Recovery (%)	Core Recovery (%)	RQD (%)	Fracture Frequency (j/m)	Test or Sample	Value
	D4						
	NW-D4	100	100	81	0		
	NW-D4	100	100	<25	0		
	NW-D4	103	103	<25	0		

11.70 – 16.21

Grey, highly weathered, intensly laminated, fine grained, soft rock, sandstone interlayered with siltstone. **Vryheid Formation**.

NOTES

1) No water strike encountered.
2) Sh = Shelby sample.
3) Ref = Refusal.
4) Disturbed SPT sample taken at 1.50--2.00 m.
5) Disturbed SPT sample taken at 3.00--3.50 m.
6) End of hole at 16.21 m.

CONTRACTOR : BAV Consulting Pty Ltd
MACHINE : ROCKDRILL TRD-300
DRILLED BY : Philip Mahlangu
PROFILED BY : Andries Vukeya Cand.Sci.Nat

INCLINATION : Vertical
DIAM : NWD-4 & NXC
DATE : 27/10/2023
DATE : 02/12/2023

ELEVATION : 1658m
X-COORD : 26.10828°S
Y-COORD : 29.45994°E

TYPE SET BY : Andries Vukeya Cand.Sci.Nat
SETUP FILE : STANDARD.SET

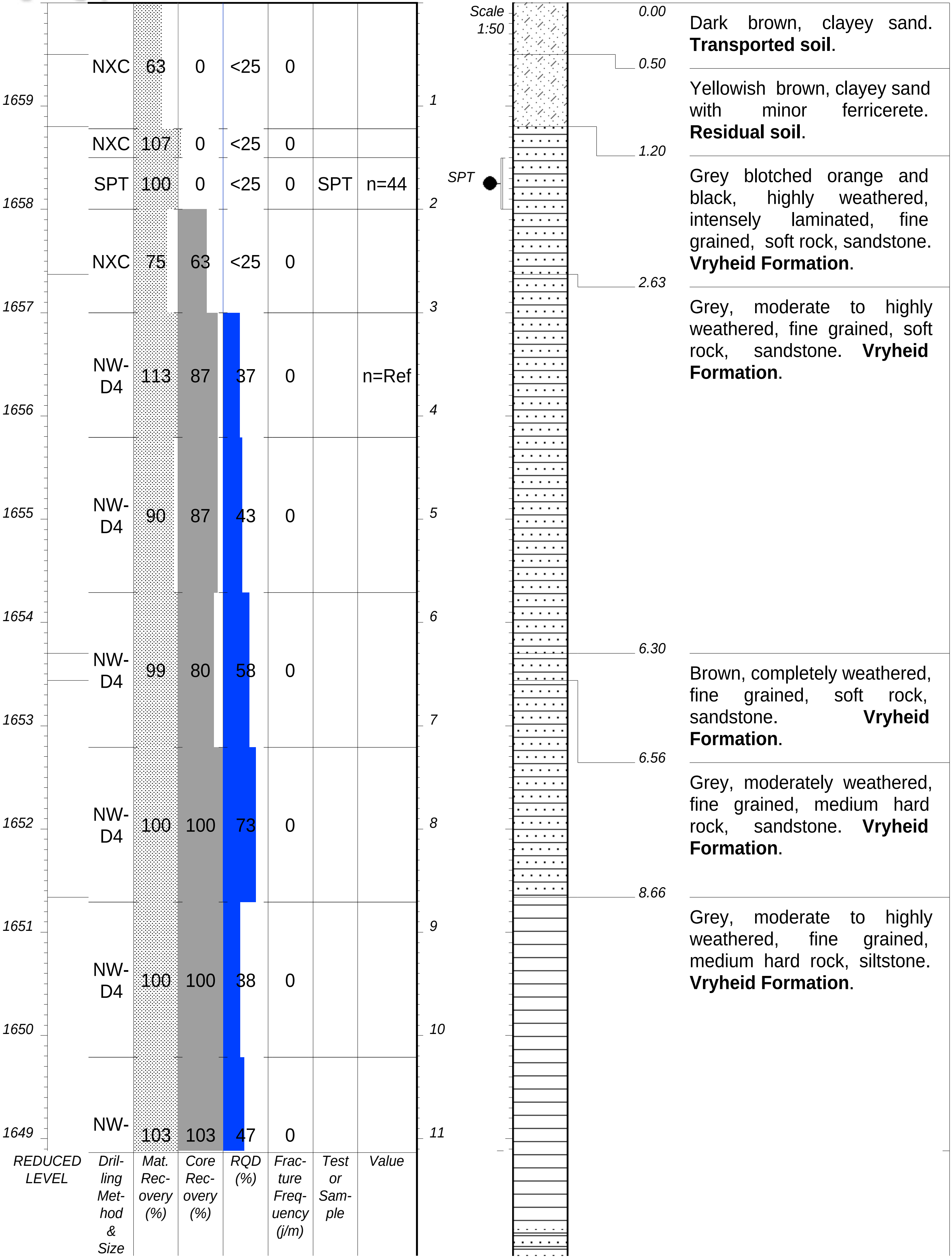
DATE : 06/12/2023 14:27
TEXT : ..holes\Boreholes\BH11.TXT

HOLE No: BH-11
Komati Power Station

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: BH-12
Sheet 1 of 2

JOB NUMBER: MAK1520823



REDUCED LEVEL	Drilling Method & Size	Mat. Recovery (%)	Core Recovery (%)	RQD (%)	Fracture Frequency (j/m)	Test or Sample	Value
	NXC	63	0	<25	0		
	NXC	107	0	<25	0		
	SPT	100	0	<25	0	SPT	n=44
	NXC	75	63	<25	0		
	NW-D4	113	87	37	0		n=Ref
	NW-D4	90	87	43	0		
	NW-D4	99	80	58	0		
	NW-D4	100	100	73	0		
	NW-D4	100	100	38	0		
	NW-	103	103	47	0		

0.00	Dark brown, clayey sand. **Transported soil**.
0.50	Yellowish brown, clayey sand with minor ferricerete. **Residual soil**.
1.20	Grey blotched orange and black, highly weathered, intensely laminated, fine grained, soft rock, sandstone. **Vryheid Formation**.
2.63	Grey, moderate to highly weathered, fine grained, soft rock, sandstone. **Vryheid Formation**.
6.30	Brown, completely weathered, fine grained, soft rock, sandstone. **Vryheid Formation**.
6.56	Grey, moderately weathered, fine grained, medium hard rock, sandstone. **Vryheid Formation**.
8.66	Grey, moderate to highly weathered, fine grained, medium hard rock, siltstone. **Vryheid Formation**.

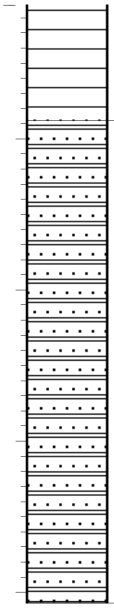
ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION: KOMATI POWER STATION

HOLE No: BH-12
Sheet 2 of 2

JOB NUMBER: MAK1520823

REDUCED LEVEL	Dril-ling Met-hod & Size	Mat. Rec-overy (%)	Core Rec-overy (%)	RQD (%)	Frac-ture Freq-uency (j/m)	Test or Sam-ple	Value
	D4						
1648	NW-D4	90	90	<25	0		
1647							
1646	NW-D4	105	89	<25	0		
1645	NW-D4	103	64	<25	0		

Depth (m): 12, 13, 14, 15



11.88

Grey, highly to completely weathered, fine grained, medium hard rock, sandstone interlayered with siltstone. **Vryheid Formation**.

15.07

NOTES

1) No water strike encountered.
2) Sh = Shelby sample.
3) Ref = Refusal.
4) Disturbed SPT sample taken at 1.50--2.00 m.
5) End of hole at 15.07 m.

CONTRACTOR : BAV Consulting Pty Ltd	*INCLINATION :* Vertical	*ELEVATION :* 1660m
MACHINE : ROCKDRILL TRD-300	*DIAM :* NWD-4 & NXC	*X-COORD :* 26.11020°S
DRILLED BY : Philip Mahlangu	*DATE :* 28/12/2023	*Y-COORD :* 29.46267°E
PROFILED BY : Andries Vukeya Cand.Sci.Nat	*DATE :* 03/12/2023	
TYPE SET BY : Andries Vukeya Cand.Sci.Nat	*DATE : 06/12/2023 14:28*	
SETUP FILE : STANDARD.SET	*TEXT : ..holes\Boreholes\BH12.TXT*	

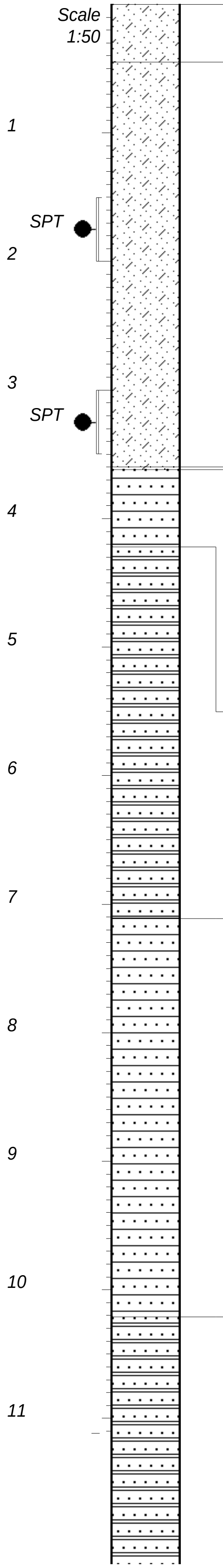
HOLE No: BH-12
Komati Power Station

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: BH-13
Sheet 1 of 2

JOB NUMBER: MAK1520823

REDUCED LEVEL	*Drilling Method & Size*	*Mat. Recovery (%)*	*Core Recovery (%)*	*RQD (%)*	*Fracture Frequency (j/m)*	*Test or Sample*	*Value*
1659	NXC	72	0	<25	0		
	NXC	94	0	<25	0		
1658	SPT	96	0	<25	0	SPT	n=24
1657	NXC	90	0	<25	0		
	SPT	90	0	<25	0	SPT	n=23
1656	NW-D4	82	0	<25	0		
1655	NW-D4	104	104	42	0		
1654 1653	NW-D4	93	93	50	0		
1652	NW-D4	103	103	46	0		
1651 1650	NW-D4	98	98	<25	0		
1649	NW-	97	97	53	0		



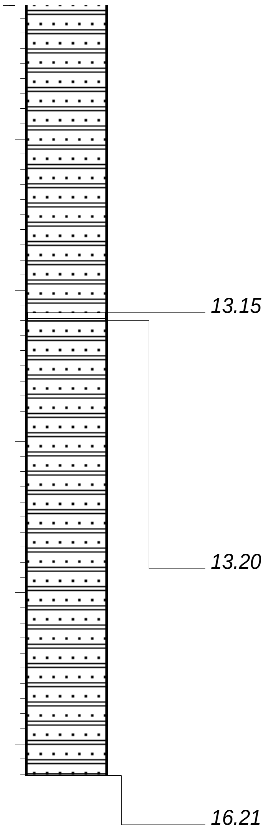
0.00	Dark brown, clayey sand. **Transported soil**.
0.45	Reddish brown mottled black, clayey sand with minor ferricerete. **Residual soil**.
3.60	Reddish brown, clayey sand. **Residual soil**.
3.62	Grey, moderate to highly weathered, intensely laminated, fine grained, soft rock, sandstone. **Vryheid Formation**.
4.22	Grey, slightly weathered, intensely laminated, fine grained, soft rock, sandstone interlayered with siltstone. **Vryheid Formation**.
7.11	Kakhi, slightly weathered, intensely laminated, fine grained, soft rock, sandstone. **Vryheid Formation**.
10.21	

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION: KOMATI POWER STATION

HOLE No: BH-13
Sheet 2 of 2

JOB NUMBER: MAK1520823

REDUCED LEVEL	Depth	Drilling Method & Size	Mat. Recovery (%)	Core Recovery (%)	RQD (%)	Fracture Frequency (j/m)	Test or Sample	Value
		D4						
1648 – 1647	12 – 13	NW-D4	92	92	58	0		
1646	14	NW-D4	102	102	71	0		
1645 – 1644	15 – 16	NW-D4	103	103	47	0		



Grey streaked black, slight to moderately weathered, intensly laminated, fine grained, medium hard rock, sandstone interlayered with carbonaceous shale. **Vryheid Formation**.

13.15

Brown streaked black, slight to moderately weathered, intensely laminated, fine grained, medium hard rock, sandstone interlayered with carbonaceous shale. **Vryheid Formation**.

13.20

Grey streaked black, slight to moderately weathered, intensly laminated, fine grained, medium hard rock, sandstone interlayered with carbonaceous shale. **Vryheid Formation**.

16.21

NOTES

1) No water strike encountered.
2) Sh = Shelby sample.
3) Ref = Refusal.
4) Disturbed SPT sample taken at 1.50--2.00 m.
5) Disturbed SPT sample taken at 3.00--3.50 m.
6) End of hole at 16.21 m.

CONTRACTOR : BAV Consulting Pty Ltd
MACHINE : ROCKDRILL TRD-300
DRILLED BY : Philip Mahlangu
PROFILED BY : Andries Vukeya Cand.Sci.Nat

TYPE SET BY : Andries Vukeya Cand.Sci.Nat
SETUP FILE : STANDARD.SET

INCLINATION : Vertical
DIAM : NWD-4 & NXC
DATE : 30/10/2023
DATE : 01/12/2023

DATE : 06/12/2023 14:29
TEXT : ..holes\Boreholes\BH13.TXT

ELEVATION : 1660m
X-COORD : 26.10362°S
Y-COORD : 29.45701°E

HOLE No: BH-13
Komati Power Station

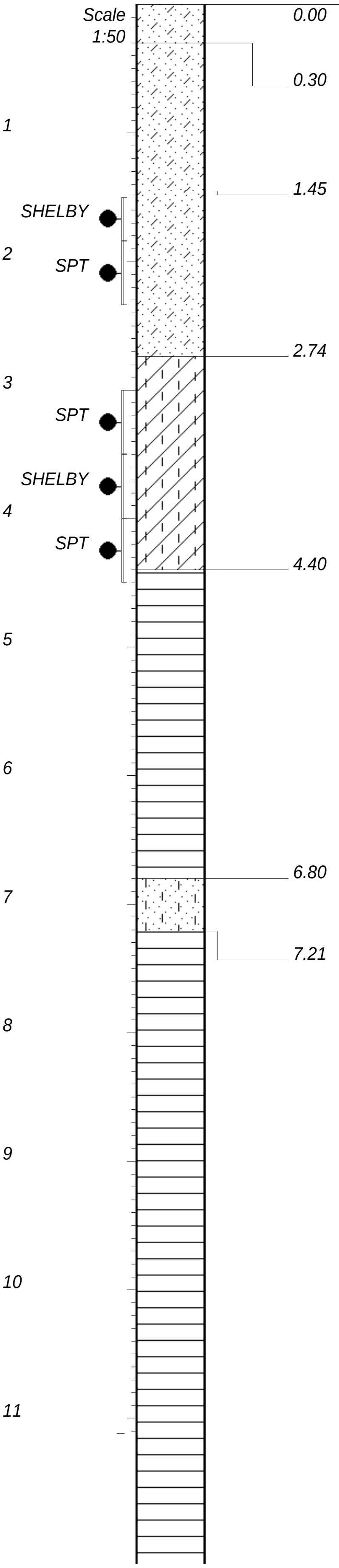
ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION: KOMATI POWER STATION

HOLE No: BH-14
Sheet 1 of 2

JOB NUMBER: MAK1520823

Drilling Method & Size	Mat. Recovery (%)	Core Recovery (%)	RQD (%)	Fracture Frequency (j/m)	Test or Sample	Value
NXC	49	49		-		
NXC	113	113		-		
NXC	100	100			SHELBY	
NXC	100	100			SPT	n=18
NXC	125	125		-		
NXC	115	115				
NWD-4	80	80	47		SPT	n=25
NWD-4	68	68	200	-	SHELBY	
NWD-4	76	76	74		SPT	
NWD-4	80	80	60	- -		
NWD-4	100	100	87	-		
NWD-4	100	100	53	- -		
NWD-4	99	99	<25	-		
NWD-4	102	102	<25	-		

REDUCED LEVEL	
1658	1
1657	2
1656	3
1655	4
1654	5
1653	6
1652	7
1651	8
1650	9
1649	10
1648	11



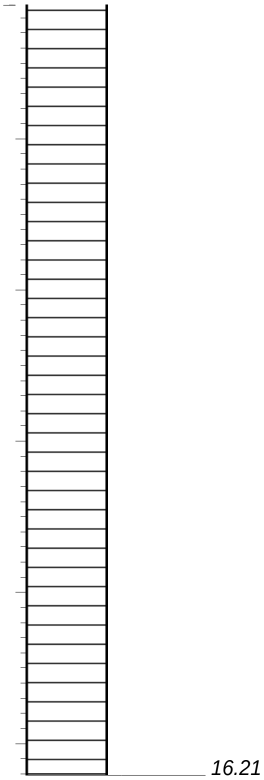
0.00 – 0.30	Dark grey, clayey sand. **Transported soil**.
0.30 – 1.45	Orangey brown, clayey sand with ferricrete gravel. **Transported soil**.
1.45 – 2.74	Grey blotched brown, clayey sand with ferricrete gravel. **Residual soil**.
2.74 – 4.40	Olive grey blotched light yellowish brown, silty clay. **Residual siltstone**.
4.40 – 6.80	Light yellowish brown streaked grey, highly weathered, intensely laminated and very thinly layered, very fine-grained, soft rock, siltstone. **Vryheid Formation**.
6.80 – 7.21	Yellowish brown, silty sand. **Residual siltstone**.
7.21 –	Light yellowish brown streaked dusky red and grey, moderately to highly weathered, intensely laminated and very thinly layered, fine-grained, soft rock, siltstone. **Vryheid Formation**.

ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: BH-14
Sheet 2 of 2

JOB NUMBER: MAK1520823

REDUCED LEVEL	Depth	Drilling Method & Size	Mat. Recovery (%)	Core Recovery (%)	RQD (%)	Fracture Frequency (j/m)	Test or Sample	Value
						-		
1647	12							
		NWD-4	97	97	<25	-		
1646	13							
						-		
1645	14	NWD-4	102	102	<25			
						-		
1644	15							
		NWD-4	100	100	<25	-		
1643	16							



NOTES

1) Sh = Shelby sample.
2) Ref = Refusal.
3) Disturbed SHELBY sample taken at 1.50--1.84 m.
4) Disturbed SPT sample taken at 1.84--2.34 m.
5) Disturbed SPT sample taken at 3.00--3.50 m.
6) Disturbed SHELBY sample taken at 3.50--4.00 m.
7) Disturbed SPT sample refused at 4.00--4.50 m.
8) End of hole at 16.21 m.

CONTRACTOR : BAV Consulting Pty Ltd
MACHINE : ROCKDRILL TRD-300
DRILLED BY : Philip Mahlangu
PROFILED BY : Hudson Mabelane Pr.Sci.Nat

INCLINATION : Vertical
DIAM : NWD-4 & NXC
DATE : 10/11/2023
DATE : 18/11/2023

ELEVATION : 1659m
X-COORD : 26.10803°S
Y-COORD : 29.46337°E

TYPE SET BY : Fumani Vukeya Cand.Sci.Nat
SETUP FILE : STANDARD.SET

DATE : 06/12/2023 14:29
TEXT : ..holes\Boreholes\BH14.TXT

HOLE No: BH-14
Komati Power Station

MAKHUMA CONSULTING

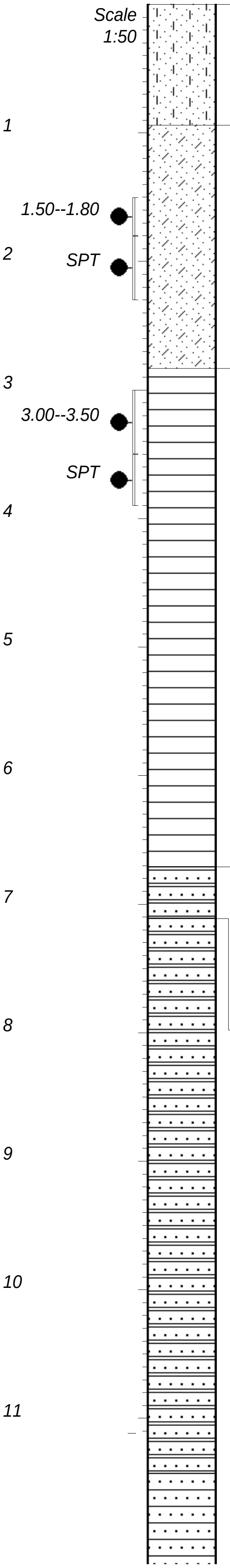
ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: BH-15
Sheet 1 of 2

JOB NUMBER: MAK1520823

REDUCED LEVEL	Drilling Method & Size	Mat. Recovery (%)	Core Recovery (%)	RQD (%)	Fracture Frequency (j/m)	Test or Sample	Value
	NXC	37	0	<25	0	0	
1664	NXC	84	0	<25	0	0	
	NXC	100	0	<25	0	Sh	
1663	SPT	60	0	<25	0	SPT	n=32
	NXC	86	0	<25	0	0	
1662	NXC	68	0	<25	0	Sh	
	SPT	100	0	<25	0	SPT	n=65
1661	NW-D4	113	0	<25	0	0	
1660	NW-D4	49	0	<25	0	0	
1659	NW-D4	99	99	<25	0	0	
1658 1657	NW-D4	105	105	43	0	0	
1656 1655	NW-D4	77	77	<25	0	0	
1654	NW-	77	77	33	0	0	

Scale 1:50



0.00	Dark brown, silty sand. **Transported soil**.
0.94	Reddish brown mottled black, clayey sand with minor ferricerete. **Residual soil**.
2.83	Grey, moderate to highly weathered, intensely laminated, fine grained, soft rock, siltstone. **Vryheid Formation**.
6.71	Grey, slightly weathered, intensly laminated, fine grained, soft rock, sandstone interlayered with siltstone. **Vryheid Formation**.
7.11	Kakhi, highly weathered, intensly laminated, fine grained, soft rock, siltstone interlayered with sandstone. **Vryheid Formation**.

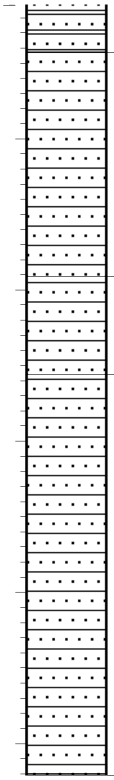
ESKOM
PRELIMINARY GEOTECHNICAL INVESTIGATION:
KOMATI POWER STATION

HOLE No: BH-15
Sheet 2 of 2

JOB NUMBER: MAK1520823

REDUCED LEVEL	Drilling Method & Size	Mat. Recovery (%)	Core Recovery (%)	RQD (%)	Fracture Frequency (j/m)	Test or Sample	Value
	D4						
1653	NW-D4	91	91	86	0	0	
1652							
1651	NW-D4	100	100	90	0	0	
1650							
1649	NW-D4	98	98	98	0	0	

Depth scale: 12, 13, 14, 15, 16



11.43	Grey, slightly weathered, intensly laminated, fine grained, medium hard rock, sandstone interlayered with sandstone. **Vryheid Formation**.
12.91	Olive, moderate to highly weathered, intensly laminated, fine grained, medium hard rock, sandstone. **Vryheid Formation**.
13.56	Grey, fine grained, medium hard rock, sandstone. **Vryheid Formation**.
16.21	

NOTES

1) No water strike encountered.

2) Sh = Shelby sample.

3) Ref = Refusal.

4) Disturbed Sh sample taken at 1.50--1.80 m

5) Disturbed SPT sample taken at 1.80--2.30 m.

6) Disturbed Sh sample taken at 3.00--3.50 m

7) Disturbed SPT sample taken at 3.50--3.90 m.

8) End of hole at 16.21 m.

CONTRACTOR : BAV Consulting Pty Ltd
MACHINE : ROCKDRILL TRD-300
DRILLED BY : Philip Mahlangu
PROFILED BY : Andries Vukeya Cand.Sci.Nat

INCLINATION : Vertical
DIAM : NWD-4 & NXC
DATE : 13/11/2023
DATE : 03/12/2023

ELEVATION : 1665m
X-COORD : 26.10505°S
Y-COORD : 29.46251°E

TYPE SET BY : Andries Vukeya Cand.Sci.Nat
SETUP FILE : STANDARD.SET

DATE : 06/12/2023 14:30
TEXT : ..holes\Boreholes\BH15.TXT

HOLE No: BH-15
Komati Power Station