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Our Reference No.: EAD 99/07/05
Your Reference No.....

Communications should be addressed to:
The Director of Environmental Affairs



ENVIRONMENTAL AFFAIRS DEPARTMENT
LINGADZI HOUSE
CITY CENTRE
PRIVATE BAG 394
LILONGWE 3
MALAWI

14th December, 2018

The Country Director
JCM Matswani Solar Corporation Limited
P.O. Box 378
LILONGWE

Dear Sir,

**RE: PROJECT BRIEF FOR PROPOSED INSTALLATION OF GOLOMOTI SOLAR POWER
PROJECT IN DEDZA**

Reference is made to your project brief which was submitted to the Department on above captioned subject.

Considering the nature and size of the proposed project, I wish to inform you that you are required to conduct an Environmental and Social Impact Assessment (ESIA) before implementation of the proposed activities on the site. Find attached Terms of Reference for conducting the ESIA.

Should you require any further information or clarification on the foregoing, please do not hesitate to contact us.

Yours faithfully,

A handwritten signature in black ink, appearing to read 'S. Najira'.

Shamiso Najira

FOR: DIRECTOR OF ENVIRONMENTAL AFFAIRS

Attd: Terms of Reference for ESIA

Terms of Reference for Environmental and Social Impact Assessment for the Golomoti Solar Power Project in Dedza

1. Provide a full description of the nature/components of the proposed Golomoti Solar Power Project with respect to the name and addresses of the proponent, aim and objectives of the proposed project; the spatial location of the site for the project with aid of appropriate maps. In addition, describe the estimated cost of the project, source of funding, the size of land for the project, the number of people to work on the area (provide a breakdown in terms of locals and non-locals, male and female).
2. Describe potential social and economic impacts of the proposed Golomoti Solar Power Project.
3. Describe main activities to be undertaken in implementation of the proposed Golomoti Solar Power Project in Dedza.
4. Provide a concise description of the project area focusing on relevant physical, biological and socio-economic resources and conditions, including any changes anticipated during construction and operations of Golomoti Solar Power project.
5. State reasons for selecting Golomoti for the Solar Power Project and not other areas.
6. Predict potential environmental impacts associated with the proposed Golomoti Solar Power Project at and around the site, focusing on both the positive and negative impacts. The impacts should include:
 - a) Project location (loss of gardens by local people, loss of flora , risks of soil erosion)
 - b) Construction and installation of infrastructure (risks of accidents, soil erosion ,influx of people etc)
 - c) Operations of solar power Project (risks of sewage discharge, generation of solid wastes, increase in surface run off discharge etc)
7. Prescribe measures to eliminate, reduce or mitigate the negative effects identified 6 above and measures to enhance the positive effects.
8. Propose an Environmental and Social Management Plan by which all of the measures prescribed in 7 above, will be carried out. In the Environmental and Social Management Plan, suggest budget for the recommended mitigation measures, specifications of who will be responsible for these measures and the schedule when these measures will take place during both construction and operational phases of Golomoti Solar Power Project in Dedza.

9. Propose an Environmental and Social Monitoring Plan by which all mitigation measures recommended in Environmental and Social Management Plan will be monitored. The plan should include the activities, the frequency of monitoring, the key monitoring indicators, and identification of authorities responsible for monitoring the exercises.
10. Provide an account of all statutory and regulatory licences and approvals to be obtained for the proposed Solar Project to ensure that implementation of the project follows sound environmental management practices and are in compliance with relevant existing legislation. Reference should at least be made to the National Environmental Policy, Environment Management Act, Malawi National Energy Policy, Energy Regulations Act, Electricity Act, Occupational Safety, Health and Welfare Act, Physical Planning Act (2016), National Water Policy, Water Works Act, Public Health Act, and other relevant policies and pieces of legislation.
11. Undertake stakeholder consultations to ensure that key interested stakeholders are involved in the environmental impact assessment process. Incorporate their views in the report and indicate a record of consultations in the appendices part of the report.
12. Recommended composition of ESIA team. A team of qualified experts should include the following:
 - a) **A Senior Urban Planner and ESIA Expert with Masters Degree** – Team Leader, over 15 years experiences in Environmental and Social Impact Assessment for large scale projects
 - b) **A Senior Socio – Economist and ESIA Expert** with Masters Degree with over 10 years experiences in socio-economic appraisal of projects
 - c) **Structural Engineer with minimum of Bachelor of Science degree** with over 5 years experiences in related assignment
13. **Format and structure of the report:**

The format of the report shall as much as possible follow the recommended structure within the Guidelines for Environmental Impact Assessment in Malawi (1997) as outlined on pages 33 – 36 and 53 – 59 available at Environmental Affairs Department in Lilongwe. All maps and figures in the report shall be presented in colour to portray the themes clearly and should be drawn to a suitable and readable scale.
14. **Deliverables:**

The consultant shall produce and submit 20 Draft Environmental and Social Impact Assessment Reports to Environmental Affairs Department.



GEOCONSULT

GOLOMOTI SOLAR PV

**HYDROLOGY AND FLOOD RISK
ASSESSMENT**



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List of Abbreviations

Q_t	Peak Discharge (m^3/s)
C_t	Runoff Coefficient
T_c	Time of concentration (hours)
I_t	Rainfall Intensity (mm/h)
A	Catchment Area (km^2)
L	Length of river run (km)
S	Gradient of river (%)
WBH	Water Borehole

1. Site Investigations

1.1 Scope

The scope of the project is to identify flood risks associated with the following components:

- Rainfall
- Groundwater flow
- Water stagnation
- 1:2, 1:5, 1:10 1:25 and 1:100 year flood lines
- Properties of aquifers on site

1.2 Site Location

The site is located below the Bangwe escarpments in the Golomoti township. The site borders the main M5 road, and an access road perpendicular to the M5 leading to an ESCOM substation indicated in figure 1 below. The site is currently being used for subsistence farming and currently does not house any residential buildings.

The two roads are significant as they not only allow for access to a large section of the site, but they act as barriers to free flowing water, this is a substantial feature for any floodplain modelling.

Site boundary, regional location and coordinates are shown in figure 1 below.



Coordinates UTM 36L
672468.00 m E , 8403648.00 m S

Figure 1: Site Boundary Indicated in Red

1.3 Regional Topography

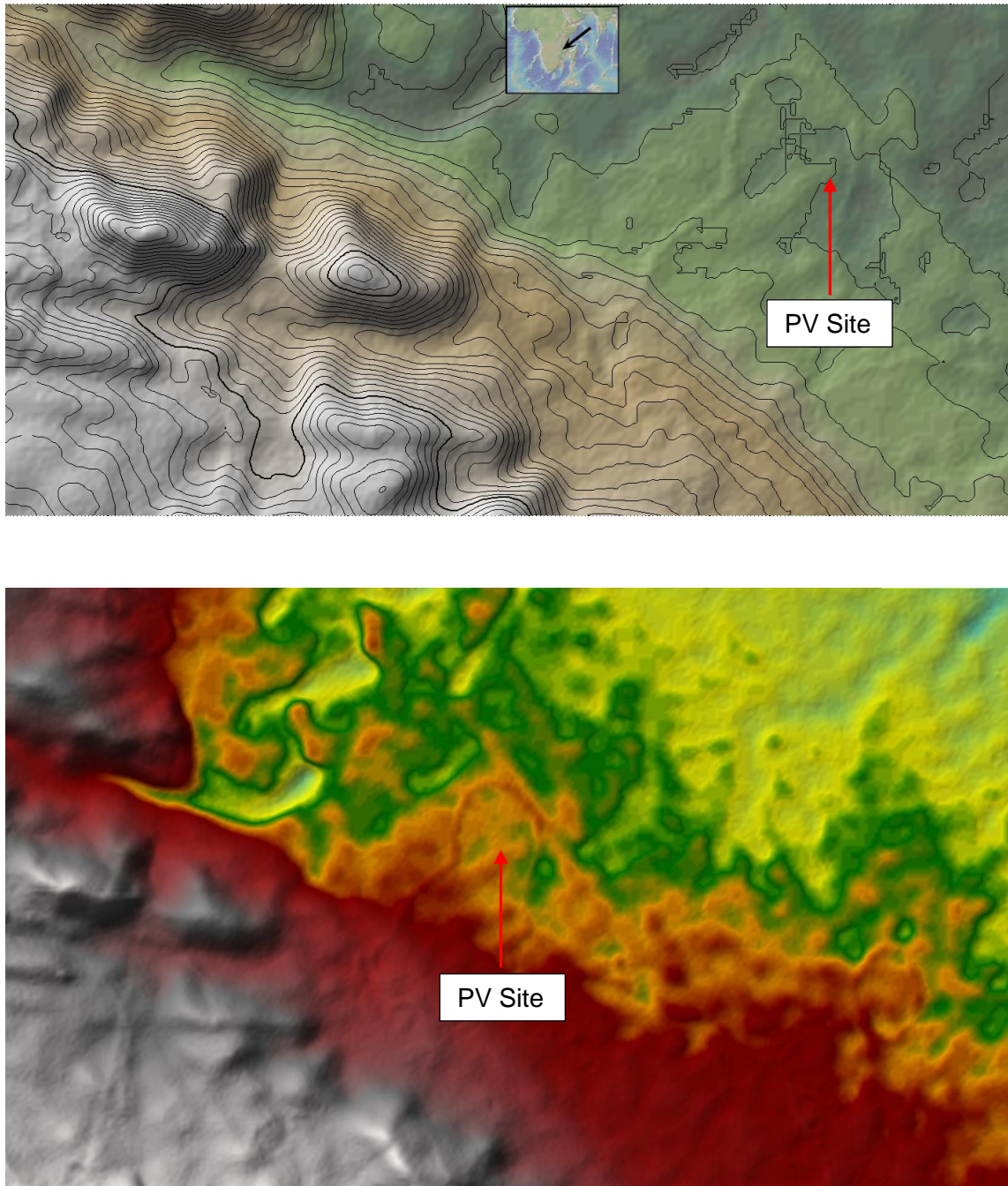


Figure 2: Topographic Mapping

The catchment area has a varied range in topography, starting in the Bangwe forrest reserve / escarpments and finally finishing in the flat planes of the Golomoti. Due to the Livulezi river in to the North east of the site and the current topographical make-up of the mountain range's discharge points, the majority of water flowing down the escarpment is diverted north of the site into the river.

Any excess water build up is channelled through the two culverts located on the main road, shown in figure 15 in the appendix that discharge to a stream further downhill.

2. Site Data Processing

2.1 Catchment Hydrology

The size of the catchment area was calculated based off two different topographic software models. Two different models were needed to achieve a greater understanding of the ground elevation and slope on the flat flood plains. Due to the access road leading to the substation, the adjacent catchment is broken up and forms part of the site's catchment which was measured at 3.5km².

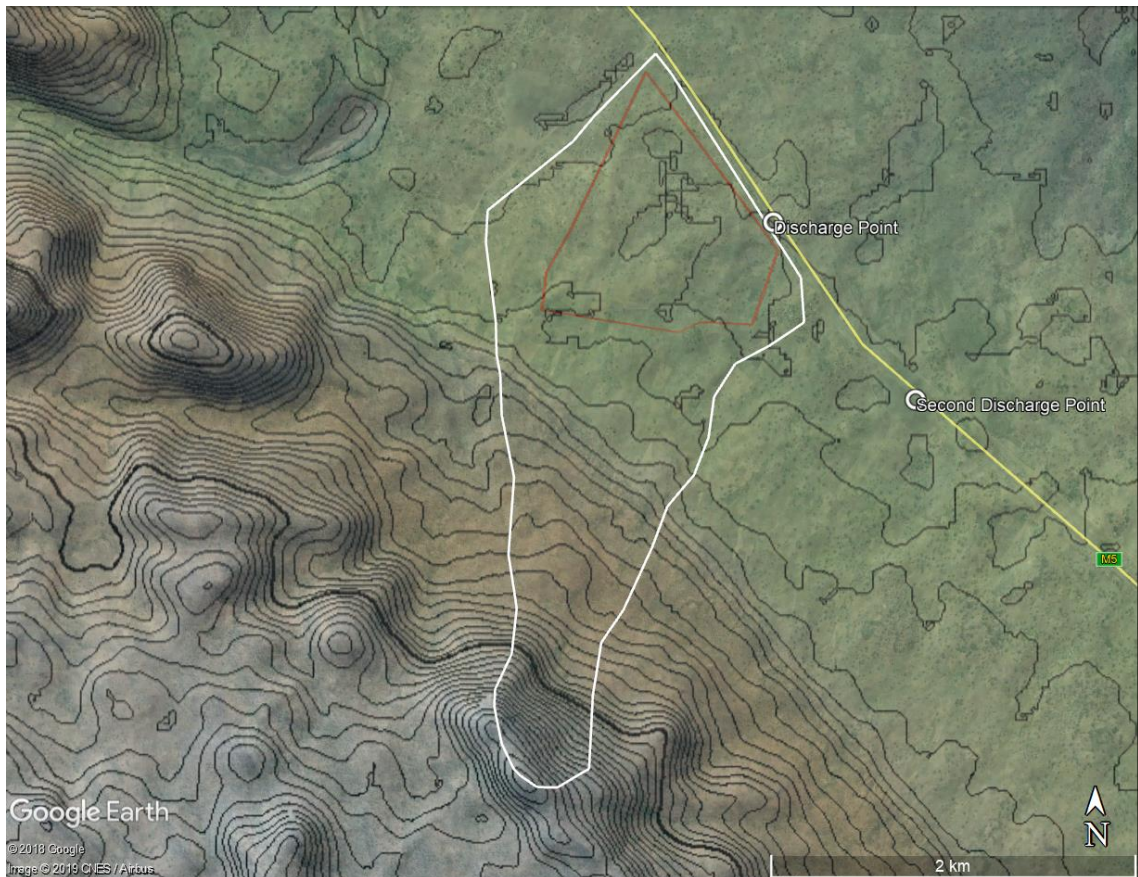


Figure 3: Catchment Area

One assumption of the data is that the flood producing rainfall falls uniformly across the catchment area, and the duration of the rainfall is equal to the time of concentration. Time of concentration is defined as the time it takes for rainfall that lands at the furthestmost point of the catchment to contribute to the outlet. Peak flow will occur when the entire watershed is contributing to the catchment outlet. In this case the 'Discharge point' labelled in figure 3

The rational method was adopted to calculate the selected return period flood discharges, this method in particular was chosen due to the catchment being less than 20km² and the availability of data and parameters required for calculations. The return period floods that were determined included 2, 10, 25, 50, 100 year discharges.

2.2 Rainfall Zone Identification

Rainfall intensity data was taken from a study into the rainfall patterns across Malawi, the data breaks up intensity in mm/h with varying return periods across the country.

The rainfall intensity zone used for the flood risk assessment was Central Lakeshore Plains and Escarpments. The table of intensity and return periods is given in figure 13, section 5.1 in the Appendix.

2.3 Calculated Data

In order to accurately model the potential flood lines, the peak discharge and the time of concentration must first be calculated for 2, 10, 25, 50 and 100 year floods.

Rainfall intensity from figure 13 can only be taken once the time of concentration is known. T_c is calculated using equation 1 below:

Equation 1: Time of concentration

$$T_c = \frac{1.286 L}{A^{0.223} S^{0.263}} = 5.26h$$

Where:

$$L = 3.1 \text{ km}$$

$$A = 3.5 \text{ km}^2$$

$$S = 0.12$$

With T_c known, the below rainfall intensity data is taken from figure 13 for a duration of 6 hours.

Table 1: Return period against rainfall intensity

Return Period (Years)	Rainfall Intensity (mm/h for 6h)
2	15.2
10	24.7
25	29.6
50	33.2
100	36.9

With the rainfall intensity known, peak discharge can be calculated using equation 2 below:

Equation 2: Peak discharge

$$Q_t = 0.278 C_t I_t A$$

Where:

$$C_t = 0.3$$

Substituting the rainfall intensity into equation 2 the following peak discharge flow for the given return periods are calculated and given in table 2.

Table 2: Return period against peak discharge

Return Period (Years)	Peak Discharge m ³ /s
2	4.4
10	7.2
25	8.6
50	9.7
100	10.8

3. Flood Modelling

In order to model the flood lines for the various peak discharges the program HEC-RAS was used. HEC-RAS was developed by the US Army Corps of Engineers to model river hydraulics through a network of open channels, floodplains and alluvial fans. Inputting topographic and terrain modelling obtained through GMRT global elevation data, HEC-RAS modelled the sections across the design site that would pose a risk due to elevated water levels. The discharge of the culverts was taken into consideration when modelling the flow, and effective discharge was accounted for. As well as the design flood levels being shown, a 2 year flood model with no culvert discharge was calculated in figure 9 to show the importance of maintaining functioning culverts.

Standing water was observed along the roadside as depicted in figure 14, the standing water at this location is a typical occurrence during the rains. This is located in front of culvert 1 and drains downstream when it overflows. This does not pose any flood risk to the site and acts as a temporary reservoir before evaporating or discharging downstream.

Maximum water level depth was calculated at 0.8m in 1:100 year in the section displayed in figure 10, this water level is equal for both areas of standing water on site. With the culverts in functioning order these are the only major sections within the site boundary to have standing water for all return periods.

Table 3: Return period against max water table

Return Period (Years)	Calculated max water depth (m)
1:2	0.5
1:10	0.68
1:25	0.75
1:50	0.79
1:100	0.84

Figure 4: 2 Year Flood

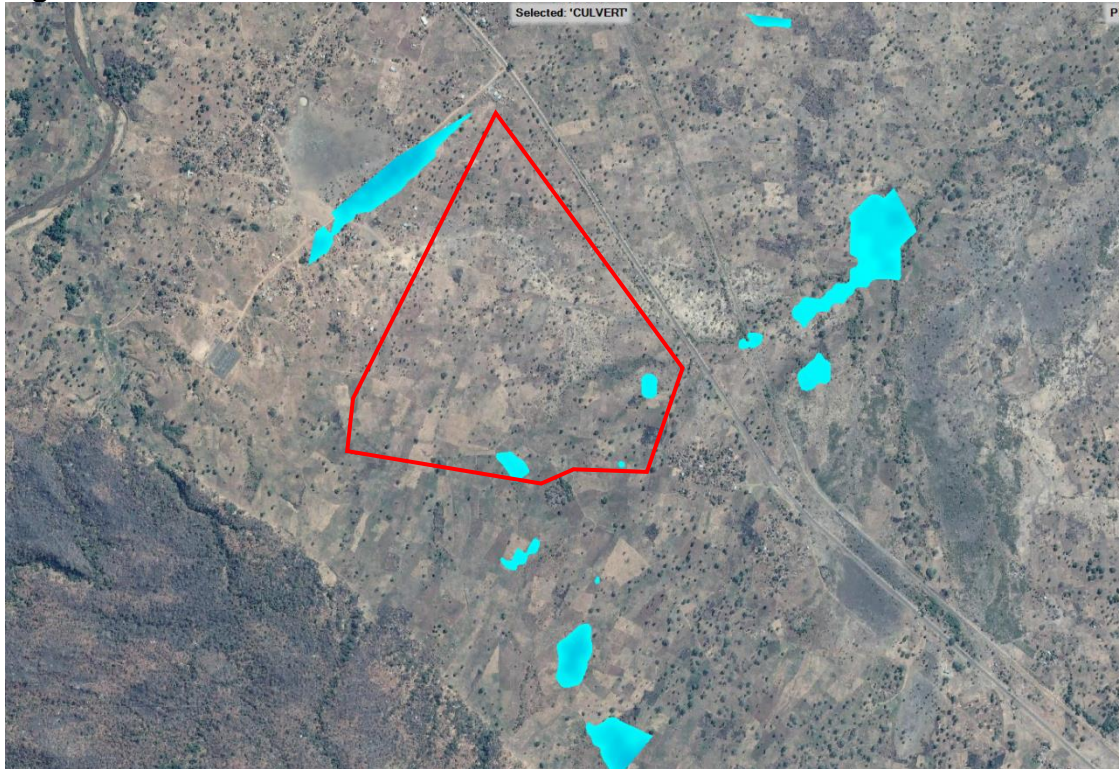


Figure 5: 10 Year Flood

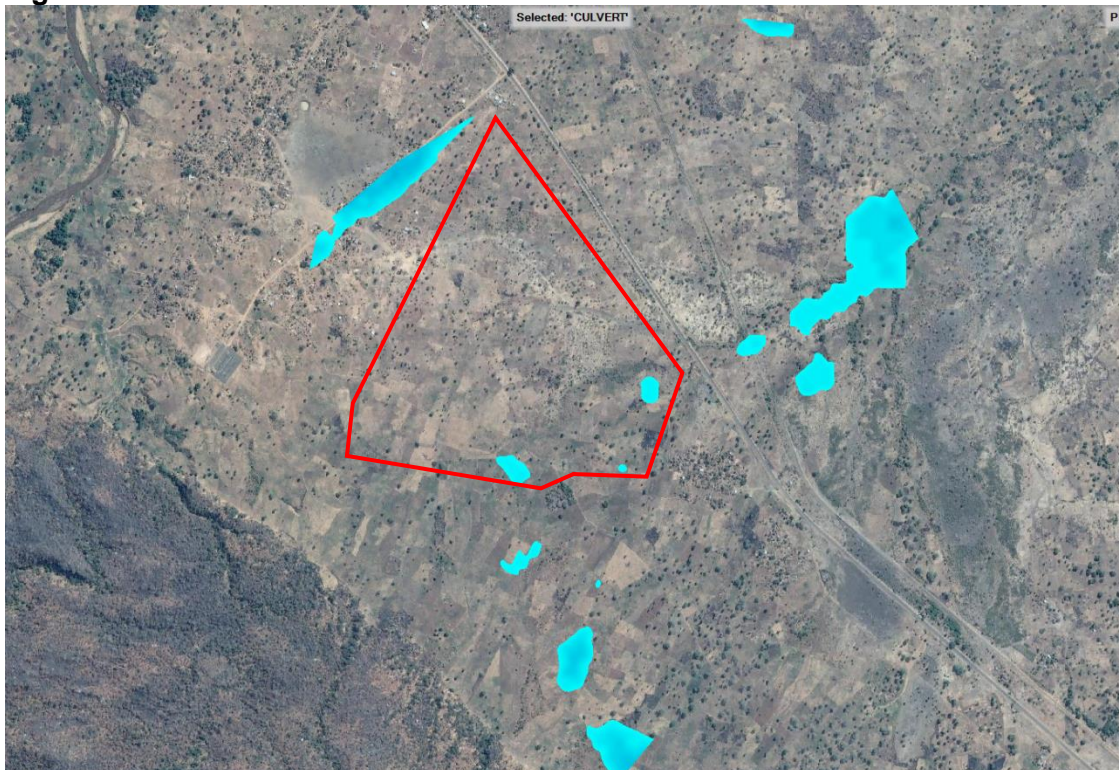


Figure 6: 25 Year Flood

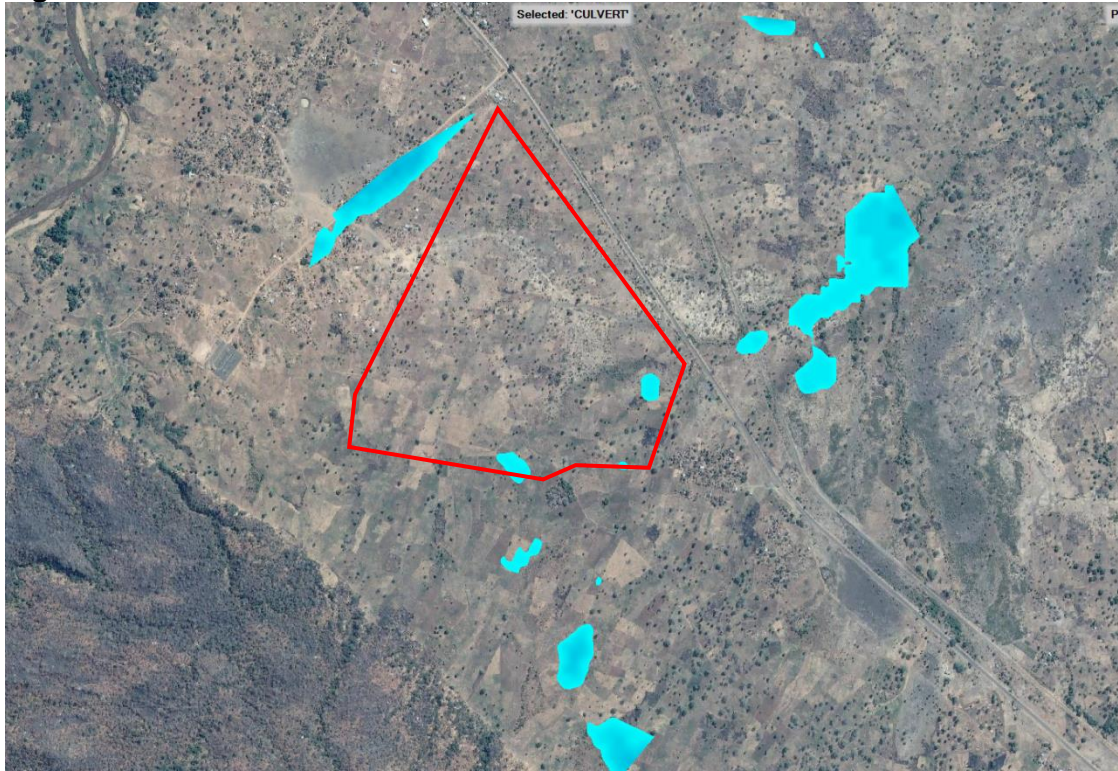


Figure 7: 50 Year Flood

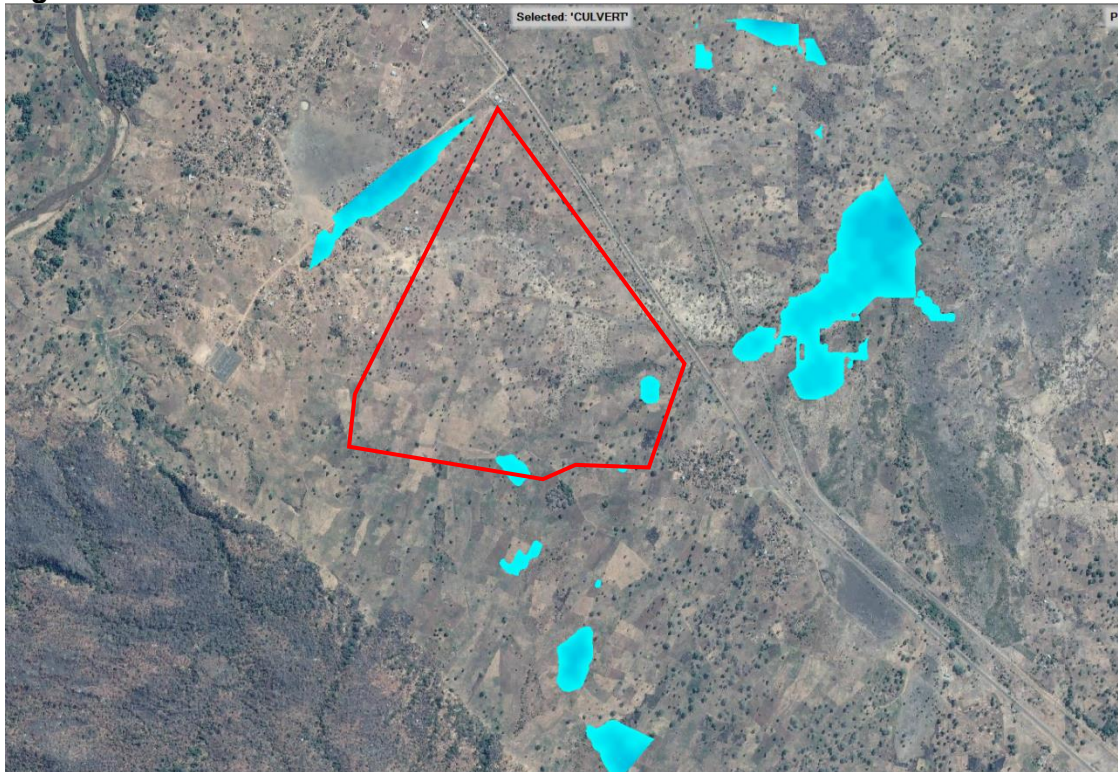


Figure 8: 100 Year Flood

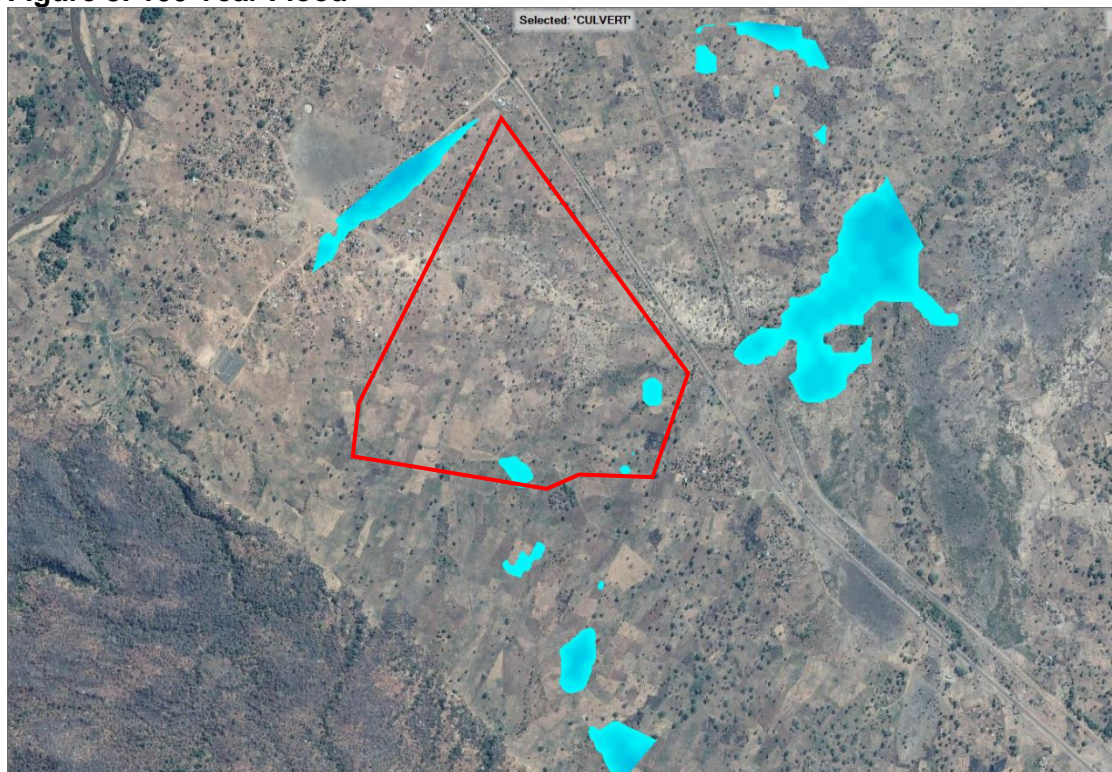


Figure 9: 2 Year Flood No Culverts

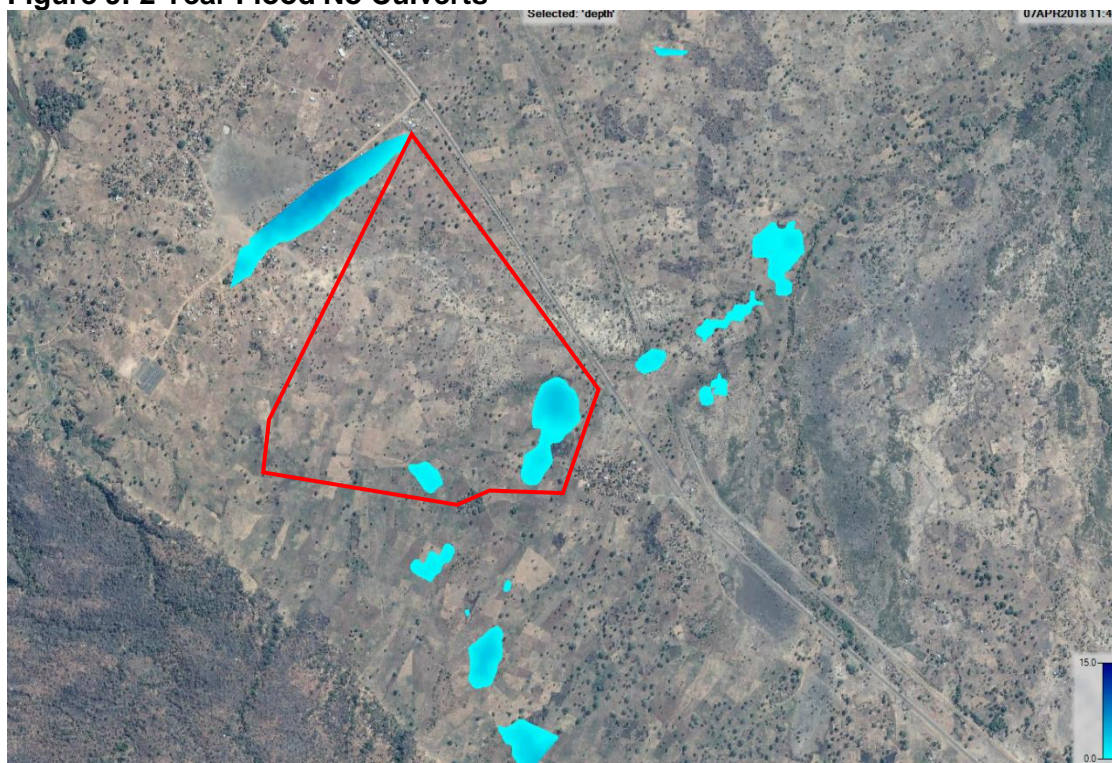
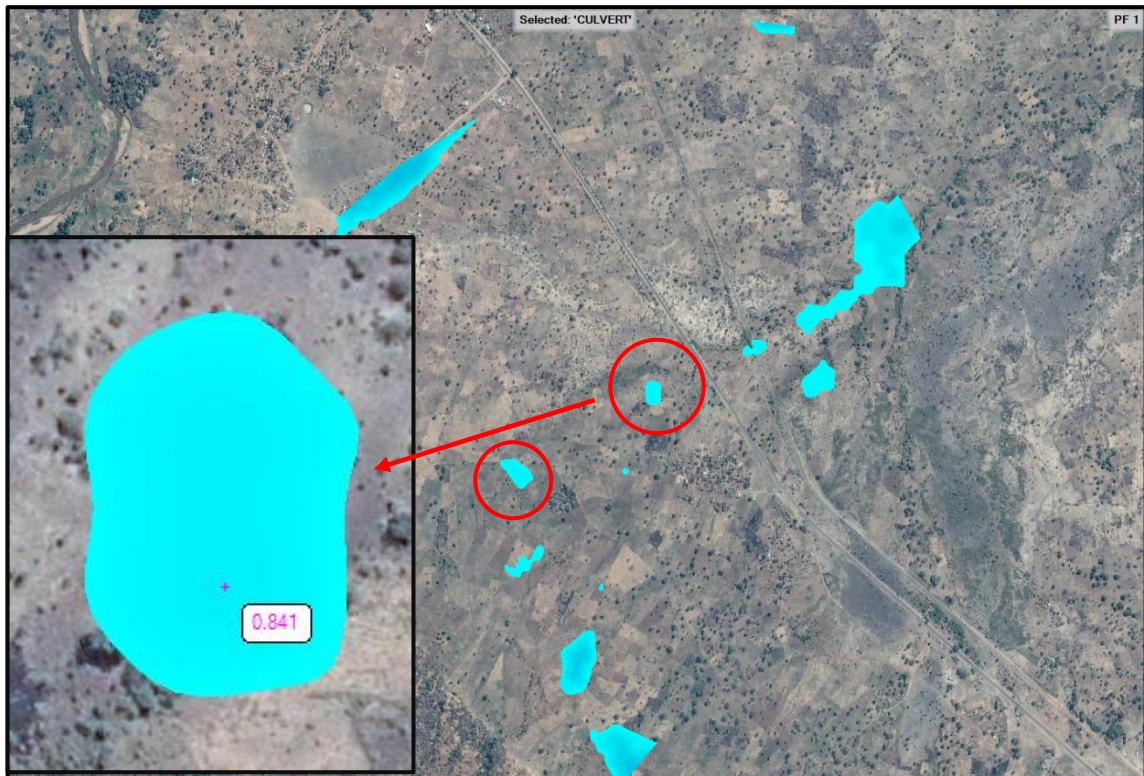


Figure 10: Max flood water depth



4. Ground Water Study

4.1 Livulezi River

The Livulezi River runs 1.2km North West of the site, figure 11 shows the river during peak rains. The river is perennial and is a sustainable source of water for all construction and site requirements.

Upstream Livulezi River



Downstream Livulezi River



Figure 11: Livulezi River

4.2 Installed Water Boreholes

On the northern border of the site boundary there are three water boreholes as shown in figure 12. WBH1 is a community installed well and services the few adjacent settlements.

WBH2 located 500m North West of WBH1, this is a government installed borehole which services a larger group of 40+ households.

WBH3 is the only borehole with an electric pump within the area, and supplies a 12,000 litre tank as well as some community taps. This borehole is primarily run and used for the ESCOM substation, the ESCOM staff who live nearby and the immediate community around the substation.

According to reports the boreholes were sunk to 50m and have never run dry. Information from government regarding the flow and yield was not possible to obtain so local knowledge was used.

Coordinates for the boreholes are given below to supplement figure 12 and the photographs in figure 16

WBH1 671979.75 m E , 8403234.00 m S

WBH2 671523.96 m E , 8403416.48 m S

WBH3 671480.72 m E , 8402954.45 m S

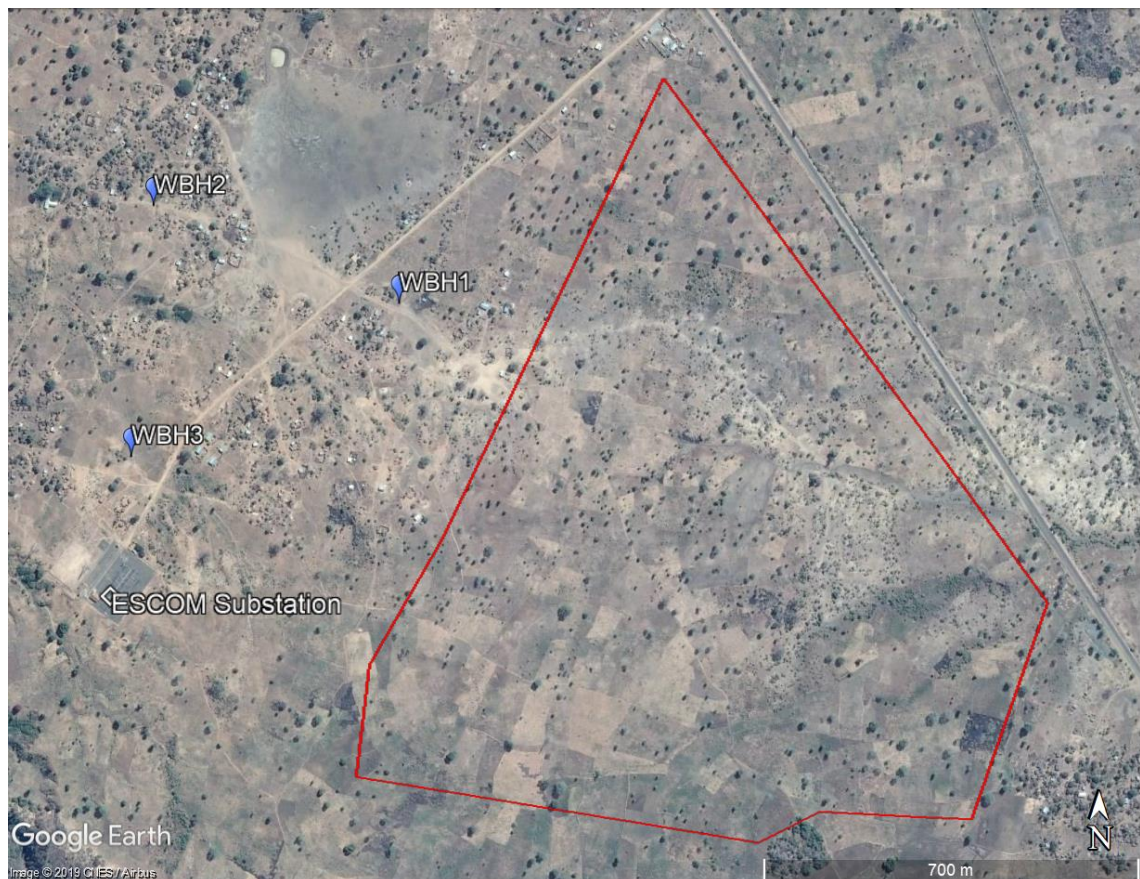


Figure 12: Current Water Borehole Locations

4.3 Aquifer hydrology

The provincial area around the site is classified as alluvium / weathered aquifer area as per figure 20. A more localised map is given below in figure 13, this classifies the area as a weathered aquifer with the potential yield of 0.25 – 1 l/s.

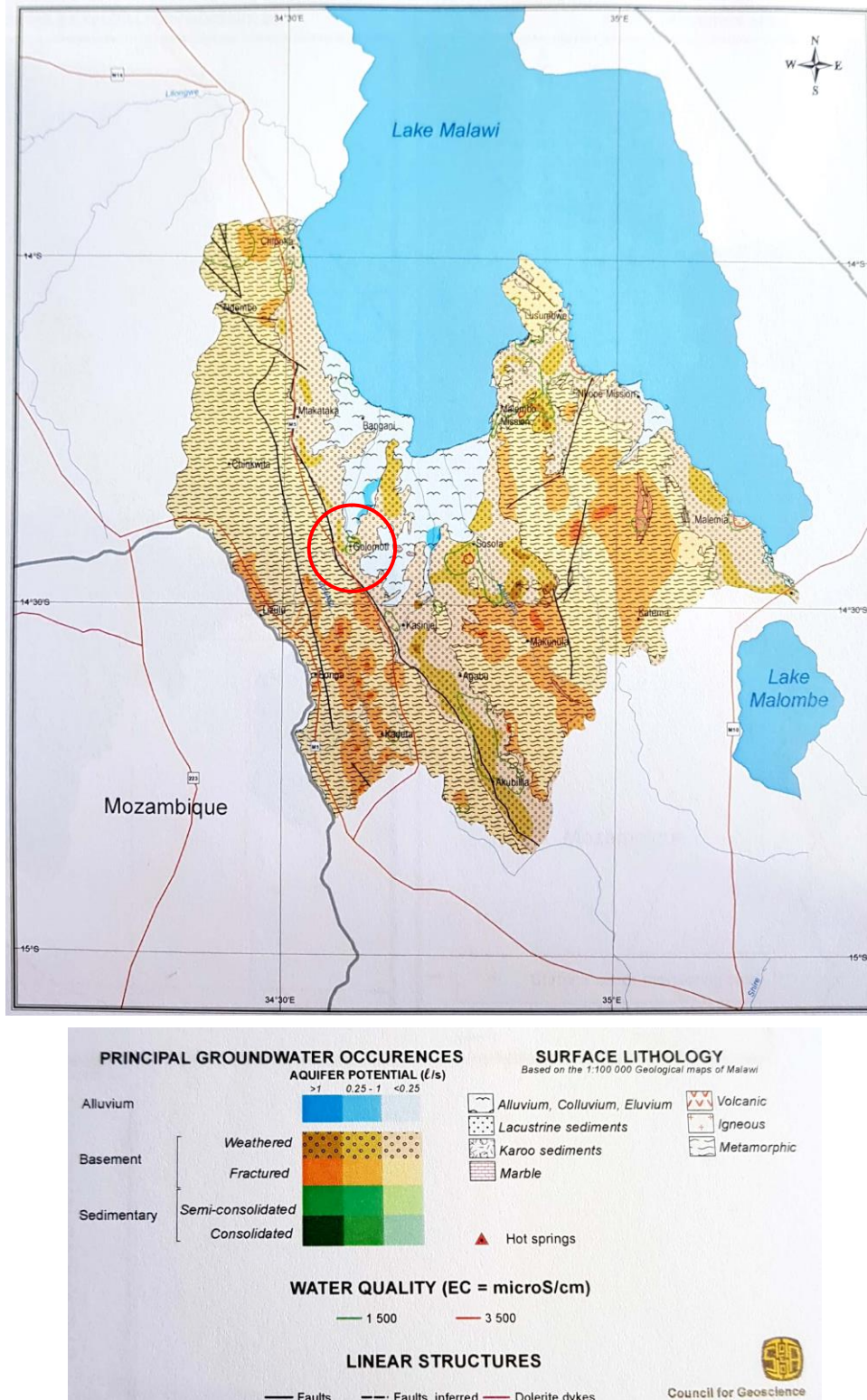


Figure 13: Aquifer Classification – Site Area Indicated in Red

Source: National Water Development Programme, Atlas for the Hydrogeological and Water Quality Map, Malawi (2015)

4.4 Water quality

A Chemical composition for weathered aquifers across the provincial area is given below in figure 14.

Maps shown in the appendix section 6.4 show low levels of sulphates, nitrates, chlorides, fluoride, calcium, magnesium, sodium, iron and medium levels of acidity.

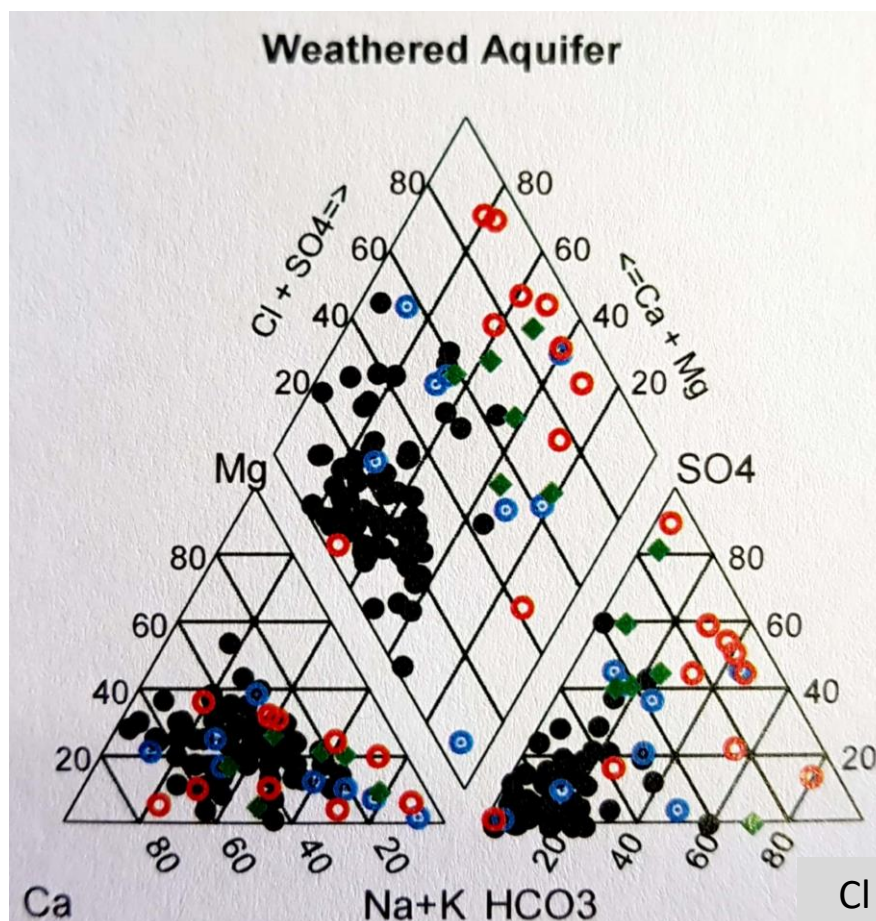


Figure 14: Chemical Composition for Weathered Aquifers

Source: National Water Development Programme, Atlas for the Hydrogeological and Water Quality Map, Malawi (2015)

A more detailed chemical study of the Bua catchment area was carried out by the British Geological Survey, in their “Ground Water Quality: Malawi (2004)” study it states generally low salinity values for groundwaters from weathered basement in the Bua catchment of western Malawi. Total dissolved solids were quoted in the range 200–740 mg/l. Low-conductivity groundwaters in basement aquifers from the Livulezi (central) and Dowa West (south-central) areas with electrical conductance were usually <750 $\mu\text{S}/\text{cm}$ but extremes up to 4000 $\mu\text{S}/\text{cm}$ were recorded

4.5 Flow rate

As shown in figure 13 the flow rates for the area are given in the range of 0.25 - 1 l/s. the installed pump at WBH3 was a 0.75 Hp Franklin Electric water pump, from the control box it is understood it is likely a 4" 3200 Series Pump. The below chart shows it has an average yield of 9m³/h.

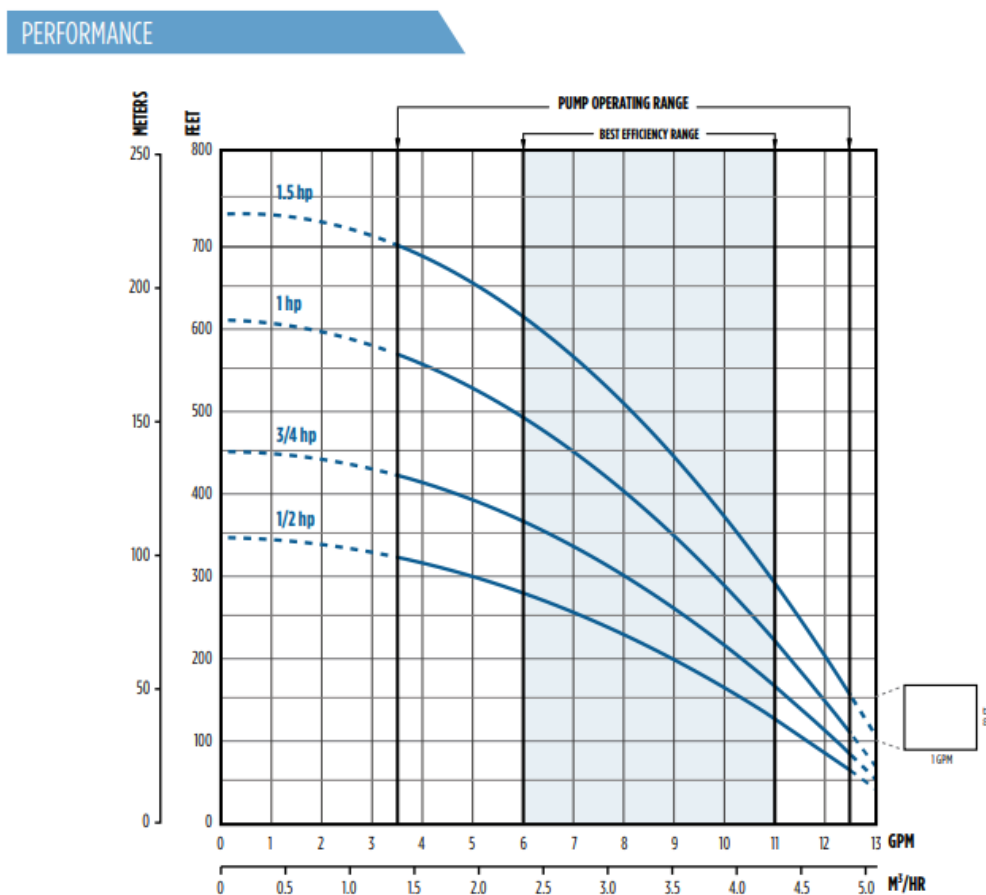


Figure 15: Franklin Electric 4" 3200 Water Pump Performance Chart

5. Conclusion and Recommendations

5.1 Flood Risk

From the hydrological modelling, field assessments and data collection it can be taken that there is little flood risk across the site. The two potential sections that show standing water due to excessive rainfall are due to uneven topography. During the first phase of land clearing it would be recommended to level these two areas to avoid pooling with the installation of French drains across the site to allow any further standing water to flow to the catchment outlet at the culverts.

Typically, flood modelling across similar regions in Malawi will factor in future change in land use. However the majority of the catchment area is protected land under Bangwe Forrest reserve, and the current land designation has a high runoff coefficient C_t , making the current land model the worst case scenario with the future solar PV land designation taken into account.

5.2 Ground Water Analysis and Availability

Ground water from local aquifers is available, should a borehole be installed. Currently 2 manual and 1 electric boreholes are installed within a 0.1 km² vicinity with no evidence of low water levels, even during the dry season. The closest river is the Livulezi River at 1.6km distance, which is perennial and is easily accessible from the main road adjacent to the site.

A borehole could be installed on the southern section of the site to provide water for site activities, where water for construction could be obtained from the Livulezi River from the site.

Chemical analysis tests from nearby boreholes surrounding the area show to have a composition that comprises of low levels of sulphates, nitrates, chlorides, fluoride, calcium, magnesium, sodium, iron and medium levels of acidity, providing chemically sound water for construction and panel washing.

The current yields are indicated between 0.25 – 1l/s from figure 13 in the aquifer map, however the minimum yield required for a hand pump is 0.25l/s, the presence of two hand pumps and one electric pump within close proximity is evidence of a decent yield with a large reserve.

With the current flow rates indicated by the installed electric pump a typical water bowser of 10,000l would take approximately one hour to fill, it is recommended that if a tank is not installed and bowsers are to be filled directly from a pumped borehole that the borehole be installed south of the site to limit the possible disturbance to current community wells reserves.

During the dry season where there is no runoff from farm land across the catchment into the river it would be recommended to look into the viability of drawing water directly from the Livulezi river as the levels of suspended solids would be at their lowest during this time.

6. Appendix

6.1 Rainfall Intensity Chart for Malawi

Return period (yrs)	Rainfall intensity (mmh-1) for duration of					
	15 min	30 min	60 min	3 hrs	6 hrs	24 hrs
<i>Central and Northern Plateaux Zone</i>						
2	94.8	67.0	42.6	17.3	9.5	3.2
5	114.8	80.4	53.0	22.7	12.8	4.2
10	126.8	89.6	61.3	26.5	15.1	4.9
25	140.8	101.0	71.7	31.1	17.8	5.7
50	150.8	109.2	79.3	34.5	19.8	6.3
100	160.4	117.2	86.7	37.9	21.8	6.9
<i>Karonga Lakeshore and Escarpment</i>						
2	105.2	79.2	54.8	22.6	12.8	3.8
5	122.0	99.2	69.1	28.2	16.0	4.9
10	131.6	110.8	78.1	32.1	18.4	5.6
25	142.8	125.4	88.8	36.1	20.9	6.6
50	150.8	135.8	96.6	40.0	23.0	7.2
100	158.0	145.8	104.0	43.4	25.0	7.9
<i>Central Plateau Plains</i>						
2	97.6	76.2	47.5	18.1	10.1	3.2
5	121.6	95.4	62.1	24.4	13.5	4.1
10	133.6	107.4	71.3	28.6	15.7	4.7
25	147.6	121.8	82.8	25.4	18.5	5.5
50	157.6	132.2	91.1	38.1	20.5	6.1
100	167.2	142.2	99.3	41.7	22.6	6.7
<i>Nkhata Bay Lakeshore and Escarpment</i>						
2	92.0	74.8	49.5	22.9	14.0	4.6
5	102.0	90.0	62.0	31.7	20.0	6.5
10	118.4	101.0	69.8	38.5	24.5	7.8
25	129.6	119.2	79.2	46.6	30.1	9.5
50	137.6	120.8	85.9	52.7	34.8	10.8
100	145.2	128.8	92.4	58.8	38.7	12.2
<i>Central Lakeshore Plains and Escarpment</i>						
2	108.8	85.2	61.3	26.2	15.2	5.4
5	122.0	102.2	74.0	34.4	20.9	7.9
10	129.2	113.2	81.6	39.6	24.7	9.7
25	137.6	126.4	90.6	46.1	29.6	12.0
50	143.2	135.6	97.3	50.9	33.2	13.7
100	148.4	144.6	103.9	55.6	36.9	15.5

Figure 16: Rainfall Intensity-Duration Values for Different Return Periods. (PEMConsult, 1999)

6.2 Culverts Along M5



Culvert 1: 673255.68 m E , 8402690.36 m S



Culvert 2: 673160.26 m E , 8402829.22 m S



Culvert 1: Downstream



Culvert 2: Downstream

Figure 17: Culverts Located on the M5 Road



Figure 18: Standing Water 15m Upstream from Culvert 1

6.3 Installed Water Boreholes



WBH1
671979.75 m E , 8403234.00 m S



WBH2
671523.96 m E , 8403416.48 m S



WBH3
671480.72 m E , 8402954.45 m S

Figure 19: Current Installed Water Boreholes

6.4 Aquifer Charts

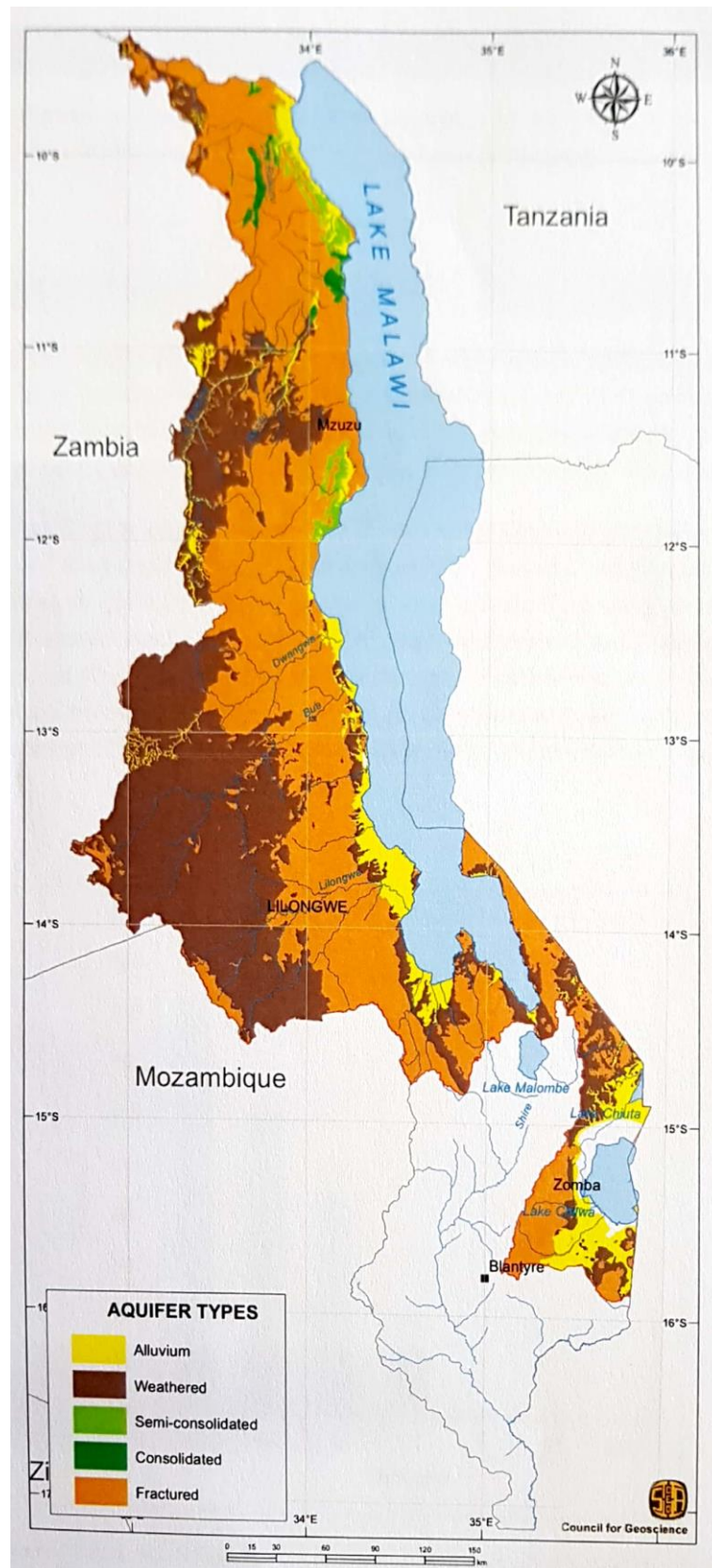


Figure 20: Aquifer Types Across Malawi

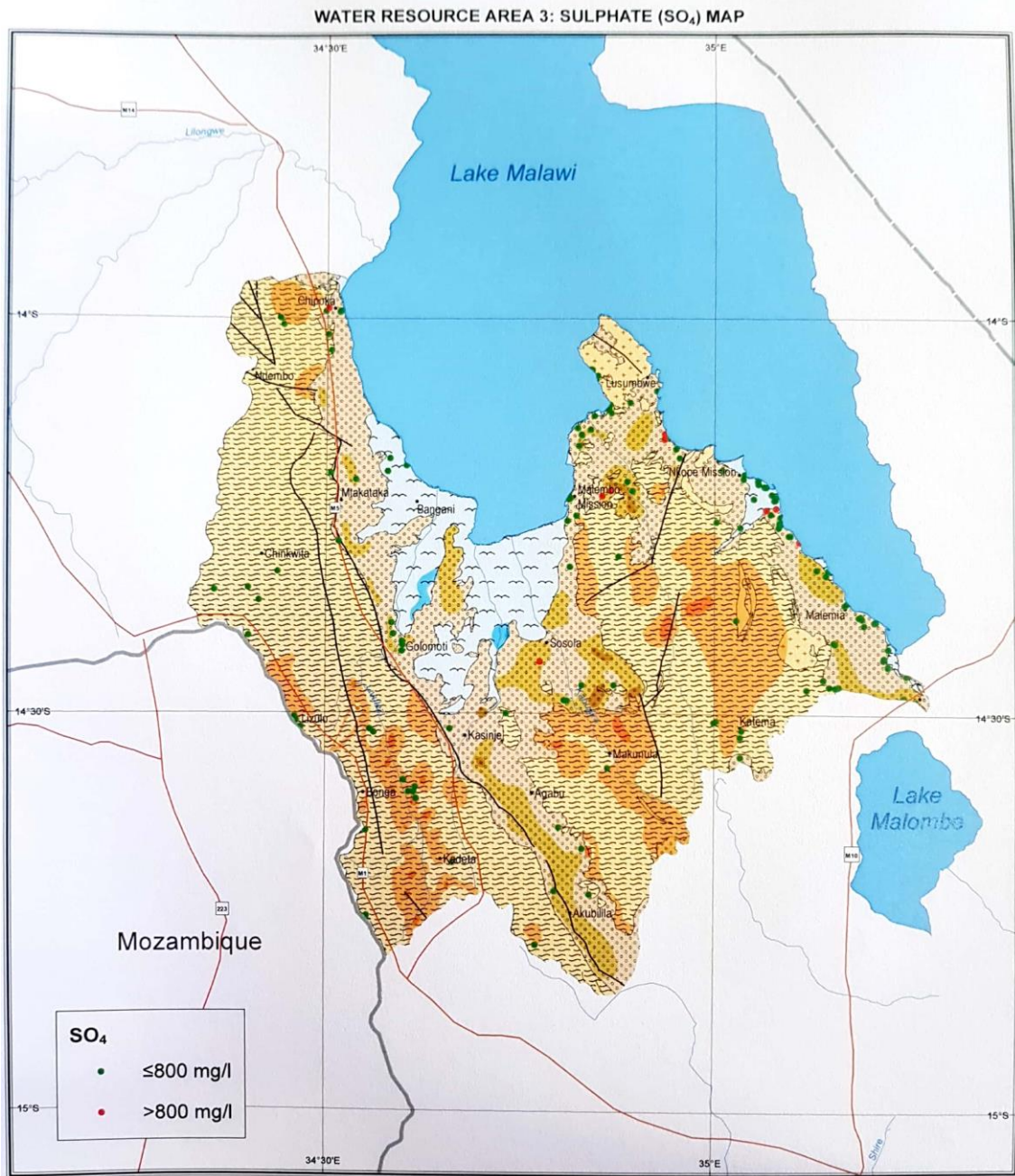


Figure 21: Sulphate Map

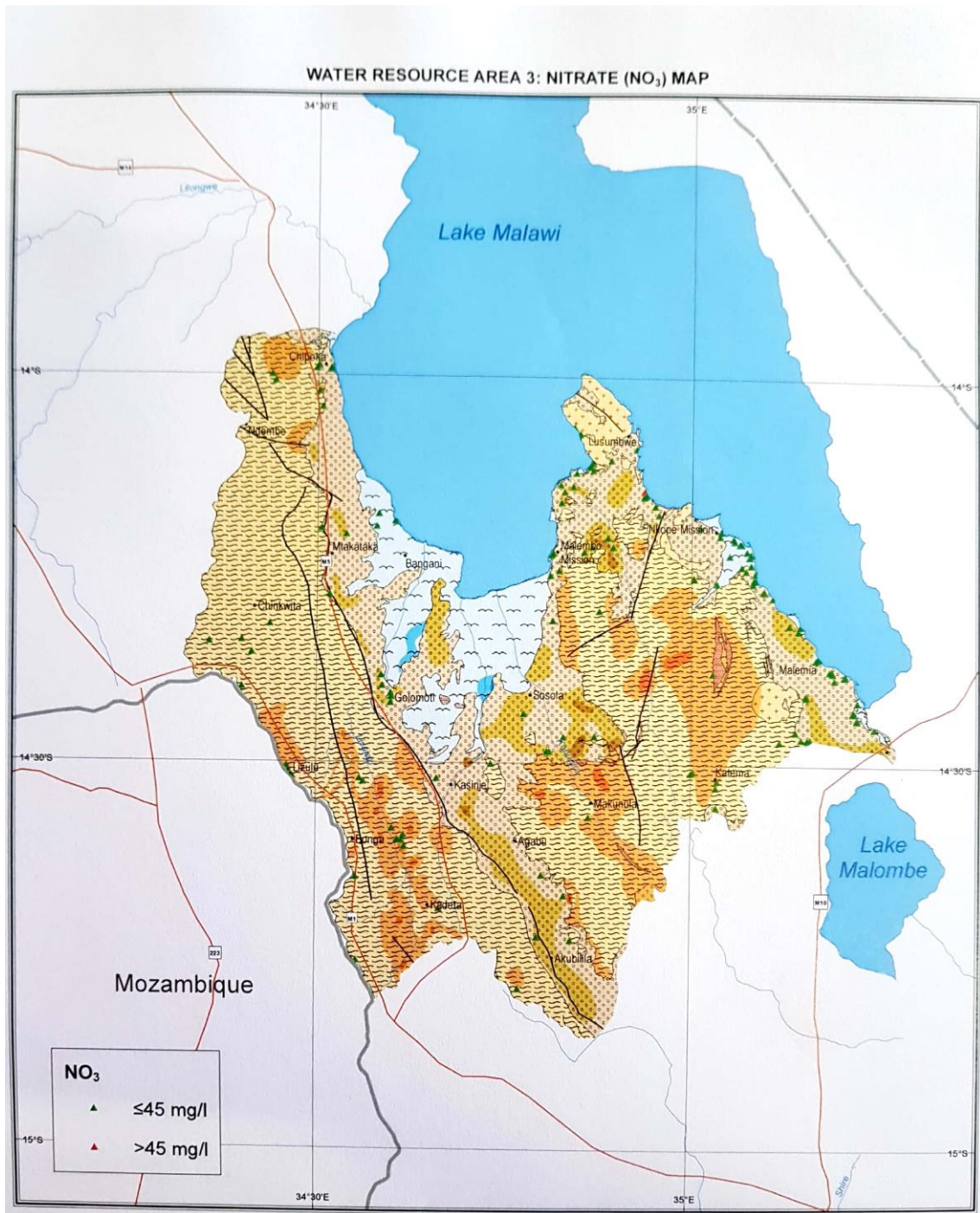


Figure 22: Map of Nitrate Levels

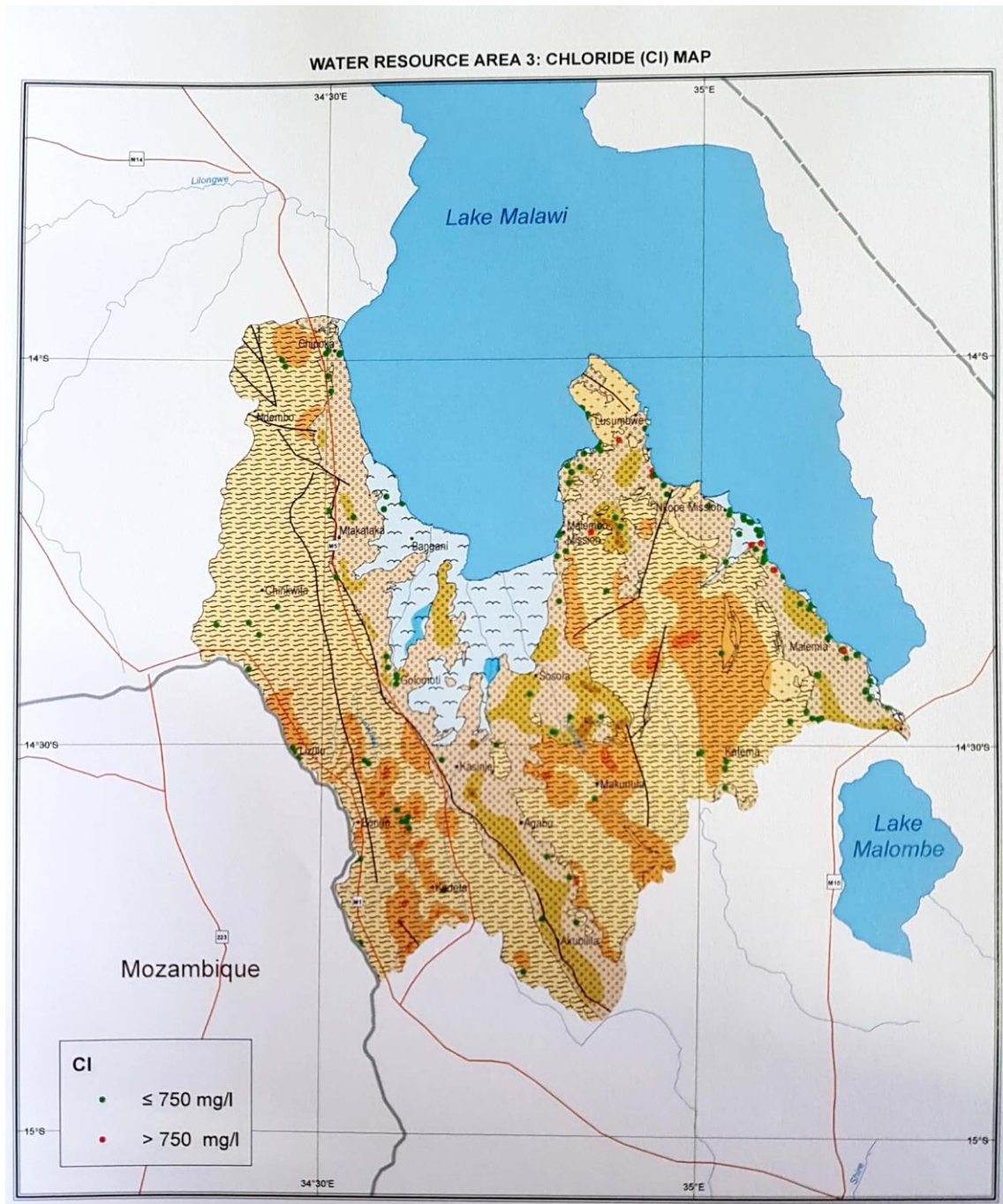


Figure 23: Map of Chloride Levels

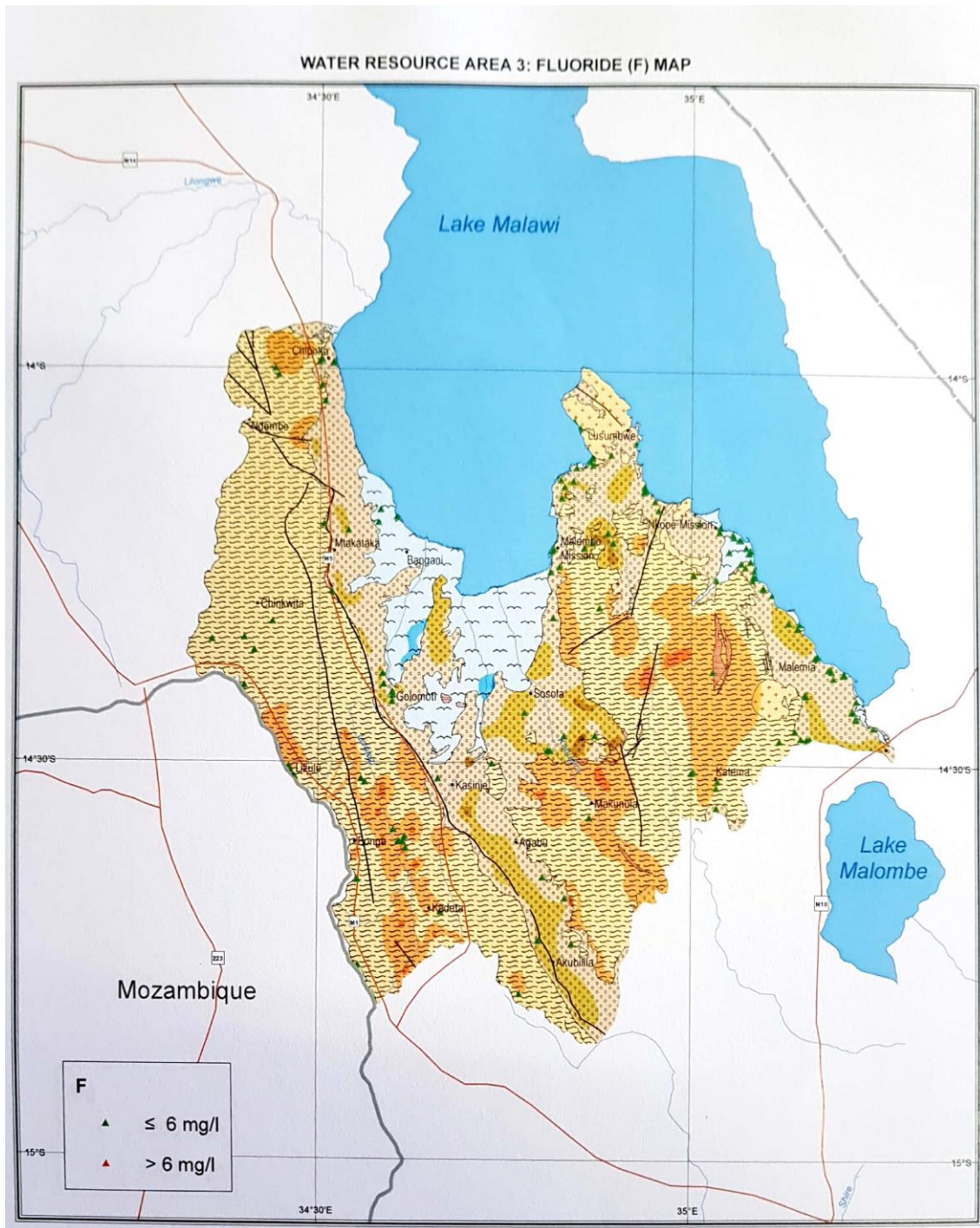


Figure 24: Map of Flouride Levels

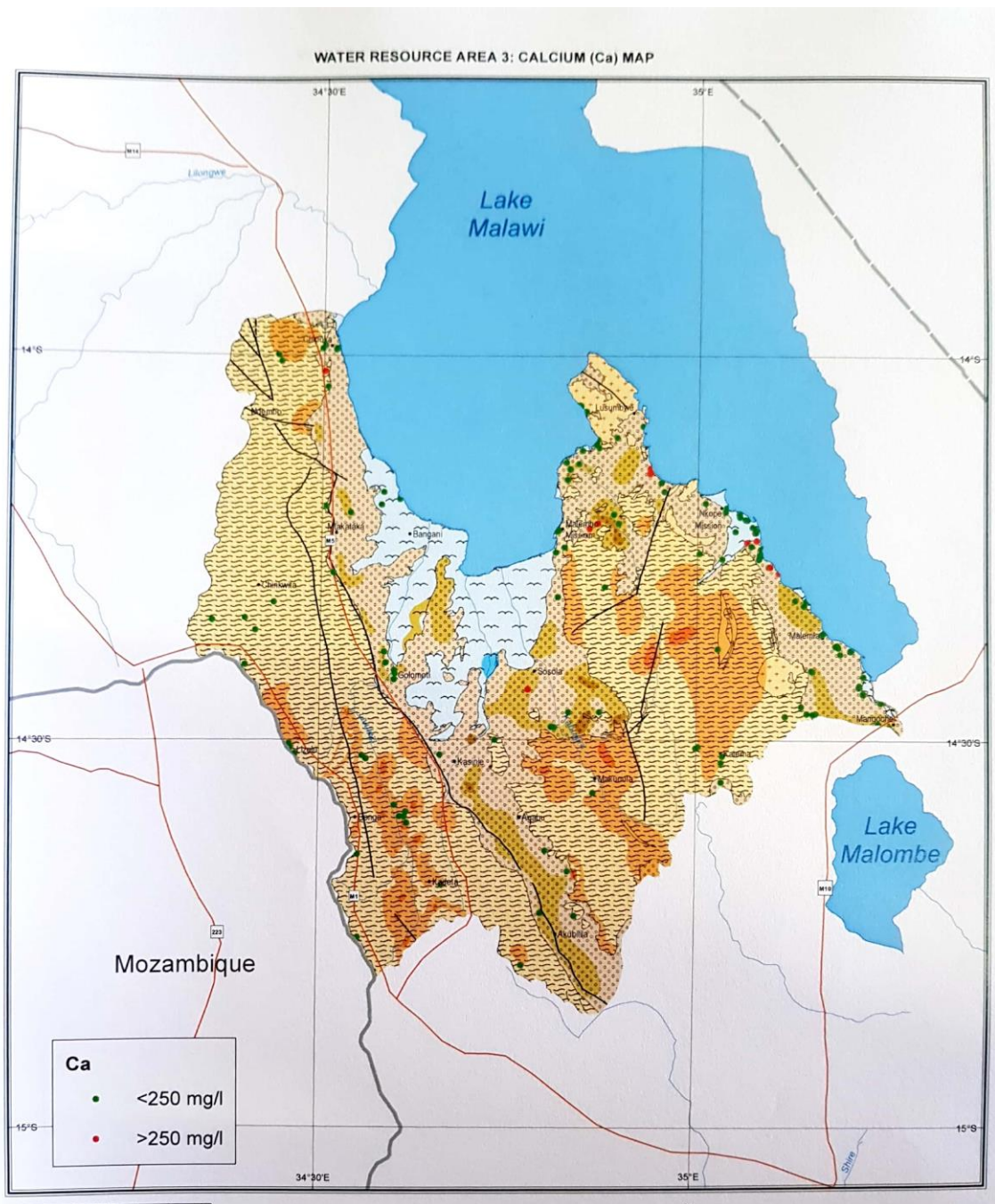


Figure 25: Map of Calcium Levels

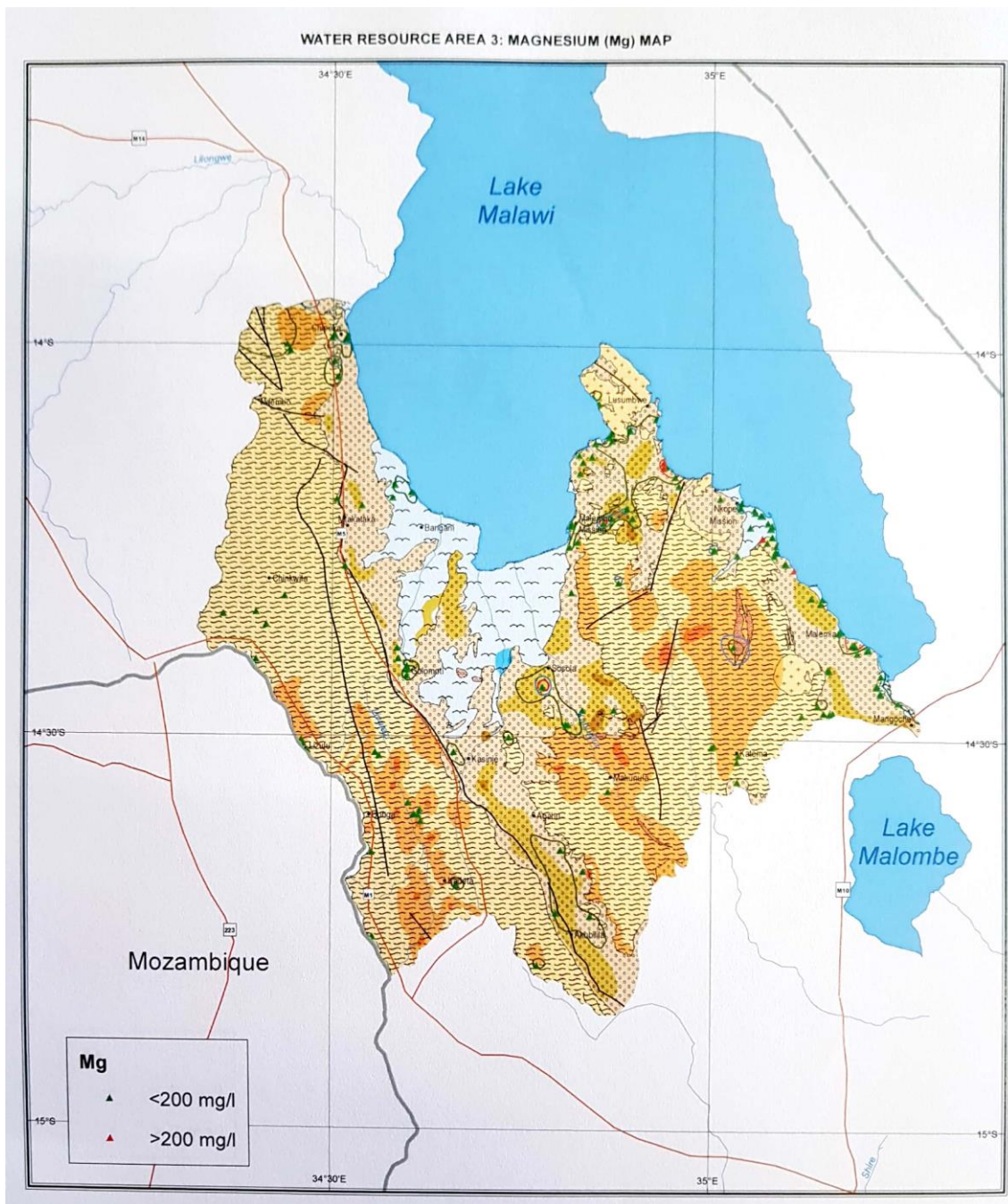


Figure 26: Map of Magnesium Levels

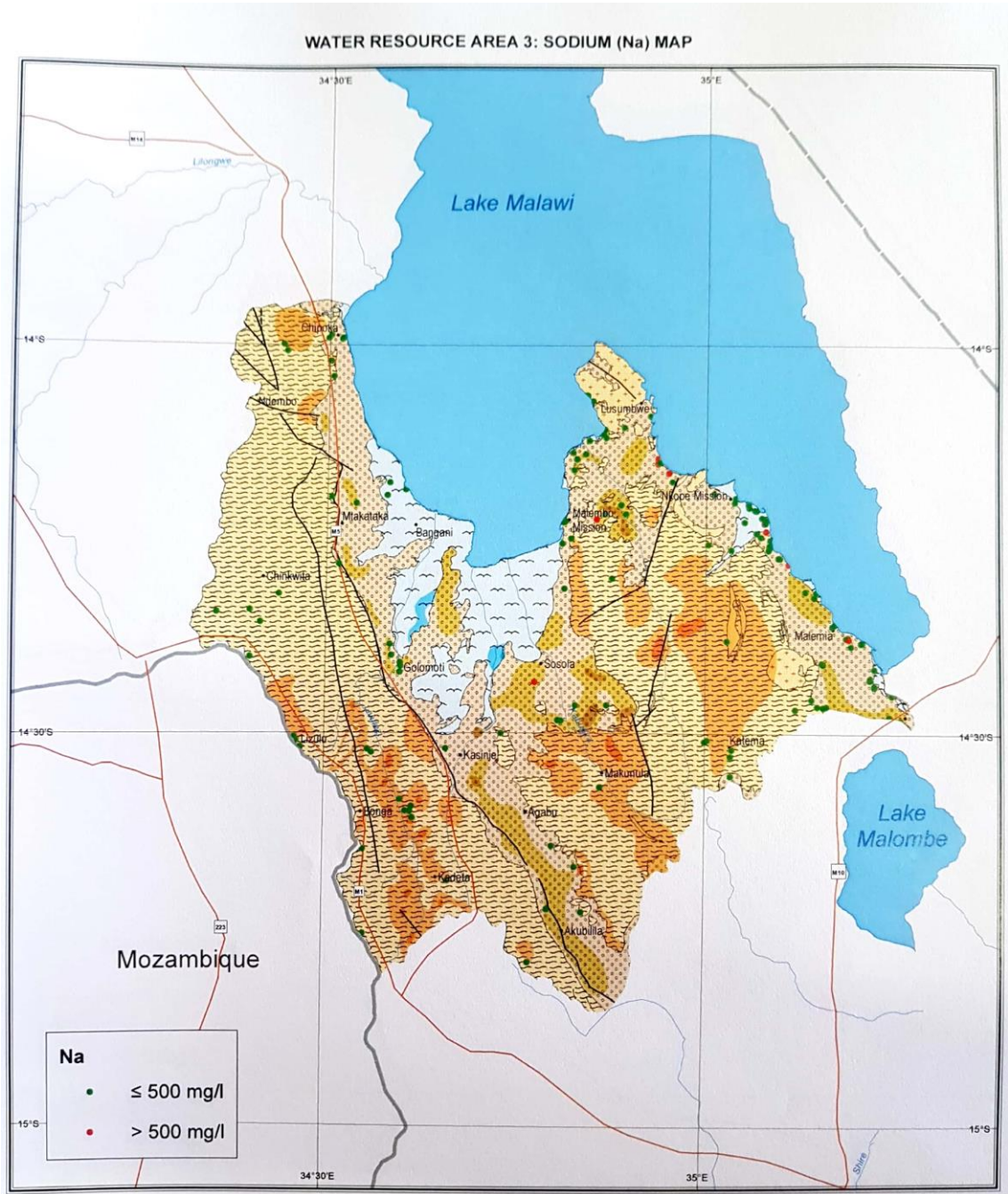


Figure 27: Map of Sodium Levels

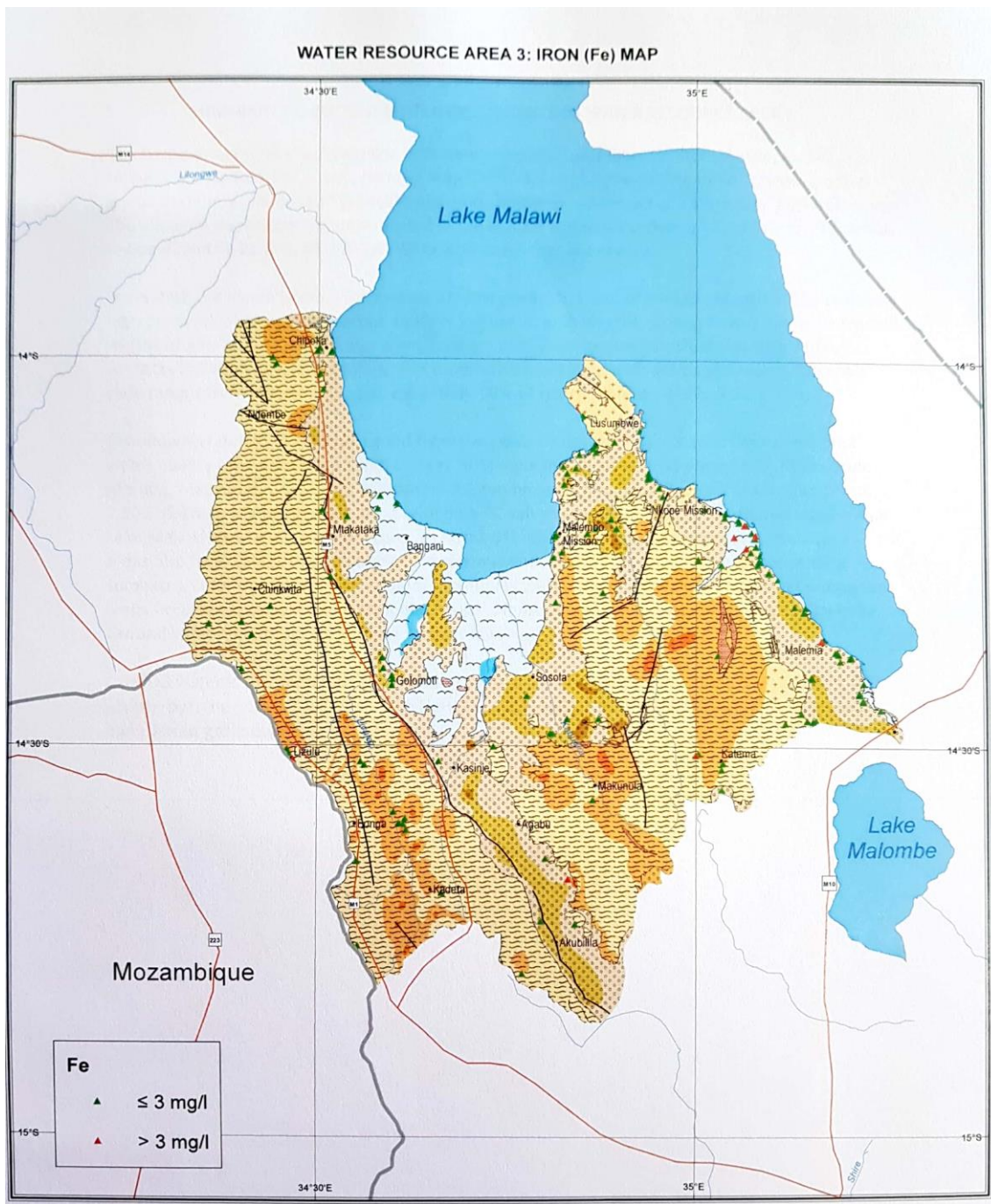


Figure 28: Map of Iron Levels

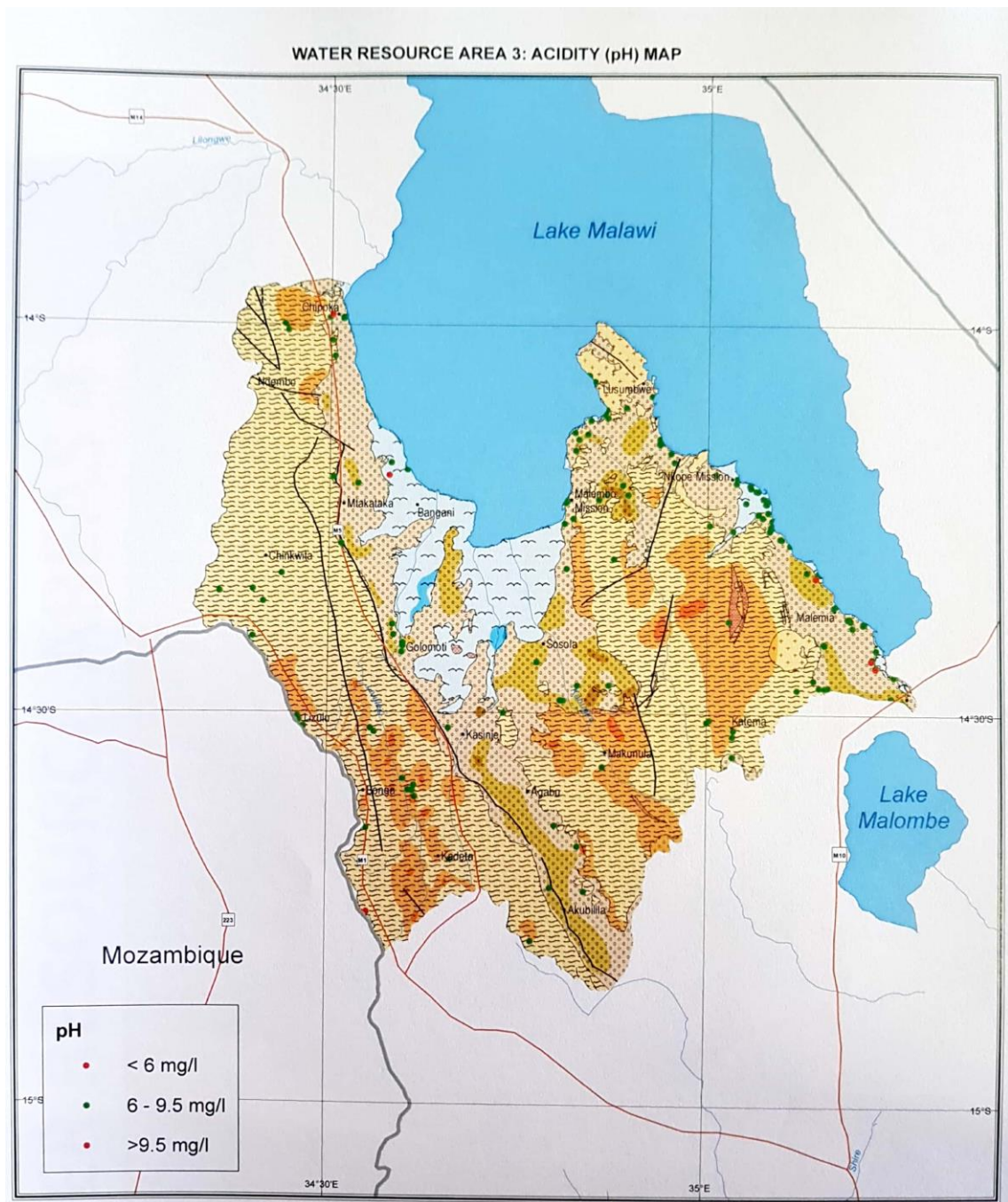


Figure 29: Map of Acidity Levels



GEOCONSULT

GOLOMOTI SOLAR PV

GEOTECHNICAL SURVEY REPORT



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List of Abbreviations

TP	Trial Pit
PI	Plasticity Index
LL	Liquid Limits
CBR	California Bearing Ratio
C	Cohesion (kPa)
ϕ	Fiction Angle
Qp	Pile tip / Base resistance
Qs	Pile skin friction resistance
Qul	Ultimate Pile Load
Qallow	Allowable Pile Capacity

1. Site Investigations

1.1 Scope

The aim of the report is to evaluate suitability of subsoil conditions along the project site to support a solar array as well as small structures in the areas adjacent to the substation.

Material's mechanical and physical properties are to be investigated to ensure adequate design and mitigation, if required, is implemented.

1.2 Site Location

The site is located below the Bangwe escarpments in the Golomoti township. The site borders the main M5 road, and an access road perpendicular to the M5 leading to an ESCOM substation indicated in figure 1 below. The site is currently being used for subsistence farming and currently does not house any residential buildings.

Site boundary, regional location and coordinates are shown in figure 1 below.



Coordinates UTM 36L
672468.00 m E , 8403648.00 m S

Figure 1: Site Boundary Indicated in Red

1.3 Site Testing and Overview

Site testing consisted of excavated trial pits to 3-4m depths, where conditions allowed. Soil samples were taken at each change of soil strata to establish soil plasticity, gradation and chemical analysis. A Dynamic Cone Penetrometer (DCP) test was conducted at 1.0m and to establish insitu soil strength. Samples were collected at 1.0m and at 2.0m to conduct triaxial tests to determine cohesion values and friction angles to for use in bearing capacity calculations.

1.4 Trial Pit Coordinates

Table 1: Trial Pit Coordinates

TP	Easting	Southing	TP	Easting	Southing
TP1	672 496	8 403 452	TP11	672 996	8 402 377
TP2	672 496	8 403 306	TP12	672 650	8 402 797
TP3	672 315	8 403 152	TP13	672 640	8 402 638
TP4	672 616	8 403 213	TP14	672 645	8 402 499
TP5	672 768	8 403 075	TP15	672 384	8 402 794
TP6	672 663	8 402 947	TP16	672 342	8 402 660
TP7	672 863	8 402 795	TP17	672 016	8 402 655
TP8	673 025	8 402 675	TP18	671 938	8 402 608
TP9	673 013	8 402 587	TP19	671 989	8 402 554
TP10	673 006	8 402 499	TP20	671 990	8 402 438



Figure 2: Trial Pit Locations

2. Site Test Results

2.1 Soil Plasticity – Atterberg Limits

Due to the size and change in soil structure across the site, trial pit analysis will be classified within three different zones:

Zone 1: TP 1 – 9

Zone 2: TP 10 – 16

Zone 3: TP 17 – 20

Zone 1

Trial pits 1 – 9 are located almost parallel and along the road reserve. This is the lowest lying area along the site and has sections that are prone to small areas of standing water.

PI levels in this zone average low 20s are classified as medium plasticity. Based on the plasticity index and the liquid limit trial pits found in Zone 1 are classified as CL and CI in the chart presented in figure 3. This classification is used for *clay of low plasticity* and *clay of intermediate plasticity*.

Zone 2

Trial pits 10-16 have relatively uniform PI values across the section down to a depth of 4m. The soil classification falls on the boundary of CI and CL due to the high LL values averaging 35-40 and the medium PI levels of average 20.

Zone 3

Trial pits 17-20 located closer to the substation and the OHL connections to the substation. The initial 1.0m of material shows to have slightly plastic values, slightly plastic soils are those with PI levels greater than 0 but less than 7, typically in the range of 3-7. This classifies the soil as CL-ML, an inorganic silt of low plasticity. These are typically cohesionless. After the initial 1.0m of material the soil the material moves into the CL range of soils (*clay of low plasticity*)

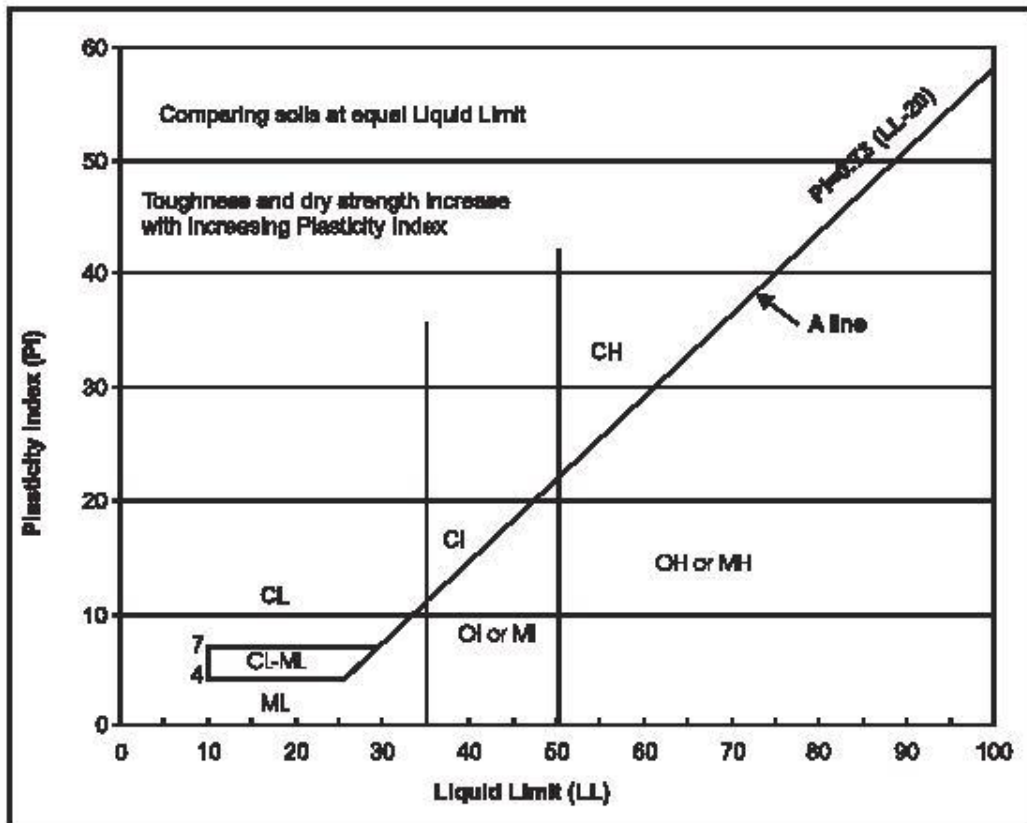


Figure 3: Plasticity Chart

Table 2: Atterburg Limits

Depth	TP1		TP2		TP3		TP4		TP5	
	PI	LL	PI	LL	PI	LL	PI	LL	PI	LL
1.0	11	21.6	22	9.4	23	12.0	13	6.1	26	12.9
2.0	21	34.3	19	8.5	13	6.9	25	12.9	26	12.9
3.0	29	42.5	19	8.5	13	6.9	20	9.4	19	10.2
4.0	21	38.6	16	7.7	21	7.7	20	9.4	19	12.0

Depth	TP6		TP7		TP8		TP9		TP10	
	PI	LL	PI	LL	PI	LL	PI	LL	PI	LL
1.0	23	11.2	22	40.8	21	39.6	21	39.6	11	31.4
2.0	23	11.1	12	32.3	20	38.7	27	42.6	11	31.4
3.0	23	11.1	11	32.3	15	38.6	21	39.0	16	36.5
4.0	24	12.0	11	32.3	15	38.6	21	39.0	19	37.0

Depth	TP11		TP12		TP13		TP14		TP15	
	PI	LL	PI	LL	PI	LL	PI	LL	PI	LL
1.0	23	38.0	15	37.7	9	27.5	16	41.5	14	28.9
2.0	12	33.0	17	37.9	15	30.1	19	44.0	21	37.4
3.0	-	-	13	28.4	19	43.8	19	44.0	17	36.9
4.0	-	-	13	28.4	19	43.8			17	36.9

Depth	TP16		TP17		TP18		TP19		TP20	
	PI	LL	PI	LL	PI	LL	PI	LL	PI	LL
1.0	11	31.1	SP	SP	SP	SP	SP	SP	13	37.5
2.0	16	33.5	12	34	14	34.6	18	36.3	14	36.8
3.0	16	33.5	10	24	16	33.1	17	35.4	20	31.7
4.0	17	36.4	10	24	16	33.1	17	35.4	20	31.7

2.2 Gradation

Gradation values as show the material on site to be predominantly silt and clay based. Sections of gravel are present in various layers however mostly surrounded by a silty clay.

2.3 DCP – Dynamic Cone Penetrometer

DCP testing was carried out at 1.0m depths to further test the subsoil's insitu strength. The test results have been correlated to CBR for an easier understanding of strength characteristics. Table 3 below shows the insitu CBR strength results per location. They are classified using the below criteria.

CBR	Strength Value
0 - 10	Poor
10 - 20	Average
20 - 30	Good
30+	Very Good

$$CBR = \frac{292}{DPI^{1.12}}$$

Table 3: DCP Insitu Strength

Trial Pit	Remarks	Trial Pit	Remarks
T01	Poor	T11	Very good
T02	Poor	T12	Very good
T03	Good	T13	Very good
T04	Good	T14	Very good
T05	Good	T15	Poor
T06	Very good	T16	Very good
T07	Very good	T17	Average
T08	Very good	T18	Average
T09	Very good	T19	Average
T10	Good	T20	Good

2.4 Triaxial Testing

Depending on the soil type Mohr or Lambe values were used.

Table 4: Triaxial Test Results

Depth	TP1		TP2		TP3		TP4		TP5	
	C	ϕ	C	ϕ	C	ϕ	C	ϕ	C	ϕ
1.0	14	24	70	10	75	27	23	27	63	33
2.0	-	-	13	35	48	17	74	38	16	33

Depth	TP6		TP7		TP8		TP9		TP10	
	C	ϕ	C	ϕ	C	ϕ	C	ϕ	C	ϕ
1.0	-	-	39	22	68	18	55	35	54	15
2.0	60	19	19	28	-	-	32	11	-	-

Depth	TP11		TP12		TP13		TP14		TP15	
	C	ϕ	C	ϕ	C	ϕ	C	ϕ	C	ϕ
1.0	43	12	-	-	85	26	82	35	11	20
2.0	26	18	48	28	-	-	27	10	23	30

Depth	TP16		TP17		TP18		TP19		TP20	
	C	ϕ	C	ϕ	C	ϕ	C	ϕ	C	ϕ
1.0	-	-	36	25	15	27	13	26	38	39
2.0	39	11	50	30	50	36	13	31	33	18

2.5 Pile Bearing Capacity

Bearing capacities were calculated for a 0.3m pile of 4.0m length.

The following constants were used throughout the calculations:

- Adhesion coefficient: α 0.9
- Friction resistance: f_{si} 4.5
- Pile Diameter: D 0.3m
- Pile Length: L 4.0m

Table 5 shows the calculate values for:

- Q_p – Pile tip / Base resistance (Load carried by the pile point)
- Q_s – Pile skin friction resistance (Load carried by the pile shaft)
- Q_{ult} – Ultimate Pile Load
- Q_{allow} – Allowable Pile Capacity (calculated for SF of 2.5)

Table 5: Piled Bearing Capacity Results

Bearing Capacity Values (Ton)					
	TP1	TP2	TP3	TP4	TP5
Q_p	0.7	10.3	6.52	85.6	111.6
Q_s	16.9	16.9	16.9	16.9	16.9
Q_{ult}	17.7	27.2	23.5	102.6	128.0
Q_{allow}	7.1	10.9	9.4	41.0	51.4

Bearing Capacity Values (Ton)					
	TP6	TP7	TP8	TP9	TP10
Q_p	3.8	4.1	3.8	4.6	1.5
Q_s	16.9	16.9	16.9	16.9	16.9
Q_{ult}	20.7	21.0	20.8	21.57	18.5
Q_{allow}	8.3	8.4	8.3	8.6	7.4

Bearing Capacity Values (Ton)					
	TP11	TP12	TP13	TP14	TP15
Q_p	1.5	6.8	6.1	3.05	1.6
Q_s	16.9	16.9	16.9	16.9	16.9
Q_{ult}	18.4	23.7	22.9	20.0	18.5
Q_{allow}	7.4	9.5	9.1	8.0	7.4

Bearing Capacity Values (Ton)					
	TP16	TP17	TP18	TP19	TP20
Q_p	0.36	6.1	5.3	6.0	7.5
Q_s	19.9	16.9	16.9	16.9	16.9
Q_{ult}	17.3	23.0	22.2	23.0	24.5
Q_{allow}	6.9	9.2	8.9	9.2	9.8

2.6 Shallow Foundations

Bearing capacity for the trial pits closer to the substation TP17-20 was calculated for shallow footings. Values based on Terzaghi (1943). Figures are for footing dimensions of 3x3m, for strip and rectangular footing widths of 3.0m

Ultimate bearing capacity values are given for a safety factor of 3.

Bearing Capacity Shallow Foundations								
Foundation Type	TP17		TP18		TP19		TP20	
	q _{ult} (ton/m ²)	q _a (kPa)	q _{ult} (ton/m ²)	q _a (kPa)	q _{ult} (ton/m ²)	q _a (kPa)	q _{ult} (ton/m ²)	q _a (kPa)
Strip Foundation	174	581	142	475	93	312	165	552
Rectangular	204	682	163	544	96	321	189	633
Square	204	682	163	544	96	321	189	633

Table 6: Bearing Capacity for Shallow Foundations

2.7 Chemical Analysis

Two samples per pit were tested to determine the Sulphate, Chloride and Oxide Reduction Potential (ORP). Results of the tests are shown in table 7.

Trial Pit	Depth (m)	pH	Sulphate SO ₄ ²⁻ (mg/l)	Chloride (Cl) mg/l	ORP mV
01	0.2 - 1.0	6.7	8.8	17.7	2.6
	3.0 - 4.0	6.8	14.3	19.5	9.4
02	0.2 - 1.0	7.7	15.4	23.4	12.3
	3.3 - 4.0	6.9	5.3	15.9	1.9
03	0.6 - 2.5	7.3	423	28.4	7.6
	2.5 - 4.1	7.2	353	25.0	5.1
04	0.2 - 1.0	7.3	101.3	39.0	13.4
	2.0 - 4.0	7.6	385.6	25.0	3.2
05	0.1 - 1.5	6.8	12.1	17.7	15.0
	3.0 - 4.0	7.1	17.8	19.5	16.3
06	0.5 - 2.0	6.9	6.8	14.2	7.1
	2.0 - 4.0	7.0	2.6	15.9	10.1
07	0.2 - 1.0	7.6	289	21.3	17.3
	1.0 - 2.5	7.3	291	35.5	8.2
08	0.8 - 2.5	7.1	15.7	33.7	15.7
	2.5 - 4.0	7.2	9.1	26.6	19.4
09	0.1 - 1.0	7.5	50.9	17.3	17.8
	2.5 - 4.0	7.6	42.0	17.3	18.2
10	0.1 - 2.0	7.6	13.5	15.9	12.0
	3.0 - 4.0	7.1	12.0	15.9	7.8

Trial Pit	Depth (m)	pH	Sulphate SO ₄ ²⁻ (mg/l)	Chloride (Cl) mg/l	ORP mV
11	0.1 - 2.0	7.0	3.8	33.7	7.7
	2.0 - 4.2	6.9	2.1	65.6	5.6
12	0.1 - 1.5	7.2	9.2	15.9	8.6
	3.0 - 3.8	6.9	18.7	19.5	13.2
13	0.1 - 1.0	7.9	3.8	19.7	17.3
	2.0 - 4.0	7.5	10.0	37.2	60.0
14	0.1 - 1.0	7.3	21.1	12.4	8.9
	2.0 - 3.8	7.1	22.1	14.4	2.7
15	0.1 - 0.6	7.2	38.9	23.0	12.6
	2.5 - 4.3	7.4	73.1	15.9	20.2
16	0.3 - 1.0	7.3	12.2	15.9	13.3
	3.0 - 4.0	7.1	16.2	24.8	8.3
17	0.1 - 0.6	7.1	9.3	15.9	5.6
	2.5 - 4.1	7.2	25.5	17.7	14.7
18	0.2 - 0.5	7.1	379.6	21.3	4.7
	2.0 - 4.0	7.0	344.0	28.4	1.7
19	0.1 - 0.5	6.7	8.9	24.8	5.7
	2.0 - 4.1	6.7	10.0	17.7	4.9
20	0.1 - 1.0	6.8	10.9	39.0	128.5
	2.0 - 4.2	6.8	21.5	21.3	14.1

Table 7: Chemical Analysis

2.8 Summary

Site investigations and laboratory test results have shown the site to have predominantly silty clayey soils within the initial 1-2m with sections of harder material at 2-4m. Laterite gravel and weathered rock was found at 2-3 meter depths in several of the trial pits.

Plasticity levels predominantly classify the soil conditions as clay of low plasticity, with the areas adjacent to the substation demonstrating non plastic tendencies within the initial 1.0m layer. For shallow foundations and any structures that would need to be built to house inverters or transformers, these soil conditions are desirable. Shallow foundations around zone 3 show bearing capacity values of 500kPa + with the exception of TP19 at 321kPa, this however is still regarded as an adequate design value.

Piling was considered for the panels due to the high load spread over a comparatively small surface area. Piling will require less structural concrete works as a wide footing would be required to combat overturning moments. Piles of diameter 0.3m and 4m lengths were used for design calculations. Piles with an allowable bearing capacity of less than 8 tons are TP01, TP10, TP11, TP15 and TP16.

Chemical analysis shows neutral pH values, chloride levels are within levels that will not pose corrosion risk to the concrete. Sulphide levels are elevated above acceptable levels in TP04, TP07 and TP18 of an average of 300 mg/l. It is recommended the surrounding area be tested to establish the extent of the elevated sulphate levels. Oxide reduction is seen to be elevated in TP2 and TP13, further testing as per with the sulphate is recommended prior to introducing mitigating measures.

3. Appendix

3.1 Soil Profiles



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LAB REF: GC499 / 05MAY19 / 15:30		SAMPLE No. GSPV / TP01 / 27APR19		
SAMPLED BY: GEOCONSULT		DATE: 27 - 04 - 2019	TIME: 11:05	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
TP 01	0 672 496	8 403 452	543 (m)	0.000-4.000
TYPE OF MATERIAL:				
TESTED BY: S.THANGATO		DATE: 27 - 04 - 2019	TIME: 11:05	
CHECKED BY: G. KACHIWALA		DATE: 27 - 06 - 2019	TIME: 17:00	
APPROVED BY: M. MICHELLE		DATE: 27 - 06 - 2019	TIME: 10:00	
PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM	

TRIAL PIT SOIL PROFILE STANDARD: BS 1377

	0 200	MOIST LIGHT BROWN TOP SOIL
	400 600 800 1000	MOIST DARK BROWN SANDY SILTY CLAY
	1200 1400 1600 1800 2000	MOIST BROWN YELLOWISH SANDY SILTY CLAY
	2200 2400 2600 2800 3000	MOIST BROWN YELLOWISH GRAVELLY SANDY SILTY CLAY
	3200 3400 3600 3800 4000	VERY MOIST BROWN GRAVELLY SANDY SILTY CLAY CONTAINS SPOTS OF DECOMPOSED ROCK

WATER LEVEL: 3.2M


PHOTOGRAPHIC REPORT




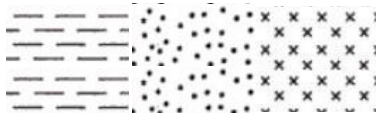
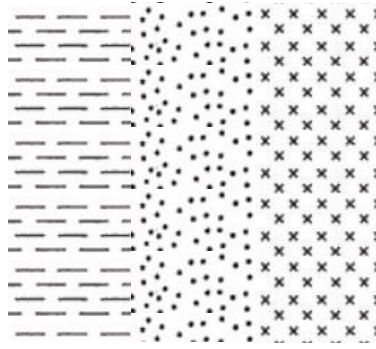
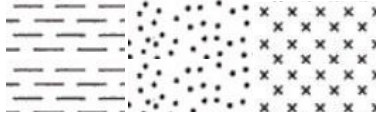
LEGEND

- made ground
 - boulders and cobbles
 - gravel
 - sand
 - silt
 - clay
 - peat
 - silty sand
- note: composite soil types are signified by combined symbols e.g.

REMARKS: SAMPLED FROM TP 01 @ GOLOMOTI SOLAR PV

 GEOCONSULT +265 0888 846 543 sabelli@geoconsult.cc	LAB REF: GC499 / 05MAY19 / 15:30		SAMPLE No. GSPV / TP02 / 27APR19		
	SAMPLED BY: GEOCONSULT		DATE: 27 - 04 - 2019	TIME: 08:10	
	LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
	TP 02	0 672 496	8 403 306	543 (m)	0.000-4.000
	TYPE OF MATERIAL:				
TESTED BY: S.THANGATO		DATE: 27 - 04 - 2019	TIME: 08:10		
CHECKED BY: G. KACHIWALA		DATE: 27 - 06 - 2019	TIME: 17:00		
APPROVED BY: M. MICHELLE		DATE: 27 - 06 - 2019	TIME: 10:00		
PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM		

TRIAL PIT SOIL PROFILE STANDARD: BS 1377



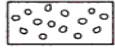

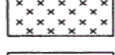

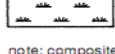
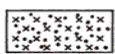
	0 200	MOIST LIGHT BROWN TOP SOIL
	400 600 800 1000	MOIST DARK BROWN SANDY SILTY CLAY
	1200 1400 1600 1800 2000 2200 2400 2600 2800 3000 3200	MOIST BROWN YELLOWISH SANDY SILTY CLAY
	3400 3600 3800 4000	VERY MOIST BROWN YELLOWISH GRAVELLY SANDY SILTY CLAY

ATER LEVEL: 3.4M

PHOTOGRAPHIC REPORT



LEGEND

-  made ground
 -  boulders and cobbles
 -  gravel
 -  sand
 -  silt
 -  clay
 -  peat
 -  silty sand
- note: composite soil types are signified by combined symbols e.g.

REMARKS: SAMPLED FROM TP 02 @ GOLOMOTI SOLAR PV



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LAB REF: GC499 / 05MAY19 / 15:30		SAMPLE No. GSPV / TP03 / 27APR19		
SAMPLED BY: GEOCONSULT		DATE: 27 - 04 - 2019	TIME: 08:10	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
TP 03	0 672 315	8 403 152	546 (m)	0.000-4.200
TYPE OF MATERIAL:				
TESTED BY: S.THANGATO		DATE: 27 - 04 - 2019	TIME: 08:10	
CHECKED BY: G. KACHIWALA		DATE: 27 - 06 - 2019	TIME: 17:00	
APPROVED BY: M. MICHELLE		DATE: 27 - 06 - 2019	TIME: 10:00	
PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM	





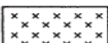
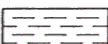
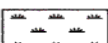
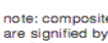
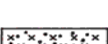
TRIAL PIT SOIL PROFILE STANDARD: BS 1377

0 200	DRY LIGHT BROWN TOP SOIL
400 600 800 1000	MOIST STIFF DARK GREY SANDY SILTY CLAY
1200 1400 1600 1800 2000 2200 2400 2600 2800 3000 3200 3400	MOIST STIFF LIGHT BROWN SANDY SILTY CLAY
3800 4000 4200	MOIST BROWN REDDISH SANDY SILTY CLAYEY LATERITE GRAVEL

PHOTOGRAPHIC REPORT



LEGEND

-  made ground
-  boulders and cobbles
-  gravel
-  sand
-  silt
-  clay
-  peat
-  note: composite soil types are signified by combined symbols e.g.
-  silty sand

REMARKS: SAMPLED FROM TP 03 @ GOLOMOTI SOLAR PV




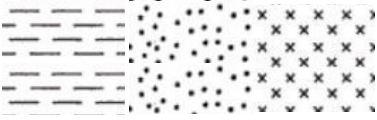
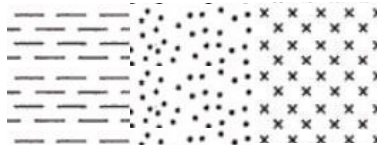
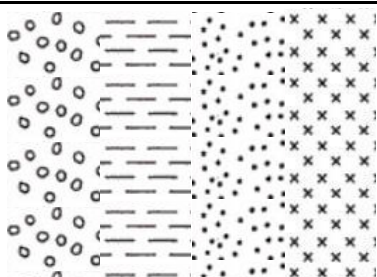
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LAB REF: GC499 / 05MAY19 / 15:30		SAMPLE No. GSPV / TP04 / 27APR19		
SAMPLED BY: GEOCONSULT		DATE: 27 - 04 - 2019	TIME: 11:33	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
TP 04	0 672 616	8 403 213	546 (m)	0.000-4.000
TYPE OF MATERIAL:				
TESTED BY: S.THANGATO		DATE: 27 - 04 - 2019	TIME: 11:33	
CHECKED BY: G. KACHIWALA		DATE: 27 - 06 - 2019	TIME: 17:00	
APPROVED BY: M. MICHELLE		DATE: 27 - 06 - 2019	TIME: 10:00	
PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM	


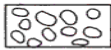
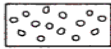




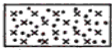
TRIAL PIT SOIL PROFILE STANDARD: BS 1377

	0 200	MOIST LIGHT BROWN TOP SOIL
	400 600 800 1000	MOIST LIGHT BROWN SANDY SILTY CLAY
	1200 1400 1600 1800 2000	MOIST BROWNISH GREY SANDY SILTY CLAY
	2200 2400 2600 2800 3000 3200 3400 3800 4000	MOIST BROWN REDDISH LATERITE GRAVELLY SANDY SILTY CLAY

PHOTOGRAPHIC REPORT



LEGEND

-  made ground
-  boulders and cobbles
-  gravel
-  sand
-  silt
-  clay
-  peat
- note: composite soil types are signified by combined symbols e.g.
-  silty sand

REMARKS: SAMPLED FROM TP 04 @ GOLOMOTI SOLAR PV




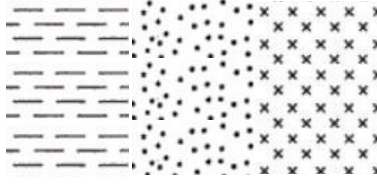
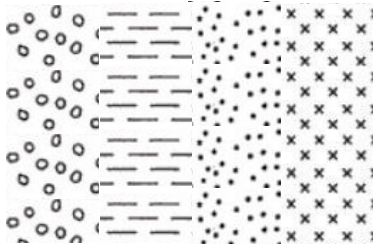
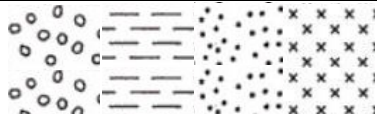
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LAB REF: GC499 / 05MAY19 / 15:30		SAMPLE No. GSPV / TP05 / 30APR19		
SAMPLED BY: GEOCONSULT		DATE: 30 - 04 - 2019	TIME: 08:30	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
TP 05	0 672 768	8 403 213	545 (m)	0.000-4.000
TYPE OF MATERIAL:				
TESTED BY: S.THANGATO		DATE: 30 - 04 - 2019	TIME: 08:30	
CHECKED BY: G. KACHIWALA		DATE: 27 - 06 - 2019	TIME: 17:00	
APPROVED BY: M. MICHELLE		DATE: 27 - 06 - 2019	TIME: 10:00	
PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM	




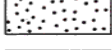
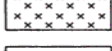

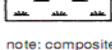
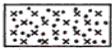
TRIAL PIT SOIL PROFILE STANDARD: BS 1377

	0 200	MOIST LIGHT BROWN TOP SOIL
	400 600 800 1000 1200 1400	MOIST LIGHT BROWN SANDY SILTY CLAY
	1600 1800 2000 2200 2400 2600 2800 3000	MOIST LIGHT BROWN REDDISH GRAVELLY SANDY SILTY CLAY
	3200 3400 3800 4000	MOIST STIFF REDDISH BROWN LATERITE GRAVELLY SANDY SILTY CLAY

PHOTOGRAPHIC REPORT



LEGEND

-  made ground
 -  boulders and cobbles
 -  gravel
 -  sand
 -  silt
 -  clay
 -  peat
 -  silty sand
- note: composite soil types are signified by combined symbols e.g.

REMARKS: SAMPLED FROM TP 05 @ GOLOMOTI SOLAR PV




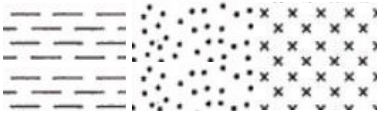
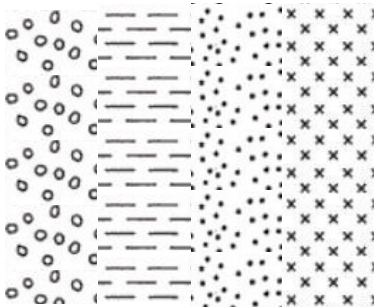
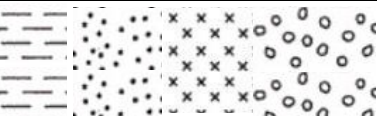
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LAB REF: GC499 / 05MAY19 / 15:30		SAMPLE No. GSPV / TP06 / 30APR19		
SAMPLED BY: GEOCONSULT		DATE: 30 - 04 - 2019	TIME: 10:11	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
TP 06	0 672 663	8 403 947	544 (m)	0.000-4.000
TYPE OF MATERIAL:				
TESTED BY: S.THANGATO		DATE: 30 - 04 - 2019	TIME: 10:11	
CHECKED BY: G. KACHIWALA		DATE: 27 - 06 - 2019	TIME: 17:00	
APPROVED BY: M. MICHELLE		DATE: 27 - 06 - 2019	TIME: 10:00	
PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM	




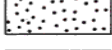
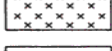

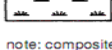
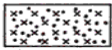
TRIAL PIT SOIL PROFILE STANDARD: BS 1377

	0 200	MOIST LIGHT BROWN TOP SOIL
	400 600 800 1000	MOIST LIGHT GREY SANDY SILTY CLAY
	1200 1400 1600 1800 2000 2200 2400 2600 2800 3000	MOIST LIGHT BROWN SANDY SILTY CLAY
	3200 3400 3800 4000	MOIST BROWN REDDISH SANDY SILTY CLAYEY LATERITE GRAVEL

PHOTOGRAPHIC REPORT



LEGEND

-  made ground
 -  boulders and cobbles
 -  gravel
 -  sand
 -  silt
 -  clay
 -  peat
 -  silty sand
- note: composite soil types are signified by combined symbols e.g.

REMARKS: SAMPLED FROM TP 06 @ GOLOMOTI SOLAR PV



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LAB REF: GC499 / 05MAY19 / 15:30		SAMPLE No. GSPV / TP07 / 30APR19		
SAMPLED BY: GEOCONSULT		DATE: 30 - 04 - 2019	TIME: 13:57	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
TP 07	0 672 863	8 402 795	544 (m)	0.000-4.000
TYPE OF MATERIAL:				
TESTED BY: S.THANGATO		DATE: 30 - 04 - 2019	TIME: 13:57	
CHECKED BY: G. KACHIWALA		DATE: 27 - 06 - 2019	TIME: 17:00	
APPROVED BY: M. MICHELLE		DATE: 27 - 06 - 2019	TIME: 10:00	
PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM	

TRIAL PIT SOIL PROFILE STANDARD: BS 1377

0 200	DRY LIGHT BROWN TOP SOIL
400 600 800 1000	MOIST REDDISH GREY SANDY SILTY CLAY
1200 1400 1600 1800 2000 2200 2400	MOIST STIFF BROWN GRAVELLY SANDY SILTY CLAY
2600 2800 3000 3200 3400 3800 4000	MOIST BROWN REDDISH SANDY SILTY CLAYEY LATERITE GRAVEL

PHOTOGRAPHIC REPORT



LEGEND

	made ground
	boulders and cobbles
	gravel
	sand
	silt
	clay
	peat
note: composite soil types are signified by combined symbols e.g.	
	silty sand

REMARKS: SAMPLED FROM TP 07 @ GOLOMOTI SOLAR PV





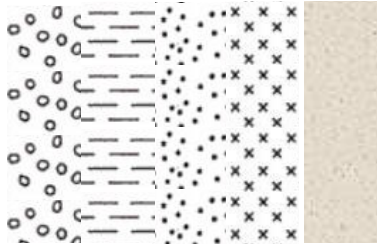
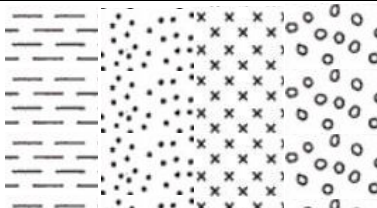
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LAB REF: GC499 / 05MAY19 / 15:30		SAMPLE No. GSPV / TP08 / 30APR19		
SAMPLED BY: GEOCONSULT		DATE: 30 - 04 - 2019	TIME: 15:10	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
TP 08	0 673 025	8 402 675	540 (m)	0.000-4.000
TYPE OF MATERIAL:				
TESTED BY: S.THANGATO		DATE: 30 - 04 - 2019	TIME: 15:10	
CHECKED BY: G. KACHIWALA		DATE: 27 - 06 - 2019	TIME: 17:00	
APPROVED BY: M. MICHELLE		DATE: 27 - 06 - 2019	TIME: 10:00	
PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM	




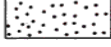
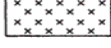
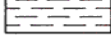


TRIAL PIT SOIL PROFILE STANDARD: BS 1377

	0 200	DRY TOP SOIL
	400 600 800	MOIST DARK BROWN SANDY SILTY CLAY
	1000 1200 1400 1600 1800 2000 2200 2400	MOIST BROWN GRAVELLY SANDY SILTY CLAY WITH SPOTS OF HARD DECOMPOSED ROCK
	2600 2800 3000 3200 3400 3800 4000	MOIST BROWN REDDISH SANDY SILTY CLAYEY LATERITE GRAVEL


PHOTOGRAPHIC REPORT




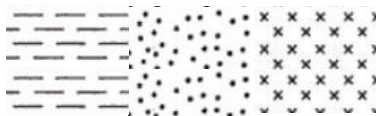
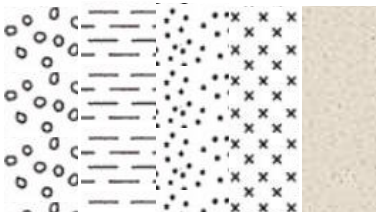
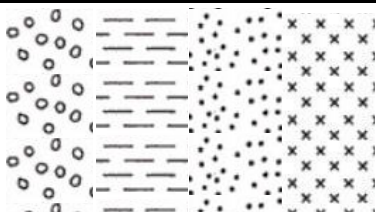
LEGEND

	made ground
	boulders and cobbles
	gravel
	sand
	silt
	clay
	peat
note: composite soil types are signified by combined symbols e.g.	
	silty sand

REMARKS: SAMPLED FROM TP 08 @ GOLOMOTI SOLAR PV

 GEOCONSULT +265 0888 846 543 sabelli@geoconsult.cc	LAB REF: GC499 / 05MAY19 / 15:30		SAMPLE No. GSPV / TP09 / 01MAY19		
	SAMPLED BY: GEOCONSULT		DATE: 01 - 05 - 2019	TIME: 15:10	
	LOCATION: 36L UTM TP 09	EASTING 0 673 013	NORTHING 8 402 587	ELEVATION 542 (m)	DEPTH (m) 0.000-4.000
	TYPE OF MATERIAL:				
	TESTED BY: S.THANGATO		DATE: 01 - 05 - 2019	TIME: 15:10	
CHECKED BY: G. KACHIWALA		DATE: 27 - 06 - 2019	TIME: 17:00		
APPROVED BY: M. MICHELLE		DATE: 27 - 06 - 2019	TIME: 10:00		
PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM		




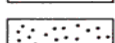
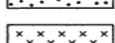
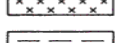


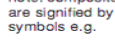
TRIAL PIT SOIL PROFILE STANDARD: BS 1377

	0 200	DRY TOP SOIL
	400 600 800 1000	MOIST DARK GREY SANDY SILTY CLAY
	1200 1400 1600 1800 2000 2200 2400	MOIST BROWN STIFF GRAVELLY SANDY SILTY CLAY CONTAINS SPOTS OF WHITISH DECOMPOSED ROCK
	2600 2800 3000 3200 3400 3800 4000	MOIST BROWN REDDISH LATERITE GRAVELLY GRAVELLY SANDY SILTY CLAY

PHOTOGRAPHIC REPORT



LEGEND

-  made ground
-  boulders and cobbles
-  gravel
-  sand
-  silt
-  clay
-  peat
-  note: composite soil types are signified by combined symbols e.g.
-  silty sand

REMARKS: SAMPLED FROM TP 09 @ GOLOMOTI SOLAR PV




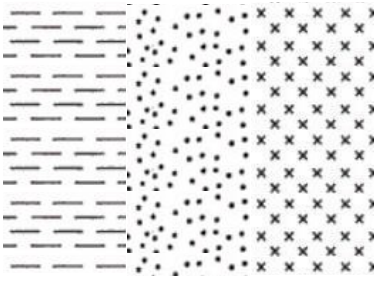
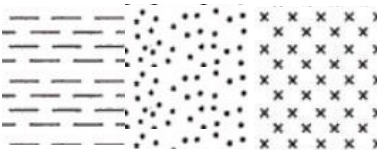
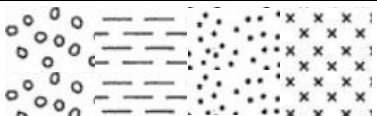
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LAB REF: GC499 / 05MAY19 / 15:30		SAMPLE No. GSPV / TP010 / 01MAY19		
SAMPLED BY: GEOCONSULT		DATE: 01 - 05 - 2019	TIME: 15:10	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
TP 10	0 673 006	8 402 499	548 (m)	0.000-4.000
TYPE OF MATERIAL:				
TESTED BY: S.THANGATO		DATE: 01 - 05 - 2019	TIME: 15:10	
CHECKED BY: G. KACHIWALA		DATE: 27 - 06 - 2019	TIME: 17:00	
APPROVED BY: M. MICHELLE		DATE: 27 - 06 - 2019	TIME: 10:00	
PROJECT: GOLOMOTI SOLAR PV		CLIENT: JCM		




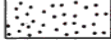
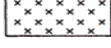
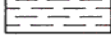


TRIAL PIT SOIL PROFILE STANDARD: BS 1377

	0 200	DRY TOP SOIL
	400 600 800 1000 1200 1400 1600 1800 2000	MOIST DARK BROWN SANDY SILTY CLAY
	2200 2400 2600 2800 3000	MOIST DARK BROWN STIFF SANDY SILTY CLAY
	3200 3400 3800 4000	MOIST BROWN GRAVELLY SANDY SILTY CLAY

PHOTOGRAPHIC REPORT



LEGEND

	made ground
	boulders and cobbles
	gravel
	sand
	silt
	clay
	peat
note: composite soil types are signified by combined symbols e.g.	
	silty sand

REMARKS: SAMPLED FROM TP 10 @ GOLOMOTI SOLAR PV



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LAB REF: GC499 / 05MAY19 / 15:30		SAMPLE No. GSPV / TP011 / 01MAY19		
SAMPLED BY: GEOCONSULT		DATE: 01 - 05 - 2019	TIME: 11:30	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
TP 11	0 672 996	8 402 377	546 (m)	0.000-4.200
TYPE OF MATERIAL:				
TESTED BY: S.THANGATO		DATE: 01 - 05 - 2019	TIME: 11:30	
CHECKED BY: G. KACHIWALA		DATE: 27 - 06 - 2019	TIME: 17:00	
APPROVED BY: M. MICHELLE		DATE: 27 - 06 - 2019	TIME: 10:00	
PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM	




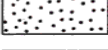
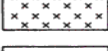

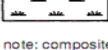

TRIAL PIT SOIL PROFILE STANDARD: BS 1377

0 200	DRY TOP SOIL
400 600 800 1000 1200 1400 1600 1800 2000	MOIST DARK BROWN SANDY SILTY CLAY
2200 2400 2600 2800 3000 3200 3400 3800 4000 4200	MOIST BROWN SANDY SILTY CLAY


PHOTOGRAPHIC REPORT




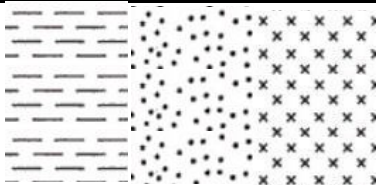
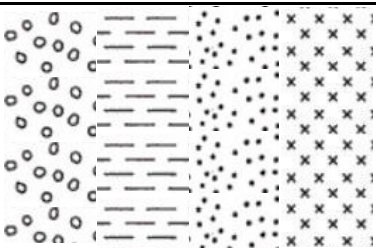
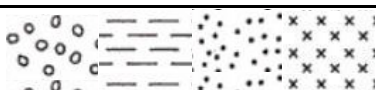
LEGEND

-  made ground
 -  boulders and cobbles
 -  gravel
 -  sand
 -  silt
 -  clay
 -  peat
 -  silty sand
- note: composite soil types are signified by combined symbols e.g.

REMARKS: SAMPLED FROM TP 11 @ GOLOMOTI SOLAR PV

 GEOCONSULT +265 0888 846 543 sabelli@geoconsult.cc	LAB REF: GC499 / 05MAY19 / 15:30		SAMPLE No. GSPV / TP012 / 02MAY19		
	SAMPLED BY: GEOCONSULT		DATE: 02 - 05 - 2019	TIME: 08:27	
	LOCATION: 36L UTM TP 12	EASTING 0 672 650	NORTHING 8 402 797	ELEVATION 547 (m)	DEPTH (m) 0.000-3.800
	TYPE OF MATERIAL:				
	TESTED BY: S.THANGATO		DATE: 02 - 05 - 2019	TIME: 08:27	
CHECKED BY: G. KACHIWALA		DATE: 27 - 06 - 2019	TIME: 17:00		
APPROVED BY: M. MICHELLE		DATE: 27 - 06 - 2019	TIME: 10:00		
PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM		



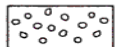
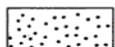

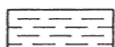

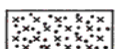
TRIAL PIT SOIL PROFILE STANDARD: BS 1377

	0 200	DRY LIGHT BROWN TOP SOIL
	400 600 800 1000 1200 1400	MOIST DARK BROWN SANDY SILTY CLAY
	1600 1800 2000 2200 2400 2600 2800 3000	MOIST BROWN SANDY SILTY CLAY
	3200 3400 3800	MOIST BROWN REDDISH STIFF LATERITE GRAVELLY SANDY SILTY CLAY

PHOTOGRAPHIC REPORT



LEGEND

-  made ground
-  boulders and cobbles
-  gravel
-  sand
-  silt
-  clay
-  peat
- note: composite soil types are signified by combined symbols e.g.
-  silty sand

REMARKS: SAMPLED FROM TP 12 @ GOLOMOTI SOLAR PV




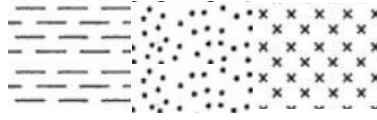
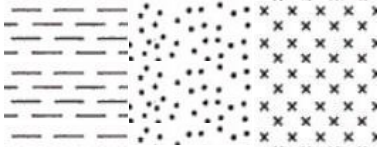
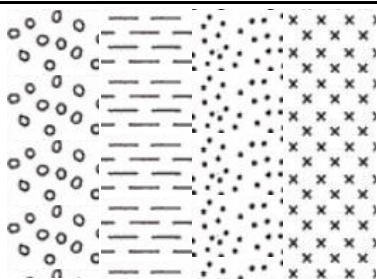
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LAB REF: GC499 / 05MAY19 / 15:30		SAMPLE No. GSPV / TP013 / 02MAY19		
SAMPLED BY: GEOCONSULT		DATE: 02 - 05 - 2019	TIME: 07:00	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
TP 13	0 672 640	8 402 630	550 (m)	0.000-3.800
TYPE OF MATERIAL:				
TESTED BY: S.THANGATO		DATE: 02 - 05 - 2019	TIME: 07:00	
CHECKED BY: G. KACHIWALA		DATE: 27 - 06 - 2019	TIME: 17:00	
APPROVED BY: M. MICHELLE		DATE: 27 - 06 - 2019	TIME: 10:00	
PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM	




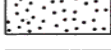
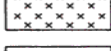

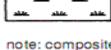
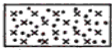
TRIAL PIT SOIL PROFILE STANDARD: BS 1377

	0 200	DRY LIGHT BROWN TOP SOIL
	400 600 800 1000	MOIST BROWN MOLTLED SANDY SILTY CLAY
	1200 1400 1600 1800 2000	MOIST BROWN SANDY SILTY CLAY
	2200 2400 2600 2800 3000 3200 3400 3800 4000	MOIST BROWN REDDISH STIFF LATERITE GRAVELLY SANDY SILTY CLAY

PHOTOGRAPHIC REPORT



LEGEND

	made ground
	boulders and cobbles
	gravel
	sand
	silt
	clay
	peat
note: composite soil types are signified by combined symbols e.g.	
	silty sand

REMARKS: SAMPLED FROM TP 13 @ GOLOMOTI SOLAR PV



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LAB REF: GC499 / 05MAY19 / 15:30		SAMPLE No. GSPV / TP014 / 01MAY19		
SAMPLED BY: GEOCONSULT		DATE: 01 - 05 - 2019	TIME: 16:15	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
TP 14	0 672 645	8 402 499	546 (m)	0.000-3.800
TYPE OF MATERIAL:				
TESTED BY: S.THANGATO		DATE: 01 - 05 - 2019	TIME: 16:15	
CHECKED BY: G. KACHIWALA		DATE: 27 - 06 - 2019	TIME: 17:00	
APPROVED BY: M. MICHELLE		DATE: 27 - 06 - 2019	TIME: 10:00	
PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM	





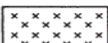
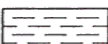
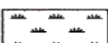
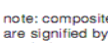
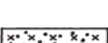
TRIAL PIT SOIL PROFILE STANDARD: BS 1377

0 200	DRY LIGHT BROWN TOP SOIL
400 600 800 1000	MOIST DARK BROWN SANDY SILTY CLAY
1200 1400 1600 1800 2000 2200 2400 2600 2800 3000 3200 3400 3800	MOIST BROWN SANDY SILTY CLAY

PHOTOGRAPHIC REPORT



LEGEND

-  made ground
-  boulders and cobbles
-  gravel
-  sand
-  silt
-  clay
-  peat
-  note: composite soil types are signified by combined symbols e.g.
-  silty sand

REMARKS: SAMPLED FROM TP 14 @ GOLOMOTI SOLAR PV



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LAB REF: GC499 / 05MAY19 / 15:30		SAMPLE No. GSPV / TP015 / 02MAY19		
SAMPLED BY: GEOCONSULT		DATE: 02 - 05 - 2019	TIME: 10:15	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
TP 15	0 672 384	8 402 794	546 (m)	0.000-4.300
TYPE OF MATERIAL:				
TESTED BY: S.THANGATO		DATE: 02 - 05 - 2019	TIME: 10:15	
CHECKED BY: G. KACHIWALA		DATE: 27 - 06 - 2019	TIME: 17:00	
APPROVED BY: M. MICHELLE		DATE: 27 - 06 - 2019	TIME: 10:00	
PROJECT: GOLOMOTI SOLAR PV		CLIENT: JCM		





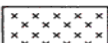
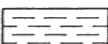
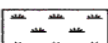
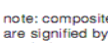
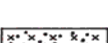
TRIAL PIT SOIL PROFILE STANDARD: BS 1377

0 200	DRY LIGHT BROWN TOP SOIL
400 600	MOIST DARK BROWN SANDY SILTY CLAY
800 1000 1200 1400 1600 1800 2000 2200 2400	MOIST BROWN REDDISH SANDY SILTY CLAY
2600 2800 3000 3200 3400 3800 4000 4200 4400	MOIST BROWN REDDISH GRAVELLY SANDY SILTY CLAY

PHOTOGRAPHIC REPORT



LEGEND

-  made ground
-  boulders and cobbles
-  gravel
-  sand
-  silt
-  clay
-  peat
-  note: composite soil types are signified by combined symbols e.g.
-  silty sand

REMARKS: SAMPLED FROM TP 15 @ GOLOMOTI SOLAR PV



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LAB REF: GC499 / 05MAY19 / 15:30		SAMPLE No. GSPV / TP016 / 02MAY19		
SAMPLED BY: GEOCONSULT		DATE: 02 - 05 - 2019	TIME: 10:10	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
TP 16	0 672 342	8 402 660	549 (m)	0.000-4.100
TYPE OF MATERIAL:				
TESTED BY: S.THANGATO		DATE: 02 - 05 - 2019	TIME: 10:10	
CHECKED BY: G. KACHIWALA		DATE: 27 - 06 - 2019	TIME: 17:00	
APPROVED BY: M. MICHELLE		DATE: 27 - 06 - 2019	TIME: 10:00	
PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM	





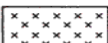
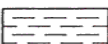
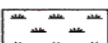
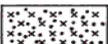
TRIAL PIT SOIL PROFILE STANDARD: BS 1377

0 200	DRY LIGHT BROWN TOP SOIL
400 600 800 1000	MOIST BROWN MOLTLED SANDY SILTY CLAYEY SOFT GRAVEL
1200 1400 1600 1800 2000 2200 2400 2600 2800 3000	MOIST BROWN REDDISH SANDY SILTY CLAYEY LATERITE GRAVEL
3200 3400 3800 4000 4200	MOIST BROWN HARD SANDY SILTY CLAYEY LATERITE GRAVEL

PHOTOGRAPHIC REPORT



LEGEND

-  made ground
-  boulders and cobbles
-  gravel
-  sand
-  silt
-  clay
-  peat
- note: composite soil types are signified by combined symbols e.g.
-  silty sand

REMARKS: SAMPLED FROM TP 16 @ GOLOMOTI SOLAR PV



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LAB REF: GC499 / 05MAY19 / 15:30		SAMPLE No. GSPV / TP017 / 02MAY19		
SAMPLED BY: GEOCONSULT		DATE: 02 - 05 - 2019	TIME: 17:05	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
TP 17	0 672 016	8 402 656	551 (m)	0.000-4.100
TYPE OF MATERIAL:				
TESTED BY: S.THANGATO		DATE: 02 - 05 - 2019	TIME: 17:05	
CHECKED BY: G. KACHIWALA		DATE: 27 - 06 - 2019	TIME: 17:00	
APPROVED BY: M. MICHELLE		DATE: 27 - 06 - 2019	TIME: 10:00	
PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM	





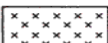
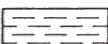
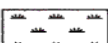
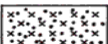
TRIAL PIT SOIL PROFILE STANDARD: BS 1377

0 200	DRY LIGHT BROWN TOP SOIL
400 600 800 1000	MOIST DARK BROWN SANDY SILTY CLAY
1200 1400 1600 1800 2000 2200 2400	MOIST BROWN GRAVELLY SANDY SILTY CLAY
2600 2800 3000 3200 3400 3800 4000 4200	MOIST BROWN REDDISH STIFF LATERITE GRAVELLY SANDY SILTY CLAY


PHOTOGRAPHIC REPORT





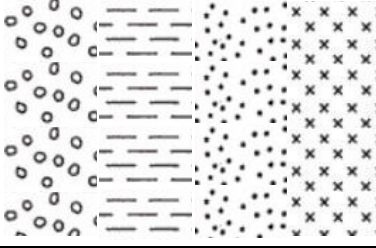
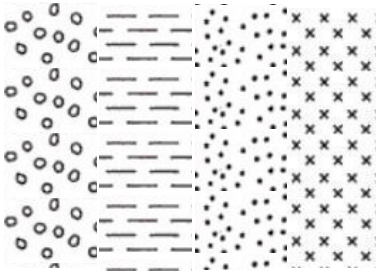
LEGEND

-  made ground
-  boulders and cobbles
-  gravel
-  sand
-  silt
-  clay
-  peat
- note: composite soil types are signified by combined symbols e.g.
-  silty sand

REMARKS: SAMPLED FROM TP 17 @ GOLOMOTI SOLAR PV

 <p>GEOCONSULT +265 0888 846 543 sabelli@geoconsult.cc</p>	LAB REF: GC499 / 05MAY19 / 15:30		SAMPLE No. GSPV / TP018 / 03MAY19		
	SAMPLED BY: GEOCONSULT		DATE: 03 - 05 - 2019	TIME: 09:30	
	LOCATION: 36L UTM TP 18	EASTING 0 671 938	NORTHING 8 402 608	ELEVATION 557 (m)	DEPTH (m) 0.000-4.000
	TYPE OF MATERIAL:				
	TESTED BY: S.THANGATO		DATE: 03 - 05 - 2019	TIME: 09:30	
CHECKED BY: G. KACHIWALA		DATE: 27 - 06 - 2019	TIME: 17:00		
APPROVED BY: M. MICHELLE		DATE: 27 - 06 - 2019	TIME: 10:00		
PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM		


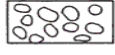

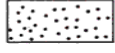



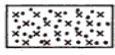
TRIAL PIT SOIL PROFILE STANDARD: BS 1377

	0 200	DRY LIGHT BROWN TOP SOIL
	400	MOIST LIGHT BROWN SANDY SILTY CLAY
	600 800 1000 1200 1400 1600 1800 2000	MOIST BROWN SOFT SANDY SILTY CLAYEY LATERITE GRAVEL
	2200 2400 2600 2800 3000 3200 3400 3800 4000	MOIST BROWN REDDISH SANDY SILTY CLAYEY LATERITE GRAVEL

PHOTOGRAPHIC REPORT



LEGEND

-  made ground
-  boulders and cobbles
-  gravel
-  sand
-  silt
-  clay
-  peat
- note: composite soil types are signified by combined symbols e.g.
-  silty sand

REMARKS: SAMPLED FROM TP 18 @ GOLOMOTI SOLAR PV



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LAB REF: GC499 / 05MAY19 / 15:30		SAMPLE No. GSPV / TP019 / 02MAY19		
SAMPLED BY: GEOCONSULT		DATE: 02 - 05 - 2019	TIME: 14:05	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
TP 19	0 671 989	8 402 554	556 (m)	0.000-4.100
TYPE OF MATERIAL:				
TESTED BY: S.THANGATO		DATE: 02 - 05 - 2019	TIME: 14:05	
CHECKED BY: G. KACHIWALA		DATE: 27 - 06 - 2019	TIME: 17:00	
APPROVED BY: M. MICHELLE		DATE: 27 - 06 - 2019	TIME: 10:00	
PROJECT: GOLOMOTI SOLAR PV		CLIENT: JCM		



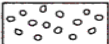
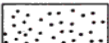
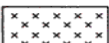
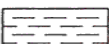

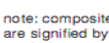
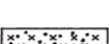
TRIAL PIT SOIL PROFILE STANDARD: BS 1377

0 200	DRY LIGHT BROWN TOP SOIL
400 600	MOIST DARK BROWN SANDY SILTY CLAY
800 1000 1200 1400 1600 1800 2000	MOIST BROWN REDDISH SANDY SILTY CLAY
2200 2400 2600 2800 3000 3200 3400 3800 4000 4200	MOIST BROWN REDDISH GRAVELLY SANDY SILTY CLAY


PHOTOGRAPHIC REPORT




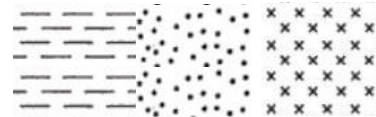
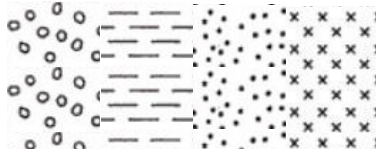
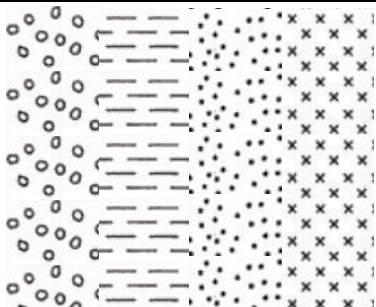
LEGEND

-  made ground
-  boulders and cobbles
-  gravel
-  sand
-  silt
-  clay
-  peat
-  note: composite soil types are signified by combined symbols e.g.
-  silty sand

REMARKS: SAMPLED FROM TP 19 @ GOLOMOTI SOLAR PV

 GEOCONSULT +265 0888 846 543 sabelli@geoconsult.cc	LAB REF: GC499 / 05MAY19 / 15:30		SAMPLE No. GSPV / TP020 / 03MAY19		
	SAMPLED BY: GEOCONSULT		DATE: 03 - 05 - 2019	TIME: 14:05	
	LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
	TP 20	0 671 990	8 402 438	561 (m)	0.000-4.200
	TYPE OF MATERIAL:				
TESTED BY: S.THANGATO		DATE: 03 - 05 - 2019	TIME: 14:05		
CHECKED BY: G. KACHIWALA		DATE: 27 - 06 - 2019	TIME: 17:00		
APPROVED BY: M. MICHELLE		DATE: 27 - 06 - 2019	TIME: 10:00		
PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM		




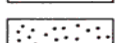
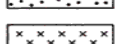
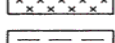


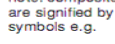
TRIAL PIT SOIL PROFILE STANDARD: BS 1377

 0 200	DRY LIGHT BROWN TOP SOIL
 400 600 800 1000	MOIST DARK BROWN SANDY SILTY CLAY
 1200 1400 1600 1800 2000	MOIST BROWN REDDISH GRAVELLY SANDY SILTY CLAY
 2200 2400 2600 2800 3000 3200 3400 3800 4000 4200	MOIST BROWN REDDISH LATERITE GRAVELLY SANDY SILTY CLAY

PHOTOGRAPHIC REPORT




LEGEND

-  made ground
-  boulders and cobbles
-  gravel
-  sand
-  silt
-  clay
-  peat
-  note: composite soil types are signified by combined symbols e.g.
-  silty sand

REMARKS: SAMPLED FROM TP 20 @ GOLOMOTI SOLAR PV

3.2 Summary of Test Results

 GEOCONSULT	LAB. REF. No. GC499 / 05MY19 / 15:00										SAMPLE No. GSPV / TRIAL PIT 1-TP6 / 05MAY19					
	SAMPLED BY: GEOCONSULT LABORATORY TEAM										DATE: 05 / 05 / 2019		TIME:			
	LOCATION: GOLOMOTI SOLAR PV										EASTING	NORTHING	ELEVATION (m)	DEPTH (m)		
	TYPE OF MATERIAL:															
	TEST STANDARD: BS 1377															
	TESTED BY: GEOCONSULT LABORATORY TEAM										DATE: 05 / 05 / 2019		TIME:			
	+265 0888 846 543										CHECKED BY: G. L. KACHIWALA		DATE: 06 / 05 / 2018		TIME:	
	sabelli@geoconsult.cc										APPROVED: M. SABELLI		DATE: 06 / 05 / 2018		TIME:	
PROJECT: GOLOMOTI SOLAR PV										CLIENT: JCM						
SUMMARY OF TEST RESULTS																
LAB. REFERENCE No.	DEPTH (m)	TRIAL PIT No.	SIEVE ANALYSIS			LL %	PI	LS %	LS / P	Classification	FI	NMC	Remarks			
			2.36 pass	0.425 pass	0.075 pass											
GC499 / 05MAY2019	0.200-1.000	1	99	72	37	21.6	11	6.1	439	A - 6 (0)	407	6.8	SELECTED FILL MATERIAL			
	1.000-2.000	1	97	67	40	34.3	21	12.5	838	A - 6 (4)	840	12	SELECTED FILL MATERIAL			
	2.000-3.000	1	96	68	49	42.5	29	12.0	816	A-7-6(9)	1421	11.7	SELECTED FILL MATERIAL			
	3.000-4.000	1	94	68	48	38.6	21	10.2	694	A - 6 (6)	1008	10.3	SELECTED FILL MATERIAL			
GC499 / 05MAY2019	0.200-1.000	2	98	72	47	38.5	22	9.4	677	A - 6 (6)	1034	10.6	SELECTED FILL MATERIAL			
	1.000-3.300	2	97	68	39	32.9	19	8.5	578	A - 6 (3)	741	10.8	SELECTED FILL MATERIAL			
	3.300-4.000	2	98	71	46	34.2	16	7.7	547	A - 6 (4)	736	19.4	SELECTED FILL MATERIAL			
GC499 / 05MAY2019	0.200-1.000	3	98	71	45	41.1	23	12	852	A-7-6(6)	1035	10.8	SELECTED FILL MATERIAL			
	1.000-3.500	3	98	90	78	49.0	13	6.9	621	A-7-5(3)	1014	11.9	SELECTED FILL MATERIAL			
	3.500-4.200	3	99	88	65	37.3	21	7.7	678	A - 6 (10)	1365	11.0	SELECTED FILL MATERIAL			
GC499 / 05MAY2019	0.250-1.000	4	99	78	48	36.4	13	6.1	476	A - 6 (3)	624	10.1	SELECTED FILL MATERIAL			
	1.000-2.000	4	98	74	40	48.6	25	12.9	955	A-7-6(5)	1000	14.5	SELECTED FILL MATERIAL			
	2.000-4.000	4	99	90	69	35.6	20	9.4	846	A - 6 (10)	1380	8.0	SELECTED FILL MATERIAL			
GC499 / 05MAY2019	0.100-1.500	5	98	87	75	43	26	12.9	1122	A-7-6(15)	1950	12.4	SELECTED FILL MATERIAL			
	1.500-3.000	5	98	85	71	41	19	10.2	867	A - 6 (11)	1349	11.8	SELECTED FILL MATERIAL			
	3.000-4.000	5	99	82	63	40	19	12.0	984	A - 6 (9)	1197	14.5	SELECTED FILL MATERIAL			
GC499 / 05MAY2019	0.200-1.000	6	98	80	55	41	23	11.2	896	A-7-6(9)	1265	6.8	SELECTED FILL MATERIAL			
	1.000-3000	6	98	83	62	38	23	11.1	921	A - 6 (10)	1426	10.1	SELECTED FILL MATERIAL			
	3.000-4.000	6	97	79	52	41	24	12.0	948	A-7-6(9)	1248	9.1	SELECTED FILL MATERIAL			
REMARKS: SAMPLED FROM GOLOMOTI SOLAR PV SITE TRIAL PITS																



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LAB. REF. No. GC499 / 05MY19 / 15:00

SAMPLED BY: GEOCONSULT LABORATORY TEAM

LOCATION:

GOLOMOTI SOLAR PV

TYPE OF MATERIAL:

TEST STANDARD: BS 1377

TESTED BY: GEOCONSULT LABORATORY TEAM

CHECKED BY: G. L. KACHIWALA

APPROVED: M. SABELLI

SAMPLE No. GSPV / TRIAL PIT 7-12 / 05MAY19

DATE: 05 / 05 / 2019

TIME:

EASTING

NORTHING

ELEVATION (m)

DEPTH (m)

DATE: 05 / 05 / 2019

TIME:

DATE: 06 / 05 / 2018

TIME:

DATE: 06 / 05 / 2018

TIME:


PROJECT: GOLOMOTI SOLAR PV


CLIENT: JCM

SUMMARY OF TEST RESULTS

LAB. REFERENCE No.	DEPTH (m)	TRIAL PIT No.	SIEVE ANALYSIS			LL %	PI	LS %	LS / P	Classification	FI	NMC	Remarks
			2.36 pass	0.425 pass	0.075 pass								
GC499 / 05MAY2019	0.200-1.000	7	98	67	37	40.8	22	11.1	744	A -7-6 (3)	814	11.1	SELECTED FILL MATERIAL
	1.000-2.500	7	99	85	66	32.3	12	6.9	587	A -6 (6)	792	10.8	SELECTED FILL MATERIAL
	2.500-4.000	7	96	75	53	32.3	11	6.1	458	A -6 (3)	583	7.1	SELECTED FILL MATERIAL
GC499 / 05MAY2019	0.100-0.800	8	99	86	70	39.6	21	13.8	1187	A -7-6 (13)	1470	11.1	SELECTED FILL MATERIAL
	0.800-2.500	8	96	78	51	38.7	20	9.4	733	A -6 (6)	1020	9.2	SELECTED FILL MATERIAL
	2.500-4.000	8	96	78	50	38.6	15	6.1	476	A -6 (5)	750	8.3	SELECTED FILL MATERIAL
GC499 / 05MAY2019	0.100-1.000	9	98	86	70	39.6	21	13.8	1187	A -6 (11)	1470	11.0	SELECTED FILL MATERIAL
	1.000-2.500	9	96	84	67	42.6	27	12.9	1084	A -7-6 (14)	1809	12.0	SELECTED FILL MATERIAL
	2.500-4.000	9	98	86	64	39.0	21	12.0	1032	A -6 (10)	1344	9.9	SELECTED FILL MATERIAL
GC499 / 05MAY2019	0.200-2.000	10	99	91	60	31.4	11	3.7	337	A -6 (4)	660	11	SELECTED FILL MATERIAL
	2.200-3.000	10	99	89	63	36.5	16	7.7	685	A -6 (8)	1008	12.5	SELECTED FILL MATERIAL
	3.000-4.000	10	96	75	47	37.0	19	9.4	705	A -6 (5)	893	12.4	SELECTED FILL MATERIAL
GC499 / 05MAY2019	0.100-2.000	11	97	67	39	38	23	10.2	683	A -6 (4)	897	15.4	SELECTED FILL MATERIAL
	0.100-1.500	11	97	79	48	33	12	8.5	672	A -6 (3)	576	13	SELECTED FILL MATERIAL
GC499 / 05MAY2019	0.100-1.500	12	87	66	48	37.7	15	7.7	508	A -6 (4)	720	8.9	SELECTED FILL MATERIAL
	1.500-3.000	12	96	76	52	37.9	17	8.5	646	A -6 (6)	884	11.7	SELECTED FILL MATERIAL
	3.000-3.800	12	99	85	68	28.4	13	6.1	519	A -6 (6)	884	9.3	SELECTED FILL MATERIAL

REMARKS: SAMPLED FROM GOLOMOTI SOLAR PV SITE TRIAL PITS

 GEOCONSULT +265 0888 846 543 sabelli@geoconsult.cc	LAB. REF. No. GC499 / 05MY19 / 15:00										SAMPLE No. GSPV / TRIAL PIT 12-17 / 05MAY19			
	SAMPLED BY: GEOCONSULT LABORATORY TEAM										DATE: 05 / 05 / 2019		TIME:	
	LOCATION: GOLOMOTI SOLAR PV										EASTING	NORTHING	ELEVATION (m)	DEPTH (m)
	TYPE OF MATERIAL:													
	TEST STANDARD: BS 1377													
	TESTED BY: GEOCONSULT LABORATORY TEAM										DATE: 05 / 05 / 2019		TIME:	
	CHECKED BY: G. L. KACHIWALA										DATE: 06 / 05 / 2018		TIME:	
	APPROVED: M. SABELLI										DATE: 06 / 05 / 2018		TIME:	
PROJECT: GOLOMOTI SOLAR PV										CLIENT: JCM				
SUMMARY OF TEST RESULTS														
LAB. REFERENCE No.	DEPTH (m)	TRIAL PIT No.	SIEVE ANALYSIS			LL %	PI	LS %	LS / P	Classification	FI	NMC	Remarks	
			2.36 pass	0.425 pass	0.075 pass									
GC499 / 05MAY2019	0.200-1.000	13	98	82	56	27.5	9	6.1	500	A - 4 (2)	504	5.3	SELECTED FILL MATERIAL	
	1.000-2.000	13	91	74	60	30.1	15	6.9	511	A - 6 (6)	900	6.9	SELECTED FILL MATERIAL	
	2.500-4.000	13	95	80	56	43.8	19	6.9	552	A - 7 - 6 (8)	1064	7.1	SELECTED FILL MATERIAL	
GC499 / 05MAY2019	0.100-1.000	14	97	83	65	41.5	16	7.7	639	A - 7 - 6 (9)	1040	6	SELECTED FILL MATERIAL	
	1.000-3.000	14	97	84	65	44.0	19	6.9	580	A - 7 - 6 (10)	1235	11.1	SELECTED FILL MATERIAL	
GC499 / 05MAY2018	0.100-0.600	15	99	81	56	28.9	14	6.9	559	A - 6 (3)	784	13.2	SELECTED FILL MATERIAL	
	0.600-2.500	15	90	74	55	37.4	21	11.1	821	A - 6 (8)	1155	12.3	SELECTED FILL MATERIAL	
	2.500-4.300	15	90	74	56	36.9	17	6.9	511	A - 6 (7)	952	10.1	SELECTED FILL MATERIAL	
GC499 / 05MAY2019	0.300-1.000	16	81	54	36	31.1	11	6.1	329	A - 6 (0)	396	6.6	SELECTED FILL MATERIAL	
	1.000-3.000	16	80	52	33	33.5	16	8.5	442	A - 2-6 (1)	528	12.3	SELECTED FILL MATERIAL	
	3.100-4.100	16	83	57	39	36.4	17	6.9	393	A - 6 (2)	663	5.5	SELECTED FILL MATERIAL	
GC499 / 05MAY2019	0.100-0.600	17	96	73	35	SP	SP	10.2		A - 2-4 (0)		13.9	SELECTED FILL MATERIAL	
	0.600-2.500	17	90	73	50	34	12	5.3	387	A - 6 (3)	600	12.1	SELECTED FILL MATERIAL	
	2.500-4.100	17	98	79	50	24	10	13.2	1043	A - 4 (2)	500	11.1	SELECTED FILL MATERIAL	
GC499 / 05MAY2019	0.200-0.500	18	94	69	39	SP	SP	2.2	152	A - 4 (0)		5.0	SELECTED FILL MATERIAL	
	0.500-2.000	18	94	70	26	34.6	14	6.1	427	A - 2-6 (0)	364	5.6	SELECTED FILL MATERIAL	
	2.000-4.000	18	99	84	64	33.1	16	8.5	714	A - 6 (7)	1024	13.2	SELECTED FILL MATERIAL	
REMARKS: SAMPLED FROM GOLOMOTI SOLAR PV SITE TRIAL PITS														

 GEOCONSULT	LAB. REF. No. GC499 / 05MY19 / 15:00		SAMPLE No. GSPV / TP19-TP20 / 05MAY19		
	SAMPLED BY: GEOCONSULT LABORATORY TEAM		DATE: 05 / 05 / 2019		TIME:
	LOCATION:	EASTING	NORTHING	ELEVATION (m)	DEPTH (m)
	GOLOMOTI SOLAR PV				
	TYPE OF MATERIAL:				
	TEST STANDARD: BS 1377				
+265 0888 846 543		TESTED BY: GEOCONSULT LABORATORY TEAM		DATE: 05 / 05 / 2019	TIME:
sabelli@geoconsult.cc		CHECKED BY: G. L. KACHIWALA		DATE: 06 / 05 / 2018	TIME:
APPROVED: M. SABELLI		DATE: 06 / 05 / 2018		TIME:	

PROJECT: GOLOMOTI SOLAR PV **CLIENT: JCM**

SUMMARY OF TEST RESULTS

LAB. REFERENCE No.	DEPTH (m)	TRIAL PIT No.	SIEVE ANALYSIS			LL %	PI	LS %	LS / P	Classification	FI	NMC	Remarks
			2.36 pass	0.425 pass	0.075 pass								
GC499 / 05MAY2019	0.100-0.500	19	99	76	40	SP	SP	1.4	106	A - 6 (6)		5.4	SELECTED FILL MATERIAL
	0.500-2.000	19	92	73	51	36.3	18	8.5	621	A - 6 (6)	918	10.7	SELECTED FILL MATERIAL
	2.000-4.100	19	97	86	54	35.4	17	7.7	662	A - 6 (6)	918	11.2	SELECTED FILL MATERIAL
GC499 / 05MAY2019	0.100-1.000	20	99	75	46	37.5	16	9.4	705	A - 6 (4)	736	9.7	SELECTED FILL MATERIAL
	1.000-2.000	20	85	61	38	36.8	14	7.7	470	A - 6 (1)	532	10.3	SELECTED FILL MATERIAL
	2.000-4.000	20	94	76	47	31.7	20	11.1	844	A - 6 (5)	940	12.4	SELECTED FILL MATERIAL

REMARKS: SAMPLED FROM GOLOMOTI SOLAR PV SITE TRIAL PITS

3.3 DCP



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LAB REF: GC499 / 04MAY19 / 15:00 SAMPLE No. GSPV / TP001 / DCP001 / 26APR19

SAMPLED BY: GEOCONSULT LAB DATE: 26 / 04 / 2019 TIME: 09:37

LOCATION: UTM 36 L TRIAL PIT 01	EASTING 0 672 496	NORTHING 8 403 452	ELEVATION 543 m	DEPTH 840
------------------------------------	----------------------	-----------------------	--------------------	--------------

TYPE OF MATERIAL:

TESTED BY: M. MILANZI DATE: 26 / 04 / 2019 TIME: 09:37

CHECKED BY: S.THANGATO DATE: 26 / 04 / 2019 TIME: 09:37

APPROVED BY: M. SABELLI DATE: 27 / 04 / 2019 TIME: 10:37

PROJECT: GOLOMOTI SOLAR PV CLIENT: JCM

DYNAMIC CONE PENETRATION TEST (DCP) STANDARD: ASTM D6951/D6951M - 09

Initial Reading (mm): 110

No of Blows	Pen (mm)	Difference (mm)	Cum. Pen (mm)	mm / Blow	CBR (%)
5	289	179	179	36	5
10	554	265	444	53	3
15	750	196	640	39	5
20	929	179	819	36	5
25	950	21	840	4	60

REMARKS: DCP TEST FROM TRIAL PIT 01 AT THE DEPTH OF 1.000m. GOLOMOTI SOLAR SITE INVESTIGATION



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LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP003 / DCP003 / 30APR19			
SAMPLED BY: GEOCONSULT LAB		DATE: 30 / 04 / 2019		TIME: 09:37	
LOCATION: UTM 36 L TRIAL PIT 03	EASTING	NORTHING		ELEVATION	DEPTH
	0 672 315	8 403 152		546 m	875
TYPE OF MATERIAL:					
TESTED BY: M. MILANZI		DATE: 30 / 04 / 2019		TIME: 09:37	
CHECKED BY: S.THANGATO		DATE: 01 / 05 / 2019		TIME: 09:37	
APPROVED BY: M. SABELLI		DATE: 05 / 05 / 2019		TIME: 10:37	

PROJECT: GOLOMOTI SOLAR PV **CLIENT: JCM**

DYNAMIC CONE PENETRATION TEST (DCP) STANDARD: ASTM D6951/D6951M - 09

Initial Reading (mm):		75				
No of Blows	Pen (mm)	Difference (mm)	Cum. Pen (mm)	mm / Blow	CBR (%)	
5	136	61	61	12	18	
10	199	63	124	13	16	
15	251	52	176	10	20	
20	310	59	235	12	18	
25	361	51	286	10	20	
30	410	49	335	10	20	
35	471	61	396	12	18	
40	529	58	454	12	18	
45	594	65	519	13	16	
50	655	61	580	12	18	
55	705	50	630	10	20	
60	770	65	695	13	16	
65	809	39	734	8	30	
70	860	51	785	10	20	
75	899	39	824	8	30	
80	950	51	875	10	20	

REMARKS: DCP TEST FROM TRIAL PIT 03 AT THE DEPTH OF 1.000m. GOLOMOTI SOLAR SITE INVESTIGATION



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LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP004 / DCP004 / 30APR19			
SAMPLED BY: GEOCONSULT LAB		DATE: 30 / 04 / 2019		TIME: 09:37	
LOCATION: UTM 36 L		EASTING	NORTHING	ELEVATION	DEPTH
TRIAL PIT 04		0 672 315	8 403 152	546 m	860
TYPE OF MATERIAL:					
TESTED BY: M. MILANZI		DATE: 30 / 04 / 2019		TIME: 09:37	
CHECKED BY: S.THANGATO		DATE: 01 / 05 / 2019		TIME: 09:37	
APPROVED BY: M. SABELLI		DATE: 05 / 05 / 2019		TIME: 10:37	

PROJECT: GOLOMOTI SOLAR PV CLIENT: JCM

DYNAMIC CONE PENETRATION TEST (DCP) STANDARD: ASTM D6951/D6951M - 09

Initial Reading (mm): 90

No of Blows	Pen (mm)	Difference (mm)	Cum. Pen (mm)	mm / Blow	CBR (%)
5	299	209	209	42	4
10	485	186	395	37	5
15	599	114	509	23	9
20	685	86	595	17	12
25	747	62	657	12	18
30	801	54	711	11	20
35	855	54	765	11	20
40	901	46	811	9	25
45	945	44	855	9	25
50	950	5	860	1	100

REMARKS: DCP TEST FROM TRIAL PIT 04 AT THE DEPTH OF 1.000m. GOLOMOTI SOLAR SITE INVESTIGATION

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LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP005 / DCP005 / 30APR19			
SAMPLED BY: GEOCONSULT LAB		DATE: 30 / 04 / 2019		TIME: 13:52	
LOCATION: UTM 36 L		EASTING	NORTHING	ELEVATION	DEPTH
TRIAL PIT 05		0 672 768	8 403 213	545 m	912
TYPE OF MATERIAL:					
TESTED BY: M. MILANZI		DATE: 30 / 04 / 2019		TIME: 13:52	
CHECKED BY: S.THANGATO		DATE: 01 / 05 / 2019		TIME: 09:37	
APPROVED BY: M. SABELLI		DATE: 05 / 05 / 2019		TIME: 10:37	
PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM		

DYNAMIC CONE PENETRATION TEST (DCP) STANDARD: ASTM D6951/D6951M - 09

Initial Reading (mm):	38					
	No of Blows	Pen (mm)	Difference (mm)	Cum. Pen (mm)	mm / Blow	CBR (%)
	5	109	71	71	14	15
	10	161	52	123	10	20
	15	208	47	170	9	25
	20	259	51	221	10	20
	25	304	45	266	9	25
	30	356	52	318	10	20
	35	406	50	368	10	20
	40	406	0	368	0	100
	45	449	43	411	9	25
	50	499	50	461	10	20
	55	536	37	498	7	35
	60	579	43	541	9	25
	65	623	44	585	9	25
	70	667	44	629	9	25
	75	709	42	671	8	30
	80	760	51	722	10	20
	85	851	91	813	18	11
	90	911	60	873	12	18
	95	950	39	912	8	30

REMARKS: DCP TEST FROM TRIAL PIT 05 AT THE DEPTH OF 1.000m. GOLOMOTI SOLAR SITE INVESTIGATION



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LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP006 / DCP006 / 30APR19		
SAMPLED BY: GEOCONSULT LAB		DATE: 30 / 04 / 2019		TIME: 15:54
LOCATION: UTM 36 L	EASTING	NORTHING	ELEVATION	DEPTH
TRIAL PIT 06	0 673 025	8 402 675	540 m	907
TYPE OF MATERIAL:				
TESTED BY: M. MILANZI		DATE: 30 / 04 / 2019		TIME: 15:54
CHECKED BY: S.THANGATO		DATE: 01 / 05 / 2019		TIME: 09:57
APPROVED BY: M. SABELLI		DATE: 05 / 05 / 2019		TIME: 11:37

PROJECT: GOLOMOTI SOLAR PV **CLIENT:** JCM

DYNAMIC CONE PENETRATION TEST (DCP) STANDARD: ASTM D6951/D6951M - 09

Initial Reading (mm): 43

No of Blows	Pen (mm)	Difference (mm)	Cum. Pen (mm)	mm / Blow	CBR (%)
5	69	26	26	5	50
10	99	30	56	6	40
15	132	33	89	7	35
20	164	32	121	6	40
25	194	30	151	6	40
30	229	35	186	7	35
35	268	39	225	8	30
40	303	35	260	7	35
45	335	32	292	6	40
50	369	34	326	7	35
55	406	37	363	7	35
60	450	44	407	9	25
65	486	36	443	7	35
70	527	41	484	8	30
75	565	38	522	8	30
80	601	36	558	7	35
85	641	40	598	8	30
90	685	44	642	9	25
95	733	48	690	10	20
100	776	43	733	9	25
105	820	44	777	9	25
110	864	44	821	9	25
115	909	45	866	9	25
120	950	41	907	8	30

REMARKS: DCP TEST FROM TRIAL PIT 06 AT THE DEPTH OF 1.000m. GOLOMOTI SOLAR SITE INVESTIGATION



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LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP007 / DCP007 / 30APR19		
SAMPLED BY: GEOCONSULT LAB		DATE: 30 / 04 / 2019	TIME: 13:52	
LOCATION: UTM 36 L TRIAL PIT 07	EASTING	NORTHING	ELEVATION	DEPTH
	0 672 863	8 402 795	544 m	889
TYPE OF MATERIAL:				
TESTED BY: M. MILANZI		DATE: 30 / 04 / 2019	TIME: 13:52	
CHECKED BY: S.THANGATO		DATE: 01 / 05 / 2019	TIME: 09:57	
APPROVED BY: M. SABELLI		DATE: 05 / 05 / 2019	TIME: 11:37	

PROJECT: GOLOMOTI SOLAR PV CLIENT: JCM

DYNAMIC CONE PENETRATION TEST (DCP) STANDARD: ASTM D6951/D6951M - 09

Initial Reading (mm):		61				
No of Blows	Pen (mm)	Difference (mm)	Cum. Pen (mm)	mm / Blow	CBR (%)	
5	195	134	134	27	7	
10	284	89	223	18	11	
15	372	88	311	18	11	
20	436	64	375	13	16	
25	489	53	428	11	20	
30	530	41	469	8	30	
35	562	32	501	6	40	
40	589	27	528	5	50	
45	624	35	563	7	35	
50	665	41	604	8	30	
55	679	14	618	3	80	
60	710	31	649	6	40	
65	736	26	675	5	50	
70	764	28	703	6	40	
75	795	31	734	6	40	
80	830	35	769	7	35	
85	871	41	810	8	30	
90	929	58	868	12	18	
95	950	21	889	4	60	

REMARKS: DCP TEST FROM TRIAL PIT 07 AT THE DEPTH OF 1.000m. GOLOMOTI SOLAR SITE INVESTIGATION



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LAB REF: GC499 / 04MAY19 / 15:00 SAMPLE No. GSPV / TP008 / DCP008 / 30APR19

SAMPLED BY: GEOCONSULT LAB DATE: 30 / 04 / 2019 TIME: 15:54

LOCATION: UTM 36 L	EASTING	NORTHING	ELEVATION	DEPTH
TRIAL PIT 08	0 673 025	8 402 675	540 m	861

TYPE OF MATERIAL:

TESTED BY: M. MILANZI DATE: 30 / 04 / 2019 TIME: 15:54

CHECKED BY: S.THANGATO DATE: 01 / 05 / 2019 TIME: 09:57

APPROVED BY: M. SABELLI DATE: 05 / 05 / 2019 TIME: 11:37

PROJECT: GOLOMOTI SOLAR PV **CLIENT:** JCM

DYNAMIC CONE PENETRATION TEST (DCP) STANDARD: ASTM D6951/D6951M - 09

Initial Reading (mm): 37

No of Blows	Pen (mm)	Difference (mm)	Cum. Pen (mm)	mm / Blow	CBR (%)
5	79	42	42	8	30
10	119	40	82	8	30
15	166	47	129	9	25
20	205	39	168	8	30
25	235	30	198	6	40
30	269	34	232	7	35
35	300	31	263	6	40
40	336	36	299	7	35
45	378	42	341	8	30
50	411	33	374	7	35
55	444	33	407	7	35
60	472	28	435	6	40
65	505	33	468	7	35
70	535	30	498	6	40
75	564	29	527	6	40
80	593	29	556	6	40
85	626	33	589	7	35
90	664	38	627	8	30
95	670	6	633	1	100
100	729	59	692	12	18
105	758	29	721	6	40
110	780	22	743	4	60
115	811	31	774	6	40
120	840	29	803	6	40
125	869	29	832	6	40
130	898	29	861	6	40

REMARKS: DCP TEST FROM TRIAL PIT 08 AT THE DEPTH OF 1.000m. GOLOMOTI SOLAR SITE INVESTIGATION



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LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP009 / DCP009 / 30APR19		
SAMPLED BY: GEOCONSULT LAB		DATE: 30 / 04 / 2019	TIME: 15:54	
LOCATION: UTM 36 L	EASTING	NORTHING	ELEVATION	DEPTH
TRIAL PIT 9	0 673 025	8 402 675	542 m	875
TYPE OF MATERIAL:				
TESTED BY: M. MILANZI		DATE: 30 / 04 / 2019	TIME: 15:54	
CHECKED BY: S.THANGATO		DATE: 01 / 05 / 2019	TIME: 09:57	
APPROVED BY: M. SABELLI		DATE: 05 / 05 / 2019	TIME: 11:37	

PROJECT: GOLOMOTI SOLAR PV **CLIENT:** JCM

DYNAMIC CONE PENETRATION TEST (DCP) STANDARD: ASTM D6951/D6951M - 09

Initial Reading (mm): 75

No of Blows	Pen (mm)	Difference (mm)	Cum. Pen (mm)	mm / Blow	CBR (%)
5	136	61	61	12	18
10	209	73	134	15	14
15	290	81	215	16	13
20	347	57	272	11	20
25	395	48	320	10	20
30	440	45	365	9	25
35	489	49	414	10	20
40	529	40	454	8	30
45	571	42	496	8	30
50	620	49	545	10	20
55	662	42	587	8	30
60	695	33	620	7	35
65	734	39	659	8	30
70	775	41	700	8	30
75	815	40	740	8	30
80	850	35	775	7	35
85	889	39	814	8	30
90	930	41	855	8	30
95	950	20	875	4	60

REMARKS: DCP TEST FROM TRIAL PIT 09 AT THE DEPTH OF 1.000m. GOLOMOTI SOLAR SITE INVESTIGATION



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LAB REF: GC499 / 04MAY19 / 15:00 SAMPLE No. GSPV / TP010 / DCP010 / 01MAY19

SAMPLED BY: GEOCONSULT LAB DATE: 01 / 05 / 2019 TIME: 15:54

LOCATION: UTM 36 L	EASTING	NORTHING	ELEVATION	DEPTH
TRIAL PIT 10	0 673 013	8 402 587	542 m	823

TYPE OF MATERIAL:

TESTED BY: M. MILANZI DATE: 01 / 05 / 2019 TIME: 15:54

CHECKED BY: S.THANGATO DATE: 01 / 05 / 2019 TIME: 09:57

APPROVED BY: M. SABELLI DATE: 05 / 05 / 2019 TIME: 11:37

PROJECT: GOLOMOTI SOLAR PV CLIENT: JCM

DYNAMIC CONE PENETRATION TEST (DCP) STANDARD: ASTM D6951/D6951M - 09

Initial Reading (mm): 127

No of Blows	Pen (mm)	Difference (mm)	Cum. Pen (mm)	mm / Blow	CBR (%)
5	446	319	319	64	3
10	594	148	467	30	6
15	682	88	555	18	11
20	700	18	573	4	60
25	805	105	678	21	10
30	853	48	726	10	20
35	895	42	768	8	30
40	935	40	808	8	30
41	950	15	823	15	14

REMARKS: DCP TEST FROM TRIAL PIT 010 AT THE DEPTH OF 1.000m. GOLOMOTI SOLAR SITE INVESTIGATION



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LAB REF: GC499 / 04MAY19 / 15:00			SAMPLE No. GSPV / TP012 / DCP012 / 02MAY19		
SAMPLED BY: GEOCONSULT LAB			DATE: 02 / 05 / 2019	TIME: 15:54	
LOCATION: UTM 36 L	EASTING	NORTHING		ELEVATION	DEPTH
TRIAL PIT 12	0 672 650	8 402 797		547 m	897
TYPE OF MATERIAL:					
TESTED BY: M. MILANZI			DATE: 02 / 05 / 2019	TIME: 15:54	
CHECKED BY: S.THANGATO			DATE: 02 / 05 / 2019	TIME: 09:57	
APPROVED BY: M. SABELLI			DATE: 10 / 05 / 2019	TIME: 11:37	
PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM		

DYNAMIC CONE PENETRATION TEST (DCP) STANDARD: ASTM D6951/D6951M - 09

Initial Reading (mm):	53					
	No of Blows	Pen (mm)	Difference (mm)	Cum. Pen (mm)	mm / Blow	CBR (%)
	5	119	66	66	13	16
	10	180	61	127	12	18
	15	253	73	200	15	14
	20	335	82	282	16	13
	25	409	74	356	15	14
	30	444	35	391	7	35
	35	523	79	470	16	13
	40	584	61	531	12	18
	45	623	39	570	8	30
	50	652	29	599	6	40
	55	691	39	638	8	30
	60	730	39	677	8	30
	65	760	30	707	6	40
	70	792	32	739	6	40
	75	825	33	772	7	35
	80	850	25	797	5	50
	85	889	39	836	8	30
	90	935	46	882	9	25
	93	950	15	897	5	50

REMARKS: DCP TEST FROM TRIAL PIT 012 AT THE DEPTH OF 1.000m. GOLOMOTI SOLAR SITE INVESTIGATION



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LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP014 / DCP014 / 02MAY19		
SAMPLED BY: GEOCONSULT LAB		DATE: 02 / 05 / 2019	TIME: 15:54	
LOCATION: UTM 36 L	EASTING	NORTHING	ELEVATION	DEPTH
TRIAL PIT 14	0 672 645	8 402 499	546 m	907
TYPE OF MATERIAL:				
TESTED BY: M. MILANZI		DATE: 02 / 05 / 2019	TIME: 15:54	
CHECKED BY: S.THANGATO		DATE: 02 / 05 / 2019	TIME: 09:57	
APPROVED BY: M. SABELLI		DATE: 10 / 05 / 2019	TIME: 11:37	

PROJECT: GOLOMOTI SOLAR PV **CLIENT:** JCM

DYNAMIC CONE PENETRATION TEST (DCP) STANDARD: ASTM D6951/D6951M - 09

Initial Reading (mm): 43

No of Blows	Pen (mm)	Difference (mm)	Cum. Pen (mm)	mm / Blow	CBR (%)
5	94	51	51	10	20
10	140	46	97	9	25
15	179	39	136	8	30
20	222	43	179	9	25
25	273	51	230	10	20
30	333	60	290	12	18
35	377	44	334	9	25
40	429	52	386	10	20
45	565	136	522	27	7
50	609	44	566	9	25
55	650	41	607	8	30
60	692	42	649	8	30
65	731	39	688	8	30
70	766	35	723	7	35
75	800	34	757	7	35
80	835	35	792	7	35
85	874	39	831	8	30
90	910	36	867	7	35
95	929	19	886	4	60
100	950	21	907	4	60

REMARKS: DCP TEST FROM TRIAL PIT 014 AT THE DEPTH OF 1.000m. GOLOMOTI SOLAR SITE INVESTIGATION



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LAB REF: GC499 / 04MAY19 / 15:00

SAMPLE No. GSPV / TP015 / DCP015 / 02MAY19

SAMPLED BY: GEOCONSULT LAB

DATE: 02 / 05 / 2019

TIME: 10:25

LOCATION: UTM 36 L

EASTING

NORTHING

ELEVATION

DEPTH

TRIAL PIT 15

0 672 384

8 402 794

546 m

886

TYPE OF MATERIAL:

TESTED BY: M. MILANZI

DATE: 02 / 05 / 2019

TIME: 10:25

CHECKED BY: S.THANGATO

DATE: 02 / 05 / 2019

TIME: 09:57

APPROVED BY: M. SABELLI

DATE: 10 / 05 / 2019

TIME: 11:37

PROJECT: GOLOMOTI SOLAR PV

CLIENT: JCM

DYNAMIC CONE PENETRATION TEST (DCP) STANDARD: ASTM D6951/D6951M - 09

Initial Reading (mm): 64

No of Blows	Pen (mm)	Difference (mm)	Cum. Pen (mm)	mm / Blow	CBR (%)
5	221	157	157	31	6
10	365	144	301	29	7
15	505	140	441	28	7
20	649	144	585	29	7
25	810	161	746	32	6
30	950	140	886	28	7

REMARKS: DCP TEST FROM TRIAL PIT 015 AT THE DEPTH OF 1.000m. GOLOMOTI SOLAR SITE INVESTIGATION



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LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP016 / DCP016 / 02MAY19		
SAMPLED BY: GEOCONSULT LAB		DATE: 02 / 05 / 2019	TIME: 15:23	
LOCATION: UTM 36 L	EASTING	NORTHING	ELEVATION	DEPTH
TRIAL PIT 16	0 672 342	8 402 660	549 m	871
TYPE OF MATERIAL:				
TESTED BY: M. MILANZI		DATE: 02 / 05 / 2019	TIME: 15:23	
CHECKED BY: S.THANGATO		DATE: 02 / 05 / 2019	TIME: 09:57	
APPROVED BY: M. SABELLI		DATE: 10 / 05 / 2019	TIME: 11:37	

PROJECT: GOLOMOTI SOLAR PV **CLIENT: JCM**

DYNAMIC CONE PENETRATION TEST (DCP) STANDARD: ASTM D6951/D6951M - 09

Initial Reading (mm):	79					
	No of Blows	Pen (mm)	Difference (mm)	Cum. Pen (mm)	mm / Blow	CBR (%)
	5	147	68	68	14	15
	10	179	32	100	6	40
	15	268	89	189	18	11
	20	350	82	271	16	13
	25	399	49	320	10	20
	30	459	60	380	12	18
	35	495	36	416	7	35
	40	535	40	456	8	30
	45	571	36	492	7	35
	50	595	24	516	5	50
	55	620	25	541	5	50
	60	645	25	566	5	50
	65	665	20	586	4	60
	70	689	24	610	5	50
	75	711	22	632	4	60
	80	733	22	654	4	60
	85	775	42	696	8	30
	90	796	21	717	4	60
	95	820	24	741	5	50
	100	845	25	766	5	50
	105	871	26	792	5	50
	110	893	22	814	4	60
	115	921	28	842	6	40
	116	950	29	871	29	7

REMARKS: DCP TEST FROM TRIAL PIT 016 AT THE DEPTH OF 1.000m. GOLOMOTI SOLAR SITE INVESTIGATION



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LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP017 / DCP017 / 02MAY19		
SAMPLED BY: GEOCONSULT LAB		DATE: 02 / 05 / 2019	TIME: 17:09	
LOCATION: UTM 36 L	EASTING	NORTHING	ELEVATION	DEPTH
TRIAL PIT 17	0 672 016	8 402 656	551 m	878

TYPE OF MATERIAL:

TESTED BY: M. MILANZI	DATE: 02 / 05 / 2019	TIME: 17:09
CHECKED BY: S.THANGATO	DATE: 02 / 05 / 2019	TIME: 09:57
APPROVED BY: M. SABELLI	DATE: 10 / 05 / 2019	TIME: 11:37

PROJECT: GOLOMOTI SOLAR PV **CLIENT: JCM**

DYNAMIC CONE PENETRATION TEST (DCP) STANDARD: ASTM D6951/D6951M - 09

Initial Reading (mm): 72

No of Blows	Pen (mm)	Difference (mm)	Cum. Pen (mm)	mm / Blow	CBR (%)
5	205	133	133	27	7
10	256	51	184	10	20
15	502	246	430	49	4
20	667	165	595	33	6
25	825	158	753	32	6
30	939	114	867	23	9
35	950	11	878	2	100

REMARKS: DCP TEST FROM TRIAL PIT 017 AT THE DEPTH OF 1.000m. GOLOMOTI SOLAR SITE INVESTIGATION



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LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP018 / DCP018 / 03MAY19		
SAMPLED BY: GEOCONSULT LAB		DATE: 03 / 05 / 2019	TIME:09:39	
LOCATION: UTM 36 L TRIAL PIT 18	EASTING 0 671 938	NORTHING 8 402 608	ELEVATION 557 m	DEPTH 859
TYPE OF MATERIAL:				
TESTED BY: M. MILANZI		DATE: 03 / 05 / 2019	TIME:09:39	
CHECKED BY: S.THANGATO		DATE: 02 / 05 / 2019	TIME: 09:57	
APPROVED BY: M. SABELLI		DATE: 10 / 05 / 2019	TIME: 11:37	

PROJECT: GOLOMOTI SOLAR PV **CLIENT: JCM**

DYNAMIC CONE PENETRATION TEST (DCP) STANDARD: ASTM D6951/D6951M - 09

Initial Reading (mm):		91				
No of Blows	Pen (mm)	Difference (mm)	Cum. Pen (mm)	mm / Blow	CBR (%)	
5	251	160	160	32	6	
10	352	101	261	20	10	
15	400	48	309	10	20	
20	505	105	414	21	10	
25	576	71	485	14	15	
30	640	64	549	13	16	
35	711	71	620	14	15	
40	799	88	708	18	11	
45	876	77	785	15	14	
50	950	74	859	15	14	

REMARKS: DCP TEST FROM TRIAL PIT 018 AT THE DEPTH OF 1.000m. GOLOMOTI SOLAR SITE INVESTIGATION



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LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP019 / DCP019 / 03MAY19		
SAMPLED BY: GEOCONSULT LAB		DATE: 03 / 05 / 2019	TIME: 09:39	
LOCATION: UTM 36 L	EASTING	NORTHING	ELEVATION	DEPTH
TRIAL PIT 19	0 671 938	8 402 608	557 m	900
TYPE OF MATERIAL:				
TESTED BY: M. MILANZI		DATE: 03 / 05 / 2019	TIME: 09:39	
CHECKED BY: S.THANGATO		DATE: 02 / 05 / 2019	TIME: 09:57	
APPROVED BY: M. SABELLI		DATE: 10 / 05 / 2019	TIME: 11:37	
PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM	

DYNAMIC CONE PENETRATION TEST (DCP) STANDARD: ASTM D6951/D6951M - 09

Initial Reading (mm):	50					
No of Blows	Pen (mm)	Difference (mm)	Cum. Pen (mm)	mm / Blow	CBR (%)	
5	128	78	78	16	13	
10	200	72	150	14	15	
15	269	69	219	14	15	
20	349	80	299	16	13	
25	441	92	391	18	11	
30	545	104	495	21	10	
35	652	107	602	21	10	
40	759	107	709	21	10	
45	801	42	751	8	30	
50	950	149	900	30	6	

REMARKS: DCP TEST FROM TRIAL PIT 019 AT THE DEPTH OF 1.000m. GOLOMOTI SOLAR SITE INVESTIGATION



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LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP020 / DCP020 / 03MAY19			
SAMPLED BY: GEOCONSULT LAB		DATE: 03 / 05 / 2019		TIME: 15:30	
LOCATION: UTM 36 L TRIAL PIT 20		EASTING 0 671 990	NORTHING 8 402 438	ELEVATION 561 m	DEPTH 897
TYPE OF MATERIAL:					
TESTED BY: M. MILANZI		DATE: 03 / 05 / 2019		TIME: 15:30	
CHECKED BY: S.THANGATO		DATE: 03 / 05 / 2019		TIME: 09:57	
APPROVED BY: M. SABELLI		DATE: 10 / 05 / 2019		TIME: 11:37	

PROJECT: GOLOMOTI SOLAR PV **CLIENT: JCM**

DYNAMIC CONE PENETRATION TEST (DCP) STANDARD: ASTM D6951/D6951M - 09

Initial Reading (mm): 53

No of Blows	Pen (mm)	Difference (mm)	Cum. Pen (mm)	mm / Blow	CBR (%)
5	190	137	137	27	7
10	295	105	242	21	10
15	419	124	366	25	8
20	425	6	372	1	100
25	613	188	560	38	5
30	709	96	656	19	11
35	795	86	742	17	12
40	809	14	756	3	80
45	950	141	897	28	7

REMARKS: DCP TEST FROM TRIAL PIT 020 AT THE DEPTH OF 1.000m. GOLOMOTI SOLAR SITE INVESTIGATION

3.4 Trial Pit 01



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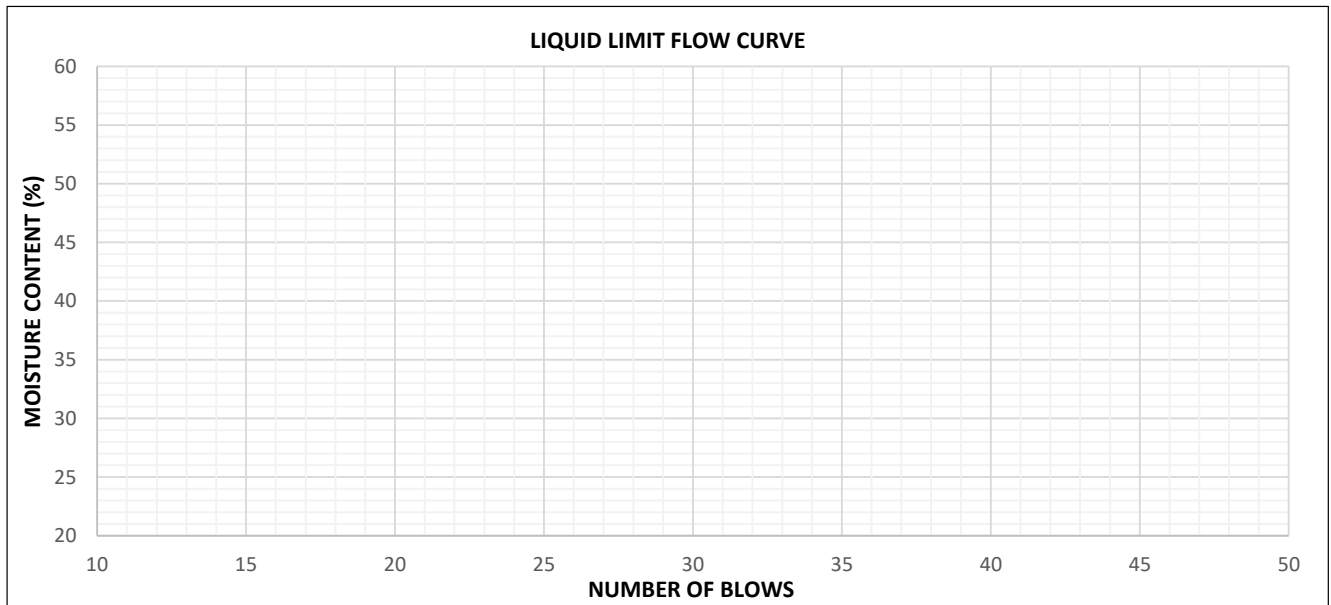
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP01 / AL004 / 27APR19	
SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 27 - 04 - 2019	TIME: 11:30
LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION
GOLOMOTI - SOLAR PV	0 672 496	8 403 452	(m)
DEPTH (m) 3.000-4.000			
TYPE OF MATERIAL: VERY MOIST BROWN GRAVELLY SANDY SILTY CLAY CONTAINS SPOTS OF DECOMPOSED ROCK			
TESTED BY: S. MATCHADO		DATE: 31 - 05-2019	TIME: 08:44
CHECKED BY: S. THANGATO		DATE: 01 - 06 - 2019	TIME: 09:35
APPROVED BY: M. SABELLI		DATE: 01 - 06 - 2019	TIME: 14:18
PROJECT: GOLOMOTI SOLAR PV		CLIENT: JCM	

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
	1	2	3	4	1	2	3
TEST No.							
CONTAINER No.	C19		R21		B	R19	A
MASS OF WET SOIL + CONTAINER(g)	44.5		49.0		45.5	45.5	44.5
MASS OF DRY SOIL + CONTAINER(g)	39.0		43.5		43.0	43.0	42.0
MASS OF CONTAINER (g)	25		29		29	28.5	27.5
MASS OF DRY SOIL (g)	14.0		14.5		14.0	14.5	14.5
MASS OF WATER (g)	5.50		5.50		2.50	2.50	2.50
MOISTURE CONTENT %	39.3	40.1	37.9	37.2	17.9	17.2	17.2
No. BLOWS	30		20			17.4	

LINEAR SHRINKAGE	17
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	12.7
LINEAR SHRINKAGE %	10.2
LIQUID LIMIT (LL) %	38.6
PLASTIC LIMIT (PL) %	17.4
PLASTICITY INDEX (PI)	21
NATURAL MOISTURE CONTENT %	10.3
FINENESS INDEX	1008.0



REMARKS: SAMPLED FROM TRIAL PIT 01 @ 3.000-4.000M. SOLAR PV SITE INVESTIGATION



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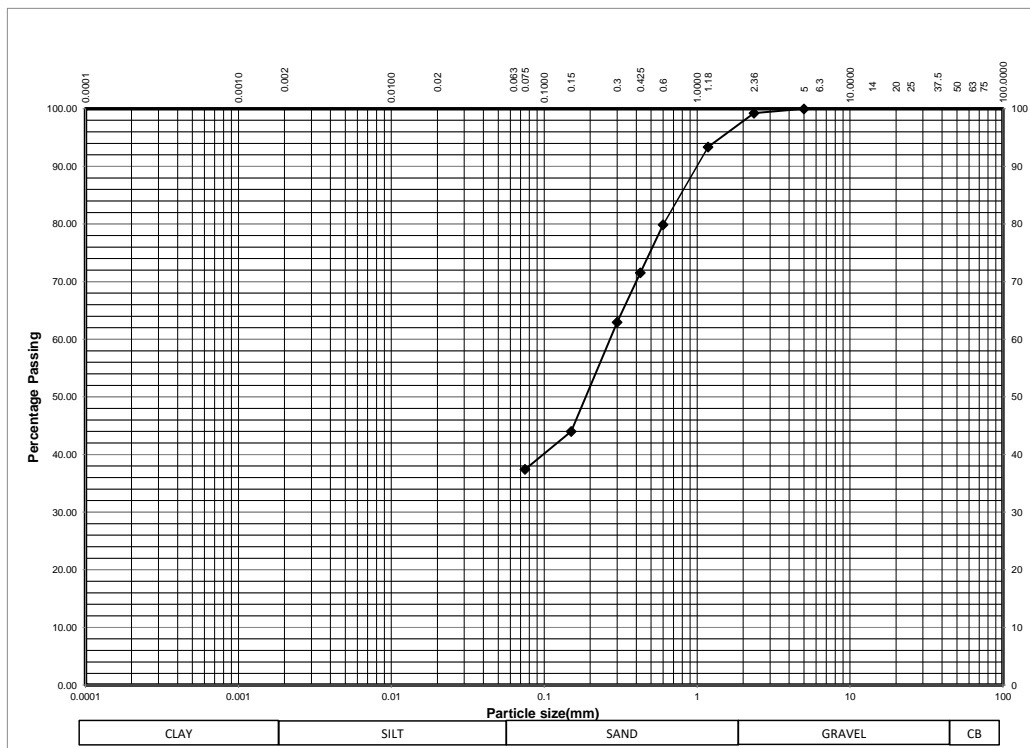
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LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP01 / G001 / 27APR19		
SAMPLED BY: GEOCONSULT LAB TEAM		DATE: 27 / 04 / 2019	TIME: 11:30	
LOCATION:	EASTING	NORTHING	ELEVATION	DEPTH (m)
GOLOMOTI - SOLAR PV	0 672 496	8 403 452	(m)	0.200-1.000
TYPE OF MATERIAL: MOIST DARK BROWN SANDY SILTY CLAY				
TESTED BY: S. MATCHADO		DATE: 06 - 06 - 2019	TIME: 11:51	
CHECKED BY: G.KACHIWALA		DATE: 07 - 06 - 2019	TIME: 13:30	
APPROVED BY: M. SABELLI		DATE: 07 - 06 - 2019	TIME: 15:00	

PROJECT: GOLOMOTI SOLAR PV **CLIENT: JCM**

SIEVE ANALYSIS (GRADATION) STANDARD: TRH14:1985

SIEVE (mm)	MASS RETAINED	PERCENTAGE			GRADATION SPECIFICATION			ZONE
		RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.500								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300								
5.000	0.00	0.00	100.00	100				
2.360	6.00	0.76	99.24	99				
1.180	52.50	6.64	93.36	93				
0.600	159.00	20.10	79.90	80				
0.425	225.00	28.45	71.55	72				
0.300	293.00	37.04	62.96	63				
0.150	443.00	56.01	43.99	44				
0.075	495.00	62.58	37.42	37				
0 pan	296.00	37.42						
TOTAL (g)	791.00							



REMARKS: SAMPLED FROM TRIAL PIT 01 @ 0.200-1.00M. SOLAR PV SITE INVESTIGATION

PAGE No.



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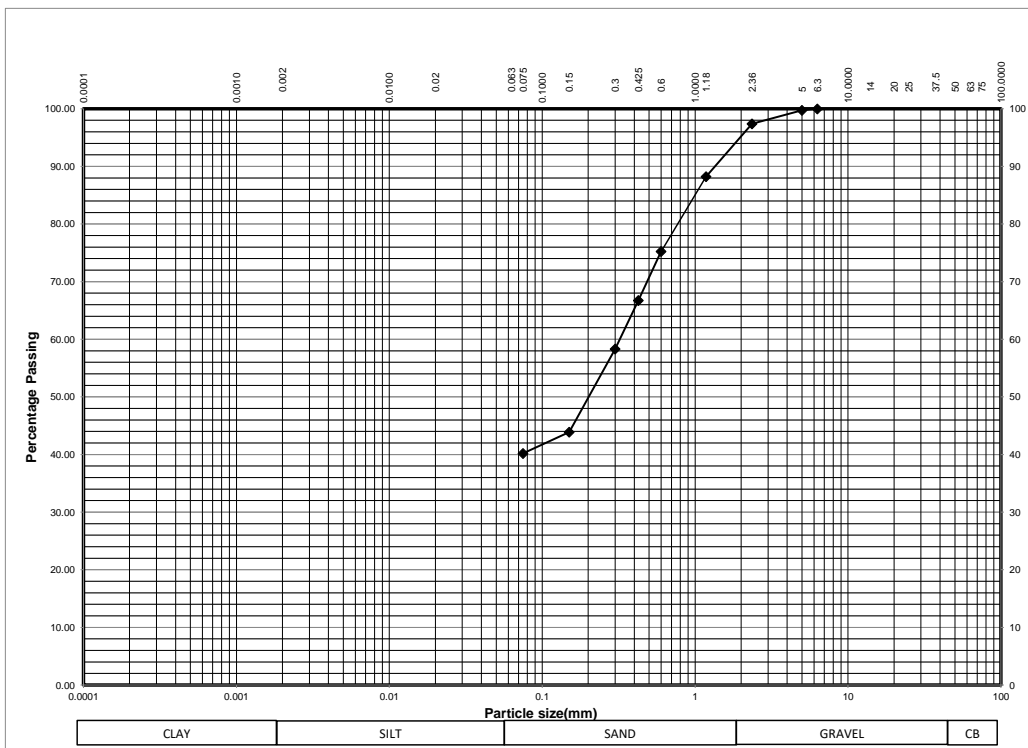
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP01 / G002 / 27APR19		
SAMPLED BY: GEOCONSULT LAB TEAM		DATE: 27 / 04 / 2019	TIME: 16:20	
LOCATION:	EASTING	NORTHING	ELEVATION	DEPTH (m)
GOLOMOTI - SOLAR PV	0 672 496	8 403 452	(m)	1.000-2.000
TYPE OF MATERIAL: MOIST BROWN YELLOWISH SANDY SILTY CLAY				
TESTED BY: I. MITOMONI		DATE: 25 - 05 - 2019	TIME: 11:20	
CHECKED BY: E. NKHUKU		DATE: 29 - 05 - 2019	TIME: 13:30	
APPROVED BY: M. SABELLI		DATE: 29 - 05 - 2019	TIME: 15:00	

PROJECT: GOLOMOTI SOLAR PV **CLIENT: JCM**

SIEVE ANALYSIS (GRADATION) STANDARD: TRH14:1985

SIEVE (mm)	MASS RETAINED	PERCENTAGE			GRADATION SPECIFICATION			ZONE
		RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.500								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300	0.00	0.00	100.00	100				
5.000	1.50	0.25	99.75	100				
2.360	15.50	2.59	97.41	97				
1.180	70.50	11.76	88.24	88				
0.600	148.50	24.77	75.23	75				
0.425	199.50	33.28	66.72	67				
0.300	250.00	41.70	58.30	58				
0.150	336.50	56.13	43.87	44				
0.075	358.50	59.80	40.20	40				
0 pan	241.00	40.20						
TOTAL (g)	599.50							



REMARKS: SAMPLED FROM TRIAL PIT 01 @ 1.000-2.000M. SOLAR PV SITE INVESTIGATION

PAGE No.



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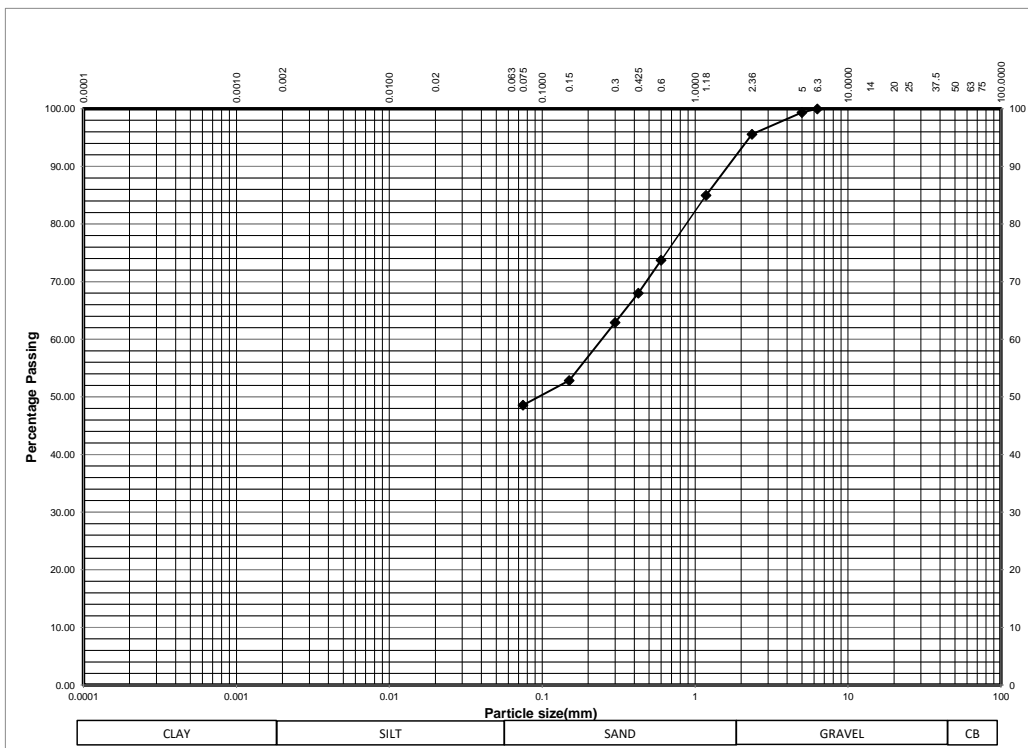
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LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP01 / G003 / 27APR19		
SAMPLED BY: GEOCONSULT LAB TEAM		DATE: 27 / 04 / 2019	TIME: 16:20	
LOCATION:	EASTING	NORTHING	ELEVATION	DEPTH (m)
GOLOMOTI - SOLAR PV	0 672 496	8 403 452	(m)	2.000-3.000
TYPE OF MATERIAL: MOIST BROWN YELLOWISH GRAVELLY SANDY SILTY CLAY				
TESTED BY: I. MITOMONI		DATE: 25 - 05 - 2019	TIME: 11:20	
CHECKED BY: E. NKHUKU		DATE: 29 - 05 - 2019	TIME: 13:30	
APPROVED BY: M. SABELLI		DATE: 29 - 05 - 2019	TIME: 15:00	

PROJECT: GOLOMOTI SOLAR PV **CLIENT: JCM**

SIEVE ANALYSIS (GRADATION) STANDARD: TRH14:1985

SIEVE (mm)	MASS		PERCENTAGE		GRADATION SPECIFICATION			ZONE
	RETAINED	RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.500								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300	0.00	0.00	100.00	100				
5.000	4.50	0.64	99.36	99				
2.360	31.00	4.43	95.57	96				
1.180	105.00	15.00	85.00	85				
0.600	184.00	26.29	73.71	74				
0.425	224.00	32.00	68.00	68				
0.300	259.50	37.07	62.93	63				
0.150	330.00	47.14	52.86	53				
0.075	360.00	51.43	48.57	49				
0 pan	340.00	48.57						
TOTAL (g)	700.00							



REMARKS: SAMPLED FROM TRIAL PIT 01 @ 2.000-3.000M. SOLAR PV SITE INVESTIGATION

PAGE No.



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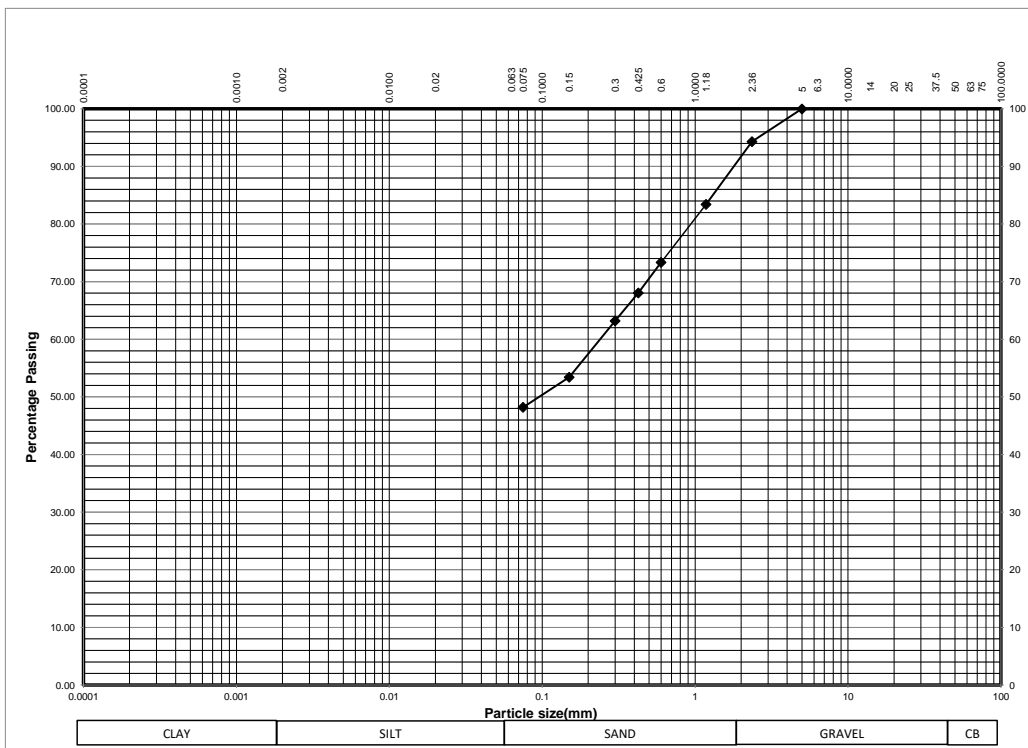
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LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP01 / G004 / 27APR19		
SAMPLED BY: GEOCONSULT LAB TEAM		DATE: 27 / 04 / 2019	TIME: 11:30	
LOCATION:	EASTING	NORTHING	ELEVATION	DEPTH (m)
GOLOMOTI - SOLAR PV	0 672 496	8 403 452	(m)	3.000-4.000
TYPE OF MATERIAL: VERY MOIST BROWN GRAVELLY SANDY SILTY CLAY CONTAINS SPOTS OF DECOMPOSED ROCK				
TESTED BY: I. MITOMONI		DATE: 25 - 05 - 2019	TIME: 11:35	
CHECKED BY: E. NKHUKU		DATE: 29 - 05 - 2019	TIME: 13:30	
APPROVED BY: M. SABELLI		DATE: 29 - 05 - 2019	TIME: 15:00	

PROJECT: GOLOMOTI SOLAR PV **CLIENT: JCM**


SIEVE ANALYSIS (GRADATION) STANDARD: TRH14:1985


SIEVE (mm)	MASS RETAINED	PERCENTAGE			GRADATION SPECIFICATION			ZONE
		RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.500								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300								
5.000	0.00	0.00	100.00	100				
2.360	49.50	5.70	94.30	94				
1.180	144.00	16.58	83.42	83				
0.600	231.50	26.66	73.34	73				
0.425	277.50	31.95	68.05	68				
0.300	319.50	36.79	63.21	63				
0.150	404.50	46.57	53.43	53				
0.075	450.00	51.81	48.19	48				
0 pan	418.50	48.19						
TOTAL (g)	868.50							





REMARKS: SAMPLED FROM TRIAL PIT 01 @ 3.000-4.000M. SOLAR PV SITE INVESTIGATION

PAGE No.

 GEOCONSULT +265 0888 846 543 sabelli@geoconsult.cc	LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP01 / NMC001 / 27APR19		
	SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 27 - 04 - 2019	TIME: 11:30	
	LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
	GOLOMOTI - SOLAR PV	0 672 496	8 403 452	(m)	0.200-1.000
	TYPE OF MATERIAL: MOIST DARK BROWN SANDY SILTY CLAY				
	TESTED BY: C. NDALAMA		DATE: 05 - 05 - 2019	TIME: 09:00	
	CHECKED BY: G. KACHIWALA		DATE: 06 - 05 - 2019	TIME: 09:45	
APPROVED BY: M. SABELLI		DATE: 06 - 05 - 2019	TIME: 10:00		
PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM		
NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: ASTM D7263					
MASS OF WET SOIL + CONTAINER (g)			418.0		
MASS OF DRY SOIL AND CONTAINER (g)			399.5		
CONTAINER No.			GOK		
MASS OF CONTAINER (g)			126.0		
MASS OF DRY SOIL (g)			273.5		
MASS OF WATER (g)			18.5		
MOISTURE CONTENT %			6.8		
AVERAGE MOISTURE CONTENT %			6.8		
REMARKS: SAMPLED FROM TRIAL PIT 01 @ 0.200-1.000M. SOLAR PV SITE INVESTIGATION					PAGE No.

 GEOCONSULT +265 0888 846 543 sabelli@geoconsult.cc	LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP01 / NMC002 / 27APR19		
	SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 27 - 04 - 2019	TIME: 11:30	
	LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
	GOLOMOTI - SOLAR PV	0 672 496	8 403 452	(m)	1.000-2000
	TYPE OF MATERIAL: MOIST BROWN YELLOWISH SANDY SILTY CLAY				
	TESTED BY: C. NDALAMA		DATE: 05 - 05 - 2019	TIME: 09:00	
	CHECKED BY: G. KACHIWALA		DATE: 05 - 05 - 2019	TIME: 09:45	
	APPROVED BY: M. SABELLI		DATE: 05 - 05 - 2019	TIME: 10:00	
	PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM	
	NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: ASTM D7263				
MASS OF WET SOIL + CONTAINER (g)		383.5			
MASS OF DRY SOIL AND CONTAINER (g)		350.0			
CONTAINER No.		GC12			
MASS OF CONTAINER (g)		70.0			
MASS OF DRY SOIL (g)		280.0			
MASS OF WATER (g)		33.5			
MOISTURE CONTENT %		12.0			
AVERAGE MOISTURE CONTENT %		12.0			
REMARKS: SAMPLED FROM TRIAL PIT 01 @ 1.000-2.000M. SOLAR PV SITE INVESTIGATION				PAGE No.	

 GEOCONSULT +265 0888 846 543 sabelli@geoconsult.cc	LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP01 / NMC003 / 27APR19		
	SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 27 - 04 - 2019	TIME: 09:01	
	LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
	GOLOMOTI - SOLAR PV	0 672 496	8 403 452	(m)	2.000-3000
	TYPE OF MATERIAL: MOIST BROWN YELLOWISH GRAVELLY SANDY SILTY CLAY				
	TESTED BY: C. NDALAMA		DATE: 05 - 05 - 2019	TIME: 09:00	
	CHECKED BY: G. KACHIWALA		DATE: 05 - 05 - 2019	TIME: 09:45	
	APPROVED BY: M. SABELLI		DATE: 05 - 05 - 2019	TIME: 10:00	
	PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM	
	NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: ASTM D7263				
MASS OF WET SOIL + CONTAINER (g)		422.0			
MASS OF DRY SOIL AND CONTAINER (g)		385.5			
CONTAINER No.		GC7			
MASS OF CONTAINER (g)		73.5			
MASS OF DRY SOIL (g)		312.0			
MASS OF WATER (g)		36.5			
MOISTURE CONTENT %		11.7			
AVERAGE MOISTURE CONTENT %		11.7			
REMARKS: SAMPLED FROM TRIAL PIT 01 @ 2.000-3.000M. SOLAR PV SITE INVESTIGATION				PAGE No.	

 GEOCONSULT +265 0888 846 543 sabelli@geoconsult.cc	LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP01 / NMC004 / 27APR19		
	SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 27 - 04 - 2019	TIME: 09:01	
	LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
	GOLOMOTI - SOLAR PV	0 672 496	8 403 452	(m)	3.000-4000
	TYPE OF MATERIAL: VERY MOIST BROWN GRAVELLY SANDY SILTY CLAY CONTAINS SPOTS OF DECOMPOSED ROCK				
	TESTED BY: C. NDALAMA		DATE: 05 - 05 - 2019	TIME: 09:00	
	CHECKED BY: G. KACHIWALA		DATE: 05 - 05 - 2019	TIME: 09:45	
	APPROVED BY: M. SABELLI		DATE: 05 - 05 - 2019	TIME: 10:00	
	PROJECT: GOLOMOTI SOLAR PV		CLIENT: JCM		
	NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: ASTM D7263				
MASS OF WET SOIL + CONTAINER (g)		471.0			
MASS OF DRY SOIL AND CONTAINER (g)		434.0			
CONTAINER No.		GCV2			
MASS OF CONTAINER (g)		73.5			
MASS OF DRY SOIL (g)		360.5			
MASS OF WATER (g)		37.0			
MOISTURE CONTENT %		10.3			
AVERAGE MOISTURE CONTENT %		10.3			
REMARKS: SAMPLED FROM TRIAL PIT 01 @ 3.000-4.000M. SOLAR PV SITE INVESTIGATION				PAGE No.	



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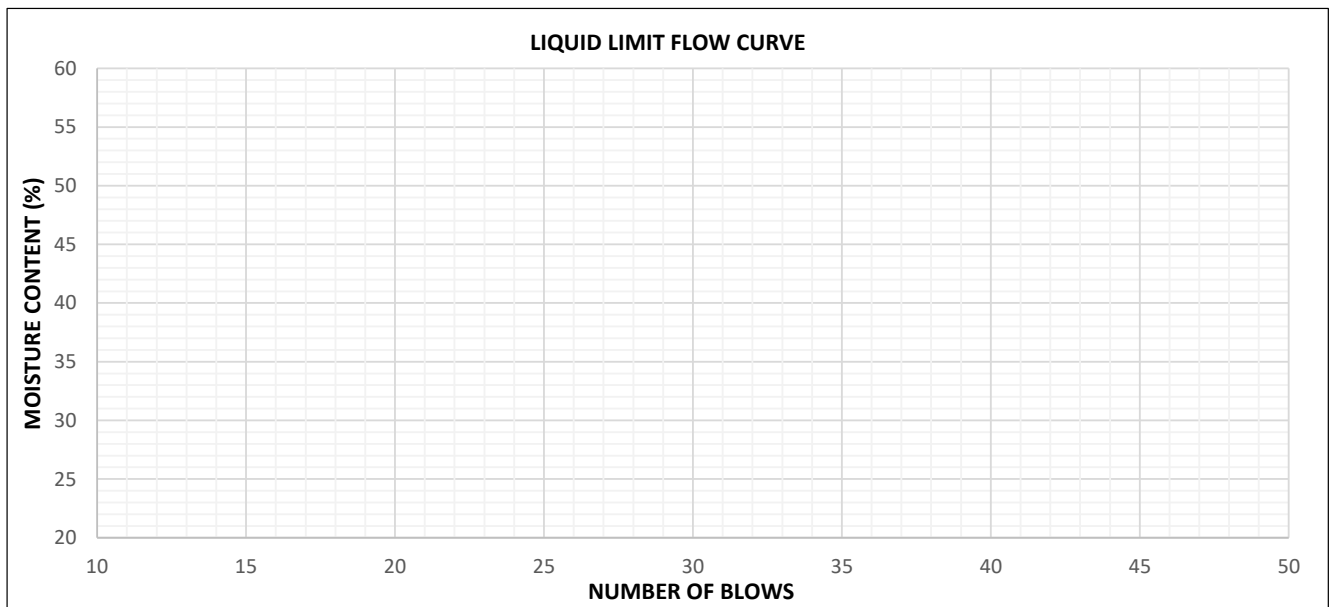
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP01 / AL001 / 27APR19	
SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 27 - 04 - 2019	TIME: 11:30
LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION
GOLOMOTI - SOLAR PV	0 672 496	8 403 452	(m)
DEPTH (m) 0.200-1.000			
TYPE OF MATERIAL: MOIST DARK BROWN SANDY SILTY CLAY			
TESTED BY: M. MILANZI		DATE: 10 - 06 - 2019	TIME: 15:21
CHECKED BY: S. THANGATO		DATE: 11 - 06 - 2019	TIME: 09:35
APPROVED BY: M. SABELLI		DATE: 11 - 06 - 2019	TIME: 14:18
PROJECT: GOLOMOTI SOLAR PV		CLIENT: JCM	

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
	1	2	3	4	1	2	3
TEST No.							
CONTAINER No.	R12		C31		C	C15	R15
MASS OF WET SOIL + CONTAINER(g)	78.5		80.0		72.5	61.5	42.5
MASS OF DRY SOIL + CONTAINER(g)	70.0		70.5		68.5	57.0	41.5
MASS OF CONTAINER (g)	29		30.0		30	15	31.5
MASS OF DRY SOIL (g)	41.0		40.5		38.5	42.0	10.0
MASS OF WATER (g)	8.50		9.50		4.00	4.50	1.00
MOISTURE CONTENT %	20.7	20.7	23.5	22.5	10.4	10.7	10.0
No. BLOWS	26		16			10.4	

LINEAR SHRINKAGE	14
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	13.2
LINEAR SHRINKAGE %	6.1
LIQUID LIMIT (LL) %	21.6
PLASTIC LIMIT (PL) %	10.4
PLASTICITY INDEX (PI)	11
NATURAL MOISTURE CONTENT %	6.8
FINENESS INDEX	407



REMARKS: SAMPLED FROM TRIAL PIT 01 @ 0.200-1.000M. SOLAR PV SITE INVESTIGATION



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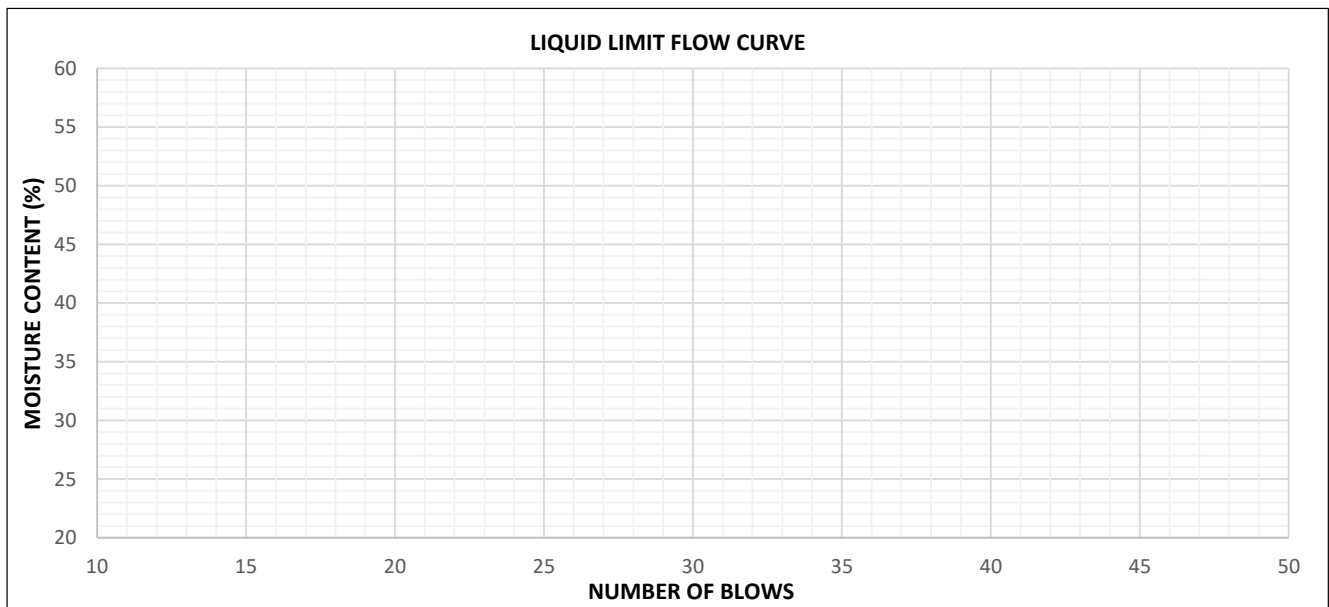
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LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP01 / AL002 / 27APR19	
SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 27 - 04 - 2019	TIME: 11:30
LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION
GOLOMOTI - SOLAR PV	0 672 496	8 403 452	(m)
DEPTH (m) 1.000-2.000			
TYPE OF MATERIAL: MOIST BROWN YELLOWISH SANDY SILTY CLAY			
TESTED BY: M. MILANZI		DATE: 31 - 05-2019	TIME: 08:44
CHECKED BY: G. KACHIWALA		DATE: 01 - 06 - 2019	TIME: 09:35
APPROVED BY: M. SABELLI		DATE: 01 - 06 - 2019	TIME: 14:18
PROJECT: GOLOMOTI SOLAR PV		CLIENT: JCM	

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
	1	2	3	4	1	2	3
TEST No.							
CONTAINER No.	C11		R22		K3	R19	C23
MASS OF WET SOIL + CONTAINER(g)	55.0		55.0		40.5	45.5	40.3
MASS OF DRY SOIL + CONTAINER(g)	49.0		48.0		39.0	44.0	38.0
MASS OF CONTAINER (g)	30		29		28	33	21.5
MASS OF DRY SOIL (g)	19.0		19.0		11.0	11.0	16.5
MASS OF WATER (g)	6.00		7.00		1.50	1.50	2.30
MOISTURE CONTENT %	31.6	32.2	36.8	36.5	13.6	13.6	13.9
No. BLOWS	30		24			13.7	

LINEAR SHRINKAGE	2
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	12.5
LINEAR SHRINKAGE %	12.0
LIQUID LIMIT (LL) %	34.3
PLASTIC LIMIT (PL) %	13.7
PLASTICITY INDEX (PI)	21
NATURAL MOISTURE CONTENT %	12.0
FINENESS INDEX	840



REMARKS: SAMPLED FROM TRIAL PIT 01 @ 1.000-2.000M. SOLAR PV SITE INVESTIGATION



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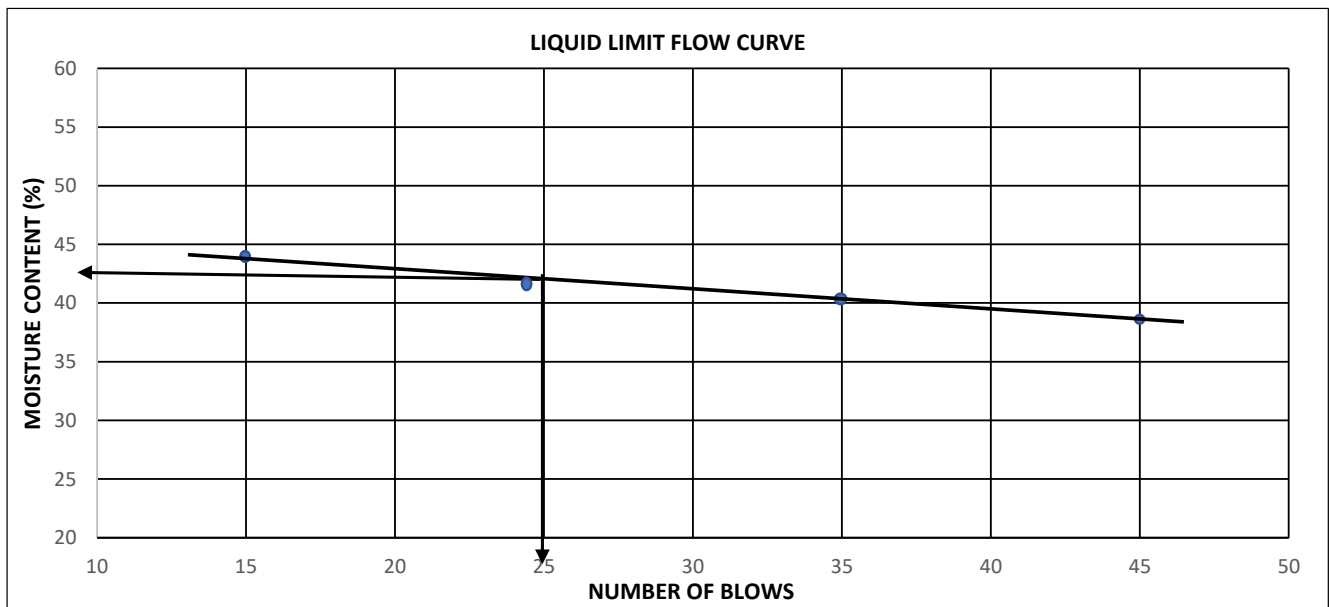
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LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP01 / AL003 / 27APR19	
SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 27 - 04 - 2019	TIME: 11:30
LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION
GOLOMOTI - SOLAR PV	0 672 496	8 403 452	(m)
DEPTH (m) 2.000-3.000			
TYPE OF MATERIAL: MOIST BROWN YELLOWISH GRAVELLY SANDY SILTY CLAY			
TESTED BY: C. NAMBANZO		DATE: 31 - 05-2019	TIME: 08:44
CHECKED BY: S. THANGATO		DATE: 01 - 06 - 2019	TIME: 09:35
APPROVED BY: M. SABELLI		DATE: 01 - 06 - 2019	TIME: 14:18
PROJECT: GOLOMOTI SOLAR PV		CLIENT: JCM	

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
	1	2	3	4	1	2	3
TEST No.							
CONTAINER No.	R17	R18	C2	C12	K3	R19	C23
MASS OF WET SOIL + CONTAINER(g)	56.5	58.5	61.5	63.5	40.5	45.5	40.3
MASS OF DRY SOIL + CONTAINER(g)	48.5	50	51.0	52.5	39.0	44.0	38.0
MASS OF CONTAINER (g)	27.50	29.00	26.00	28.00	28	33	21.5
MASS OF DRY SOIL (g)	21.0	21.0	25.0	24.5	11.0	11.0	16.5
MASS OF WATER (g)	8.00	8.50	10.50	11.00	1.50	1.50	2.30
MOISTURE CONTENT %	38.1	40.5	42.0	44.9	13.6	13.6	13.9
No. BLOWS	45	35	24	15		13.7	

LINEAR SHRINKAGE	2
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	12.5
LINEAR SHRINKAGE %	12.0
LIQUID LIMIT (LL) %	42.5
PLASTIC LIMIT (PL) %	13.7
PLASTICITY INDEX (PI)	29
NATURAL MOISTURE CONTENT %	11.7
FINENESS INDEX	1421



REMARKS: SAMPLED FROM TRIAL PIT 01 @ 2.000-3.000M. SOLAR PV SITE INVESTIGATION

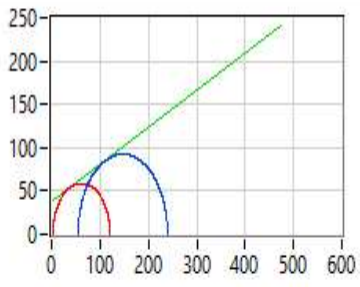
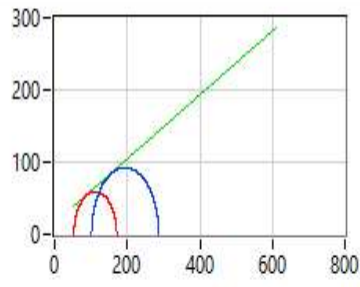
Triaxial test - UU BS 1377 part 7, 1377 part 8		
	Site : GOLOMOTI SOLAR PV	Levy date : 29-Jun-19
	Technician's name :	Date of test : 29-Jun-19
GEOCONSULT LIMITED P.O. BOX 40 LILONGWE	File N° : 39	Survey depth (m) : 1.000
	Survey N° : TRIAL PIT No. 01	Level of water (m) :
	Kind of soil :	Moist Brown Reddish Laterite Gravelley Sandy Silty CLAY

Identification of samples :

Ovo, Total stress of the soil in situ (kPa) : 0.000	Uo, Pore pressure of the soil in situ (kPa) : 0.000
Category of soil : Soft/Granular	Kind of drainage : Without lateral drain
ρ_s , Grain density (kg/m ³) : 0.000	
S_m : <input type="checkbox"/>	S_d : <input type="checkbox"/>

Samples before test :									Samples after saturation :		
N°	Hi (mm)	Di (mm)	mi (g)	ρ_i (kg/m ³)	ρ_{di} (kg/m ³)	wi (%)	ei	Si (%)	Ucp (kPa)	ΔV_{sat} (mm ³)	B (%)
1	76.00	38	175.0	2030	1694	19.86	-1.000	-0.000		0.000	0.000
2	76.00	38	144.0	1671	1381	21.01	-1.000	-0.000		0.000	0.000

Samples after consolidation :							Samples after shearing							
N°	Hs (mm)	Ds (mm)	ΔV_s (mm ³)	T100 (min)	Vmax ($\mu\text{m}/\text{min}$)	σ'_c (kPa)	Hf (mm)	Df (mm)	mf (g)	md (g)	wf (%)	ρ_{df} (kg/m ³)	ef	Srf (%)
1	76.00	38.00	0.000	0.000	0.000	0.000	76.00	38.00	173.5	146.0	18.84	1694	-1.000	-0.000
2	76.00	38.00	0.000	0.000	0.000	0.000	76.00	38.00	143.5	119.0	20.59	1381	-1.000	-0.000

Total stress :	Effective stress :	Comments :												
 <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><th colspan="2">Mohr</th></tr> <tr><td>C (kPa)</td><td>37.93</td></tr> <tr><td>ϕ (°)</td><td>23.02</td></tr> </table>	Mohr		C (kPa)	37.93	ϕ (°)	23.02	 <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><th>Mohr</th><th>Lambe</th></tr> <tr><td>C' (kPa)</td><td>14.65 / 13.38</td></tr> <tr><td>ϕ' (°)</td><td>24.05 / 22.17</td></tr> </table>	Mohr	Lambe	C' (kPa)	14.65 / 13.38	ϕ' (°)	24.05 / 22.17	<div style="border: 1px solid black; height: 100px; width: 100%;"></div>
Mohr														
C (kPa)	37.93													
ϕ (°)	23.02													
Mohr	Lambe													
C' (kPa)	14.65 / 13.38													
ϕ' (°)	24.05 / 22.17													
<div style="display: flex; justify-content: space-between;"> Visa : p.1/3 </div>														

3.5 Trial Pit 02



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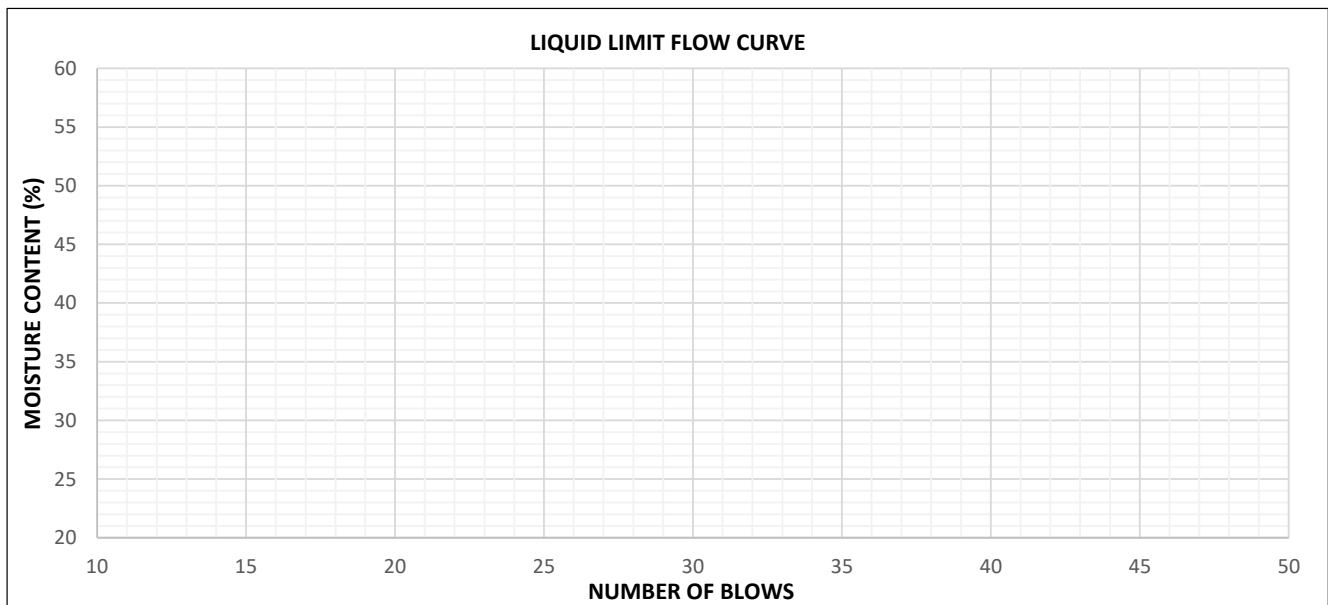
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP02 / AL007 / 27APR19	
SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 27 - 04 - 2019	TIME: 09:05
LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION
GOLOMOTI - SOLAR PV	0 672 496	8 403 452	(m)
DEPTH (m) 3.300-4.000			
TYPE OF MATERIAL: VERY MOIST BROWN YELLOWISH GRAVELLY SANDY SILTY CLAY			
TESTED BY: S. MATCHADO		DATE: 31 - 05-2019	TIME: 10:33
CHECKED BY: S. THANGATO		DATE: 01 - 06 - 2019	TIME: 09:35
APPROVED BY: M. SABELLI		DATE: 01 - 06 - 2019	TIME: 14:18
PROJECT: GOLOMOTI SOLAR PV		CLIENT: JCM	

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
	1	2	3	4	1	2	3
TEST No.							
CONTAINER No.	C20		R15		R2	R23	R19
MASS OF WET SOIL + CONTAINER(g)	59.0		57.0		44.0	44.0	44.0
MASS OF DRY SOIL + CONTAINER(g)	53.0		50.0		41.5	41.0	41.5
MASS OF CONTAINER (g)	33		32		28	25	28
MASS OF DRY SOIL (g)	20.0		18.0		13.5	16.0	13.5
MASS OF WATER (g)	6.00		7.00		2.50	3.00	2.50
MOISTURE CONTENT %	30.0	30.6	38.9	37.7	18.5	18.8	18.5
No. BLOWS	30		19			18.6	

LINEAR SHRINKAGE	5
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	13.0
LINEAR SHRINKAGE %	7.7
LIQUID LIMIT (LL) %	34.2
PLASTIC LIMIT (PL) %	18.6
PLASTICITY INDEX (PI)	16
NATURAL MOISTURE CONTENT %	19.4
FINENESS INDEX	736.0



REMARKS: SAMPLED FROM TRIAL PIT 02 @ 3.300-4.000M. SOLAR PV SITE INVESTIGATION



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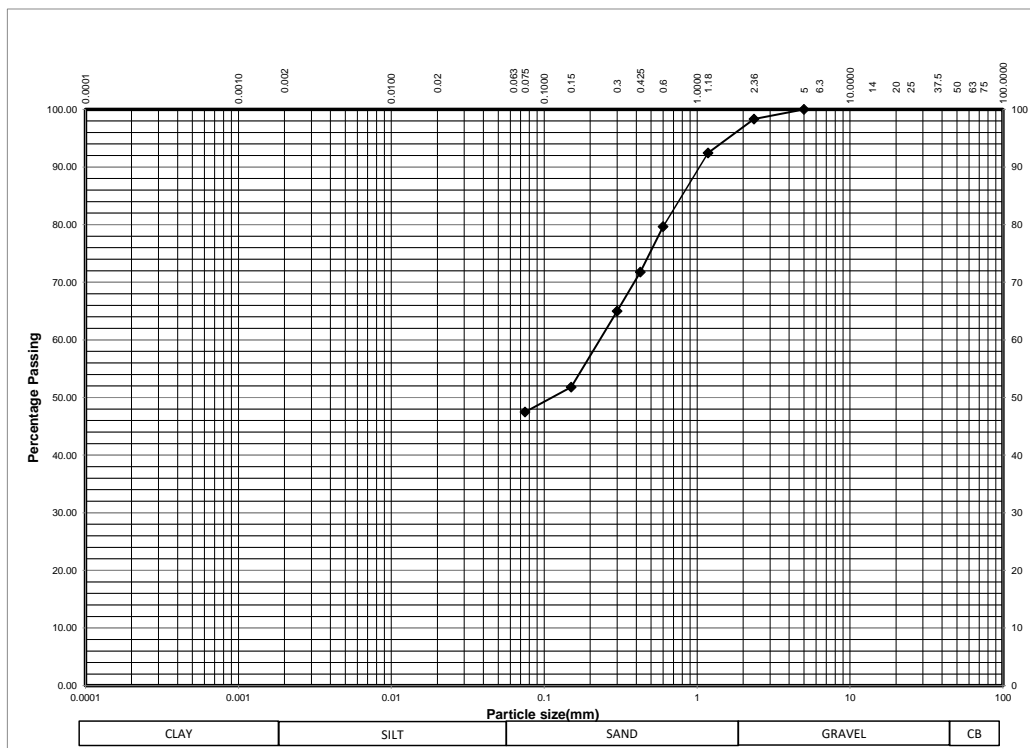
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LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP02 / G005 / 27APR19		
SAMPLED BY: GEOCONSULT LAB TEAM		DATE: 27 / 04 / 2019	TIME: 15:30	
LOCATION:	EASTING	NORTHING	ELEVATION	DEPTH (m)
GOLOMOTI - SOLAR PV	0 672 496	8 403 306	(m)	0.200-1.000
TYPE OF MATERIAL: MOIST DARK BROWN SANDY SILTY CLAY				
TESTED BY: I. MITOMONI		DATE: 25 - 05 - 2019	TIME: 11:20	
CHECKED BY: E. NKHUKU		DATE: 29 - 05 - 2019	TIME: 13:30	
APPROVED BY: M. SABELLI		DATE: 29 - 05 - 2019	TIME: 15:00	

PROJECT: GOLOMOTI SOLAR PV **CLIENT: JCM**

SIEVE ANALYSIS (GRADATION) STANDARD: TRH14:1985

SIEVE (mm)	MASS RETAINED	PERCENTAGE			GRADATION SPECIFICATION			ZONE
		RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.500								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300								
5.000	0.00	0.00	100.00	100				
2.360	11.50	1.65	98.35	98				
1.180	52.50	7.54	92.46	92				
0.600	141.50	20.33	79.67	80				
0.425	196.50	28.23	71.77	72				
0.300	243.50	34.99	65.01	65				
0.150	335.50	48.20	51.80	52				
0.075	365.50	52.51	47.49	47				
0 pan	330.50	47.49						
TOTAL (g)	696.00							



REMARKS: SAMPLED FROM TRIAL PIT 02 @ 0.200-1.00M. SOLAR PV SITE INVESTIGATION

PAGE No.



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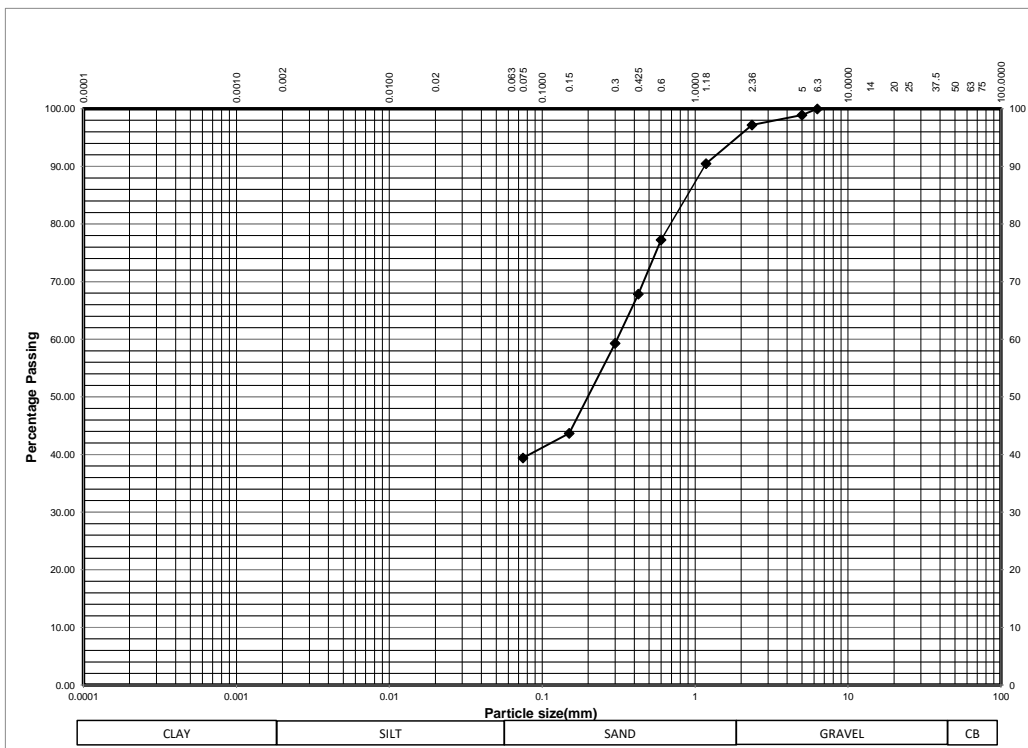
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP02 / G006 / 27APR19		
SAMPLED BY: GEOCONSULT LAB TEAM		DATE: 27 / 04 / 2019	TIME: 09:01	
LOCATION:	EASTING	NORTHING	ELEVATION	DEPTH (m)
GOLOMOTI - SOLAR PV	0 672 496	8 403 306	(m)	1.000-3.300
TYPE OF MATERIAL: MOIST BROWN YELLOWISH SANDY SILTY CLAY				
TESTED BY: I. MITOMONI		DATE: 25 - 05 - 2019	TIME: 11:20	
CHECKED BY: E. NKHUKU		DATE: 29 - 05 - 2019	TIME: 13:30	
APPROVED BY: M. SABELLI		DATE: 29 - 05 - 2019	TIME: 15:00	

PROJECT: GOLOMOTI SOLAR PV **CLIENT: JCM**

SIEVE ANALYSIS (GRADATION) STANDARD: TRH14:1985

SIEVE (mm)	MASS RETAINED	PERCENTAGE			GRADATION SPECIFICATION			ZONE
		RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.500								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300	0.00	0.00	100.00	100				
5.000	7.50	1.08	98.92	99				
2.360	19.50	2.81	97.19	97				
1.180	66.00	9.50	90.50	91				
0.600	158.00	22.73	77.27	77				
0.425	223.50	32.16	67.84	68				
0.300	283.00	40.72	59.28	59				
0.150	391.50	56.33	43.67	44				
0.075	421.00	60.58	39.42	39				
0 pan	274.00	39.42						
TOTAL (g)	695.00							



REMARKS: SAMPLED FROM TRIAL PIT 02 @ 1.000-3.300M. SOLAR PV SITE INVESTIGATION

PAGE No.



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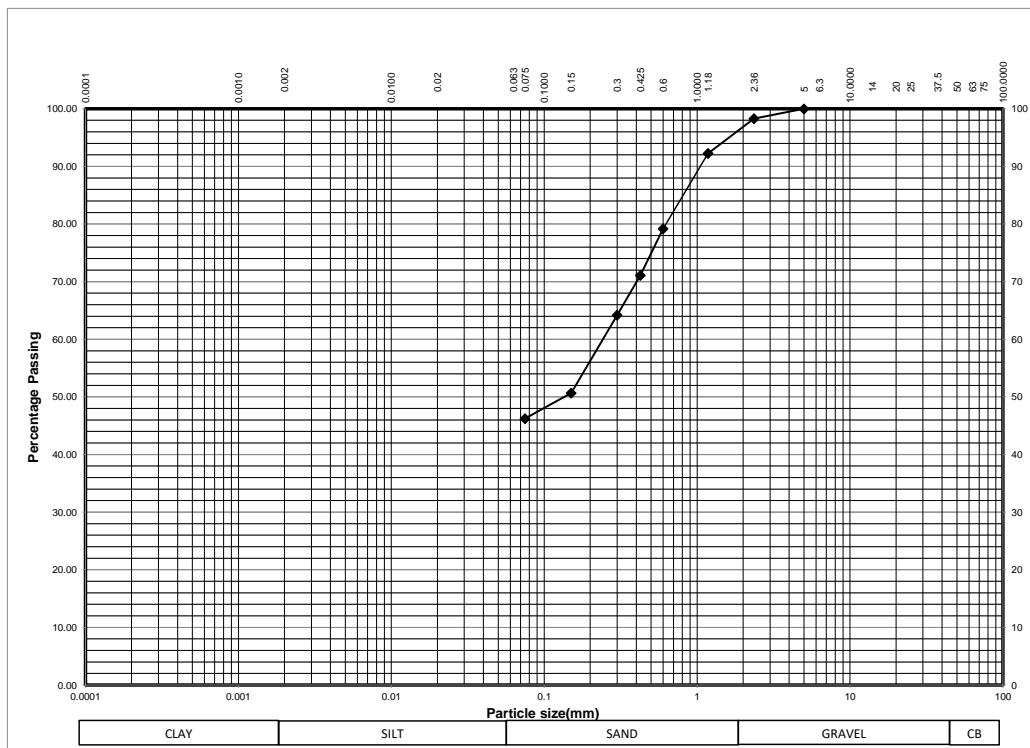
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP02 / G007 / 27APR19		
SAMPLED BY: GEOCONSULT LAB TEAM		DATE: 27 / 04 / 2019	TIME: 09:01	
LOCATION:	EASTING	NORTHING	ELEVATION	DEPTH (m)
GOLOMOTI - SOLAR PV	0 672 496	8 403 306	(m)	3.300-4.400
TYPE OF MATERIAL: MOIST BROWN YELLOWISH GRAVELLY SANDY SILTY CLAY				
TESTED BY: I. MITOMONI		DATE: 25 - 05 - 2019	TIME: 11:20	
CHECKED BY: E. NKHUKU		DATE: 29 - 05 - 2019	TIME: 13:30	
APPROVED BY: M. SABELLI		DATE: 29 - 05 - 2019	TIME: 15:00	

PROJECT: GOLOMOTI SOLAR PV **CLIENT: JCM**


SIEVE ANALYSIS (GRADATION) STANDARD: TRH14:1985


SIEVE (mm)	MASS RETAINED	PERCENTAGE			GRADATION SPECIFICATION			ZONE
		RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.500								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300								
5.000	0.00	0.00	100.00	100				
2.360	11.50	1.69	98.31	98				
1.180	52.50	7.72	92.28	92				
0.600	141.50	20.81	79.19	79				
0.425	196.50	28.90	71.10	71				
0.300	243.50	35.81	64.19	64				
0.150	335.50	49.34	50.66	51				
0.075	365.50	53.75	46.25	46				
0 pan	314.50	46.25						
TOTAL (g)	680.00							




REMARKS: SAMPLED FROM TRIAL PIT 02 @ 3.300-4.000M. SOLAR PV SITE INVESTIGATION

PAGE No.

 GEOCONSULT +265 0888 846 543 sabelli@geoconsult.cc	LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP02 / NMC005 / 27APR19		
	SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 27 - 04 - 2019	TIME: 09:02	
	LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
	GOLOMOTI - SOLAR PV	0 672 496	8 403 306	(m)	0.200-1.000
	TYPE OF MATERIAL: MOIST DARK BROWN SANDY SILTY CLAY				
TESTED BY: C. NDALAMA		DATE: 05 - 05 - 2019	TIME: 09:30		
CHECKED BY: G. KACHIWALA		DATE: 06 - 05 - 2019	TIME: 09:46		
APPROVED BY: M. SABELLI		DATE: 06 - 05 - 2019	TIME: 10:00		
PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM		
NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: ASTM D7263					
MASS OF WET SOIL + CONTAINER (g)		282.5			
MASS OF DRY SOIL AND CONTAINER (g)		260.5			
CONTAINER No.		GC14B			
MASS OF CONTAINER (g)		52.0			
MASS OF DRY SOIL (g)		208.5			
MASS OF WATER (g)		22.0			
MOISTURE CONTENT %		10.6			
AVERAGE MOISTURE CONTENT %		10.6			
REMARKS: SAMPLED FROM TRIAL PIT 02 @ 0.200-1.000M. SOLAR PV SITE INVESTIGATION				PAGE No.	

 GEOCONSULT +265 0888 846 543 sabelli@geoconsult.cc	LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP02 / NMC006 / 27APR19		
	SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 27 - 04 - 2019	TIME: 09:02	
	LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
	GOLOMOTI - SOLAR PV	0 672 496	8 403 306	(m)	1.000-3.300
	TYPE OF MATERIAL: MOIST BROWN YELLOWISH SANDY SILTY CLAY				
	TESTED BY: C. NDALAMA		DATE: 05 - 05 - 2019	TIME: 09:30	
	CHECKED BY: G. KACHIWALA		DATE: 06 - 05 - 2019	TIME: 09:46	
	APPROVED BY: M. SABELLI		DATE: 06 - 05 - 2019	TIME: 10:00	
	PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM	
	NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: ASTM D7263				
MASS OF WET SOIL + CONTAINER (g)		473.0			
MASS OF DRY SOIL AND CONTAINER (g)		439.0			
CONTAINER No.		JB			
MASS OF CONTAINER (g)		125.5			
MASS OF DRY SOIL (g)		313.5			
MASS OF WATER (g)		34.0			
MOISTURE CONTENT %		10.8			
AVERAGE MOISTURE CONTENT %		10.8			
REMARKS: SAMPLED FROM TRIAL PIT 02 @ 1.000-3.300M. SOLAR PV SITE INVESTIGATION				PAGE No.	

 GEOCONSULT +265 0888 846 543 sabelli@geoconsult.cc	LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP02 / NMC006 / 27APR19		
	SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 27 - 04 - 2019	TIME: 09:02	
	LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
	GOLOMOTI - SOLAR PV	0 672 496	8 403 306	(m)	1.000-3.300
	TYPE OF MATERIAL: VERY MOIST BROWN YELLOWISH GRAVELLY SANDY SILTY CLAY				
	TESTED BY: C. NDALAMA		DATE: 05 - 05 - 2019	TIME: 09:30	
	CHECKED BY: G. KACHIWALA		DATE: 06 - 05 - 2019	TIME: 09:46	
	APPROVED BY: M. SABELLI		DATE: 06 - 05 - 2019	TIME: 10:00	
	PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM	
	NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: ASTM D7263				
MASS OF WET SOIL + CONTAINER (g)		466.5			
MASS OF DRY SOIL AND CONTAINER (g)		411.5			
CONTAINER No.		GCX			
MASS OF CONTAINER (g)		128.0			
MASS OF DRY SOIL (g)		283.5			
MASS OF WATER (g)		55.0			
MOISTURE CONTENT %		19.4			
AVERAGE MOISTURE CONTENT %		19.4			
REMARKS: SAMPLED FROM TRIAL PIT 02 @ 3.300-4.000M. SOLAR PV SITE INVESTIGATION				PAGE No.	



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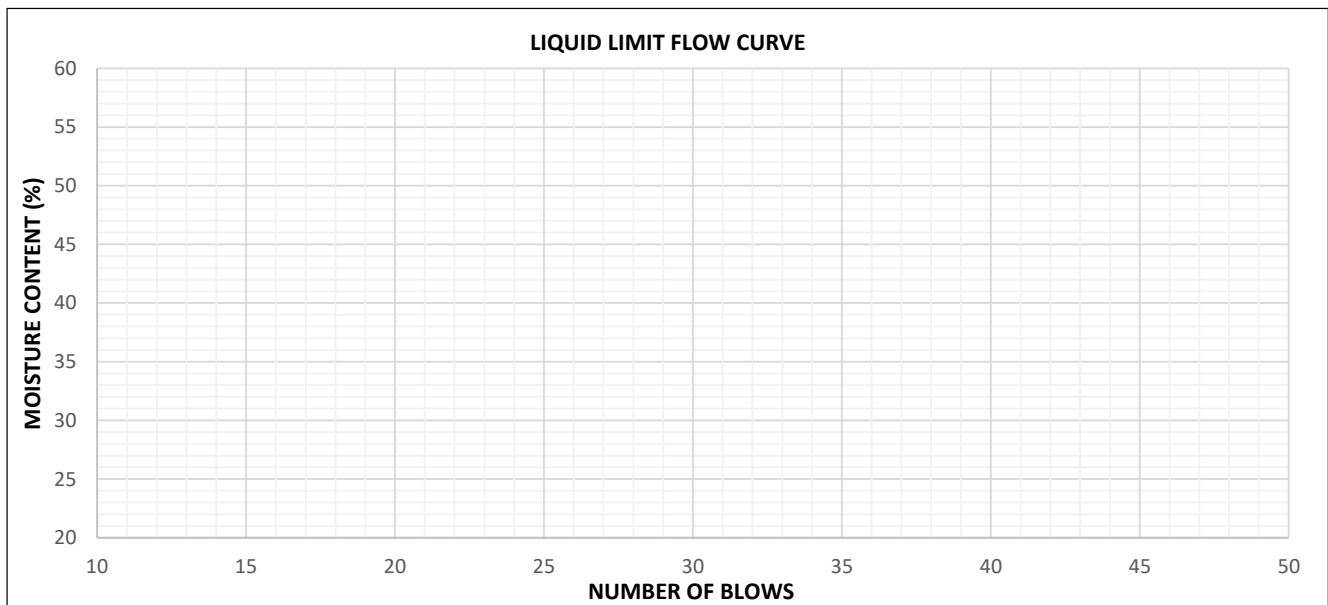
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP02 / AL005 / 27APR19	
SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 27 - 04 - 2019	TIME: 09:01
LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION
GOLOMOTI - SOLAR PV	0 672 496	8 403 306	(m)
DEPTH (m) 0.200-1.000			
TYPE OF MATERIAL: MOIST DARK BROWN SANDY SILTY CLAY			
TESTED BY: S. MATCHADO		DATE: 31 - 05-2019	TIME: 08:29
CHECKED BY: S. THANGATO		DATE: 01 - 06 - 2019	TIME: 09:35
APPROVED BY: M. SABELLI		DATE: 01 - 06 - 2019	TIME: 14:18
PROJECT: GOLOMOTI SOLAR PV		CLIENT: JCM	

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
	1	2	3	4	1	2	3
TEST No.							
CONTAINER No.	R6		C14		C25	R24	A
MASS OF WET SOIL + CONTAINER(g)	56.0		54.0		43.5	45.5	37.5
MASS OF DRY SOIL + CONTAINER(g)	49.0		46.0		41.5	43.5	36.0
MASS OF CONTAINER (g)	29.5		27		29.65	31	27
MASS OF DRY SOIL (g)	19.5		19.0		11.9	12.5	9.0
MASS OF WATER (g)	7.00		8.00		2.00	2.00	1.50
MOISTURE CONTENT %	35.9	36.3	42.1	40.8	16.9	16.0	16.7
No. BLOWS	27		18			16.5	

LINEAR SHRINKAGE	10
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	12.8
LINEAR SHRINKAGE %	9.4
LIQUID LIMIT (LL) %	38.5
PLASTIC LIMIT (PL) %	16.5
PLASTICITY INDEX (PI)	22
NATURAL MOISTURE CONTENT %	10.6
FINENESS INDEX	1034



REMARKS: SAMPLED FROM TRIAL PIT 02 @ 0.200-1.000M. SOLAR PV SITE INVESTIGATION



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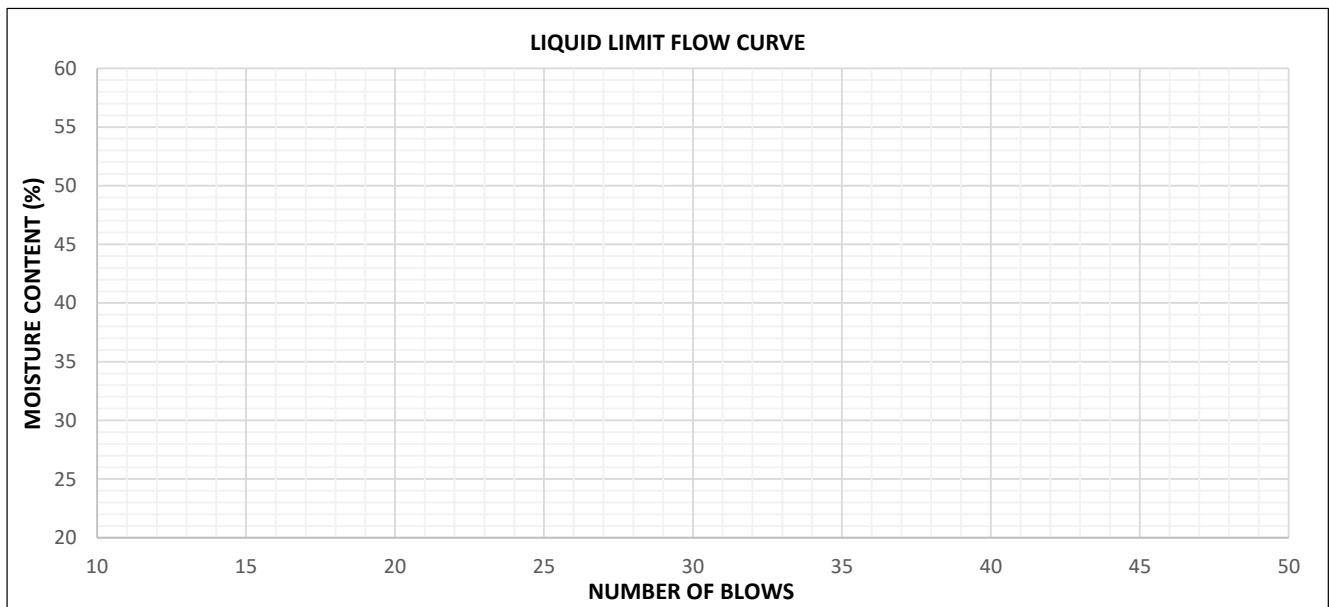
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP02 / AL006 / 27APR19	
SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 27 - 04 - 2019	TIME: 09:02
LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION
GOLOMOTI - SOLAR PV	0 672 496	8 403 452	(m)
DEPTH (m) 1.000-3.300			
TYPE OF MATERIAL: MOIST BROWN YELLOWISH SANDY SILTY CLAY			
TESTED BY: M. MILANZI		DATE: 31 - 05-2019	TIME: 08:29
CHECKED BY: S. THANGATO		DATE: 01 - 06 - 2019	TIME: 09:35
APPROVED BY: M. SABELLI		DATE: 01 - 06 - 2019	TIME: 14:18
PROJECT: GOLOMOTI SOLAR PV		CLIENT: JCM	

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
	1	2	3	4	1	2	3
TEST No.							
CONTAINER No.	C23		C20		R6	R3	C4
MASS OF WET SOIL + CONTAINER(g)	57.5		53.5		42.5	43.5	39.5
MASS OF DRY SOIL + CONTAINER(g)	50.5		46.0		41.0	41.5	37.5
MASS OF CONTAINER (g)	28		25		30	26.5	22.5
MASS OF DRY SOIL (g)	22.5		21.0		11.0	15.0	15.0
MASS OF WATER (g)	7.00		7.50		1.50	2.00	2.00
MOISTURE CONTENT %	31.1	31.4	35.7	34.3	13.6	13.3	13.3
No. BLOWS	28		17			13.4	

LINEAR SHRINKAGE	10
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	12.9
LINEAR SHRINKAGE %	8.5
LIQUID LIMIT (LL) %	32.9
PLASTIC LIMIT (PL) %	13.4
PLASTICITY INDEX (PI)	19
NATURAL MOISTURE CONTENT %	10.8
FINENESS INDEX	741.0



REMARKS: SAMPLED FROM TRIAL PIT 02 @ 1.000-3.300M. SOLAR PV SITE INVESTIGATION

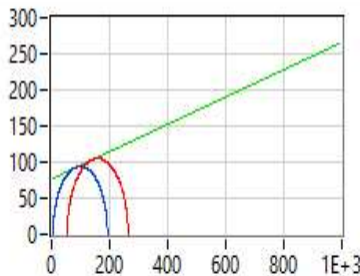
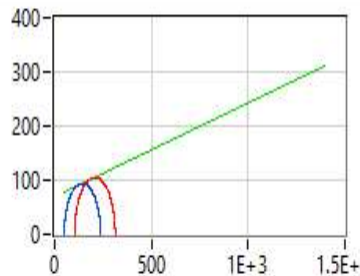
Triaxial test - UU BS 1377 part 7, 1377 part 8				
	Site :	GOLOMOTI SOALR PV	Levy date :	26-Jun-19
	Technician's name :		Date of test :	26-Jun-19
GEOCONSULT LIMITED P.O. BOX 40 LILONGWE	File N° :	27	Survey depth (m) :	1.000
	Survey N° :	TRIAL PIT No. 02	Level of water (m) :	
	Kind of soil :	Moist Brown Yellowish Sandy Silty CLAY		

Identification of samples :

Ovo, Total stress of the soil in situ (kPa) : 0.000	Uo, Pore pressure of the soil in situ (kPa) : 0.000
Category of soil : Soft/Granular	Kind of drainage : Without lateral drain
ρ_s , Grain density (kg/m ³) : 0.000	
S_m : <input type="checkbox"/>	S_d : <input type="checkbox"/>

Samples before test :									Samples after saturation :		
N°	Hi (mm)	Di (mm)	mi (g)	ρ_i (kg/m ³)	ρ_{di} (kg/m ³)	wi (%)	ei	Si (%)	Ucp (kPa)	ΔV_{sat} (mm ³)	B (%)
1	76.00	38	172.5	2001	1653	21.05	-1.000	-0.000		0.000	0.000
2	76.00	38	168.0	1949	1607	21.30	-1.000	-0.000		0.000	0.000

Samples after consolidation :							Samples after shearing							
N°	Hs (mm)	Ds (mm)	ΔV_s (mm ³)	T100 (min)	Vmax (μm/min)	σ'_c (kPa)	Hf (mm)	Df (mm)	mf (g)	md (g)	wf (%)	ρ_{df} (kg/m ³)	ef	Srf (%)
1	76.00	38.00	0.000	0.000	0.000	0.000	76.00	38.00	172.0	142.5	20.70	1653	-1.000	-0.000
2	76.00	38.00	0.000	0.000	0.000	0.000	76.00	38.00	167.5	138.5	20.94	1607	-1.000	-0.000

Total stress :	Effective stress :	Comments :																		
 <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><th colspan="2">Mohr</th></tr> <tr><td>C (kPa)</td><td>76.94</td></tr> <tr><td>ϕ (°)</td><td>10.69</td></tr> </table>	Mohr		C (kPa)	76.94	ϕ (°)	10.69	 <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><th colspan="2">Mohr</th><th colspan="2">Lambe</th></tr> <tr><td>C' (kPa)</td><td>70.47</td><td>69.43</td><td></td></tr> <tr><td>ϕ' (°)</td><td>9.848</td><td>9.706</td><td></td></tr> </table>	Mohr		Lambe		C' (kPa)	70.47	69.43		ϕ' (°)	9.848	9.706		<div style="border: 1px solid black; height: 100px; width: 100%;"></div>
Mohr																				
C (kPa)	76.94																			
ϕ (°)	10.69																			
Mohr		Lambe																		
C' (kPa)	70.47	69.43																		
ϕ' (°)	9.848	9.706																		
<div style="border: 1px solid black; height: 20px; width: 100%;"></div>		Visa : p.1/3																		

		Triaxial test - UU BS 1377 part 7, 1377 part 8	
		Site : GOLOMOTI SOLAR PV	Levy date : 13-Jun-19
		Technician's name :	Date of test : 13-Jun-19
GEOCONSULT LIMITED P.O. BOX 40 LILONGWE	File N° :	9	Survey depth (m) : 2.000
	Survey N° :	2	Level of water (m) :
	Kind of soil :	Moist Brown yellowish sandy silty Clay	

Identification of samples :

Ovo, Total stress of the soil in situ (kPa) : 0.000	Uo, Pore pressure of the soil in situ (kPa) : 0.000
Category of soil : Steep/Strongly overconsolidated	Kind of drainage : Without lateral drain
ρ_s , Grain density (kg/m ³) : 0.000	
S_m : <input type="checkbox"/>	S_d : <input type="checkbox"/>

Samples before test :									Samples after saturation :		
N°	H _i (mm)	D _i (mm)	m _i (g)	ρ_i (kg/m ³)	ρ_{di} (kg/m ³)	w _i (%)	e _i	S _i (%)	U _{cp} (kPa)	ΔV_{sat} (mm ³)	B (%)
1	76.00	38	153.5	1781	1479	20.39	-1.000	-0.000		0.000	0.000
2	76.00	38	172.5	2001	1653	21.05	-1.000	-0.000		0.000	0.000

Samples after consolidation :							Samples after shearing							
N°	H _s (mm)	D _s (mm)	ΔV_s (mm ³)	T100 (min)	V _{max} (μ m/min)	σ'_c (kPa)	H _f (mm)	D _f (mm)	m _f (g)	m _d (g)	w _f (%)	ρ_{df} (kg/m ³)	e _f	S _f (%)
1	76.00	38.00	0.000	0.000	0.000	0.000	76.00	38.00	152.5	127.5	19.61	1479	-1.000	-0.000
2	76.00	38.00	0.000	0.000	0.000	0.000	76.00	38.00	172.0	142.5	20.70	1653	-1.000	-0.000

Total stress :	Effective stress :	Comments :												
<table border="1" style="margin-top: 10px; width: 100%;"> <tr><th colspan="2">Mohr</th></tr> <tr><td>C (kPa)</td><td>44.88</td></tr> <tr><td>ϕ (°)</td><td>35.65</td></tr> </table>	Mohr		C (kPa)	44.88	ϕ (°)	35.65	<table border="1" style="margin-top: 10px; width: 100%;"> <tr><th>Mohr</th><th>Lambe</th></tr> <tr><td>C' (kPa)</td><td>13.57</td></tr> <tr><td>ϕ' (°)</td><td>30.09</td></tr> </table>	Mohr	Lambe	C' (kPa)	13.57	ϕ' (°)	30.09	<div style="border: 1px solid black; height: 100px; width: 100%;"></div>
Mohr														
C (kPa)	44.88													
ϕ (°)	35.65													
Mohr	Lambe													
C' (kPa)	13.57													
ϕ' (°)	30.09													
<div style="border: 1px solid black; padding: 5px;">Visa :</div>		p.1/3												

3.6 Trial Pit 03



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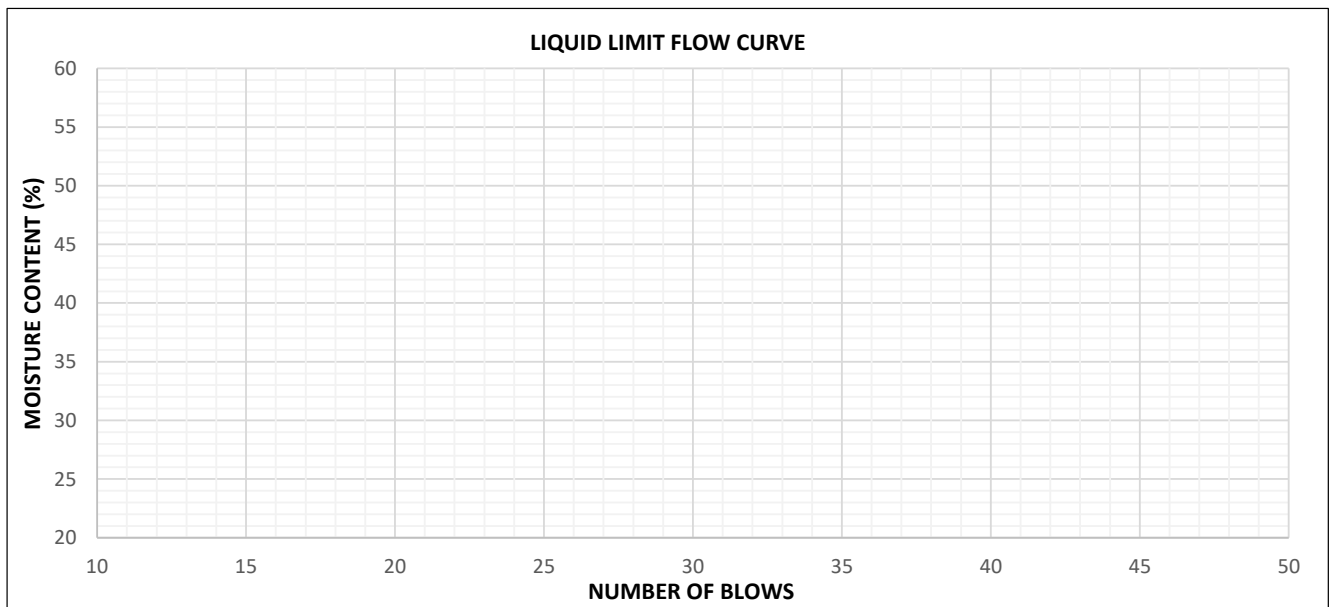
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP03 / AL010 / 30APR19	
SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 30 - 04 - 2019	TIME: 09:05
LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION
GOLOMOTI - SOLAR PV	0 672 315	8 403 152	(m)
DEPTH (m) 3.500-4.200			
TYPE OF MATERIAL: MOIST BROWN REDDISH SANDY SILTY CLAY LATERITE GRAVEL			
TESTED BY: S. MATCHADO		DATE: 31 - 05 - 2019	TIME: 10:31
CHECKED BY: S. THANGATO		DATE: 01 - 06 - 2019	TIME: 09:35
APPROVED BY: M. SABELLI		DATE: 01 - 06 - 2019	TIME: 14:18
PROJECT: GOLOMOTI SOLAR PV		CLIENT: JCM	

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
	1	2	3	4	1	2	3
TEST No.							
CONTAINER No.	R16		R17		R30	C2	RAI
MASS OF WET SOIL + CONTAINER(g)	51.5		49.0		41.0	40.5	39.5
MASS OF DRY SOIL + CONTAINER(g)	45.5		42.5		39.0	38.5	38.0
MASS OF CONTAINER (g)	28.5		26		26.5	26	29
MASS OF DRY SOIL (g)	17.0		16.5		12.5	12.5	9.0
MASS OF WATER (g)	6.00		6.50		2.00	2.00	1.50
MOISTURE CONTENT %	35.3	36.0	39.4	38.6	16.0	16.0	16.7
No. BLOWS	33		21			16.2	

LINEAR SHRINKAGE	16
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	13.0
LINEAR SHRINKAGE %	7.7
LIQUID LIMIT (LL) %	37.3
PLASTIC LIMIT (PL) %	16.2
PLASTICITY INDEX (PI)	21
NATURAL MOISTURE CONTENT %	11.0
FINENESS INDEX	1365



REMARKS: SAMPLED FROM TRIAL PIT 03 @ 3.500-4.200M. SOLAR PV SITE INVESTIGATION



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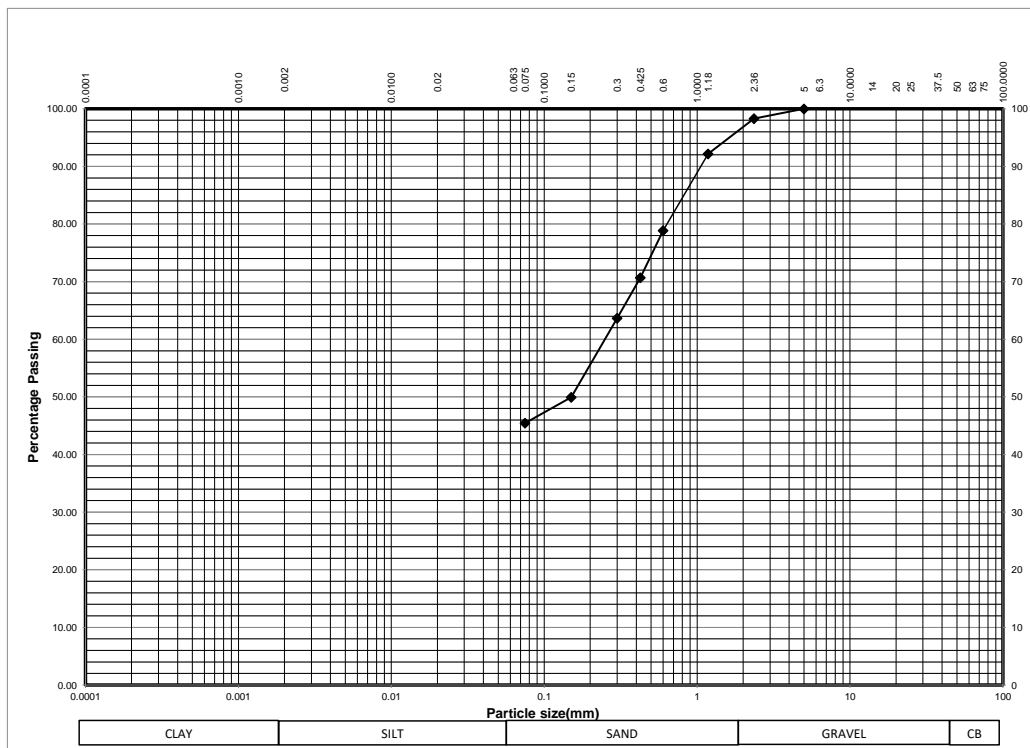
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LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP03 / G008 / 30APR19		
SAMPLED BY: GEOCONSULT LAB TEAM		DATE: 30 / 04 / 2019	TIME: 09:01	
LOCATION:	EASTING	NORTHING	ELEVATION	DEPTH (m)
GOLOMOTI - SOLAR PV	0 672 315	8 403 152	(m)	0.200-1.000
TYPE OF MATERIAL: MOIST STIFF DARK GREY SANDY SILTY CLAY				
TESTED BY: I. MITOMONI		DATE: 25 - 05 - 2019	TIME: 11:20	
CHECKED BY: E. NKHUKU		DATE: 29 - 05 - 2019	TIME: 13:30	
APPROVED BY: M. SABELLI		DATE: 29 - 05 - 2019	TIME: 15:00	

PROJECT: GOLOMOTI SOLAR PV **CLIENT: JCM**

SIEVE ANALYSIS (GRADATION) STANDARD: TRH14:1985

SIEVE (mm)	MASS RETAINED	PERCENTAGE			GRADATION SPECIFICATION			ZONE
		RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.500								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300								
5.000	0.00	0.00	100.00	100				
2.360	11.50	1.72	98.28	98				
1.180	52.50	7.84	92.16	92				
0.600	141.50	21.12	78.88	79				
0.425	196.50	29.33	70.67	71				
0.300	243.50	36.34	63.66	64				
0.150	335.50	50.07	49.93	50				
0.075	365.50	54.55	45.45	45				
0 pan	304.50	45.45						
TOTAL (g)	670.00							



REMARKS: SAMPLED FROM TRIAL PIT 03 @ 0.200-1.000M. SOLAR PV SITE INVESTIGATION

PAGE No.



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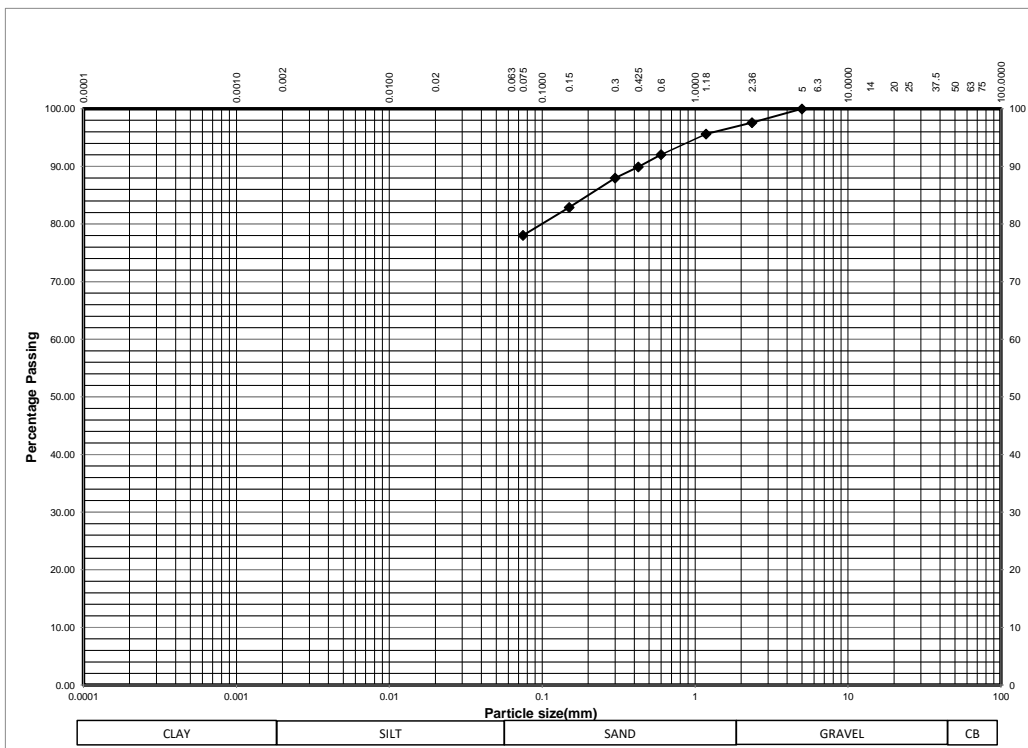
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP03 / G008 / 30APR19		
SAMPLED BY: GEOCONSULT LAB TEAM		DATE: 30 / 04 / 2019	TIME: 07:31	
LOCATION:	EASTING	NORTHING	ELEVATION	DEPTH (m)
GOLOMOTI - SOLAR PV	0 672 315	8 403 152	(m)	1.000-3.500
TYPE OF MATERIAL: MOIST STIFF LIGHT BROWN SANDY SILTY CLAY				
TESTED BY: I. MITOMONI		DATE: 25 - 05 - 2019	TIME: 11:20	
CHECKED BY: E. NKHUKU		DATE: 29 - 05 - 2019	TIME: 13:30	
APPROVED BY: M. SABELLI		DATE: 29 - 05 - 2019	TIME: 15:00	

PROJECT: GOLOMOTI SOLAR PV **CLIENT: JCM**

SIEVE ANALYSIS (GRADATION) STANDARD: TRH14:1985

SIEVE (mm)	MASS RETAINED	PERCENTAGE			GRADATION SPECIFICATION			ZONE
		RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.500								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300								
5.000	0.00	0.00	100.00	100				
2.360	15.00	2.39	97.61	98				
1.180	27.50	4.38	95.62	96				
0.600	50.00	7.96	92.04	92				
0.425	63.50	10.10	89.90	90				
0.300	75.50	12.01	87.99	88				
0.150	107.50	17.10	82.90	83				
0.075	138.00	21.96	78.04	78				
0 pan	490.50	78.04						
TOTAL (g)	628.50							



REMARKS: SAMPLED FROM TRIAL PIT 03 @ 1.000-3.500M. SOLAR PV SITE INVESTIGATION

PAGE No.



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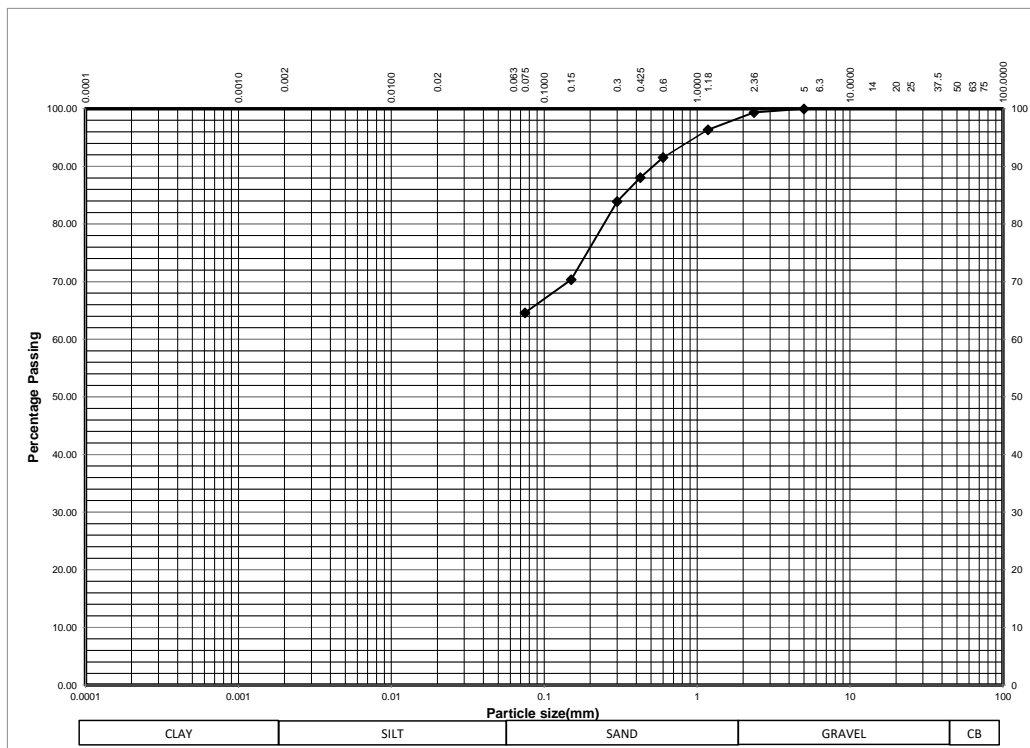
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP03 / G008 / 30APR19		
SAMPLED BY: GEOCONSULT LAB TEAM		DATE: 30 / 04 / 2019	TIME: 09:01	
LOCATION:	EASTING	NORTHING	ELEVATION	DEPTH (m)
GOLOMOTI - SOLAR PV	0 672 315	8 403 152	(m)	3.500-4.200
TYPE OF MATERIAL: MOIST BROWN REDDISH SANDY SILTY CLAY LATERITE GRAVEL				
TESTED BY: C. NDALAMA		DATE: 03 - 06 - 2019	TIME: 10:43	
CHECKED BY: G. KACHIWALA		DATE: 04 - 06 - 2019	TIME: 13:30	
APPROVED BY: M. SABELLI		DATE: 04 - 06 - 2019	TIME: 15:00	

PROJECT: GOLOMOTI SOLAR PV **CLIENT: JCM**


SIEVE ANALYSIS (GRADATION) STANDARD: TRH14:1985


SIEVE (mm)	MASS RETAINED	PERCENTAGE			GRADATION SPECIFICATION			ZONE
		RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.500								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300								
5.000	0.00	0.00	100.00	100				
2.360	4.50	0.61	99.39	99				
1.180	26.50	3.61	96.39	96				
0.600	62.00	8.45	91.55	92				
0.425	87.50	11.93	88.07	88				
0.300	118.00	16.09	83.91	84				
0.150	217.50	29.65	70.35	70				
0.075	259.50	35.38	64.62	65				
0 pan	474.00	64.62						
TOTAL (g)	733.50							




REMARKS: SAMPLED FROM TRIAL PIT 03 @ 3.500-4.200M. SOLAR PV SITE INVESTIGATION

PAGE No.

 GEOCONSULT +265 0888 846 543 sabelli@geoconsult.cc	LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP03 / NMC008 / 30APRT19		
	SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 30 - 04 - 2019	TIME: 07:31	
	LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
	GOLOMOTI - SOLAR PV	0 672 315	8 403 152	(m)	0.200-1.000
	TYPE OF MATERIAL: MOIST STIFF DARK GREY SANDY SILTY CLAY				
	TESTED BY: C. NDALAMA		DATE: 05 - 05 - 2019	TIME: 09:38	
	CHECKED BY: G. KACHIWALA		DATE: 06 - 05 - 2019	TIME: 09:46	
	APPROVED BY: M. SABELLI		DATE: 06 - 05 - 2019	TIME: 10:00	
	PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM	
	NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: ASTM D7263				
MASS OF WET SOIL + CONTAINER (g)		339.0			
MASS OF DRY SOIL AND CONTAINER (g)		318.5			
CONTAINER No.		SDA			
MASS OF CONTAINER (g)		129.0			
MASS OF DRY SOIL (g)		189.5			
MASS OF WATER (g)		20.5			
MOISTURE CONTENT %		10.8			
AVERAGE MOISTURE CONTENT %		10.8			
REMARKS: SAMPLED FROM TRIAL PIT 03 @ 0.200-1.000M. SOLAR PV SITE INVESTIGATION				PAGE No.	

 GEOCONSULT +265 0888 846 543 sabelli@geoconsult.cc	LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP03 / NMC009 / 30APRT19		
	SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 30 - 04 - 2019	TIME: 07:31	
	LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
	GOLOMOTI - SOLAR PV	0 672 315	8 403 152	(m)	1.000-3.500
	TYPE OF MATERIAL: MOIST TIFF LIGHT BROWN SANDY SILTY CLAY				
TESTED BY: C. NDALAMA		DATE: 05 - 05 - 2019	TIME: 09:38		
CHECKED BY: G. KACHIWALA		DATE: 06 - 05 - 2019	TIME: 09:46		
APPROVED BY: M. SABELLI		DATE: 06 - 05 - 2019	TIME: 10:00		
PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM		
NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: ASTM D7263					
MASS OF WET SOIL + CONTAINER (g)		293.0			
MASS OF DRY SOIL AND CONTAINER (g)		275.5			
CONTAINER No.		GC91			
MASS OF CONTAINER (g)		129.0			
MASS OF DRY SOIL (g)		146.5			
MASS OF WATER (g)		17.5			
MOISTURE CONTENT %		11.9			
AVERAGE MOISTURE CONTENT %		11.9			
REMARKS: SAMPLED FROM TRIAL PIT 03 @ 1.000-3.500M. SOLAR PV SITE INVESTIGATION				PAGE No.	

 GEOCONSULT +265 0888 846 543 sabelli@geoconsult.cc	LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP03 / NMC010 / 30APRT19		
	SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 30 - 04 - 2019	TIME: 07:31	
	LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
	GOLOMOTI - SOLAR PV	0 672 315	8 403 152	(m)	3.500-4.200
	TYPE OF MATERIAL: MOIST BROWN REDDISH SANDY SILTY CLAY LATERITE GRAVEL				
	TESTED BY: C. NDALAMA		DATE: 05 - 05 - 2019	TIME: 09:38	
	CHECKED BY: G. KACHIWALA		DATE: 06 - 05 - 2019	TIME: 09:46	
APPROVED BY: M. SABELLI		DATE: 06 - 05 - 2019	TIME: 10:00		
PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM		
NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: ASTM D7263					
MASS OF WET SOIL + CONTAINER (g)			376.0		
MASS OF DRY SOIL AND CONTAINER (g)			346.0		
CONTAINER No.			GC2B		
MASS OF CONTAINER (g)			73.0		
MASS OF DRY SOIL (g)			273.0		
MASS OF WATER (g)			30.0		
MOISTURE CONTENT %			11.0		
AVERAGE MOISTURE CONTENT %			11.0		
REMARKS: SAMPLED FROM TRIAL PIT 03 @ 3.500-4.200M. SOLAR PV SITE INVESTIGATION					PAGE No.



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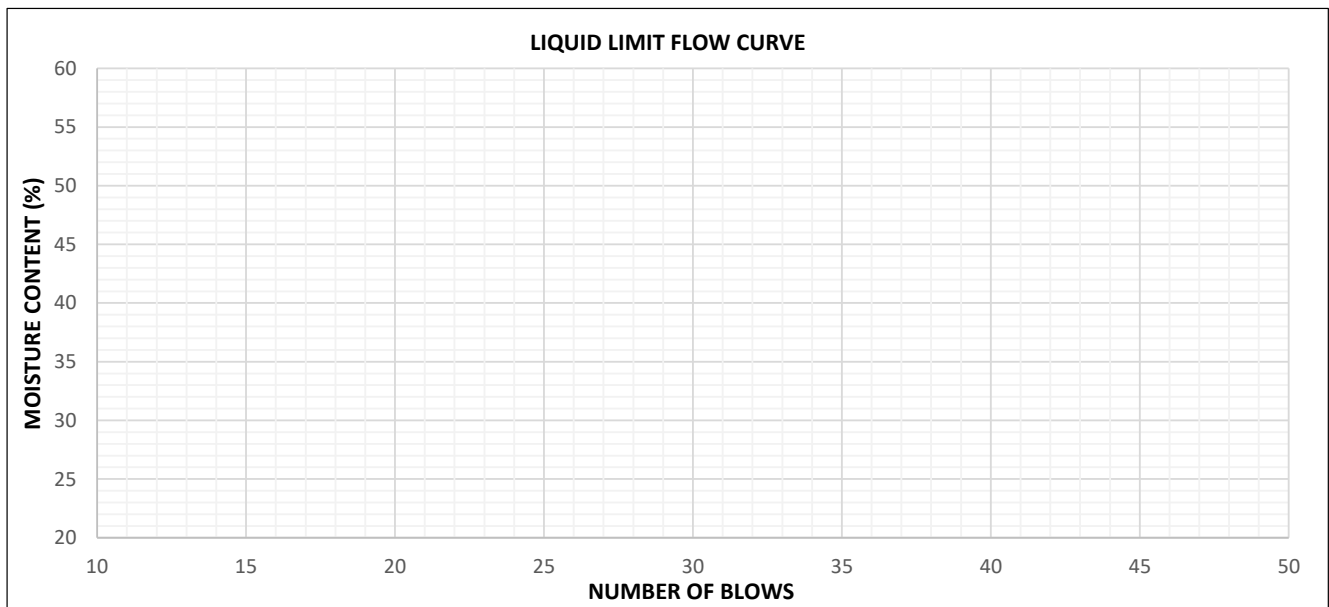
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP03 / AL008 / 27APR19	
SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 27 - 04 - 2019	TIME: 09:05
LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION
GOLOMOTI - SOLAR PV	0 672 315	8 403 152	(m)
DEPTH (m) 0.200-1.000			
TYPE OF MATERIAL: MOIST STIFF DARK GREY SANDY SILTY CLAY			
TESTED BY: S. MATCHADO		DATE: 31 - 05 - 2019	TIME: 09:18
CHECKED BY: G. KACHIWALA		DATE: 01 - 06 - 2019	TIME: 09:35
APPROVED BY: M. SABELLI		DATE: 01 - 06 - 2019	TIME: 14:18
PROJECT: GOLOMOTI SOLAR PV		CLIENT: JCM	

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
	1	2	3	4	1	2	3
TEST No.							
CONTAINER No.	C24		R13		K2	R21	R14
MASS OF WET SOIL + CONTAINER(g)	59.0		56.0		44.0	44.0	44.0
MASS OF DRY SOIL + CONTAINER(g)	52.0		48.0		41.5	41.0	41.5
MASS OF CONTAINER (g)	32		31		28	25	28
MASS OF DRY SOIL (g)	20.0		17.0		13.5	16.0	13.5
MASS OF WATER (g)	7.00		8.00		2.50	3.00	2.50
MOISTURE CONTENT %	35.0	35.7	47.1	46.6	18.5	18.8	18.5
No. BLOWS	30		23			18.6	

LINEAR SHRINKAGE	1
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	12.5
LINEAR SHRINKAGE %	12.0
LIQUID LIMIT (LL) %	41.1
PLASTIC LIMIT (PL) %	18.6
PLASTICITY INDEX (PI)	23
NATURAL MOISTURE CONTENT %	10.8
FINENESS INDEX	1035



REMARKS: SAMPLED FROM TRIAL PIT 03 @ 0.200-1.000M. SOLAR PV SITE INVESTIGATION



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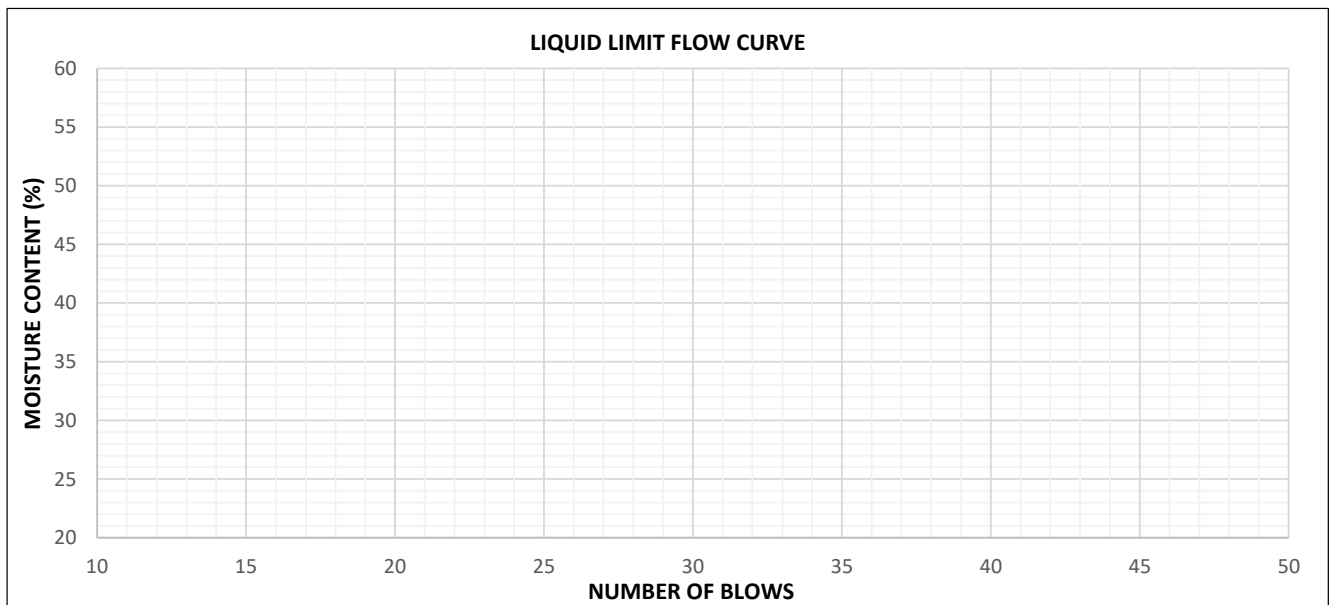
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP03 / AL009 / 27APR19	
SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 27 - 04 - 2019	TIME: 09:05
LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION
GOLOMOTI - SOLAR PV	0 672 315	8 403 152	(m)
DEPTH (m) 1.000-3.500			
TYPE OF MATERIAL: MOIST STIFF LIGHT BROWN SANDY SILTY CLAY			
TESTED BY: S. MATCHADO		DATE: 31 - 05 - 2019	TIME: 09:18
CHECKED BY: S. THANGATO		DATE: 01 - 06 - 2019	TIME: 09:35
APPROVED BY: M. SABELLI		DATE: 01 - 06 - 2019	TIME: 14:18
PROJECT: GOLOMOTI SOLAR PV		CLIENT: JCM	

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
	1	2	3	4	1	2	3
TEST No.							
CONTAINER No.	R5		R7		R22	C21	R18
MASS OF WET SOIL + CONTAINER(g)	68.5		68.5		42.5	46.0	46.0
MASS OF DRY SOIL + CONTAINER(g)	56.0		55.0		39.0	41.5	41.5
MASS OF CONTAINER (g)	29		29.5		29.5	29	29
MASS OF DRY SOIL (g)	27.0		25.5		9.5	12.5	12.5
MASS OF WATER (g)	12.50		13.50		3.50	4.50	4.50
MOISTURE CONTENT %	46.3	47.2	52.9	50.8	36.8	36.0	36.0
No. BLOWS	30		16			36.3	

LINEAR SHRINKAGE	8
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	13.1
LINEAR SHRINKAGE %	6.9
LIQUID LIMIT (LL) %	49.0
PLASTIC LIMIT (PL) %	36.3
PLASTICITY INDEX (PI)	13
NATURAL MOISTURE CONTENT %	11.9
FINENESS INDEX	1014



REMARKS: SAMPLED FROM TRIAL PIT 03 @ 1.000-3.500M. SOLAR PV SITE INVESTIGATION

Triaxial test - UU BS 1377 part 7, 1377 part 8	
Site :	GOLOMOTI SOALR PV
Levy date :	21-Jun-19
Technicien's name :	Date of test :
	21-Jun-19
File N° :	21
Survey depth (m) :	1.000
Survey N° :	TRIAL PIT No. 03
Level of water (m) :	
Kind of soil :	MOIST TIFF LIGHT BROWN SANDY SILTY CLAY

GEOCONSULT LIMITED

P.O. BOX 40 LILONGWE

Identification of samples :

Ovo, Total stress of the soil in situ (kPa) : 0.000	Uo, Pore pressure of the soil in situ (kPa) : 0.000
Category of soil : Soft/Granular	Kind of drainage : Without lateral drain
ρ_s , Grain density (kg/m ³) : 0.000	
S_m : <input type="checkbox"/>	S_d : <input type="checkbox"/>

Samples before test :									Samples after saturation :		
N°	Hi (mm)	Di (mm)	mi (g)	ρ_i (kg/m ³)	ρ_{di} (kg/m ³)	wi (%)	ei	Si (%)	Ucp (kPa)	ΔV_{sat} (mm ³)	B (%)
1	76.00	38	165.5	1920	1624	18.21	-1.000	-0.000		0.000	0.000
2	76.00	38	169.0	1961	1647	19.01	-1.000	-0.000		0.000	0.000
3	76.00	38	164.0	1903	1607	18.41	-1.000	-0.000		0.000	0.000

Samples after consolidation :							Samples after shearing							
N°	Hs (mm)	Ds (mm)	ΔV_s (mm ³)	T100 (min)	Vmax ($\mu\text{m}/\text{min}$)	σ'_c (kPa)	Hf (mm)	Df (mm)	mf (g)	md (g)	wf (%)	ρ_{df} (kg/m ³)	ef	Srf (%)
1	76.00	38.00	0.000	0.000	0.000	0.000	76.00	38.00	166.0	140.0	18.57	1624	-1.000	-0.000
2	76.00	38.00	0.000	0.000	0.000	0.000	76.00	38.00	168.5	142.0	18.66	1647	-1.000	-0.000
3	76.00	38.00	0.000	0.000	0.000	0.000	76.00	38.00	164.5	138.5	18.77	1607	-1.000	-0.000

Total stress :	Effective stress :	Comments :												
<table border="1" style="margin-left: auto; margin-right: auto;"> <tr><th colspan="2">Mohr</th></tr> <tr><td>C (kPa)</td><td>NaN</td></tr> <tr><td>ϕ (°)</td><td>NaN</td></tr> </table>	Mohr		C (kPa)	NaN	ϕ (°)	NaN	<table border="1" style="margin-left: auto; margin-right: auto;"> <tr><th>Mohr</th><th>Lambe</th></tr> <tr><td>C' (kPa)</td><td>75.90</td></tr> <tr><td>ϕ' (°)</td><td>27.89</td></tr> </table>	Mohr	Lambe	C' (kPa)	75.90	ϕ' (°)	27.89	<div style="border: 1px solid black; height: 100px; width: 100%;"></div>
Mohr														
C (kPa)	NaN													
ϕ (°)	NaN													
Mohr	Lambe													
C' (kPa)	75.90													
ϕ' (°)	27.89													
<div style="display: flex; justify-content: space-between;"> Visa : p. 1/3 </div>														

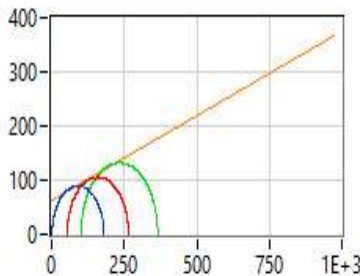
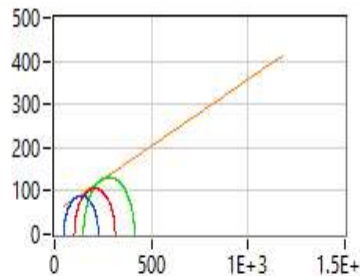
Triaxial test - UU BS 1377 part 7, 1377 part 8				
	Site :	GOLOMOTI SOLAR PV	Levy date :	27-Jun-19
	Technician's name :		Date of test :	27-Jun-19
GEOCONSULT LIMITED P.O. BOX 40 LILONGWE	File N° :	31	Survey depth (m) :	2.000
	Survey N° :	TRIAL PIT No. 03	Level of water (m) :	
	Kind of soil :	Moist Stiff Light Brown Sandy Silty CLAY		

Identification of samples :

Ovo, Total stress of the soil in situ (kPa) : 0.000	Uo, Pore pressure of the soil in situ (kPa) : 0.000
Category of soil : Soft/Granular	Kind of drainage : Without lateral drain
ρ_s , Grain density (kg/m ³) : 0.000	
S_m : <input type="checkbox"/>	S_d : <input type="checkbox"/>

Samples before test :									Samples after saturation :		
N°	Hi (mm)	Di (mm)	mi (g)	ρ_i (kg/m ³)	ρ_{di} (kg/m ³)	wi (%)	ei	Si (%)	Ucp (kPa)	ΔV_{sat} (mm ³)	B (%)
1	76.00	38	166.5	1932	1555	24.25	-1.000	-0.000		0.000	0.000
2	76.00	38	166.5	1932	1543	25.19	-1.000	-0.000		0.000	0.000
3	76.00	38	167.0	1938	1555	24.63	-1.000	-0.000		0.000	0.000

Samples after consolidation :							Samples after shearing							
N°	Hs (mm)	Ds (mm)	ΔV_s (mm ³)	T100 (min)	Vmax (μm/min)	σ'_c (kPa)	Hf (mm)	Df (mm)	mf (g)	md (g)	wf (%)	ρ_{df} (kg/m ³)	ef	Srf (%)
1	76.00	38.00	0.000	0.000	0.000	0.000	76.00	38.00	166.0	134.0	23.88	1555	-1.000	-0.000
2	76.00	38.00	0.000	0.000	0.000	0.000	76.00	38.00	167.0	133.0	25.56	1543	-1.000	-0.000
3	76.00	38.00	0.000	0.000	0.000	0.000	76.00	38.00	167.0	134.0	24.63	1555	-1.000	-0.000

Total stress :	Effective stress :	Comments :												
 <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><th colspan="2">Mohr</th></tr> <tr><td>C (kPa)</td><td>62.64</td></tr> <tr><td>ϕ (°)</td><td>17.32</td></tr> </table>	Mohr		C (kPa)	62.64	ϕ (°)	17.32	 <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><th>Mohr</th><th>Lambe</th></tr> <tr><td>C' (kPa)</td><td>48.37 / 47.57</td></tr> <tr><td>ϕ' (°)</td><td>17.18 / 16.46</td></tr> </table>	Mohr	Lambe	C' (kPa)	48.37 / 47.57	ϕ' (°)	17.18 / 16.46	<div style="border: 1px solid black; height: 100px; width: 100%;"></div>
Mohr														
C (kPa)	62.64													
ϕ (°)	17.32													
Mohr	Lambe													
C' (kPa)	48.37 / 47.57													
ϕ' (°)	17.18 / 16.46													
<div style="display: flex; justify-content: space-between;"> Visa : p.1/3 </div>														

3.7 Trial Pit 04



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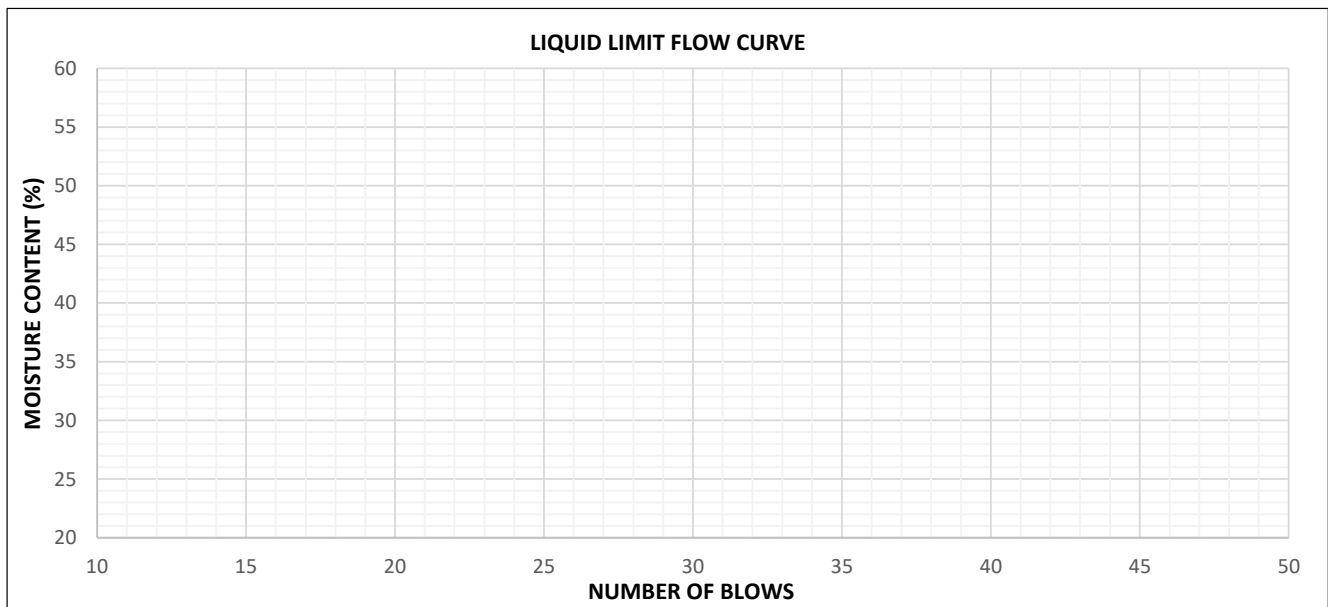
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP04 / AL013 / 27APR19	
SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 27 - 04 - 2019	TIME: 08:10
LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION
GOLOMOTI - SOLAR PV	0 672 616	8 403 213	(m)
DEPTH (m) 2.000-4.000			
TYPE OF MATERIAL: MOIST BROWN REDDISH LATERITE GRAVELLY SANDY SILTY CLAY			
TESTED BY: M. MILANZI		DATE: 27 - 05 - 2019	TIME: 10:00
CHECKED BY: S. THANGATO		DATE: 01 - 06 - 2019	TIME: 09:35
APPROVED BY: M. SABELLI		DATE: 01 - 06 - 2019	TIME: 14:18
PROJECT: GOLOMOTI SOLAR PV		CLIENT: JCM	

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
	1	2	3	4	1	2	3
TEST No.							
CONTAINER No.	R20		R15		R22	C9	C32
MASS OF WET SOIL + CONTAINER(g)	47.0		52.0		37.0	39.0	36.5
MASS OF DRY SOIL + CONTAINER(g)	42.5		43.5		36.0	37.5	35.0
MASS OF CONTAINER (g)	28.5		22		29.5	28	25
MASS OF DRY SOIL (g)	14.0		21.5		6.5	9.5	10.0
MASS OF WATER (g)	4.50		8.50		1.00	1.50	1.50
MOISTURE CONTENT %	32.1	32.8	39.5	38.3	15.4	15.8	15.0
No. BLOWS	30		19			15.4	

LINEAR SHRINKAGE	1
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	12.8
LINEAR SHRINKAGE %	9.4
LIQUID LIMIT (LL) %	35.6
PLASTIC LIMIT (PL) %	15.4
PLASTICITY INDEX (PI)	20
NATURAL MOISTURE CONTENT %	8.0
FINENESS INDEX	1380



REMARKS: SAMPLED FROM TRIAL PIT 04 @ 2.000-4.000M. SOLAR PV SITE INVESTIGATION



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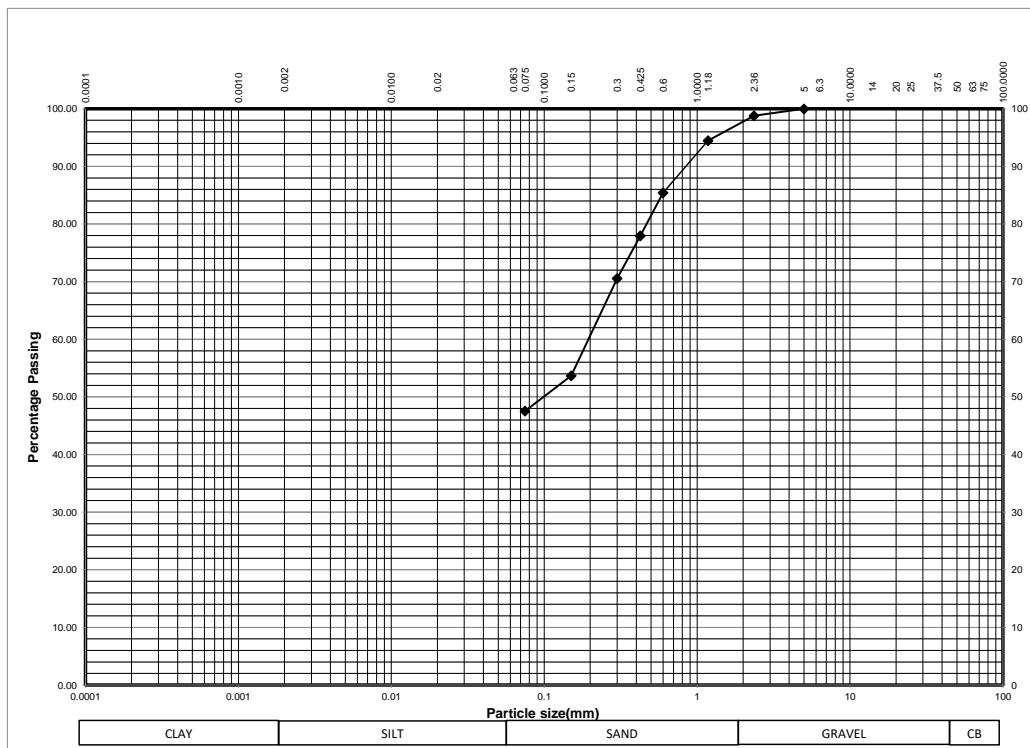
+265 0888 846 543
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP04 / G011 / 27APR19		
SAMPLED BY: GEOCONSULT LAB TEAM		DATE: 30 / 04 / 2019	TIME: 12:26	
LOCATION:	EASTING	NORTHING	ELEVATION	DEPTH (m)
GOLOMOTI - SOLAR PV	0 672 616	8 403 213	(m)	0.250-1.000
TYPE OF MATERIAL: MOIST LIGHT BROWN SANDY SILTY CLAY				
TESTED BY: C. NDALAMA		DATE: 06 - 06 - 2019	TIME: 11:17	
CHECKED BY: G. KACHIWALA		DATE: 04 - 06 - 2019	TIME: 13:30	
APPROVED BY: M. SABELLI		DATE: 04 - 06 - 2019	TIME: 15:00	

PROJECT: GOLOMOTI SOLAR PV **CLIENT: JCM**

SIEVE ANALYSIS (GRADATION) STANDARD: TRH14:1985

SIEVE (mm)	MASS RETAINED	PERCENTAGE			GRADATION SPECIFICATION			ZONE
		RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.500								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300								
5.000	0.00	0.00	100.00	100				
2.360	8.00	1.21	98.79	99				
1.180	36.50	5.51	94.49	94				
0.600	96.50	14.57	85.43	85				
0.425	146.00	22.04	77.96	78				
0.300	195.00	29.43	70.57	71				
0.150	307.00	46.34	53.66	54				
0.075	347.50	52.45	47.55	48				
0 pan	315.00	47.55						
TOTAL (g)	662.50							



REMARKS: SAMPLED FROM TRIAL PIT 04 @ 0.250-1.000M. SOLAR PV SITE INVESTIGATION

PAGE No.



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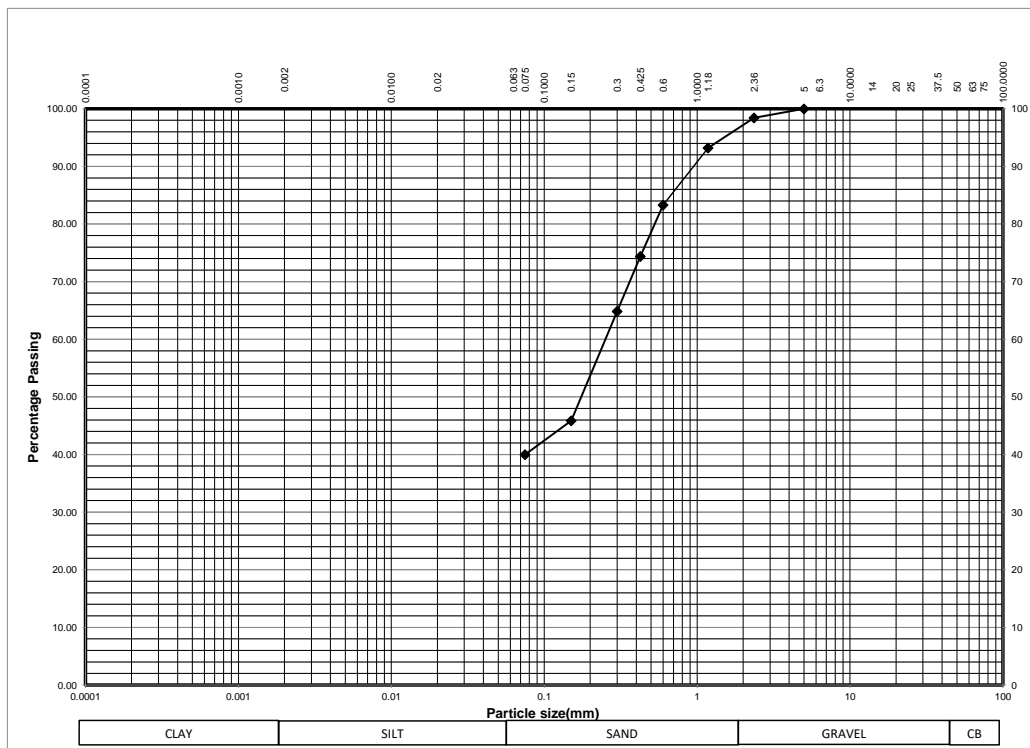
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LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP04 / G012 / 30APR19		
SAMPLED BY: GEOCONSULT LAB TEAM		DATE: 30 / 04 / 2019	TIME: 10:58	
LOCATION:	EASTING	NORTHING	ELEVATION	DEPTH (m)
GOLOMOTI - SOLAR PV	0 672 616	8 403 213	(m)	1.000-2.000
TYPE OF MATERIAL: MOIST BROWNISH GREY SANDY SILTY CLAY				
TESTED BY: C. NDALAMA		DATE: 03 - 06 - 2019	TIME: 10:43	
CHECKED BY: G. KACHIWALA		DATE: 04 - 06 - 2019	TIME: 13:30	
APPROVED BY: M. SABELLI		DATE: 04 - 06 - 2019	TIME: 15:00	

PROJECT: GOLOMOTI SOLAR PV **CLIENT: JCM**

SIEVE ANALYSIS (GRADATION) STANDARD: TRH14:1985

SIEVE (mm)	MASS RETAINED	PERCENTAGE			GRADATION SPECIFICATION			ZONE
		RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.500								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300								
5.000	0.00	0.00	100.00	100				
2.360	12.50	1.57	98.43	98				
1.180	54.00	6.80	93.20	93				
0.600	132.50	16.69	83.31	83				
0.425	203.50	25.63	74.37	74				
0.300	279.00	35.14	64.86	65				
0.150	430.00	54.16	45.84	46				
0.075	476.50	60.01	39.99	40				
0 pan	317.50	39.99						
TOTAL (g)	794.00							



REMARKS: SAMPLED FROM TRIAL PIT 04 @ 1.000-2.000M. SOLAR PV SITE INVESTIGATION **PAGE No.**



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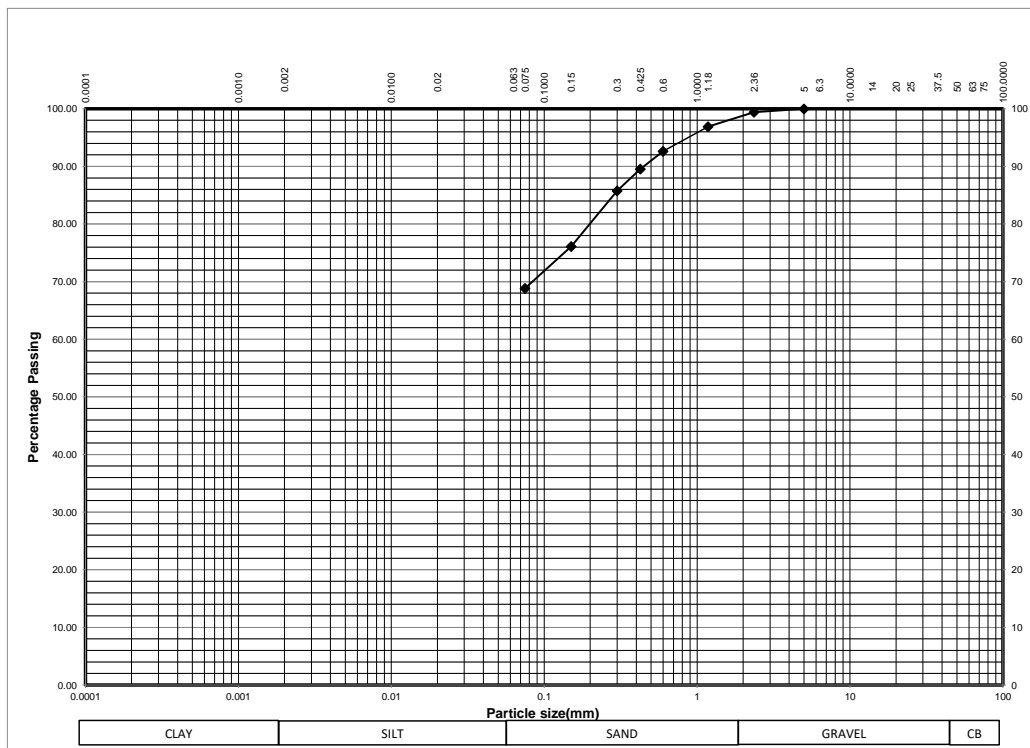
+265 0888 846 543
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LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP04 / G013 / 30APR19		
SAMPLED BY: GEOCONSULT LAB TEAM		DATE: 30 / 04 / 2019	TIME: 10:58	
LOCATION:	EASTING	NORTHING	ELEVATION	DEPTH (m)
GOLOMOTI - SOLAR PV	0 672 616	8 403 213	(m)	2.000-4.000
TYPE OF MATERIAL: MOIST BROWN REDDISH LATERITE GRAVELLY SANDY SILTY CLAY				
TESTED BY: C. NDALAMA		DATE: 03 - 06 - 2019	TIME: 10:43	
CHECKED BY: G. KACHIWALA		DATE: 04 - 06 - 2019	TIME: 13:30	
APPROVED BY: M. SABELLI		DATE: 04 - 06 - 2019	TIME: 15:00	

PROJECT: GOLOMOTI SOLAR PV **CLIENT: JCM**


SIEVE ANALYSIS (GRADATION) STANDARD: TRH14:1985


SIEVE (mm)	MASS RETAINED	PERCENTAGE			GRADATION SPECIFICATION			ZONE
		RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.500								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300								
5.000	0.00	0.00	100.00	100				
2.360	2.50	0.57	99.43	99				
1.180	13.50	3.10	96.90	97				
0.600	32.00	7.36	92.64	93				
0.425	45.50	10.46	89.54	90				
0.300	62.00	14.25	85.75	86				
0.150	104.00	23.91	76.09	76				
0.075	135.50	31.15	68.85	69				
0 pan	299.50	68.85						
TOTAL (g)	435.00							




REMARKS: SAMPLED FROM TRIAL PIT 04 @ 2.000-4.000M. SOLAR PV SITE INVESTIGATION

PAGE No.

 GEOCONSULT +265 0888 846 543 sabelli@geoconsult.cc	LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP04 / NMC011 / 27APR19		
	SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 27 - 04 - 2019	TIME: 02:26	
	LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
	GOLOMOTI - SOLAR PV	0 672 616	8 403 213	(m)	0.250-1.000
	TYPE OF MATERIAL: MOIST LIGHT BROWN SANDY SILTY CLAY				
TESTED BY: C. NDALAMA		DATE: 05 - 05 - 2019	TIME: 09:38		
CHECKED BY: G. KACHIWALA		DATE: 06 - 05 - 2019	TIME: 09:46		
APPROVED BY: M. SABELLI		DATE: 06 - 05 - 2019	TIME: 10:00		
PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM		
NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: ASTM D7263					
MASS OF WET SOIL + CONTAINER (g)			304.5		
MASS OF DRY SOIL AND CONTAINER (g)			285.0		
CONTAINER No.			GC100		
MASS OF CONTAINER (g)			91.5		
MASS OF DRY SOIL (g)			193.5		
MASS OF WATER (g)			19.5		
MOISTURE CONTENT %			10.1		
AVERAGE MOISTURE CONTENT %			10.1		
REMARKS: SAMPLED FROM TRIAL PIT 04 @ 0.250-1.000M. SOLAR PV SITE INVESTIGATION					PAGE No.

 GEOCONSULT +265 0888 846 543 sabelli@geoconsult.cc	LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP04 / NMC012 / 27APR19		
	SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 27 - 04 - 2019	TIME: 12:52	
	LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
	GOLOMOTI - SOLAR PV	0 672 616	8 403 213	(m)	1.000-2.000
	TYPE OF MATERIAL: MOIST BROWNISH GREY SANDY SILTY CLAY				
	TESTED BY: C. NDALAMA		DATE: 05 - 05 - 2019	TIME: 09:38	
	CHECKED BY: G. KACHIWALA		DATE: 06 - 05 - 2019	TIME: 09:46	
	APPROVED BY: M. SABELLI		DATE: 06 - 05 - 2019	TIME: 10:00	
	PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM	
	NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: ASTM D7263				
MASS OF WET SOIL + CONTAINER (g)		392.5			
MASS OF DRY SOIL AND CONTAINER (g)		355.0			
CONTAINER No.		GCB2			
MASS OF CONTAINER (g)		96.0			
MASS OF DRY SOIL (g)		259.0			
MASS OF WATER (g)		37.5			
MOISTURE CONTENT %		14.5			
AVERAGE MOISTURE CONTENT %		14.5			
REMARKS: SAMPLED FROM TRIAL PIT 04 @ 1.000-2.000M. SOLAR PV SITE INVESTIGATION				PAGE No.	

 GEOCONSULT +265 0888 846 543 sabelli@geoconsult.cc	LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP04 / NMC013 / 27APR19		
	SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 27 - 04 - 2019	TIME: 10:58	
	LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
	GOLOMOTI - SOLAR PV	0 672 616	8 403 213	(m)	3.000-4.000
	TYPE OF MATERIAL: MOIST BROWN REDDISH LATERITE GRAVELLY SANDY SILTY CLAY				
	TESTED BY: C. NDALAMA		DATE: 05 - 05 - 2019	TIME: 09:38	
	CHECKED BY: G. KACHIWALA		DATE: 06 - 05 - 2019	TIME: 09:46	
	APPROVED BY: M. SABELLI		DATE: 06 - 05 - 2019	TIME: 10:00	
	PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM	
	NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: ASTM D7263				
MASS OF WET SOIL + CONTAINER (g)		314.0			
MASS OF DRY SOIL AND CONTAINER (g)		300.0			
CONTAINER No.		NCIC			
MASS OF CONTAINER (g)		125.0			
MASS OF DRY SOIL (g)		175.0			
MASS OF WATER (g)		14.0			
MOISTURE CONTENT %		8.0			
AVERAGE MOISTURE CONTENT %		8.0			
REMARKS: SAMPLED FROM TRIAL PIT 04 @ 2.000-4.000M. SOLAR PV SITE INVESTIGATION				PAGE No.	



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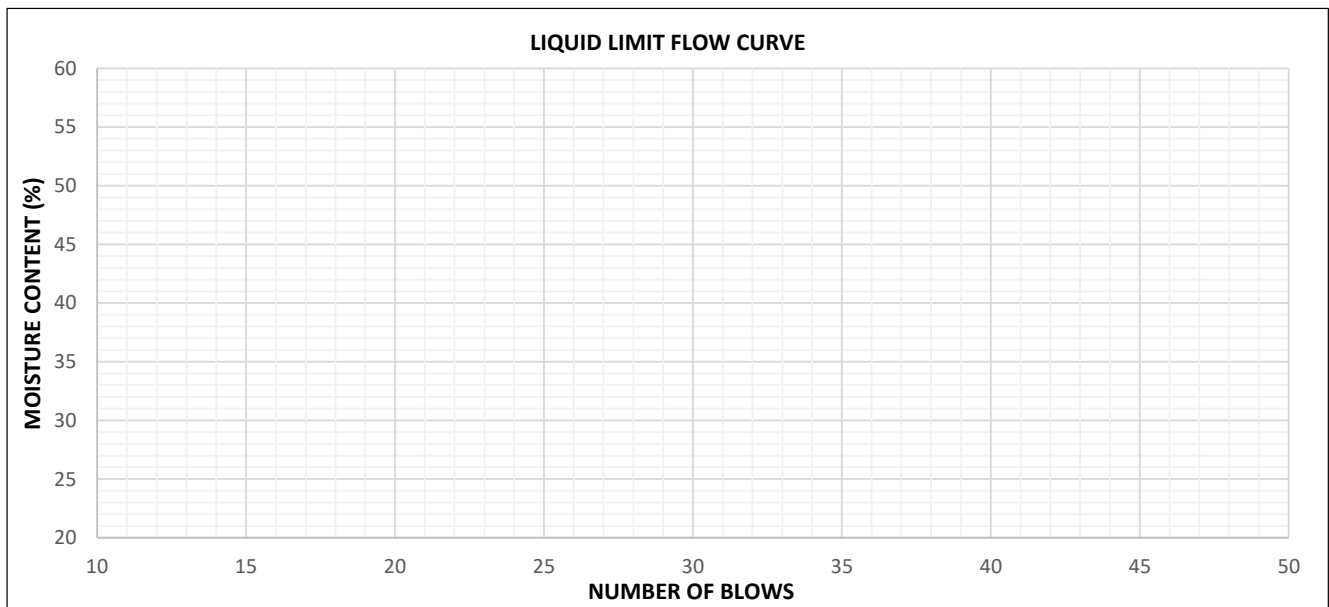
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP04 / AL011 / 27APR19	
SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 27 - 04 - 2019	TIME: 12:26
LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION
GOLOMOTI - SOLAR PV	0 672 616	8 403 213	(m)
DEPTH (m) 0.250-1.000			
TYPE OF MATERIAL: MOIST LIGHT BROWN SANDY SILTY CLAY			
TESTED BY: M. MILANZI		DATE: 08 - 06 - 2019	TIME: 10:00
CHECKED BY: S. THANGATO		DATE: 10 - 06 - 2019	TIME: 09:35
APPROVED BY: M. SABELLI		DATE: 10 - 06 - 2019	TIME: 14:18
PROJECT: GOLOMOTI SOLAR PV		CLIENT: JCM	

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
	1	2	3	4	1	2	3
TEST No.							
CONTAINER No.	R14		C16		C29	C4	C5
MASS OF WET SOIL + CONTAINER(g)	47.0		51.5		42.5	35.5	36.5
MASS OF DRY SOIL + CONTAINER(g)	42.0		44.5		39.0	33.5	34.5
MASS OF CONTAINER (g)	27		27		24	25	26
MASS OF DRY SOIL (g)	15.0		17.5		15.0	8.5	8.5
MASS OF WATER (g)	5.00		7.00		3.50	2.00	2.00
MOISTURE CONTENT %	33.3	34.0	40.0	38.8	23.3	23.5	23.5
No. BLOWS	31		18			23.5	

LINEAR SHRINKAGE	16
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	13.2
LINEAR SHRINKAGE %	6.1
LIQUID LIMIT (LL) %	36.4
PLASTIC LIMIT (PL) %	23.5
PLASTICITY INDEX (PI)	13
NATURAL MOISTURE CONTENT %	10.1
FINENESS INDEX	624



REMARKS: SAMPLED FROM TRIAL PIT 04 @ 0.250-1.000M. SOLAR PV SITE INVESTIGATION



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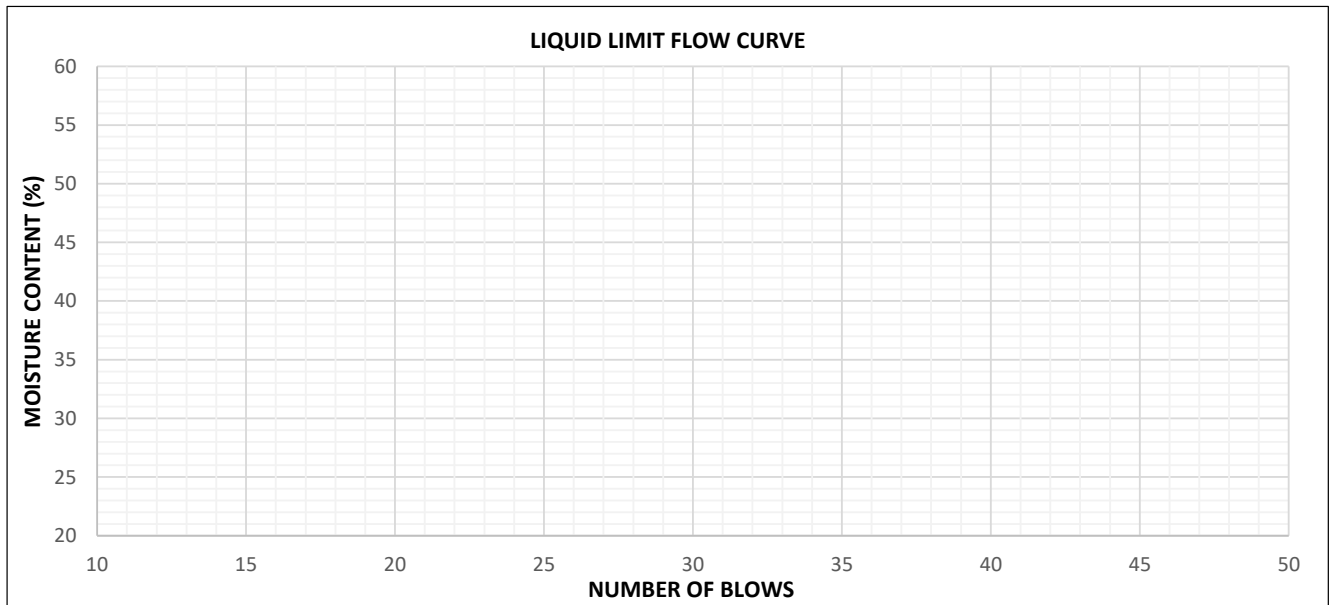
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP04 / AL012 / 30APR19	
SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 30 - 04 - 2019	TIME: 08:10
LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION
GOLOMOTI - SOLAR PV	0 672 616	8 403 213	(m)
DEPTH (m) 1.000-2.000			
TYPE OF MATERIAL: MOIST BROWNISH GREY SANDY SILTY CLAY			
TESTED BY: M. MILANZI		DATE: 27 - 05 - 2019	TIME: 10:00
CHECKED BY: G. KACHIWALA		DATE: 01 - 06 - 2019	TIME: 09:35
APPROVED BY: M. SABELLI		DATE: 01 - 06 - 2019	TIME: 14:18
PROJECT: GOLOMOTI SOLAR PV		CLIENT: JCM	

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
	1	2	3	4	1	2	3
TEST No.							
CONTAINER No.	R16		C4		RAI	R21	R18
MASS OF WET SOIL + CONTAINER(g)	62.5		69.0		37.5	37.0	39.5
MASS OF DRY SOIL + CONTAINER(g)	51.5		54.5		35.5	35.5	37.5
MASS OF CONTAINER (g)	28.5		25.5		27	29	29
MASS OF DRY SOIL (g)	23.0		29.0		8.5	6.5	8.5
MASS OF WATER (g)	11.00		14.50		2.00	1.50	2.00
MOISTURE CONTENT %	47.8	48.8	50.0	48.5	23.5	23.1	23.5
No. BLOWS	31		19			23.4	

LINEAR SHRINKAGE	14
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	12.4
LINEAR SHRINKAGE %	12.9
LIQUID LIMIT (LL) %	48.6
PLASTIC LIMIT (PL) %	23.4
PLASTICITY INDEX (PI)	25
NATURAL MOISTURE CONTENT %	14.5
FINENESS INDEX	1000



REMARKS: SAMPLED FROM TRIAL PIT 04 @ 1.000-2.000M. SOLAR PV SITE INVESTIGATION

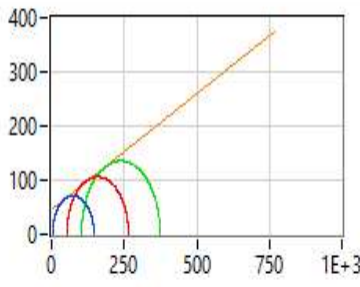
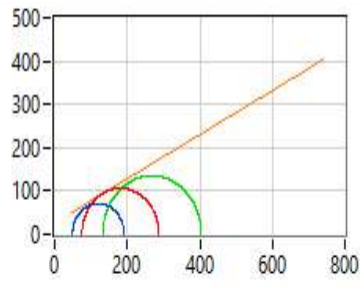
Triaxial test - UU BS 1377 part 7, 1377 part 8				
	Site :	GOLOMOTI SOLAR PV	Levy date :	13-Jun-19
	Technician's name :		Date of test :	13-Jun-19
GEOCONSULT LIMITED P.O. BOX 40 LILONGWE	File N° :	10	Survey depth (m) :	1.000
	Survey N° :	TRIAL PIT No. 4	Level of water (m) :	
	Kind of soil :	MOIST LIGHT BROWN SANDY SILTY CLAY		

Identification of samples :

Ovo, Total stress of the soil in situ (kPa) : 0.000	Uo, Pore pressure of the soil in situ (kPa) : 0.000
Category of soil : Steep/Strongly overconsolidated	Kind of drainage : Without lateral drain
ρ_s , Grain density (kg/m ³) : 0.000	
S_m : <input type="checkbox"/>	S_d : <input type="checkbox"/>

Samples before test :									Samples after saturation :		
N°	Hi (mm)	Di (mm)	mi (g)	ρ_i (kg/m ³)	ρ_{di} (kg/m ³)	wi (%)	ei	Si (%)	Ucp (kPa)	ΔV_{sat} (mm ³)	B (%)
1	76.00	38	152.5	1769	1456	21.51	-1.000	-0.000		0.000	0.000
2	76.00	38	153.5	1781	1526	16.73	-1.000	-0.000		0.000	0.000
3	76.00	38	161.0	1868	1531	21.97	-1.000	-0.000		0.000	0.000

Samples after consolidation :							Samples after shearing							
N°	Hs (mm)	Ds (mm)	ΔV_s (mm ³)	T100 (min)	Vmax ($\mu\text{m}/\text{min}$)	σ'_c (kPa)	Hf (mm)	Df (mm)	mf (g)	md (g)	wf (%)	ρ_{df} (kg/m ³)	ef	Srf (%)
1	76.00	38.00	0.000	0.000	0.000	0.000	76.00	38.00	152.5	125.5	21.51	1456	-1.000	-0.000
2	76.00	38.00	0.000	0.000	0.000	0.000	76.00	38.00	153.0	131.5	16.35	1526	-1.000	-0.000
3	76.00	38.00	0.000	0.000	0.000	0.000	76.00	38.00	160.0	132.0	21.21	1531	-1.000	-0.000

Total stress :	Effective stress :	Comments :												
 <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><th colspan="2">Mohr</th></tr> <tr><td>C (kPa)</td><td>47.11</td></tr> <tr><td>ϕ (°)</td><td>23.11</td></tr> </table>	Mohr		C (kPa)	47.11	ϕ (°)	23.11	 <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><th>Mohr</th><th>Lambe</th></tr> <tr><td>C' (kPa)</td><td>23.84 / 22.94</td></tr> <tr><td>ϕ' (°)</td><td>27.18 / 23.19</td></tr> </table>	Mohr	Lambe	C' (kPa)	23.84 / 22.94	ϕ' (°)	27.18 / 23.19	<p>Visa :</p>
Mohr														
C (kPa)	47.11													
ϕ (°)	23.11													
Mohr	Lambe													
C' (kPa)	23.84 / 22.94													
ϕ' (°)	27.18 / 23.19													
		p.1/3												

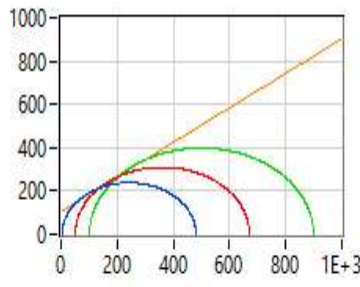
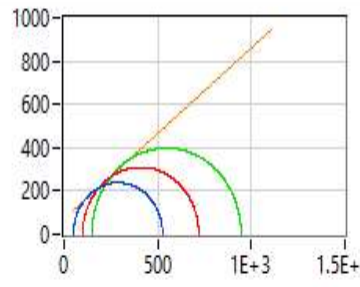
Triaxial test - UU BS 1377 part 7, 1377 part 8				
	Site :	GOLOMOTI SOLAR PV	Levy date :	29-Jun-19
	Technician's name :		Date of test :	29-Jun-19
GEOCONSULT LIMITED P.O. BOX 40 LILONGWE	File N° :	38	Survey depth (m) :	2.000
	Survey N° :	TRIAL PIT No. 04	Level of water (m) :	
	Kind of soil :	Moist Brown Reddish Laterite Gravelley Sandy Silty CLAY		

Identification of samples :

Ovo, Total stress of the soil in situ (kPa) :	0.000	Uo, Pore pressure of the soil in situ (kPa) :	0.000
Category of soil :	Soft/Granular	Kind of drainage :	Without lateral drain
ρ_s , Grain density (kg/m ³) :	0.000		
S_m :	<input type="checkbox"/>	S_d :	<input type="checkbox"/>

Samples before test :									Samples after saturation :		
N°	Hi (mm)	Di (mm)	mi (g)	ρ_i (kg/m ³)	ρ_{di} (kg/m ³)	wi (%)	ei	Si (%)	Ucp (kPa)	ΔV_{sat} (mm ³)	B (%)
1	76.00	38	163.0	1891	1543	22.56	-1.000	-0.000		0.000	0.000
2	76.00	38	165.0	1914	1566	22.22	-1.000	-0.000		0.000	0.000
3	76.00	38	163.5	1897	1560	21.56	-1.000	-0.000		0.000	0.000

Samples after consolidation :							Samples after shearing							
N°	Hs (mm)	Ds (mm)	ΔV_s (mm ³)	T100 (min)	Vmax (µm/min)	σ'_c (kPa)	Hf (mm)	Df (mm)	mf (g)	md (g)	wf (%)	ρ_{df} (kg/m ³)	ef	Srf (%)
1	76.00	38.00	0.000	0.000	0.000	0.000	76.00	38.00	161.0	133.0	21.05	1543	-1.000	-0.000
2	76.00	38.00	0.000	0.000	0.000	0.000	76.00	38.00	163.5	135.0	21.11	1566	-1.000	-0.000
3	76.00	38.00	0.000	0.000	0.000	0.000	76.00	38.00	162.0	134.5	20.45	1560	-1.000	-0.000

Total stress :	Effective stress :	Comments :															
 <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="2" style="text-align: center;">Mohr</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">C (kPa)</td> <td style="text-align: center;">110.5</td> </tr> <tr> <td style="text-align: center;">ϕ (°)</td> <td style="text-align: center;">38.36</td> </tr> </tbody> </table>	Mohr		C (kPa)	110.5	ϕ (°)	38.36	 <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th></th> <th style="text-align: center;">Mohr</th> <th style="text-align: center;">Lambe</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">C' (kPa)</td> <td style="text-align: center;">74.24</td> <td style="text-align: center;">59.02</td> </tr> <tr> <td style="text-align: center;">ϕ' (°)</td> <td style="text-align: center;">38.17</td> <td style="text-align: center;">31.76</td> </tr> </tbody> </table>		Mohr	Lambe	C' (kPa)	74.24	59.02	ϕ' (°)	38.17	31.76	<div style="border: 1px solid black; height: 100px; width: 100%;"></div>
Mohr																	
C (kPa)	110.5																
ϕ (°)	38.36																
	Mohr	Lambe															
C' (kPa)	74.24	59.02															
ϕ' (°)	38.17	31.76															
<div style="border: 1px solid black; padding: 5px;"> Visa : p.1/3 </div>																	

3.8 Trial Pit 05



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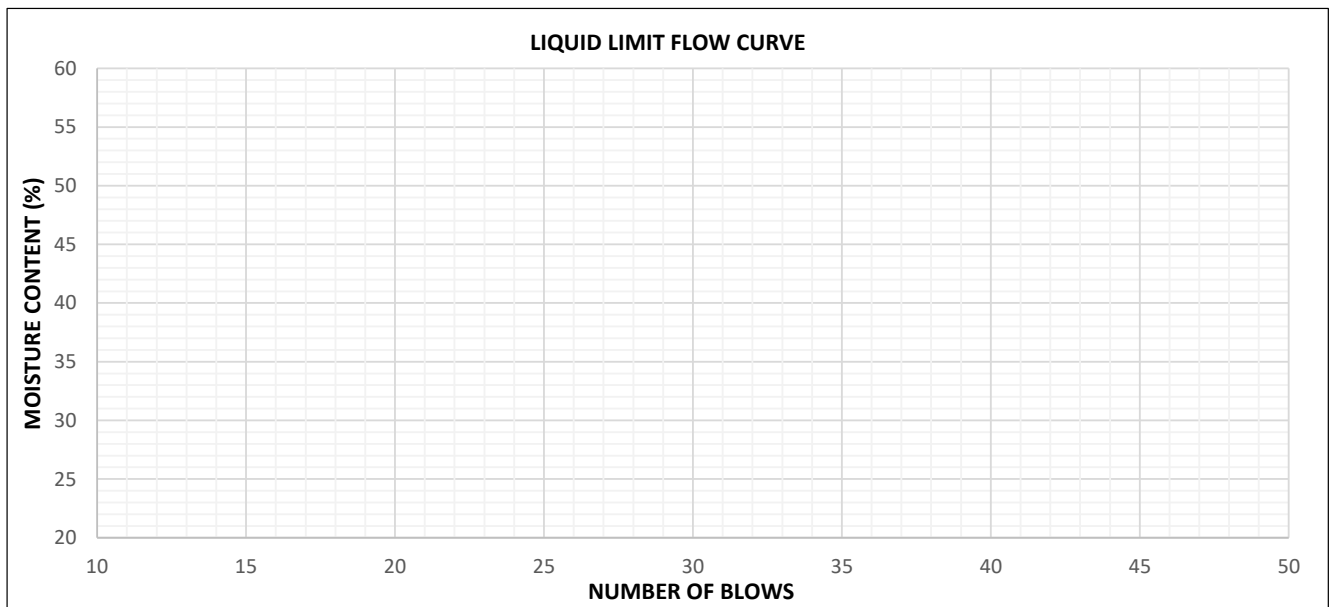
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP05 / AL016 / 30APR19	
SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 30 - 04 - 2019	TIME: 10:58
LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION
GOLOMOTI - SOLAR PV	0 672 768	8 403 213	(m)
DEPTH (m) 3.000-4.000			
TYPE OF MATERIAL: MOIST STIFF REDDISH BROWN LATERITE GRAVELLY SANDY SILTY CLAY			
TESTED BY: M. MILANZI		DATE: 08 - 06 - 2019	TIME: 10:00
CHECKED BY: S. THANGATO		DATE: 10 - 06 - 2019	TIME: 09:35
APPROVED BY: M. SABELLI		DATE: 10 - 06 - 2019	TIME: 14:18
PROJECT: GOLOMOTI SOLAR PV		CLIENT: JCM	

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
	1	2	3	4	1	2	3
TEST No.							
CONTAINER No.	R3		R75		RA1	R19	C3
MASS OF WET SOIL + CONTAINER(g)	59.0		63.0		44.5	44.5	39.0
MASS OF DRY SOIL + CONTAINER(g)	51.0		54.5		41.5	42.5	36.0
MASS OF CONTAINER (g)	30		34		27.5	33	22
MASS OF DRY SOIL (g)	21.0		20.5		14.0	9.5	14.0
MASS OF WATER (g)	8.00		8.50		3.00	2.00	3.00
MOISTURE CONTENT %	38.1	38.9	41.5	41.0	21.4	21.1	21.4
No. BLOWS	32		24			21.3	

LINEAR SHRINKAGE	3
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	12.5
LINEAR SHRINKAGE %	12.0
LIQUID LIMIT (LL) %	40.0
PLASTIC LIMIT (PL) %	21.3
PLASTICITY INDEX (PI)	19
NATURAL MOISTURE CONTENT %	14.5
FINENESS INDEX	1197



REMARKS: SAMPLED FROM TRIAL PIT 05 @ 3.000-4.000M. SOLAR PV SITE INVESTIGATION



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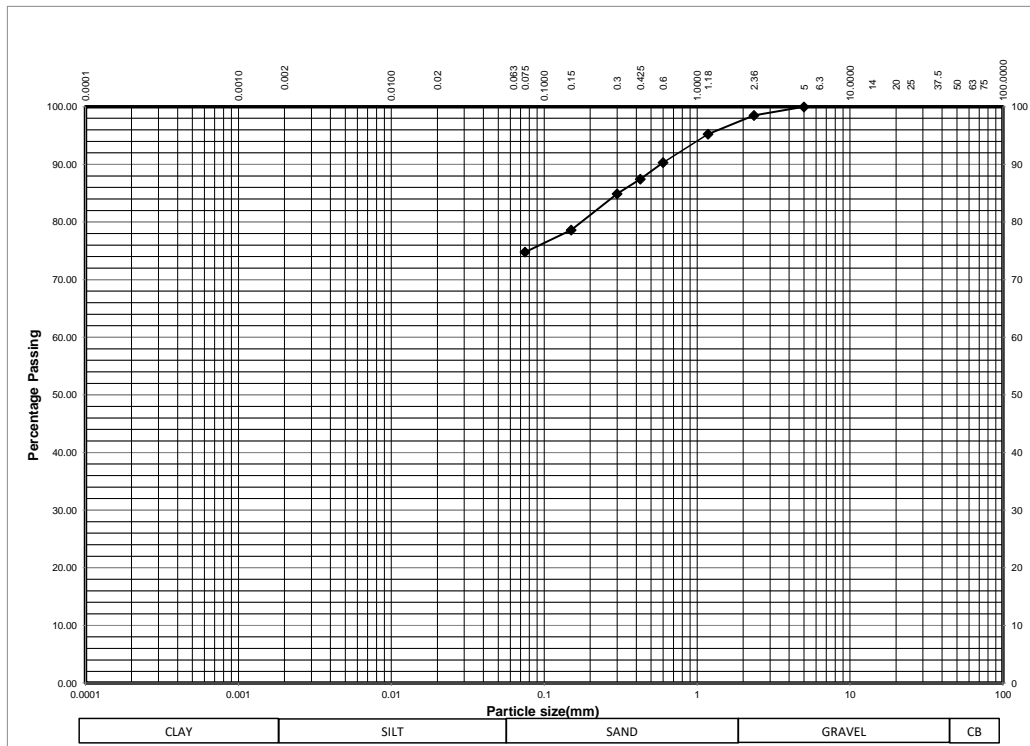
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sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP05 / G014 / 30APR19		
SAMPLED BY: GEOCONSULT LAB TEAM		DATE: 30 / 04 / 2019	TIME: 10:58	
LOCATION:	EASTING	NORTHING	ELEVATION	DEPTH (m)
GOLOMOTI - SOLAR PV	0 672 768	8 403 213	(m)	0.100-1.500
TYPE OF MATERIAL: MOIST LIGHT BROWN SANDY SILTY CLAY				
TESTED BY: C. NDALAMA		DATE: 03 - 06 - 2019	TIME: 10:43	
CHECKED BY: G. KACHIWALA		DATE: 04 - 06 - 2019	TIME: 13:30	
APPROVED BY: M. SABELLI		DATE: 04 - 06 - 2019	TIME: 15:00	

PROJECT: GOLOMOTI SOLAR PV **CLIENT: JCM**

SIEVE ANALYSIS (GRADATION) STANDARD: TRH14:1985

SIEVE (mm)	MASS RETAINED	PERCENTAGE			GRADATION SPECIFICATION			ZONE
		RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.500								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300								
5.000	0.00	0.00	100.00	100				
2.360	10.00	1.50	98.50	98				
1.180	31.50	4.73	95.27	95				
0.600	64.50	9.68	90.32	90				
0.425	83.50	12.54	87.46	87				
0.300	100.50	15.09	84.91	85				
0.150	142.50	21.40	78.60	79				
0.075	168.00	25.23	74.77	75				
0 pan	498.00	74.77						
TOTAL (g)	666.00							



REMARKS: SAMPLED FROM TRIAL PIT 05 @ 0.100-1.500M. SOLAR PV SITE INVESTIGATION

PAGE No.



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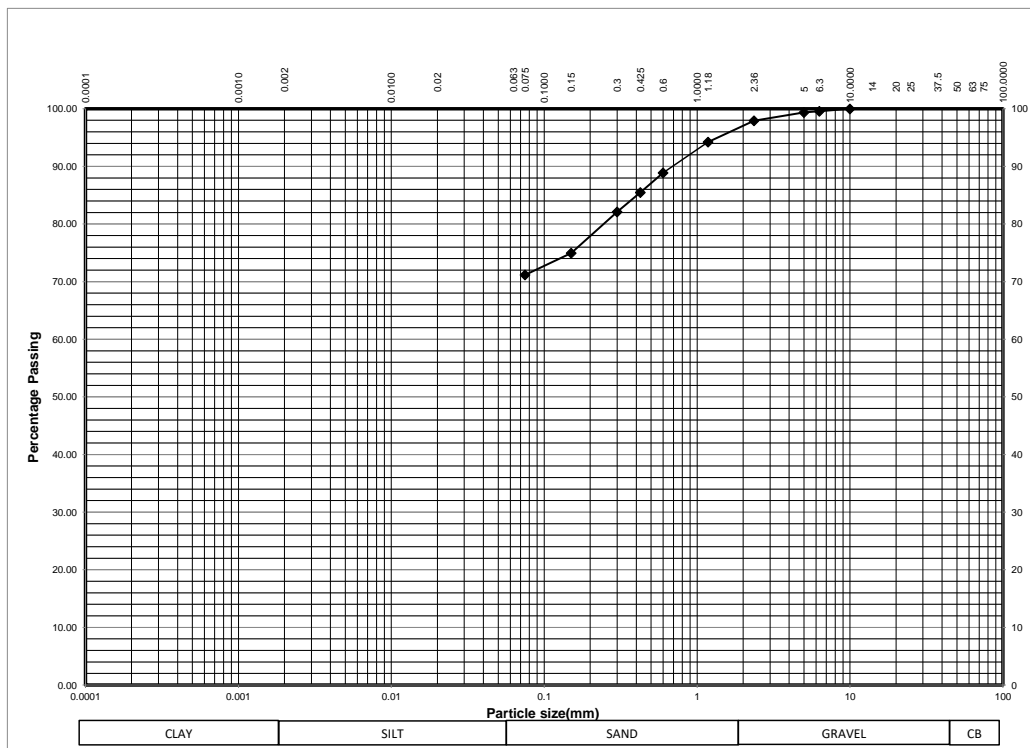
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LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP05 / G015 / 30APR19		
SAMPLED BY: GEOCONSULT LAB TEAM		DATE: 30 / 04 / 2019	TIME: 10:58	
LOCATION:	EASTING	NORTHING	ELEVATION	DEPTH (m)
GOLOMOTI - SOLAR PV	0 672 768	8 403 213	(m)	1.500-3.000
TYPE OF MATERIAL: MOIST BROWN REDDISH GRAVELLY SANDY SILTY CLAY				
TESTED BY: C. NDALAMA		DATE: 03 - 06 - 2019	TIME: 10:43	
CHECKED BY: G. KACHIWALA		DATE: 04 - 06 - 2019	TIME: 13:30	
APPROVED BY: M. SABELLI		DATE: 04 - 06 - 2019	TIME: 15:00	

PROJECT: GOLOMOTI SOLAR PV **CLIENT: JCM**

SIEVE ANALYSIS (GRADATION) STANDARD: TRH14:1985

SIEVE (mm)	MASS RETAINED	PERCENTAGE			GRADATION SPECIFICATION			ZONE
		RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.500								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000	0.00	0.00	100.00	100				
6.300	4.50	0.43	99.57	100				
5.000	6.50	0.62	99.38	99				
2.360	21.50	2.07	97.93	98				
1.180	60.00	5.77	94.23	94				
0.600	115.50	11.10	88.90	89				
0.425	151.00	14.51	85.49	85				
0.300	186.00	17.88	82.12	82				
0.150	260.50	25.04	74.96	75				
0.075	300.00	28.83	71.17	71				
0 pan	740.50	71.17						
TOTAL (g)	1040.50							



REMARKS: SAMPLED FROM TRIAL PIT 05 @ 1.500-3.000M. SOLAR PV SITE INVESTIGATION

PAGE No.



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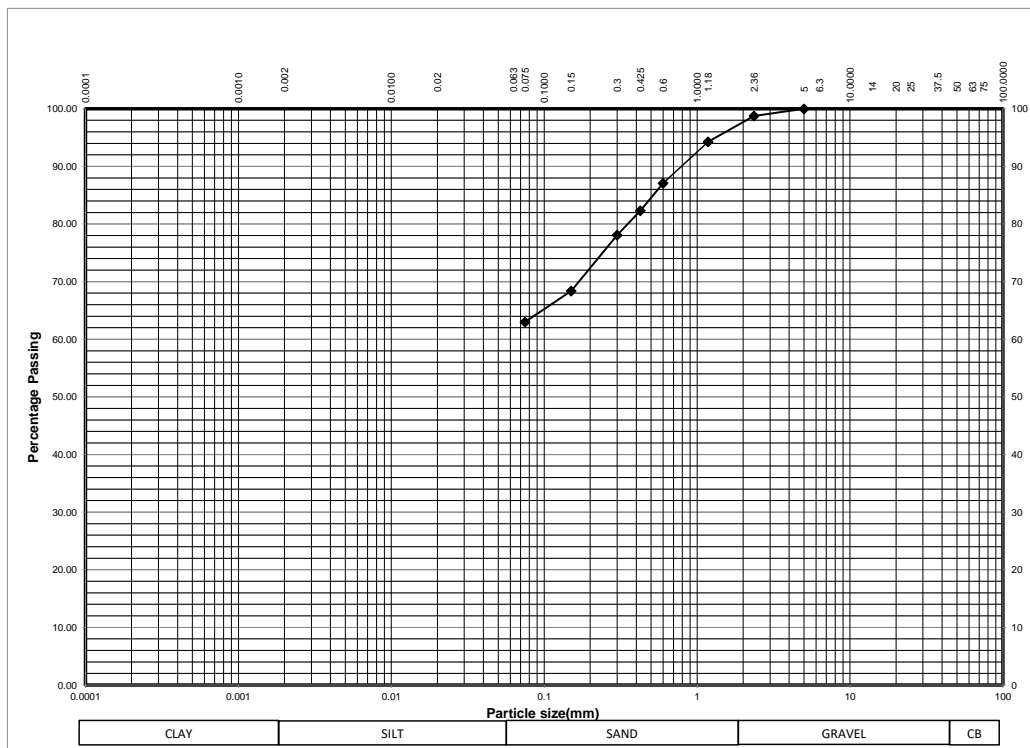
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sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP05 / G016 / 30APR19		
SAMPLED BY: GEOCONSULT LAB TEAM		DATE: 30 / 04 / 2019	TIME: 10:58	
LOCATION:	EASTING	NORTHING	ELEVATION	DEPTH (m)
GOLOMOTI - SOLAR PV	0 672 768	8 403 213	(m)	3.000-4.000
TYPE OF MATERIAL: MOIST BROWN REDDISH BROWN LATERITE GRAVELLY SANDY SILTY CLAY				
TESTED BY: C. NDALAMA		DATE: 03 - 06 - 2019	TIME: 10:43	
CHECKED BY: G. KACHIWALA		DATE: 04 - 06 - 2019	TIME: 13:30	
APPROVED BY: M. SABELLI		DATE: 04 - 06 - 2019	TIME: 15:00	

PROJECT: GOLOMOTI SOLAR PV **CLIENT: JCM**


SIEVE ANALYSIS (GRADATION) STANDARD: TRH14:1985


SIEVE (mm)	MASS RETAINED	PERCENTAGE			GRADATION SPECIFICATION			ZONE
		RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.500								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300								
5.000	0.00	0.00	100.00	100				
2.360	8.50	1.27	98.73	99				
1.180	38.50	5.74	94.26	94				
0.600	86.50	12.90	87.10	87				
0.425	118.50	17.67	82.33	82				
0.300	147.00	21.92	78.08	78				
0.150	212.00	31.62	68.38	68				
0.075	248.00	36.99	63.01	63				
0 pan	422.50	63.01						
TOTAL (g)	670.50							




REMARKS: SAMPLED FROM TRIAL PIT 05 @ 3.000-4.000M. SOLAR PV SITE INVESTIGATION

PAGE No.

 GEOCONSULT +265 0888 846 543 sabelli@geoconsult.cc	LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP05 / NMC014 / 30APRT19		
	SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 30 - 04 - 2019	TIME: 10:58	
	LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
	GOLOMOTI - SOLAR PV	0 672 768	8 403 213	(m)	0.100-1.500
	TYPE OF MATERIAL: MOIST LIGHT BROWN SANDY SILTY CLAY				
	TESTED BY: C. NDALAMA		DATE: 05 - 05 - 2019	TIME: 09:38	
	CHECKED BY: G. KACHIWALA		DATE: 06 - 05 - 2019	TIME: 09:46	
	APPROVED BY: M. SABELLI		DATE: 06 - 05 - 2019	TIME: 10:00	
	PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM	
	NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: ASTM D7263				
MASS OF WET SOIL + CONTAINER (g)		435.0			
MASS OF DRY SOIL AND CONTAINER (g)		401.0			
CONTAINER No.		GCK			
MASS OF CONTAINER (g)		126.5			
MASS OF DRY SOIL (g)		274.5			
MASS OF WATER (g)		34.0			
MOISTURE CONTENT %		12.4			
AVERAGE MOISTURE CONTENT %		12.4			
REMARKS: SAMPLED FROM TRIAL PIT 05 @ 0.100-1.500M. SOLAR PV SITE INVESTIGATION				PAGE No.	

 GEOCONSULT +265 0888 846 543 sabelli@geoconsult.cc	LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP05 / NMC015 / 30APR19		
	SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 30 - 04 - 2019	TIME: 10:58	
	LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
	GOLOMOTI - SOLAR PV	0 672 768	8 403 213	(m)	1.500-3.000
	TYPE OF MATERIAL: MOIST BROWN REDDISH GRAVELLY SANDY SILTY CLAY				
TESTED BY: C. NDALAMA		DATE: 05 - 05 - 2019	TIME: 09:38		
CHECKED BY: G. KACHIWALA		DATE: 06 - 05 - 2019	TIME: 09:46		
APPROVED BY: M. SABELLI		DATE: 06 - 05 - 2019	TIME: 10:00		
PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM		
NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: ASTM D7263					
MASS OF WET SOIL + CONTAINER (g)		407.0			
MASS OF DRY SOIL AND CONTAINER (g)		376.5			
CONTAINER No.		JJ			
MASS OF CONTAINER (g)		118.0			
MASS OF DRY SOIL (g)		258.5			
MASS OF WATER (g)		30.5			
MOISTURE CONTENT %		11.8			
AVERAGE MOISTURE CONTENT %		11.8			
REMARKS: SAMPLED FROM TRIAL PIT 05 @ 1.500-3.500M. SOLAR PV SITE INVESTIGATION				PAGE No.	

 GEOCONSULT +265 0888 846 543 sabelli@geoconsult.cc	LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP05 / NMC016 / 30APR19		
	SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 30 - 04 - 2019	TIME: 10:58	
	LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
	GOLOMOTI - SOLAR PV	0 672 768	8 403 213	(m)	3.000-4.000
	TYPE OF MATERIAL: MOIST STIFF REDDISH BROWN LATERITE GRAVELLY SANDY SILTY CLAY				
	TESTED BY: C. NDALAMA		DATE: 05 - 05 - 2019	TIME: 09:38	
	CHECKED BY: G. KACHIWALA		DATE: 06 - 05 - 2019	TIME: 09:46	
	APPROVED BY: M. SABELLI		DATE: 06 - 05 - 2019	TIME: 10:00	
	PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM	
	NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: ASTM D7263				
MASS OF WET SOIL + CONTAINER (g)			407.0		
MASS OF DRY SOIL AND CONTAINER (g)			370.5		
CONTAINER No.			JM		
MASS OF CONTAINER (g)			118.0		
MASS OF DRY SOIL (g)			252.5		
MASS OF WATER (g)			36.5		
MOISTURE CONTENT %			14.5		
AVERAGE MOISTURE CONTENT %			14.5		
REMARKS: SAMPLED FROM TRIAL PIT 05 @3.000-4.000M. SOLAR PV SITE INVESTIGATION					PAGE No.



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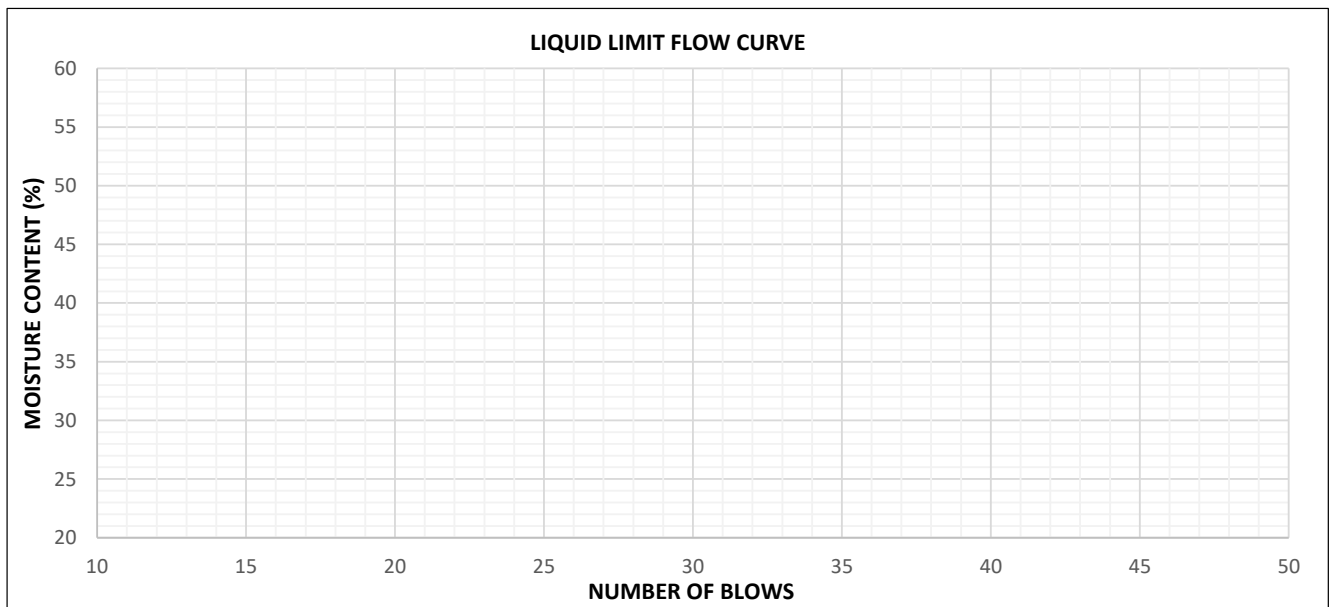
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP05 / AL014 / 30APR19	
SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 30 - 04 - 2019	TIME: 10:58
LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION
GOLOMOTI - SOLAR PV	0 672 768	8 403 213	(m)
DEPTH (m) 0.100-1.500			
TYPE OF MATERIAL: MOIST LIGHT BROWN SANDY SILTY CLAY			
TESTED BY: M. MILANZI		DATE: 27 - 05 - 2019	TIME: 10:00
CHECKED BY: S. THANGATO		DATE: 01 - 06 - 2019	TIME: 09:35
APPROVED BY: M. SABELLI		DATE: 01 - 06 - 2019	TIME: 14:18
PROJECT: GOLOMOTI SOLAR PV		CLIENT: JCM	

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
	1	2	3	4	1	2	3
TEST No.							
CONTAINER No.	C10		R28		R12	R75	R4
MASS OF WET SOIL + CONTAINER(g)	44.0		48.0		43.5	48.0	44.0
MASS OF DRY SOIL + CONTAINER(g)	39.5		42.5		41.5	46.0	42.0
MASS OF CONTAINER (g)	28.5		30		29	34	30
MASS OF DRY SOIL (g)	11.0		12.5		12.5	12.0	12.0
MASS OF WATER (g)	4.50		5.50		2.00	2.00	2.00
MOISTURE CONTENT %	40.9	42.1	44.0	43.6	16.0	16.7	16.7
No. BLOWS	35		24			16.4	

LINEAR SHRINKAGE	3
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	12.4
LINEAR SHRINKAGE %	12.9
LIQUID LIMIT (LL) %	42.8
PLASTIC LIMIT (PL) %	16.4
PLASTICITY INDEX (PI)	26
NATURAL MOISTURE CONTENT %	12.4
FINENESS INDEX	1950



REMARKS: SAMPLED FROM TRIAL PIT 05 @ 0.100-1.500M. SOLAR PV SITE INVESTIGATION



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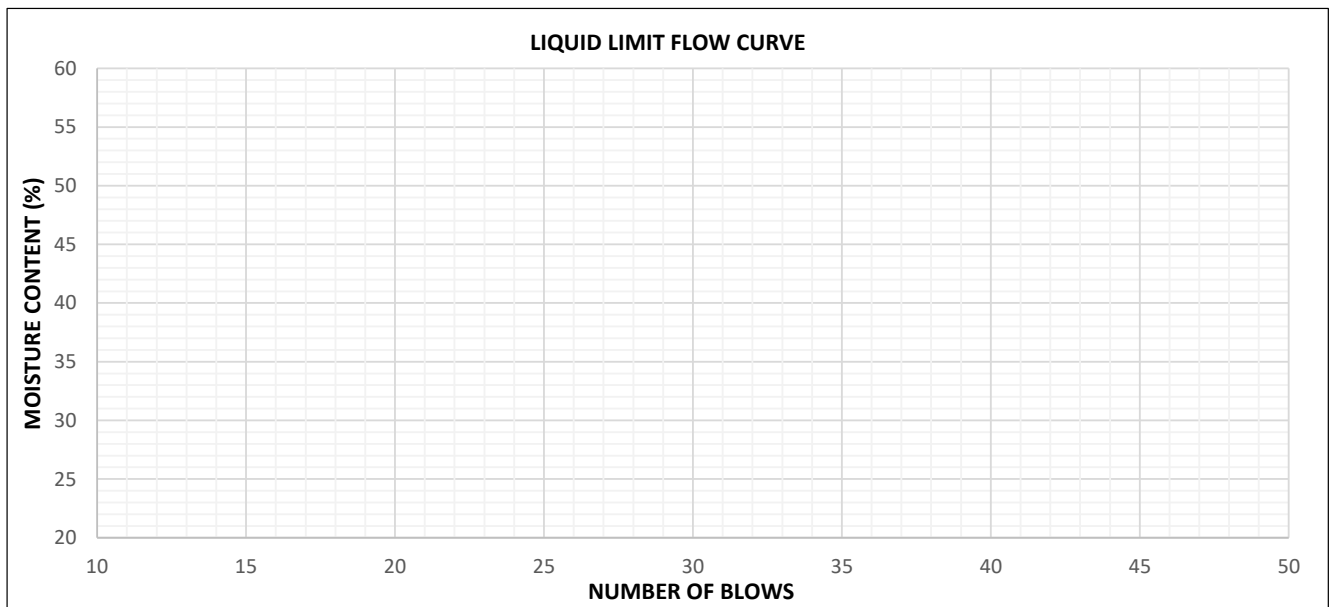
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP05 / AL015 / 30APR19	
SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 30 - 04 - 2019	TIME: 10:58
LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION
GOLOMOTI - SOLAR PV	0 672 768	8 403 213	(m)
DEPTH (m) 1.500-3.000			
TYPE OF MATERIAL: MOIST BROWN REDDISH GRAVELLY SANDY SILTY CLAY			
TESTED BY: S. MATCHADO		DATE: 27 - 05 - 2019	TIME: 10:00
CHECKED BY: G. KACHIWALA		DATE: 01 - 06 - 2019	TIME: 09:35
APPROVED BY: M. SABELLI		DATE: 01 - 06 - 2019	TIME: 14:18
PROJECT: GOLOMOTI SOLAR PV		CLIENT: JCM	

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
	1	2	3	4	1	2	3
TEST No.							
CONTAINER No.	R22		R30		E	C7	M
MASS OF WET SOIL + CONTAINER(g)	54.5		50.0		46.0	38.5	44.5
MASS OF DRY SOIL + CONTAINER(g)	47.0		44.0		42.5	37.0	41.5
MASS OF CONTAINER (g)	27.5		30		26	30	27.5
MASS OF DRY SOIL (g)	19.5		14.0		16.5	7.0	14.0
MASS OF WATER (g)	7.50		6.00		3.50	1.50	3.00
MOISTURE CONTENT %	38.5	38.8	42.9	42.4	21.2	21.4	21.4
No. BLOWS	29		23			21.4	

LINEAR SHRINKAGE	1
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	12.7
LINEAR SHRINKAGE %	10.2
LIQUID LIMIT (LL) %	40.6
PLASTIC LIMIT (PL) %	21.4
PLASTICITY INDEX (PI)	19
NATURAL MOISTURE CONTENT %	11.8
FINENESS INDEX	1349



REMARKS: SAMPLED FROM TRIAL PIT 05 @ 1.500-3.000M. SOLAR PV SITE INVESTIGATION

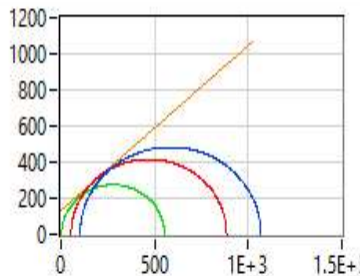
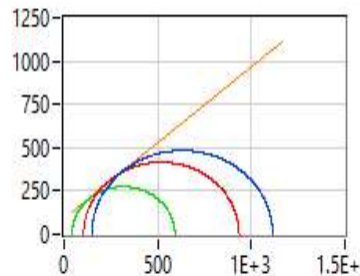
Triaxial test - UU BS 1377 part 7, 1377 part 8				
	Site :	GOLOMOTI SOLAR PV	Levy date :	27-Jun-19
	Technician's name :		Date of test :	27-Jun-19
GEOCONSULT LIMITED P.O. BOX 40 LILONGWE	File N° :	32	Survey depth (m) :	1.000
	Survey N° :	TRIAL PIT No. 05	Level of water (m) :	
	Kind of soil :	Moist Light Brown Sandy Silty CLAY		

Identification of samples :

Ovo, Total stress of the soil in situ (kPa) :	0.000	Uo, Pore pressure of the soil in situ (kPa) :	0.000
Category of soil :	Soft/Granular	Kind of drainage :	Without lateral drain
ρ_s , Grain density (kg/m ³) :	0.000		
S_m :	<input type="checkbox"/>	S_d :	<input type="checkbox"/>

Samples before test :									Samples after saturation :		
N°	Hi (mm)	Di (mm)	mi (g)	ρ_i (kg/m ³)	ρ_{di} (kg/m ³)	wi (%)	ei	Si (%)	Ucp (kPa)	ΔV_{sat} (mm ³)	B (%)
1	76.00	38	179.0	2077	1781	16.61	-1.000	-0.000		0.000	0.000
2	76.00	38	160.0	1856	1589	16.79	-1.000	-0.000		0.000	0.000
3	76.00	38	165.5	1920	1624	18.21	-1.000	-0.000		0.000	0.000

Samples after consolidation :							Samples after shearing							
N°	Hs (mm)	Ds (mm)	ΔV_s (mm ³)	T100 (min)	Vmax ($\mu\text{m}/\text{min}$)	σ'_c (kPa)	Hf (mm)	Df (mm)	mf (g)	md (g)	wf (%)	ρ_{df} (kg/m ³)	ef	Srf (%)
1	76.00	38.00	0.000	0.000	0.000	0.000	76.00	38.00	179.0	153.5	16.61	1781	-1.000	-0.000
2	76.00	38.00	0.000	0.000	0.000	0.000	76.00	38.00	160.0	137.0	16.79	1589	-1.000	-0.000
3	76.00	38.00	0.000	0.000	0.000	0.000	76.00	38.00	166.0	140.0	18.57	1624	-1.000	-0.000

Total stress :	Effective stress :	Comments :															
 <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="2" style="text-align: center;">Mohr</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">C (kPa)</td> <td style="text-align: center;">131.7</td> </tr> <tr> <td style="text-align: center;">ϕ (°)</td> <td style="text-align: center;">42.40</td> </tr> </tbody> </table>	Mohr		C (kPa)	131.7	ϕ (°)	42.40	 <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th></th> <th style="text-align: center;">Mohr</th> <th style="text-align: center;">Lambe</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">C' (kPa)</td> <td style="text-align: center;">95.82</td> <td style="text-align: center;">64.15</td> </tr> <tr> <td style="text-align: center;">ϕ' (°)</td> <td style="text-align: center;">41.20</td> <td style="text-align: center;">33.78</td> </tr> </tbody> </table>		Mohr	Lambe	C' (kPa)	95.82	64.15	ϕ' (°)	41.20	33.78	<div style="border: 1px solid black; height: 100px; width: 100%;"></div>
Mohr																	
C (kPa)	131.7																
ϕ (°)	42.40																
	Mohr	Lambe															
C' (kPa)	95.82	64.15															
ϕ' (°)	41.20	33.78															
Visa :		p.1/3															

Triaxial test - UU BS 1377 part 7, 1377 part 8				
	Site :	GOLOMOTI SOLAR PV	Levy date :	27-Jun-19
	Technician's name :		Date of test :	27-Jun-19
GEOCONSULT LIMITED P.O. BOX 40 LILONGWE	File N° :	34	Survey depth (m) :	2.000
	Survey N° :	TRIAL PIT No. 05	Level of water (m) :	
	Kind of soil :	Moist Brown Reddish Gravelley Sandy Silty CLAY		

Identification of samples :

Ovo, Total stress of the soil in situ (kPa) :	0.000	Uo, Pore pressure of the soil in situ (kPa) :	0.000
Category of soil :	Soft/Granular	Kind of drainage :	Without lateral drain
ρ_s , Grain density (kg/m ³) :	0.000		
S_m :	<input type="checkbox"/>	S_d :	<input type="checkbox"/>

Samples before test :									Samples after saturation :		
N°	Hi (mm)	Di (mm)	mi (g)	ρ_i (kg/m ³)	ρ_{di} (kg/m ³)	wi (%)	ei	Si (%)	Ucp (kPa)	ΔV_{sat} (mm ³)	B (%)
1	76.00	38	149.0	1729	1450	19.20	-1.000	-0.000		0.000	0.000
2	76.00	38	161.5	1874	1584	18.32	-1.000	-0.000		0.000	0.000

Samples after consolidation :							Samples after shearing							
N°	Hs (mm)	Ds (mm)	ΔV_s (mm ³)	T100 (min)	Vmax (μm/min)	σ'_c (kPa)	Hf (mm)	Df (mm)	mf (g)	md (g)	wf (%)	ρ_{df} (kg/m ³)	ef	Srf (%)
1	76.00	38.00	0.000	0.000	0.000	0.000	76.00	38.00	148.5	125.0	18.80	1450	-1.000	-0.000
2	76.00	38.00	0.000	0.000	0.000	0.000	76.00	38.00	163.0	136.5	19.41	1584	-1.000	-0.000

Total stress :	Effective stress :	Comments :																		
<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="2" style="text-align: center;">Mohr</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">C (kPa)</td> <td style="text-align: center;">47.36</td> </tr> <tr> <td style="text-align: center;">ϕ (°)</td> <td style="text-align: center;">34.12</td> </tr> </tbody> </table>	Mohr		C (kPa)	47.36	ϕ (°)	34.12	<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="2" style="text-align: center;">Mohr</th> <th colspan="2" style="text-align: center;">Lambe</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">C' (kPa)</td> <td style="text-align: center;">16.34</td> <td style="text-align: center;">13.61</td> <td></td> </tr> <tr> <td style="text-align: center;">ϕ' (°)</td> <td style="text-align: center;">33.58</td> <td style="text-align: center;">28.95</td> <td></td> </tr> </tbody> </table>	Mohr		Lambe		C' (kPa)	16.34	13.61		ϕ' (°)	33.58	28.95		<div style="border: 1px solid black; height: 100px; width: 100%;"></div>
Mohr																				
C (kPa)	47.36																			
ϕ (°)	34.12																			
Mohr		Lambe																		
C' (kPa)	16.34	13.61																		
ϕ' (°)	33.58	28.95																		
<div style="border: 1px solid black; padding: 2px;">Visa :</div>		<div style="border: 1px solid black; padding: 2px;">p.1/3</div>																		

3.9 Trial Pit 06



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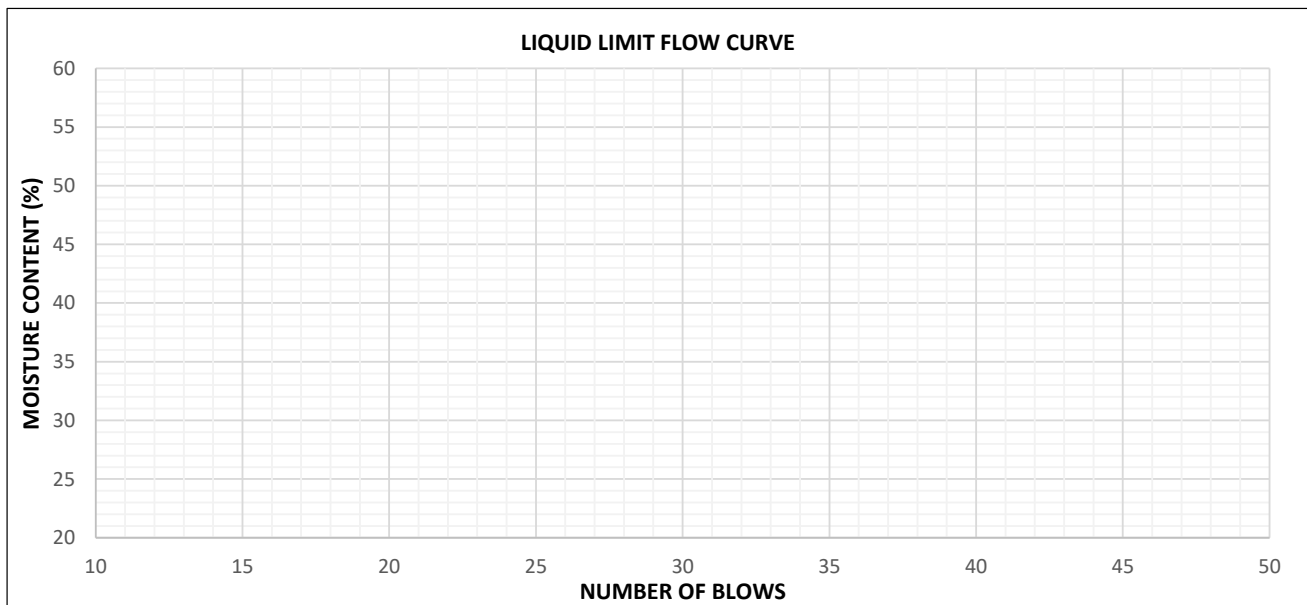
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP06 / AL019 / 30APR19	
SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 30 - 04 - 2019	TIME: 11:53
LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION
GOLOMOTI - SOLAR PV	0 672 663	8 402 947	(m)
DEPTH (m) 3.000-4.000			
TYPE OF MATERIAL: MOIST BROWN REDDISH SANDY SILTY CLAYEY LATERITE GRAVEL			
TESTED BY: M. MILANZI		DATE: 28-08-2019	TIME: 15:21
CHECKED BY: S. THANGATO		DATE: 31 - 05 - 2019	TIME: 09:35
APPROVED BY: M. SABELLI		DATE: 31 - 05 - 2019	TIME: 14:18
PROJECT: GOLOMOTI SOLAR PV		CLIENT: JCM	

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
	1	2	3	4	1	2	3
TEST No.							
CONTAINER No.	R12		C18		R11	K4	C18
MASS OF WET SOIL + CONTAINER(g)	46.0		47.0		41.0	38.0	39.5
MASS OF DRY SOIL + CONTAINER(g)	41.0		42.0		39.5	36.5	38.0
MASS OF CONTAINER (g)	28.5		30.5		30.5	27.5	29
MASS OF DRY SOIL (g)	12.5		11.5		9.0	9.0	9.0
MASS OF WATER (g)	5.00		5.00		1.50	1.50	1.50
MOISTURE CONTENT %	40.0	40.4	43.5	41.7	16.7	16.7	16.7
No. BLOWS	28		17			16.7	

LINEAR SHRINKAGE	4
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	12.5
LINEAR SHRINKAGE %	12.0
LIQUID LIMIT (LL) %	41.1
PLASTIC LIMIT (PL) %	16.7
PLASTICITY INDEX (PI)	24
NATURAL MOISTURE CONTENT %	9.1
FINENESS INDEX	1248



REMARKS: SAMPLED FROM TRIAL PIT 06 @ 3.000-4.000M. SOLAR PV SITE INVESTIGATION



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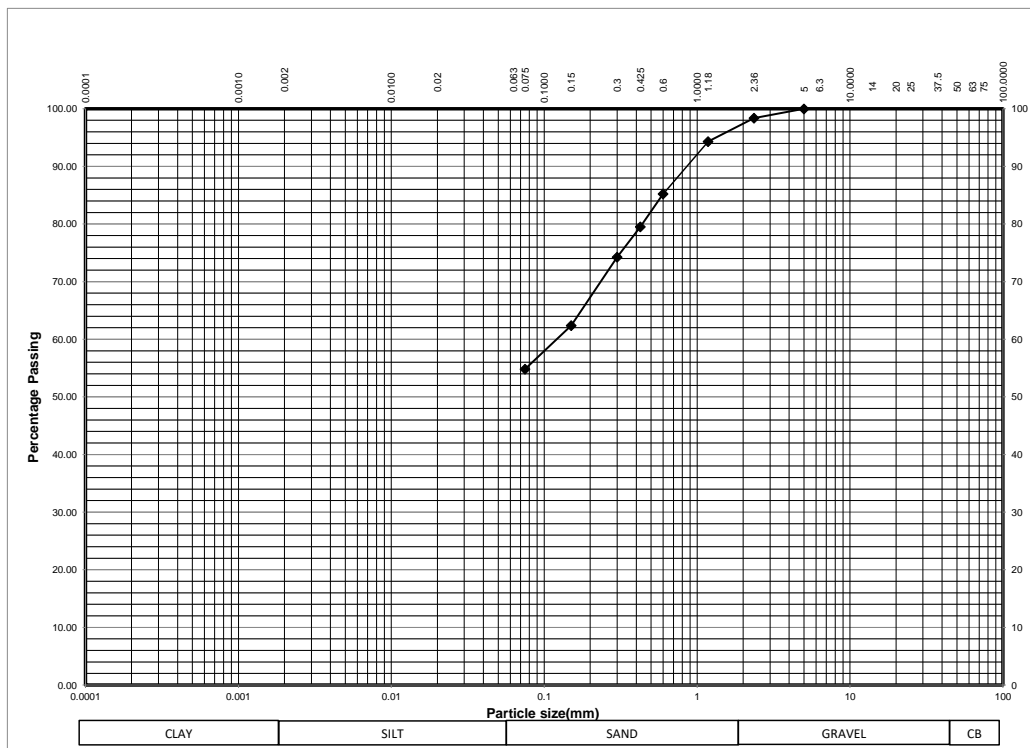
+265 0888 846 543
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP06 / G017 / 30APR19		
SAMPLED BY: GEOCONSULT LAB TEAM		DATE: 30 / 04 / 2019	TIME: 10:18	
LOCATION:	EASTING	NORTHING	ELEVATION	DEPTH (m)
GOLOMOTI - SOLAR PV	0 672 663	8 402 947	(m)	0.200-1.000
TYPE OF MATERIAL: MOIST LIGHT GREY SANDY SILTY CLAY				
TESTED BY: C. NDALAMA		DATE: 03 - 06 - 2019	TIME: 14:50	
CHECKED BY: G. KACHIWALA		DATE: 04 - 06 - 2019	TIME: 13:30	
APPROVED BY: M. SABELLI		DATE: 04 - 06 - 2019	TIME: 15:00	

PROJECT: GOLOMOTI SOLAR PV **CLIENT: JCM**

SIEVE ANALYSIS (GRADATION) STANDARD: TRH14:1985

SIEVE (mm)	MASS RETAINED	PERCENTAGE			GRADATION SPECIFICATION			ZONE
		RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.500								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300								
5.000	0.00	0.00	100.00	100				
2.360	7.00	1.63	98.37	98				
1.180	24.50	5.70	94.30	94				
0.600	63.50	14.78	85.22	85				
0.425	88.00	20.49	79.51	80				
0.300	110.50	25.73	74.27	74				
0.150	161.50	37.60	62.40	62				
0.075	194.00	45.17	54.83	55				
0 pan	235.50	54.83						
TOTAL (g)	429.50							



REMARKS: SAMPLED FROM TRIAL PIT 06 @ 0.200-1.000M. SOLAR PV SITE INVESTIGATION

PAGE No.



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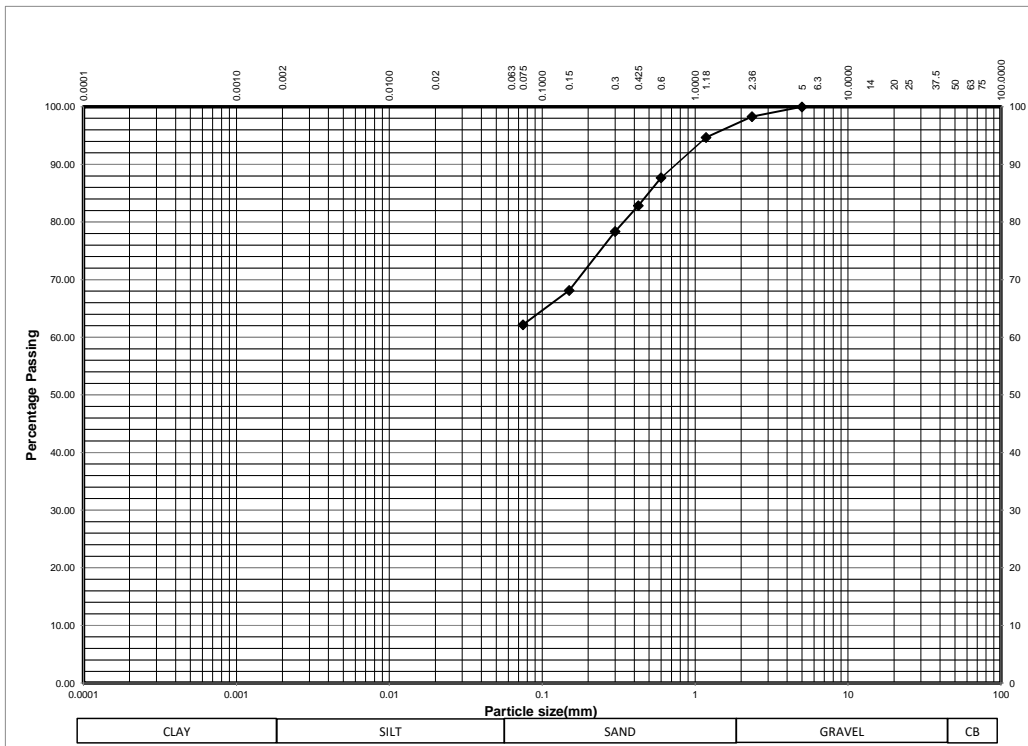
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP06 / G018 / 30APR19		
SAMPLED BY: GEOCONSULT LAB TEAM		DATE: 30 / 04 / 2019	TIME: 10:18	
LOCATION:	EASTING	NORTHING	ELEVATION	DEPTH (m)
GOLOMOTI - SOLAR PV	0 672 663	8 402 947	(m)	1.000-3.000
TYPE OF MATERIAL: MOIST LIGHT BROWN SANDY SILTY CLAY				
TESTED BY: C. NDALAMA		DATE: 03 - 06 - 2019	TIME: 15:00	
CHECKED BY: G. KACHIWALA		DATE: 04 - 06 - 2019	TIME: 13:30	
APPROVED BY: M. SABELLI		DATE: 04 - 06 - 2019	TIME: 15:00	

PROJECT: GOLOMOTI SOLAR PV **CLIENT: JCM**

SIEVE ANALYSIS (GRADATION) STANDARD: TRH14:1985

SIEVE (mm)	MASS RETAINED	PERCENTAGE			GRADATION SPECIFICATION			ZONE
		RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.500								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300								
5.000	0.00	0.00	100.00	100				
2.360	7.00	1.69	98.31	98				
1.180	22.00	5.31	94.69	95				
0.600	51.00	12.32	87.68	88				
0.425	71.00	17.15	82.85	83				
0.300	89.50	21.62	78.38	78				
0.150	132.00	31.88	68.12	68				
0.075	156.50	37.80	62.20	62				
0 pan	257.50	62.20						
TOTAL (g)	414.00							



REMARKS: SAMPLED FROM TRIAL PIT 06 @ 1.000-3.000M. SOLAR PV SITE INVESTIGATION

PAGE No.



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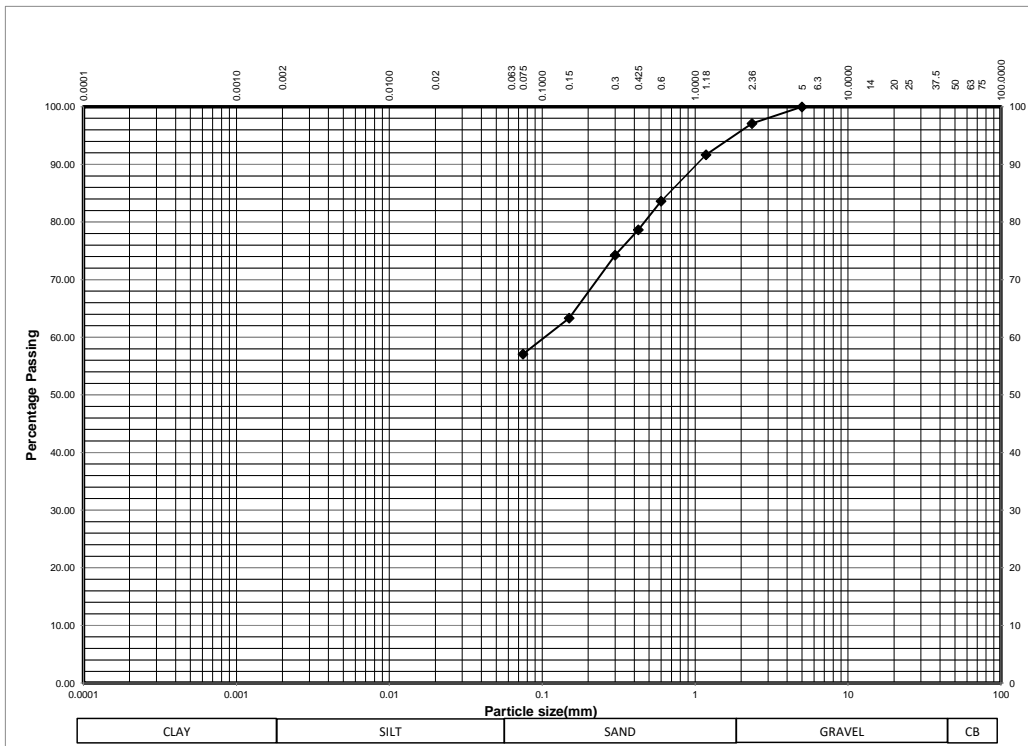
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP06 / G019 / 30APR19		
SAMPLED BY: GEOCONSULT LAB TEAM		DATE: 30 / 04 / 2019	TIME: 10:18	
LOCATION:	EASTING	NORTHING	ELEVATION	DEPTH (m)
GOLOMOTI - SOLAR PV	0 672 663	8 402 947	(m)	3.000-4.000
TYPE OF MATERIAL: MOIST BROWN REDDISH SANDY SILTY CLAYEY LATERITE GRAVEL				
TESTED BY: C. NDALAMA		DATE: 03 - 06 - 2019	TIME: 15:10	
CHECKED BY: G. KACHIWALA		DATE: 04 - 06 - 2019	TIME: 13:30	
APPROVED BY: M. SABELLI		DATE: 04 - 06 - 2019	TIME: 15:00	

PROJECT: GOLOMOTI SOLAR PV **CLIENT: JCM**


SIEVE ANALYSIS (GRADATION) STANDARD: TRH14:1985


SIEVE (mm)	MASS RETAINED	PERCENTAGE			GRADATION SPECIFICATION			ZONE
		RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.500								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300								
5.000	0.00	0.00	100.00	100				
2.360	12.50	2.88	97.12	97				
1.180	36.00	8.30	91.70	92				
0.600	71.00	16.38	83.62	84				
0.425	92.50	21.34	78.66	79				
0.300	111.50	25.72	74.28	74				
0.150	159.00	36.68	63.32	63				
0.075	186.00	42.91	57.09	57				
0 pan	247.50	57.09						
TOTAL (g)	433.50							




REMARKS: SAMPLED FROM TRIAL PIT 06 @ 3.000-4.000M. SOLAR PV SITE INVESTIGATION

PAGE No.

 GEOCONSULT +265 0888 846 543 sabelli@geoconsult.cc	LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP06 / NMC017 / 30APR19		
	SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 30 - 04 - 2019	TIME: 11:53	
	LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
	GOLOMOTI - SOLAR PV	0 672 663	8 402 947	(m)	0.200-1.000
	TYPE OF MATERIAL: MOIST LIGHT GREY SANDY SILTY CLAY				
	TESTED BY: C. NDALAMA		DATE: 05 - 05 - 2019	TIME: 09:38	
	CHECKED BY: G. KACHIWALA		DATE: 06 - 05 - 2019	TIME: 09:46	
	APPROVED BY: M. SABELLI		DATE: 06 - 05 - 2019	TIME: 10:00	
	PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM	
	NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: ASTM D7263				
MASS OF WET SOIL + CONTAINER (g)		363.5			
MASS OF DRY SOIL AND CONTAINER (g)		345.0			
CONTAINER No.		GC3			
MASS OF CONTAINER (g)		74.0			
MASS OF DRY SOIL (g)		271.0			
MASS OF WATER (g)		18.5			
MOISTURE CONTENT %		6.8			
AVERAGE MOISTURE CONTENT %		6.8			
REMARKS: SAMPLED FROM TRIAL PIT 06 @0.200-1.000M. SOLAR PV SITE INVESTIGATION				PAGE No.	

 GEOCONSULT +265 0888 846 543 sabelli@geoconsult.cc	LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP06 / NMC018 / 30APR19		
	SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 30 - 04 - 2019	TIME: 11:53	
	LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
	GOLOMOTI - SOLAR PV	0 672 663	8 402 947	(m)	1.000-3.000
	TYPE OF MATERIAL: MOIST LIGHT BROWN SANDY SILTY CLAY				
TESTED BY: C. NDALAMA		DATE: 05 - 05 - 2019	TIME: 11:38		
CHECKED BY: G. KACHIWALA		DATE: 06 - 05 - 2019	TIME: 09:46		
APPROVED BY: M. SABELLI		DATE: 06 - 05 - 2019	TIME: 10:00		
PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM		
NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: ASTM D7263					
MASS OF WET SOIL + CONTAINER (g)		294.5			
MASS OF DRY SOIL AND CONTAINER (g)		272.0			
CONTAINER No.		GC21			
MASS OF CONTAINER (g)		49.0			
MASS OF DRY SOIL (g)		223.0			
MASS OF WATER (g)		22.5			
MOISTURE CONTENT %		10.1			
AVERAGE MOISTURE CONTENT %		10.1			
REMARKS: SAMPLED FROM TRIAL PIT 06 @1.000-3.000M. SOLAR PV SITE INVESTIGATION				PAGE No.	

 GEOCONSULT +265 0888 846 543 sabelli@geoconsult.cc	LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP06 / NMC019 / 30APR19		
	SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 30 - 04 - 2019	TIME: 11:53	
	LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
	GOLOMOTI - SOLAR PV	0 672 663	8 402 947	(m)	3.000-4.000
	TYPE OF MATERIAL: MOIST BROWN REDDISH SANDY SILTY CLAYEY LATERITE GRAVEL				
	TESTED BY: C. NDALAMA		DATE: 05 - 05 - 2019	TIME: 11:38	
	CHECKED BY: G. KACHIWALA		DATE: 06 - 05 - 2019	TIME: 09:46	
APPROVED BY: M. SABELLI		DATE: 06 - 05 - 2019	TIME: 10:00		
PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM		
NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: ASTM D7263					
MASS OF WET SOIL + CONTAINER (g)		312.0			
MASS OF DRY SOIL AND CONTAINER (g)		290.5			
CONTAINER No.		GC15			
MASS OF CONTAINER (g)		54.0			
MASS OF DRY SOIL (g)		236.5			
MASS OF WATER (g)		21.5			
MOISTURE CONTENT %		9.1			
AVERAGE MOISTURE CONTENT %		9.1			
REMARKS: SAMPLED FROM TRIAL PIT 06 @3.000-4.000M. SOLAR PV SITE INVESTIGATION				PAGE No.	



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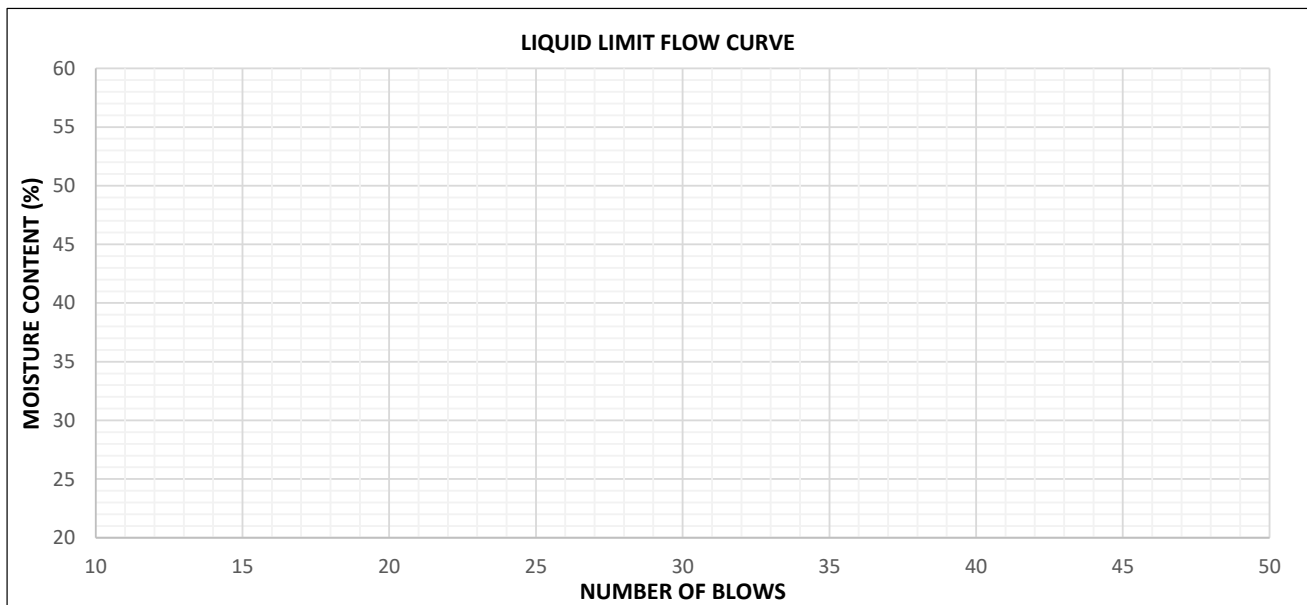
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP06 / AL017 / 30APR19	
SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 30 - 04 - 2019	TIME: 11:53
LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION
GOLOMOTI - SOLAR PV	0 672 663	8 402 947	(m)
DEPTH (m) 0.200-1.000			
TYPE OF MATERIAL: MOIST LIGHT GREY SANDY SILTY CLAY			
TESTED BY: M. MILANZI		DATE: 08 - 06 - 2019	TIME: 15:21
CHECKED BY: G. KACHIWALA		DATE: 10 - 06 - 2019	TIME: 09:35
APPROVED BY: M. SABELLI		DATE: 10 - 06 - 2019	TIME: 14:18
PROJECT: GOLOMOTI SOLAR PV		CLIENT: JCM	

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
	1	2	3	4	1	2	3
TEST No.							
CONTAINER No.	C5		C9		R13	K2	C15
MASS OF WET SOIL + CONTAINER(g)	46.0		47.0		41.0	38.0	39.5
MASS OF DRY SOIL + CONTAINER(g)	41.0		42.0		39.5	36.5	38.0
MASS OF CONTAINER (g)	28.5		30.5		31	28	29.5
MASS OF DRY SOIL (g)	12.5		11.5		8.5	8.5	8.5
MASS OF WATER (g)	5.00		5.00		1.50	1.50	1.50
MOISTURE CONTENT %	40.0	40.4	43.5	41.7	17.6	17.6	17.6
No. BLOWS	28		17			17.6	

LINEAR SHRINKAGE	2
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	12.6
LINEAR SHRINKAGE %	11.1
LIQUID LIMIT (LL) %	41.1
PLASTIC LIMIT (PL) %	17.6
PLASTICITY INDEX (PI)	23
NATURAL MOISTURE CONTENT %	6.8
FINENESS INDEX	1265



REMARKS: SAMPLED FROM TRIAL PIT 06 @ 0.200-1.000M. SOLAR PV SITE INVESTIGATION



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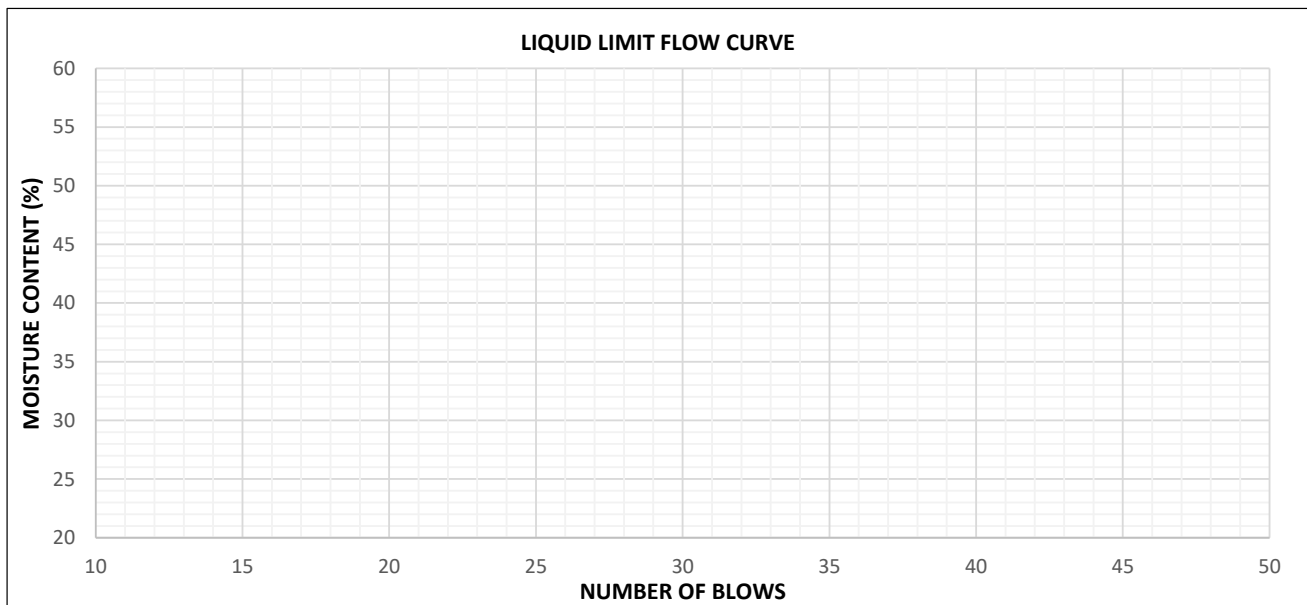
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP06 / AL018 / 30APR19	
SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 30 - 04 - 2019	TIME: 11:53
LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION
GOLOMOTI - SOLAR PV	0 672 663	8 402 947	(m)
DEPTH (m) 1.000-3.000			
TYPE OF MATERIAL: MOIST LIGHT BROWN SANDY SILTY CLAY			
TESTED BY: M. MILANZI		DATE: 10 - 06 - 2019	TIME: 15:21
CHECKED BY: G. KACHIWALA		DATE: 11 - 05 - 2019	TIME: 09:35
APPROVED BY: M. SABELLI		DATE: 11 - 05 - 2019	TIME: 14:18
PROJECT: GOLOMOTI SOLAR PV		CLIENT: JCM	

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
	1	2	3	4	1	2	3
TEST No.							
CONTAINER No.	C6		C8		R13	K2	C15
MASS OF WET SOIL + CONTAINER(g)	46.0		47.0		41.0	38.0	39.5
MASS OF DRY SOIL + CONTAINER(g)	41.5		42.0		39.5	36.5	38.0
MASS OF CONTAINER (g)	28.5		30.5		30	27	28.5
MASS OF DRY SOIL (g)	13.0		11.5		9.5	9.5	9.5
MASS OF WATER (g)	4.50		5.00		1.50	1.50	1.50
MOISTURE CONTENT %	34.6	35.0	43.5	41.7	15.8	15.8	15.8
No. BLOWS	27		17			15.8	

LINEAR SHRINKAGE	4
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	12.6
LINEAR SHRINKAGE %	11.1
LIQUID LIMIT (LL) %	38.4
PLASTIC LIMIT (PL) %	15.8
PLASTICITY INDEX (PI)	23
NATURAL MOISTURE CONTENT %	10.1
FINENESS INDEX	1426



REMARKS: SAMPLED FROM TRIAL PIT 06 @ 1.000-3.000M. SOLAR PV SITE INVESTIGATION

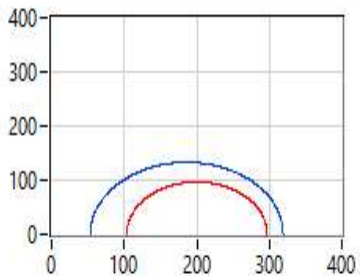
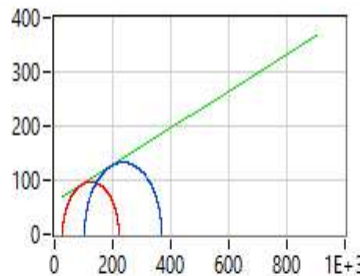
		Triaxial test - UU BS 1377 part 7, 1377 part 8	
		Site : GOLOMOTI SOLAR PV	Levy date : 17-Jun-19
		Technician's name :	Date of test : 17-Jun-19
GEOCONSULT LIMITED P.O. BOX 40 LILONGWE	File N° :	14	Survey depth (m) : 2.000
	Survey N° :	06	Level of water (m) :
	Kind of soil :	MOIST LIGHT BROWN SANDY SILTY CLAY	

Identification of samples :

Ovo, Total stress of the soil in situ (kPa) : 0.000	Uo, Pore pressure of the soil in situ (kPa) : 0.000
Category of soil : Steep/Strongly overconsolidated	Kind of drainage : Without lateral drain
ρ_s , Grain density (kg/m ³) : 0.000	
S_m : <input type="checkbox"/>	S_d : <input type="checkbox"/>

Samples before test :									Samples after saturation :		
N°	Hi (mm)	Di (mm)	mi (g)	ρ_i (kg/m ³)	ρ_{di} (kg/m ³)	wi (%)	ei	Si (%)	Ucp (kPa)	ΔV_{sat} (mm ³)	B (%)
1	75.00	38	167.0	1963	1652	18.86	-1.000	-0.000		0.000	0.000
2	76.00	38	174.0	2019	1665	21.25	-1.000	-0.000		0.000	-0.024

Samples after consolidation :							Samples after shearing							
N°	Hs (mm)	Ds (mm)	ΔV_s (mm ³)	T100 (min)	Vmax ($\mu\text{m}/\text{min}$)	σ'_c (kPa)	Hf (mm)	Df (mm)	mf (g)	md (g)	wf (%)	ρ_{df} (kg/m ³)	ef	Srf (%)
1	75.00	38.00	0.000	0.000	0.000	0.000	75.00	38.00	167.0	140.5	18.86	1652	-1.000	-0.000
2	76.00	38.00	0.000	0.000	0.000	0.000	76.00	38.00	174.5	143.5	21.60	1665	-1.000	-0.000

Total stress :	Effective stress :	Comments :																		
 <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><th colspan="2">Mohr</th></tr> <tr><td>C (kPa)</td><td>NaN</td></tr> <tr><td>ϕ (°)</td><td>NaN</td></tr> </table>	Mohr		C (kPa)	NaN	ϕ (°)	NaN	 <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><th colspan="2">Mohr</th><th colspan="2">Lambe</th></tr> <tr><td>C' (kPa)</td><td>59.91</td><td>C'</td><td>56.69</td></tr> <tr><td>ϕ' (°)</td><td>18.87</td><td>ϕ'</td><td>17.92</td></tr> </table>	Mohr		Lambe		C' (kPa)	59.91	C'	56.69	ϕ' (°)	18.87	ϕ'	17.92	<p>Visa :</p>
Mohr																				
C (kPa)	NaN																			
ϕ (°)	NaN																			
Mohr		Lambe																		
C' (kPa)	59.91	C'	56.69																	
ϕ' (°)	18.87	ϕ'	17.92																	
		p.1/3																		

3.10 Trial Pit 07



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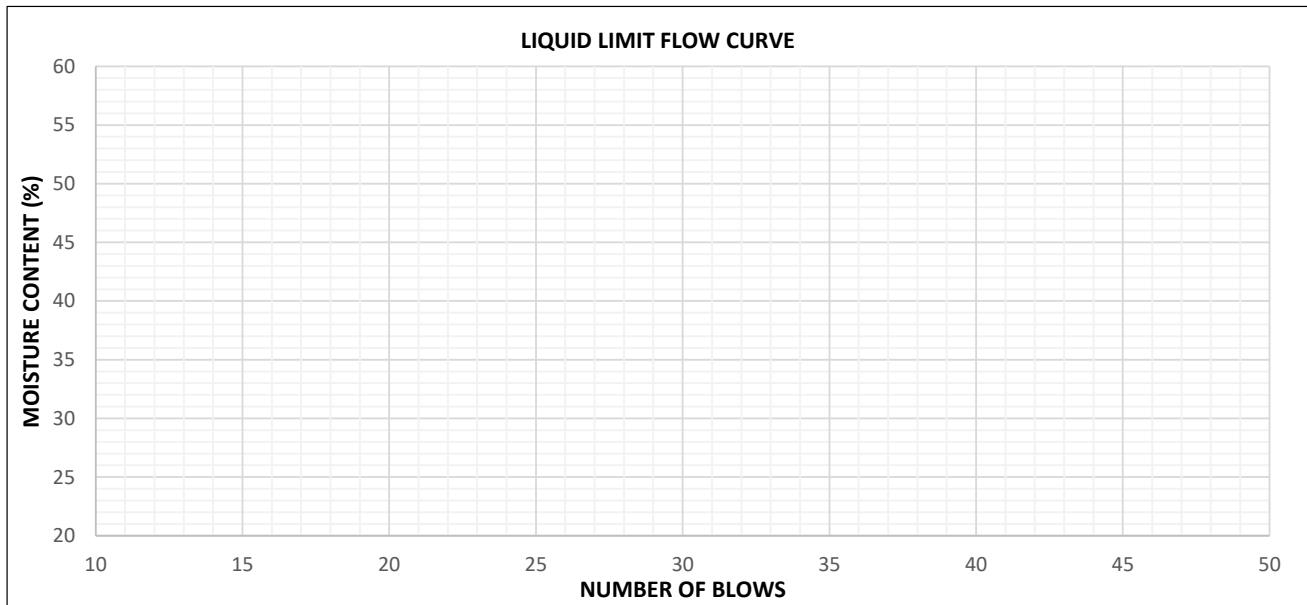
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP07 / AL022 / 30APR19	
SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 30 - 04 - 2019	TIME: 15:28
LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION
GOLOMOTI - SOLAR PV	0 672 863	8 402 795	(m)
DEPTH (m) 2.500-4.000			
TYPE OF MATERIAL: MOIST BROWN REDDISH SANDY SILTY CLAYEY LATERITE GRAVEL			
TESTED BY: M. MILANZI		DATE: 28 - 04 - 2019	TIME: 07:30
CHECKED BY: G. KACHIWALA		DATE: 31 - 05 - 2019	TIME: 09:35
APPROVED BY: M. SABELLI		DATE: 31 - 05 - 2019	TIME: 14:18
PROJECT: GOLOMOTI SOLAR PV		CLIENT: JCM	

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
	1	2	3	4	1	2	3
TEST No.							
CONTAINER No.	C6		R20		R22	C25	C7
MASS OF WET SOIL + CONTAINER(g)	47.5		49.5		44.0	41.0	40.0
MASS OF DRY SOIL + CONTAINER(g)	43.5		44.0		41.0	39.0	38.0
MASS OF CONTAINER (g)	29.5		28.5		26.5	29.5	28.5
MASS OF DRY SOIL (g)	14.0		15.5		14.5	9.5	9.5
MASS OF WATER (g)	4.00		5.50		3.00	2.00	2.00
MOISTURE CONTENT %	28.6	29.4	35.5	35.1	20.7	21.1	21.1
No. BLOWS	35		24			20.9	

LINEAR SHRINKAGE	8
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	13.2
LINEAR SHRINKAGE %	6.1
LIQUID LIMIT (LL) %	32.3
PLASTIC LIMIT (PL) %	20.9
PLASTICITY INDEX (PI)	11
NATURAL MOISTURE CONTENT %	7.1
FINENESS INDEX	583



REMARKS: SAMPLED FROM TRIAL PIT 07 @ 2.500-4.000M. SOLAR PV SITE INVESTIGATION



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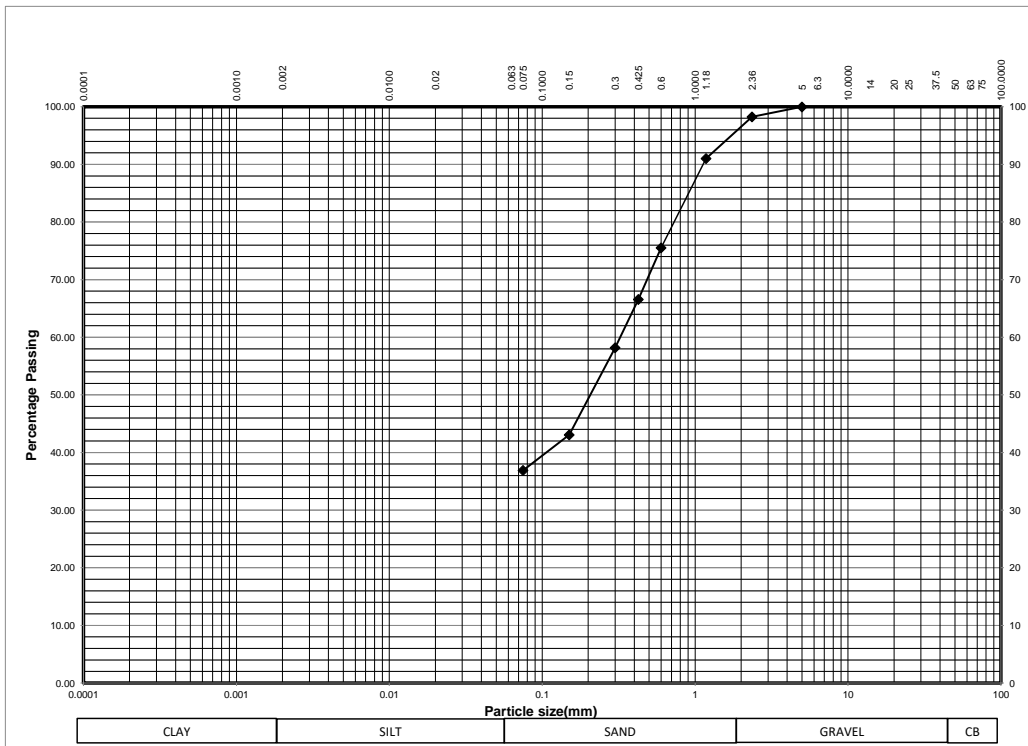
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP07 / G020 / 30APR19		
SAMPLED BY: GEOCONSULT LAB TEAM		DATE: 30 / 04 / 2019	TIME: 10:20	
LOCATION:	EASTING	NORTHING	ELEVATION	DEPTH (m)
GOLOMOTI - SOLAR PV	0 672 863	8 402 795	(m)	0.200-1.000
TYPE OF MATERIAL: MOIST REDDISH GREY SANDY SILTY CLAY				
TESTED BY: C. NDALAMA		DATE: 03 - 06 - 2019	TIME: 10:15	
CHECKED BY: G. KACHIWALA		DATE: 04 - 06 - 2019	TIME: 13:30	
APPROVED BY: M. SABELLI		DATE: 04 - 06 - 2019	TIME: 15:00	

PROJECT: GOLOMOTI SOLAR PV **CLIENT: JCM**

SIEVE ANALYSIS (GRADATION) STANDARD: TRH14:1985

SIEVE (mm)	MASS RETAINED	PERCENTAGE			GRADATION SPECIFICATION			ZONE
		RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.500								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300								
5.000	0.00	0.00	100.00	100				
2.360	7.50	1.75	98.25	98				
1.180	38.50	8.96	91.04	91				
0.600	105.00	24.45	75.55	76				
0.425	143.50	33.41	66.59	67				
0.300	179.50	41.79	58.21	58				
0.150	244.50	56.93	43.07	43				
0.075	271.00	63.10	36.90	37				
0 pan	158.50	36.90						
TOTAL (g)	429.50							



REMARKS: SAMPLED FROM TRIAL PIT 07 @ 0.200-1.000M. SOLAR PV SITE INVESTIGATION

PAGE No.



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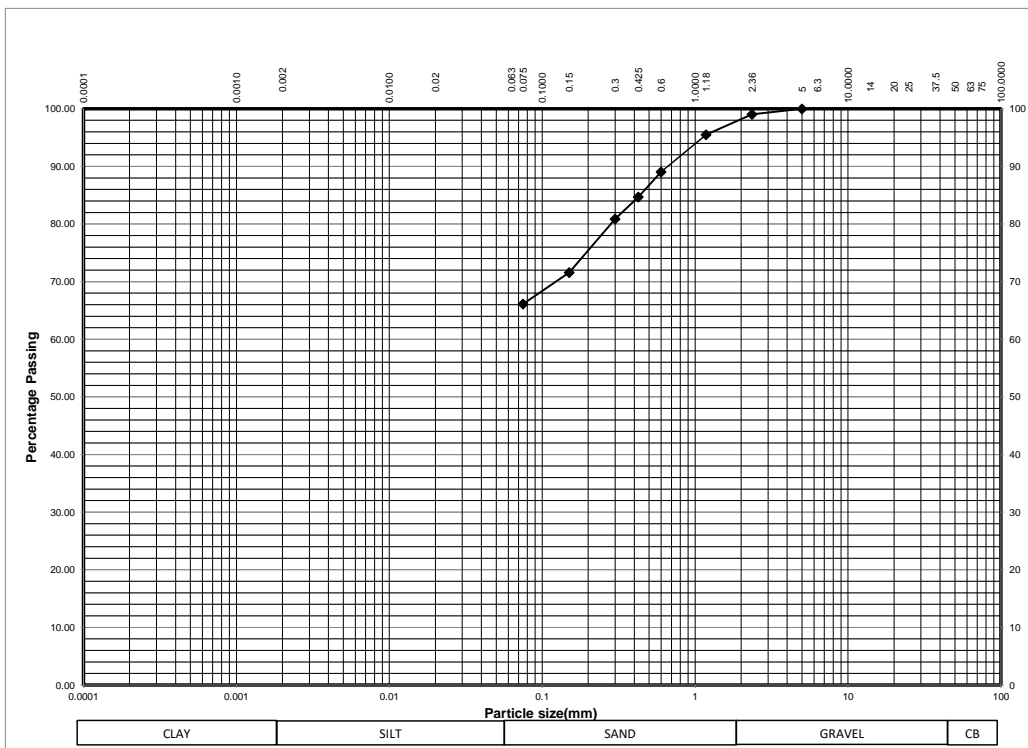
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP07 / G021 / 30APR19		
SAMPLED BY: GEOCONSULT LAB TEAM		DATE: 30 / 04 / 2019	TIME: 10:20	
LOCATION:	EASTING	NORTHING	ELEVATION	DEPTH (m)
GOLOMOTI - SOLAR PV	0 672 863	8 402 795	(m)	1.000-2.500
TYPE OF MATERIAL: MOIST STIFF BROWN GRAVELLY SANDY SILTY CLAY				
TESTED BY: C. NDALAMA		DATE: 03 - 06 - 2019	TIME: 10:25	
CHECKED BY: G. KACHIWALA		DATE: 04 - 06 - 2019	TIME: 13:30	
APPROVED BY: M. SABELLI		DATE: 04 - 06 - 2019	TIME: 15:00	

PROJECT: GOLOMOTI SOLAR PV **CLIENT: JCM**

SIEVE ANALYSIS (GRADATION) STANDARD: TRH14:1985

SIEVE (mm)	MASS RETAINED	PERCENTAGE			GRADATION SPECIFICATION			ZONE
		RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.500								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300								
5.000	0.00	0.00	100.00	100				
2.360	3.50	0.96	99.04	99				
1.180	16.50	4.51	95.49	95				
0.600	40.00	10.93	89.07	89				
0.425	56.00	15.30	84.70	85				
0.300	70.00	19.13	80.87	81				
0.150	104.00	28.42	71.58	72				
0.075	124.00	33.88	66.12	66				
0 pan	242.00	66.12						
TOTAL (g)	366.00							



REMARKS: SAMPLED FROM TRIAL PIT 07 @ 1.000-2.500M. SOLAR PV SITE INVESTIGATION

PAGE No.



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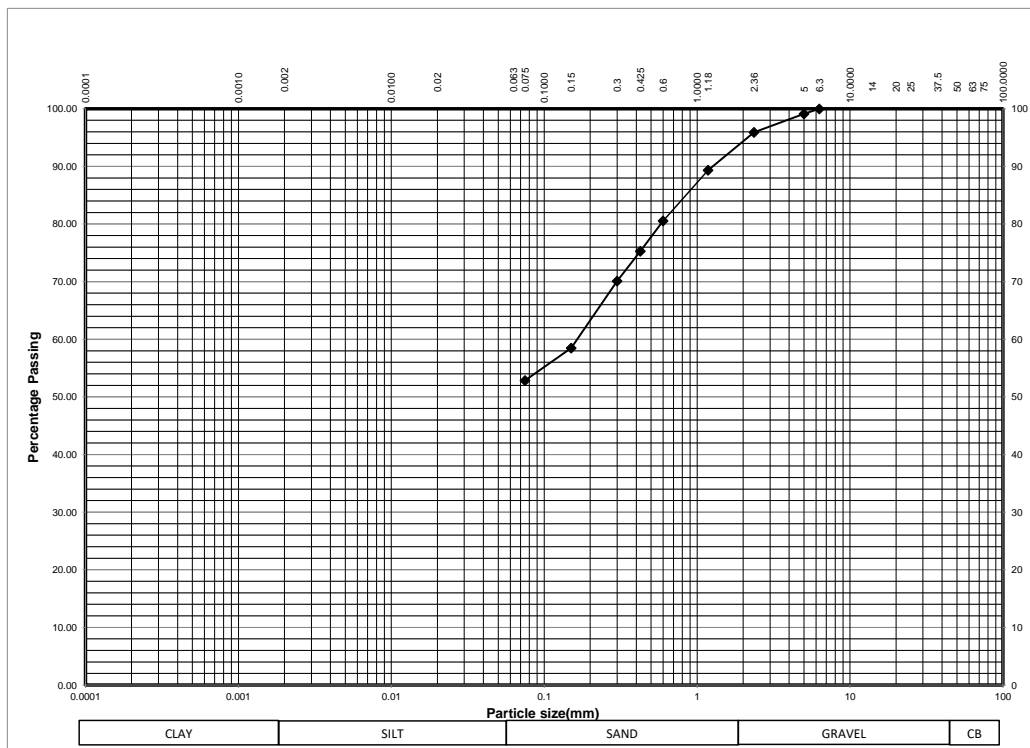
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LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP07 / G022 / 30APR19		
SAMPLED BY: GEOCONSULT LAB TEAM		DATE: 30 / 04 / 2019	TIME: 10:20	
LOCATION:	EASTING	NORTHING	ELEVATION	DEPTH (m)
GOLOMOTI - SOLAR PV	0 672 863	8 402 795	(m)	2.500-4.000
TYPE OF MATERIAL: MOIST BROWN REDDISH SANDY SILTY CLAYEY LATERITE GRAVEL				
TESTED BY: C. NDALAMA		DATE: 03 - 06 - 2019	TIME: 10:25	
CHECKED BY: G. KACHIWALA		DATE: 04 - 06 - 2019	TIME: 13:30	
APPROVED BY: M. SABELLI		DATE: 04 - 06 - 2019	TIME: 15:00	

PROJECT: GOLOMOTI SOLAR PV **CLIENT: JCM**


SIEVE ANALYSIS (GRADATION) STANDARD: TRH14:1985


SIEVE (mm)	MASS RETAINED	PERCENTAGE			GRADATION SPECIFICATION			ZONE
		RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.500								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300	0.00	0.00	100.00	100				
5.000	4.00	0.88	99.12	99				
2.360	18.50	4.07	95.93	96				
1.180	48.50	10.66	89.34	89				
0.600	88.50	19.45	80.55	81				
0.425	112.50	24.73	75.27	75				
0.300	136.00	29.89	70.11	70				
0.150	189.00	41.54	58.46	58				
0.075	214.50	47.14	52.86	53				
0 pan	240.50	52.86						
TOTAL (g)	455.00							




REMARKS: SAMPLED FROM TRIAL PIT 07 @ 2.500-4.000M. SOLAR PV SITE INVESTIGATION

PAGE No.

 GEOCONSULT +265 0888 846 543 sabelli@geoconsult.cc	LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP07 / NMC020 / 30APR19		
	SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 30 - 04 - 2019	TIME: 15:28	
	LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
	GOLOMOTI - SOLAR PV	0 672 863	8 402 795	(m)	0.200-1.000
	TYPE OF MATERIAL: MOIST REDDISH GREY SAND SILTY CLAY				
	TESTED BY: C. NDALAMA		DATE: 05 - 05 - 2019	TIME: 13:38	
CHECKED BY: G. KACHIWALA		DATE: 06 - 05 - 2019	TIME: 09:46		
APPROVED BY: M. SABELLI		DATE: 06 - 05 - 2019	TIME: 10:00		
PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM		
NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: ASTM D7263					
MASS OF WET SOIL + CONTAINER (g)		281.0			
MASS OF DRY SOIL AND CONTAINER (g)		258.0			
CONTAINER No.		GC111			
MASS OF CONTAINER (g)		51.5			
MASS OF DRY SOIL (g)		206.5			
MASS OF WATER (g)		23.0			
MOISTURE CONTENT %		11.1			
AVERAGE MOISTURE CONTENT %		11.1			
REMARKS: SAMPLED FROM TRIAL PIT 07 @0.200-1.000M. SOLAR PV SITE INVESTIGATION				PAGE No.	

 GEOCONSULT +265 0888 846 543 sabelli@geoconsult.cc	LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP07 / NMC021 / 30APR19		
	SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 30 - 04 - 2019	TIME: 15:28	
	LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
	GOLOMOTI - SOLAR PV	0 672 863	8 402 795	(m)	1.000-2.500
	TYPE OF MATERIAL: MOIST STIFF BROWN GRAVELLY SAND SILTY CLAY				
TESTED BY: C. NDALAMA		DATE: 05 - 05 - 2019	TIME: 13:38		
CHECKED BY: G. KACHIWALA		DATE: 06 - 05 - 2019	TIME: 09:46		
APPROVED BY: M. SABELLI		DATE: 06 - 05 - 2019	TIME: 10:00		
PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM		
NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: ASTM D7263					
MASS OF WET SOIL + CONTAINER (g)			350.5		
MASS OF DRY SOIL AND CONTAINER (g)			323.0		
CONTAINER No.			GC18		
MASS OF CONTAINER (g)			67.5		
MASS OF DRY SOIL (g)			255.5		
MASS OF WATER (g)			27.5		
MOISTURE CONTENT %			10.8		
AVERAGE MOISTURE CONTENT %			10.8		
REMARKS: SAMPLED FROM TRIAL PIT 07 @1.000-2.500M. SOLAR PV SITE INVESTIGATION					PAGE No.

 GEOCONSULT +265 0888 846 543 sabelli@geoconsult.cc	LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP07 / NMC022 / 30APR19		
	SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 30 - 04 - 2019	TIME: 15:28	
	LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
	GOLOMOTI - SOLAR PV	0 672 863	8 402 795	(m)	2.500-4.000
	TYPE OF MATERIAL: MOIST BROWN REDDISH SANDY SILTY CLAYEY LATERITE GRAVEL				
TESTED BY: C. NDALAMA		DATE: 05 - 05 - 2019	TIME: 13:38		
CHECKED BY: G. KACHIWALA		DATE: 06 - 05 - 2019	TIME: 09:46		
APPROVED BY: M. SABELLI		DATE: 06 - 05 - 2019	TIME: 10:00		
PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM		
NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: ASTM D7263					
MASS OF WET SOIL + CONTAINER (g)		371.5			
MASS OF DRY SOIL AND CONTAINER (g)		350.0			
CONTAINER No.		GC13			
MASS OF CONTAINER (g)		47.0			
MASS OF DRY SOIL (g)		303.0			
MASS OF WATER (g)		21.5			
MOISTURE CONTENT %		7.1			
AVERAGE MOISTURE CONTENT %		7.1			
REMARKS: SAMPLED FROM TRIAL PIT 07 @2.500-4.000M. SOLAR PV SITE INVESTIGATION				PAGE No.	



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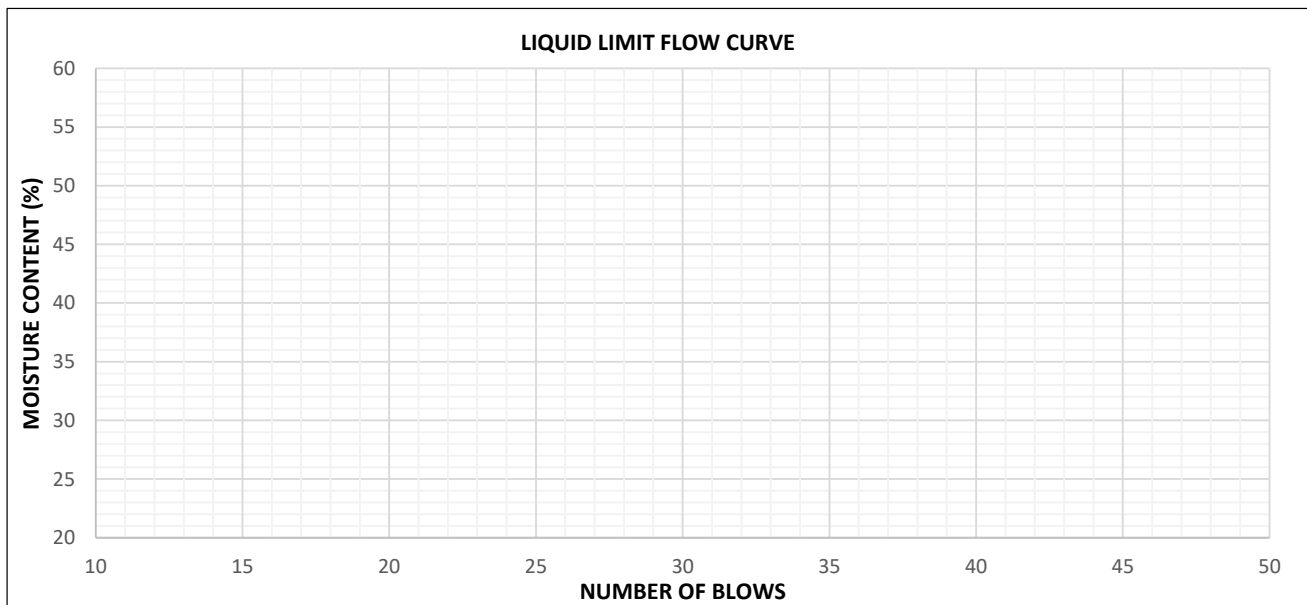
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP07 / AL020 / 30APR19	
SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 30 - 04 - 2019	TIME: 13:50
LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION
GOLOMOTI - SOLAR PV	0 672 863	8 402 795	(m)
DEPTH (m) 0.200-1.000			
TYPE OF MATERIAL: MOIST REDDISH GREY SAND SILTY CLAY			
TESTED BY: M. MILANZI		DATE: 10 - 06 - 2019	TIME: 09:30
CHECKED BY: G. KACHIWALA		DATE: 15 - 06 - 2019	TIME: 09:35
APPROVED BY: M. SABELLI		DATE: 15 - 06 - 2019	TIME: 14:18
PROJECT: GOLOMOTI SOLAR PV		CLIENT: JCM	

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
	1	2	3	4	1	2	3
TEST No.							
CONTAINER No.	R14		C23		C11	R18	C4
MASS OF WET SOIL + CONTAINER(g)	50.0		48.0		41.0	39.0	39.5
MASS OF DRY SOIL + CONTAINER(g)	43.5		40.5		39.0	37.5	37.0
MASS OF CONTAINER (g)	28		22		28.5	29.5	24
MASS OF DRY SOIL (g)	15.5		18.5		10.5	8.0	13.0
MASS OF WATER (g)	6.50		7.50		2.00	1.50	2.50
MOISTURE CONTENT %	41.9	42.8	40.5	38.9	19.0	18.8	19.2
No. BLOWS	30		16			19.0	

LINEAR SHRINKAGE	5
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	12.6
LINEAR SHRINKAGE %	11.1
LIQUID LIMIT (LL) %	40.8
PLASTIC LIMIT (PL) %	19.0
PLASTICITY INDEX (PI)	22
NATURAL MOISTURE CONTENT %	11.1
FINENESS INDEX	814.0



REMARKS: SAMPLED FROM TRIAL PIT 07 @ 0.200-1.000M. SOLAR PV SITE INVESTIGATION



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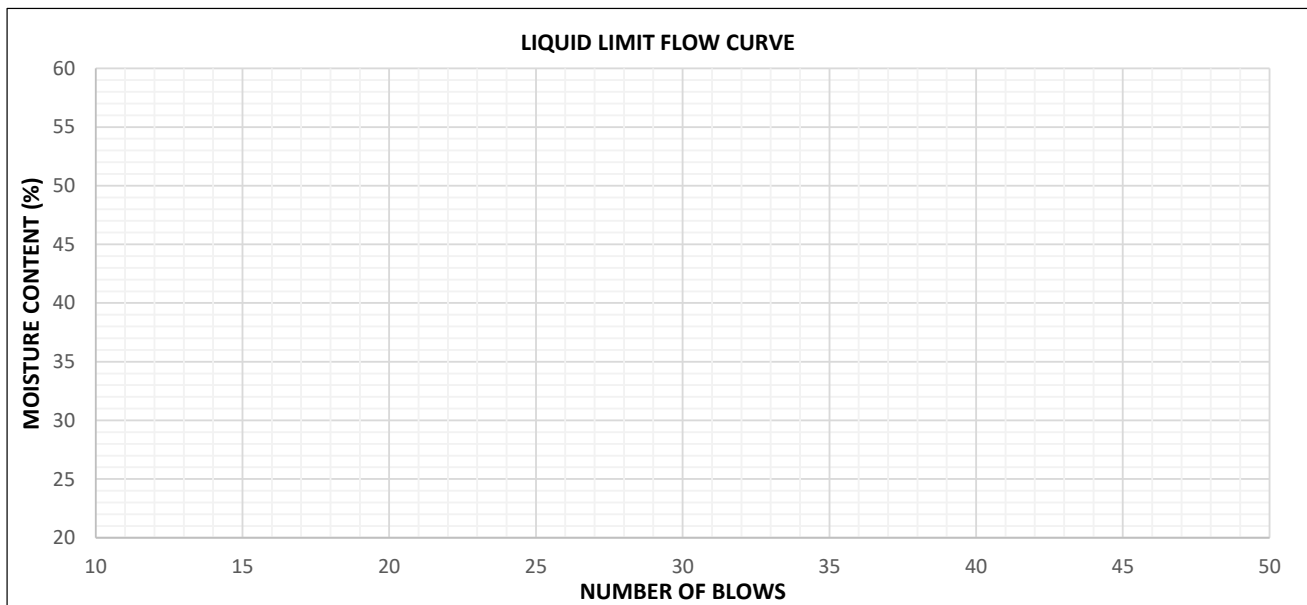
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP07 / AL021 / 30APR19	
SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 30 - 04 - 2019	TIME: 15:28
LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION
GOLOMOTI - SOLAR PV	0 672 863	8 402 795	(m)
DEPTH (m) 1.000-2.500			
TYPE OF MATERIAL: MOIST STIFF BROWN GRAVELLY SAND SILTY CLAY			
TESTED BY: M. MILANZI		DATE: 10 - 06 - 2019	TIME: 07:30
CHECKED BY: G. KACHIWALA		DATE: 11 - 06 - 2019	TIME: 09:35
APPROVED BY: M. SABELLI		DATE: 11 - 06 - 2019	TIME: 14:18
PROJECT: GOLOMOTI SOLAR PV		CLIENT: JCM	

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
	1	2	3	4	1	2	3
TEST No.							
CONTAINER No.	R27		R20		R28	C17	C29
MASS OF WET SOIL + CONTAINER(g)	47.5		49.5		44.0	41.0	40.0
MASS OF DRY SOIL + CONTAINER(g)	43.5		44.0		41.5	39.0	38.0
MASS OF CONTAINER (g)	30		28		29	29	28
MASS OF DRY SOIL (g)	13.5		16.0		12.5	10.0	10.0
MASS OF WATER (g)	4.00		5.50		2.50	2.00	2.00
MOISTURE CONTENT %	29.6	30.5	34.4	34.0	20.0	20.0	20.0
No. BLOWS	35		24			20.0	

LINEAR SHRINKAGE	11
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	13.1
LINEAR SHRINKAGE %	6.9
LIQUID LIMIT (LL) %	32.3
PLASTIC LIMIT (PL) %	20.0
PLASTICITY INDEX (PI)	12
NATURAL MOISTURE CONTENT %	10.8
FINENESS INDEX	782



REMARKS: SAMPLED FROM TRIAL PIT 07 @ 1.000-2.500M. SOLAR PV SITE INVESTIGATION

Triaxial test - UU BS 1377 part 7, 1377 part 8	
Site :	GOLOMOTI SOLAR PV
Levy date :	26-Jun-19
Technician's name :	Date of test :
	26-Jun-19
File N° :	28
Survey depth (m) :	1.000
Survey N° :	TRIAL PIT No. 07
Level of water (m) :	
Kind of soil :	Moist Brown Gravelley Sandy Silty CLAY

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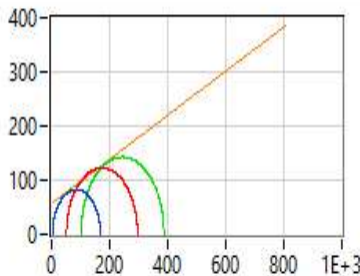
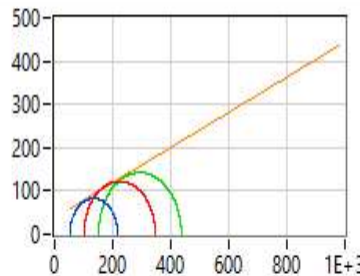
P.O. BOX 40 LILONGWE

Identification of samples :

Ovo, Total stress of the soil in situ (kPa) : 0.000	Uo, Pore pressure of the soil in situ (kPa) : 0.000
Category of soil : Steep/Strongly overconsolidated	Kind of drainage : Without lateral drain
ρ_s , Grain density (kg/m ³) : 0.000	
S_m : <input type="checkbox"/>	S_d : <input type="checkbox"/>

Samples before test :									Samples after saturation :		
N°	Hi (mm)	Di (mm)	mi (g)	ρ_i (kg/m ³)	ρ_{di} (kg/m ³)	wi (%)	ei	Si (%)	Ucp (kPa)	ΔV_{sat} (mm ³)	B (%)
1	76.00	38	147.0	1705	1404	21.49	-1.000	-0.000		0.000	0.000
2	76.00	38	155.0	1798	1491	20.62	-1.000	-0.000		0.000	0.000
3	76.00	38	154.0	1787	1468	21.74	-1.000	-0.000		0.000	0.000

Samples after consolidation :							Samples after shearing							
N°	Hs (mm)	Ds (mm)	ΔV_s (mm ³)	T100 (min)	Vmax (μ m/min)	σ'_c (kPa)	Hf (mm)	Df (mm)	mf (g)	md (g)	wf (%)	ρ_{df} (kg/m ³)	ef	Srf (%)
1	76.00	38.00	0.000	0.000	0.000	0.000	76.00	38.00	146.5	121.0	21.07	1404	-1.000	-0.000
2	76.00	38.00	0.000	0.000	0.000	0.000	76.00	38.00	154.0	128.5	19.84	1491	-1.000	-0.000
3	76.00	38.00	0.000	0.000	0.000	0.000	76.00	38.00	153.0	126.5	20.95	1468	-1.000	-0.000

Total stress :	Effective stress :	Comments :												
 <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><th colspan="2">Mohr</th></tr> <tr><td>C (kPa)</td><td>59.51</td></tr> <tr><td>ϕ (°)</td><td>22.15</td></tr> </table>	Mohr		C (kPa)	59.51	ϕ (°)	22.15	 <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><th>Mohr</th><th>Lambe</th></tr> <tr><td>C' (kPa)</td><td>39.51 / 32.72</td></tr> <tr><td>ϕ' (°)</td><td>22.04 / 20.91</td></tr> </table>	Mohr	Lambe	C' (kPa)	39.51 / 32.72	ϕ' (°)	22.04 / 20.91	<p>Visa :</p>
Mohr														
C (kPa)	59.51													
ϕ (°)	22.15													
Mohr	Lambe													
C' (kPa)	39.51 / 32.72													
ϕ' (°)	22.04 / 20.91													
		p.1/3												

Triaxial test - UU BS 1377 part 7, 1377 part 8				
	Site :	GOLOMOTI SOLAR PV	Levy date :	28-Jun-19
	Technician's name :		Date of test :	28-Jun-19
GEOCONSULT LIMITED P.O. BOX 40 LILONGWE	File N° :	36	Survey depth (m) :	2.000
	Survey N° :	TRIAL PIT No. 07	Level of water (m) :	
	Kind of soil :	Moist Brown Gravelley Sandy Silty CLAY		

Identification of samples :

Ovo, Total stress of the soil in situ (kPa) : 0.000	Uo, Pore pressure of the soil in situ (kPa) : 0.000
Category of soil : Soft/Granular	Kind of drainage : Without lateral drain
ρ_s , Grain density (kg/m ³) : 0.000	
Sm : <input type="checkbox"/>	Sd : <input type="checkbox"/>

Samples before test :									Samples after saturation :		
N°	Hi (mm)	Di (mm)	mi (g)	ρ_i (kg/m ³)	ρ_{di} (kg/m ³)	wi (%)	ei	Si (%)	Ucp (kPa)	ΔV_{sat} (mm ³)	B (%)
1	76.00	38	152.0	1763	1497	17.83	-1.000	-0.000		0.000	0.000
2	76.00	38	160.0	1856	1572	18.08	-1.000	-0.000		0.000	0.000

Samples after consolidation :							Samples after shearing							
N°	Hs (mm)	Ds (mm)	ΔV_s (mm ³)	T100 (min)	Vmax ($\mu\text{m}/\text{min}$)	σ'_c (kPa)	Hf (mm)	Df (mm)	mf (g)	md (g)	wf (%)	ρ_{df} (kg/m ³)	ef	Srf (%)
1	76.00	38.00	0.000	0.000	0.000	0.000	76.00	38.00	152.5	129.0	18.22	1497	-1.000	-0.000
2	76.00	38.00	0.000	0.000	0.000	0.000	76.00	38.00	159.5	135.5	17.71	1572	-1.000	-0.000

Total stress :	Effective stress :	Comments :												
<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="2">Mohr</th> </tr> </thead> <tbody> <tr> <td>C (kPa)</td> <td>43.78</td> </tr> <tr> <td>ϕ (°)</td> <td>28.31</td> </tr> </tbody> </table>	Mohr		C (kPa)	43.78	ϕ (°)	28.31	<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Mohr</th> <th>Lambe</th> </tr> </thead> <tbody> <tr> <td>C' (kPa)</td> <td>19.25</td> </tr> <tr> <td>ϕ' (°)</td> <td>25.16</td> </tr> </tbody> </table>	Mohr	Lambe	C' (kPa)	19.25	ϕ' (°)	25.16	<div style="border: 1px solid black; height: 100px; width: 100%;"></div>
Mohr														
C (kPa)	43.78													
ϕ (°)	28.31													
Mohr	Lambe													
C' (kPa)	19.25													
ϕ' (°)	25.16													
<div style="border: 1px solid black; height: 20px; width: 100%;"></div>		<div style="border: 1px solid black; padding: 2px;">p.1/3</div>												

3.11 Trial Pit 08



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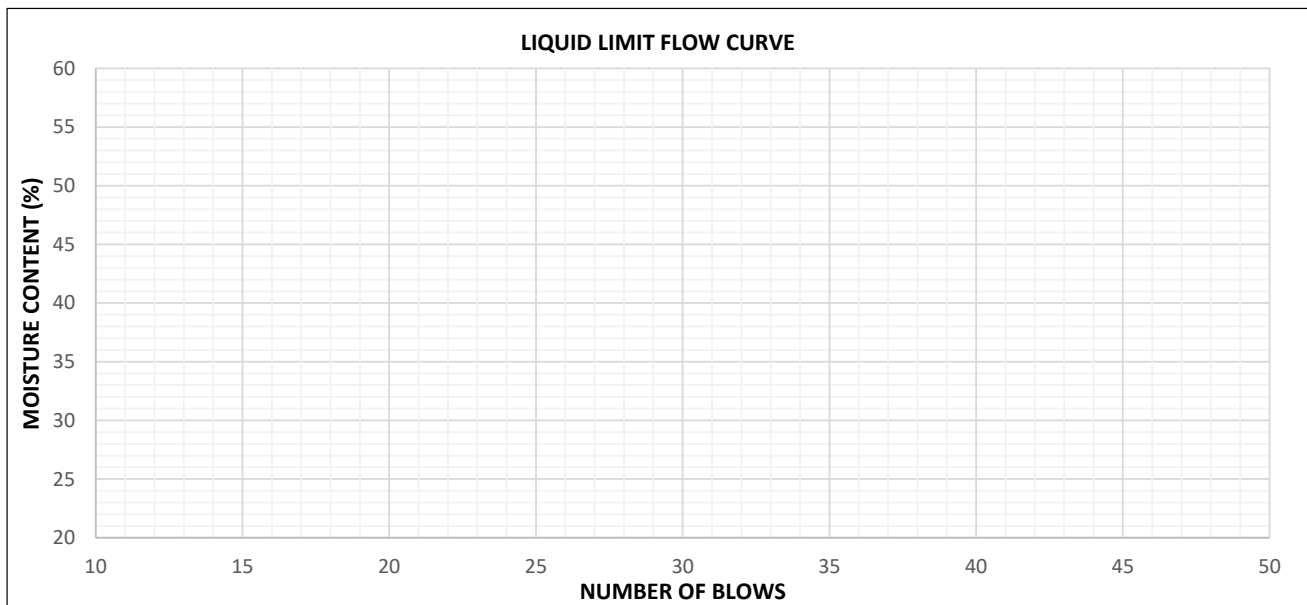
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP08 / AL025 / 30APR19	
SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 30 - 04 - 2019	TIME: 16:28
LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION
GOLOMOTI - SOLAR PV	0 673 025	8 402 675	(m)
DEPTH (m) 2.500-4.000			
TYPE OF MATERIAL: MOIST BROWN REDDISH SANDY SILTY LATERITE GRAVEL			
TESTED BY: M. MILANZI		DATE: 28 - 05 - 2019	TIME: 11:02
CHECKED BY: S. THANGATO		DATE: 31 - 05 - 2019	TIME: 09:35
APPROVED BY: M. SABELLI		DATE: 31 - 05 - 2019	TIME: 14:18
PROJECT: GOLOMOTI SOLAR PV		CLIENT: JCM	

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
	1	2	3	4	1	2	3
TEST No.							
CONTAINER No.	K3		R29		C24	R16	R24
MASS OF WET SOIL + CONTAINER(g)	53.5		51.5		43.0	41.5	42.5
MASS OF DRY SOIL + CONTAINER(g)	47.0		45.0		41.0	39.0	40.5
MASS OF CONTAINER (g)	29.5		29		32.5	28.5	32
MASS OF DRY SOIL (g)	17.5		16.0		8.5	10.5	8.5
MASS OF WATER (g)	6.50		6.50		2.00	2.50	2.00
MOISTURE CONTENT %	37.1	37.9	40.6	39.4	23.5	23.8	23.5
No. BLOWS	30		18			23.6	

LINEAR SHRINKAGE	11
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	13.2
LINEAR SHRINKAGE %	6.1
LIQUID LIMIT (LL) %	38.6
PLASTIC LIMIT (PL) %	23.6
PLASTICITY INDEX (PI)	15
NATURAL MOISTURE CONTENT %	8.3
FINENESS INDEX	750



REMARKS: SAMPLED FROM TRIAL PIT 08 @ 2.500-4.000M. SOLAR PV SITE INVESTIGATION



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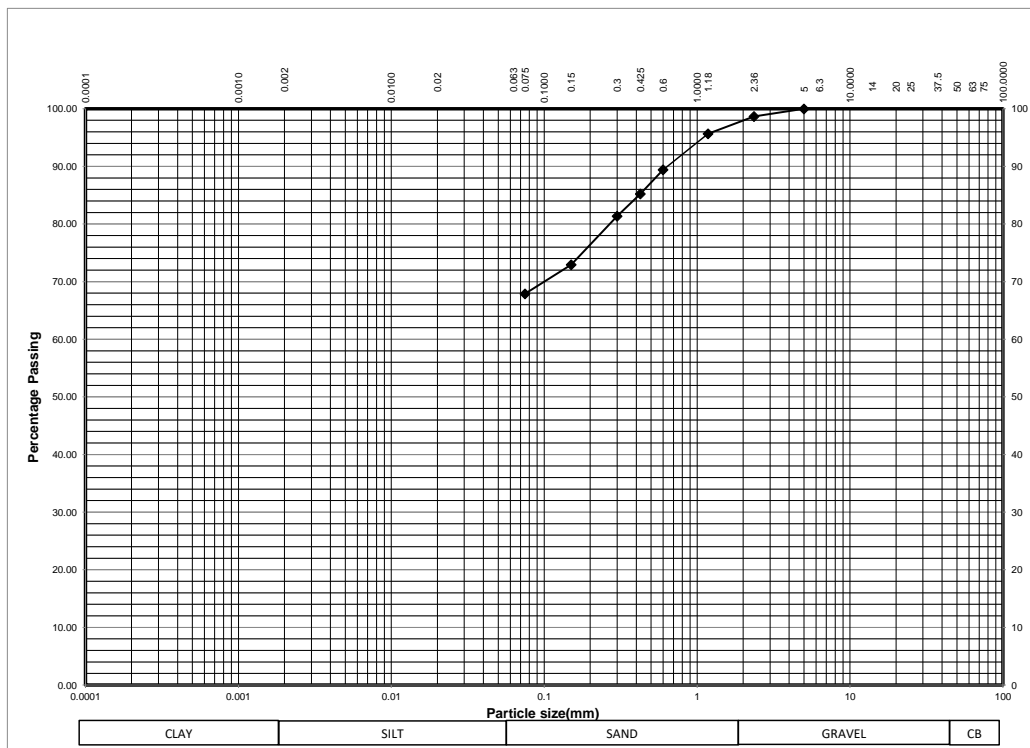
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LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP08 / G023 / 30APR19		
SAMPLED BY: GEOCONSULT LAB TEAM		DATE: 30 / 04 / 2019	TIME: 16:28	
LOCATION:	EASTING	NORTHING	ELEVATION	DEPTH (m)
GOLOMOTI - SOLAR PV	0 673 025	8 402 675	(m)	0.100-0.800
TYPE OF MATERIAL: MOIST DARK BROWN SANDY SILTY CLAY				
TESTED BY: C. NDALAMA		DATE: 07 - 06 - 2019	TIME: 10:25	
CHECKED BY: G. KACHIWALA		DATE: 08 - 06 - 2019	TIME: 13:30	
APPROVED BY: M. SABELLI		DATE: 08 - 06 - 2019	TIME: 15:00	

PROJECT: GOLOMOTI SOLAR PV **CLIENT: JCM**

SIEVE ANALYSIS (GRADATION) STANDARD: TRH14:1985

SIEVE (mm)	MASS RETAINED	PERCENTAGE			GRADATION SPECIFICATION			ZONE
		RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.500								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300								
5.000	0.00	0.00	100.00	100				
2.360	5.50	1.32	98.68	99				
1.180	18.00	4.33	95.67	96				
0.600	44.00	10.58	89.42	89				
0.425	61.50	14.78	85.22	85				
0.300	77.50	18.63	81.37	81				
0.150	112.50	27.04	72.96	73				
0.075	133.50	32.09	67.91	68				
0 pan	282.50	67.91						
TOTAL (g)	416.00							



REMARKS: SAMPLED FROM TRIAL PIT 08 @ 0.100-0.800M. SOLAR PV SITE INVESTIGATION

PAGE No.



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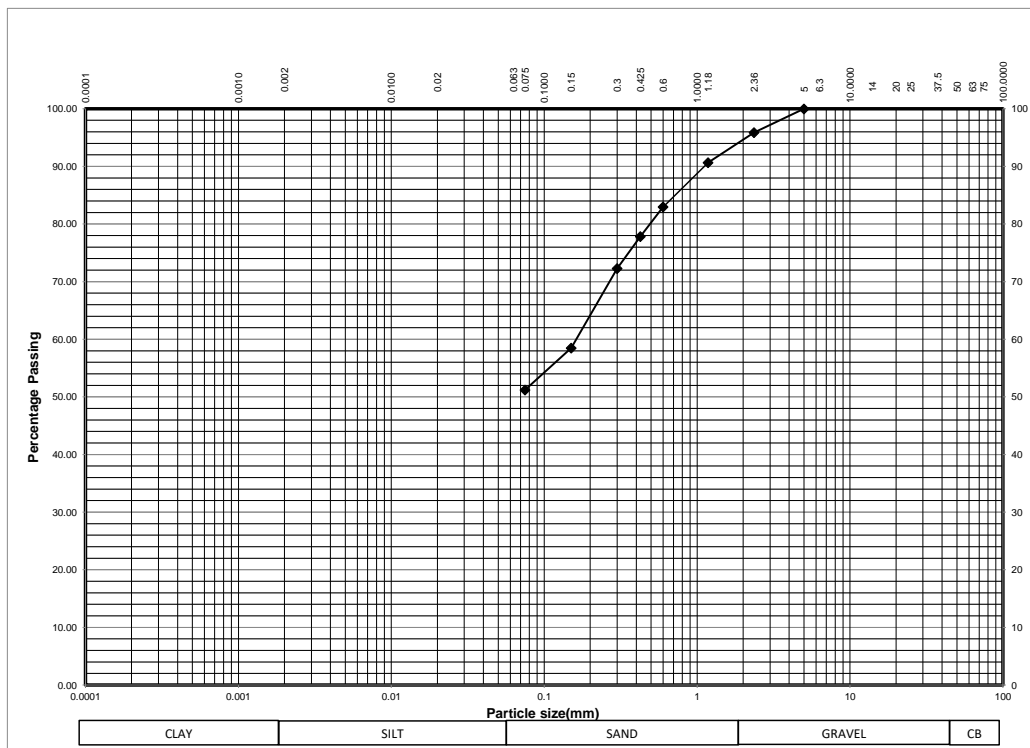
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LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP08 / G024 / 30APR19		
SAMPLED BY: GEOCONSULT LAB TEAM		DATE: 30 / 04 / 2019	TIME: 16:28	
LOCATION:	EASTING	NORTHING	ELEVATION	DEPTH (m)
GOLOMOTI - SOLAR PV	0 673 025	8 402 675	(m)	0.800-2.500
TYPE OF MATERIAL: MOIST BROWN GRAVELLY SANDY SILTY CLAY WITH SPOTS OF HARD AND WHITISH DECOMPOSED ROCK				
TESTED BY: C. NDALAMA		DATE: 07 - 06 - 2019	TIME: 10:55	
CHECKED BY: G. KACHIWALA		DATE: 08 - 06 - 2019	TIME: 13:30	
APPROVED BY: M. SABELLI		DATE: 08 - 06 - 2019	TIME: 15:00	

PROJECT: GOLOMOTI SOLAR PV **CLIENT: JCM**

SIEVE ANALYSIS (GRADATION) STANDARD: TRH14:1985

SIEVE (mm)	MASS RETAINED	PERCENTAGE			GRADATION SPECIFICATION			ZONE
		RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.500								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300								
5.000	0.00	0.00	100.00	100				
2.360	18.50	4.12	95.88	96				
1.180	42.00	9.35	90.65	91				
0.600	76.50	17.04	82.96	83				
0.425	99.50	22.16	77.84	78				
0.300	124.50	27.73	72.27	72				
0.150	186.50	41.54	58.46	58				
0.075	219.00	48.78	51.22	51				
0 pan	230.00	51.22						
TOTAL (g)	449.00							



REMARKS: SAMPLED FROM TRIAL PIT 08 @ 0.800-2.500M. SOLAR PV SITE INVESTIGATION

PAGE No.



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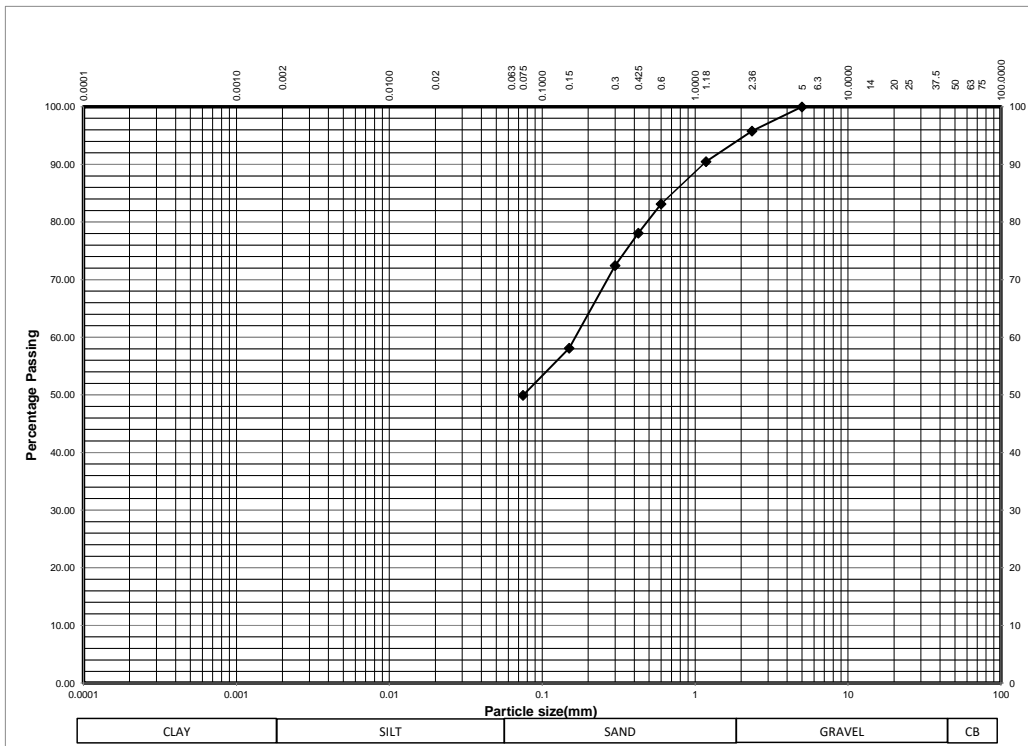
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP08 / G024 / 30APR19		
SAMPLED BY: GEOCONSULT LAB TEAM		DATE: 30 / 04 / 2019	TIME: 16:28	
LOCATION:	EASTING	NORTHING	ELEVATION	DEPTH (m)
GOLOMOTI - SOLAR PV	0 673 025	8 402 675	(m)	2.500-4.000
TYPE OF MATERIAL: MOIST BROWN GRAVELLY SANDY SILTY CLAY WITH SPOTS OF HARD AND WHITISH DECOMPOSED ROCK				
TESTED BY: C. NDALAMA		DATE: 07 - 06 - 2019	TIME: 14:25	
CHECKED BY: G. KACHIWALA		DATE: 08 - 06 - 2019	TIME: 13:30	
APPROVED BY: M. SABELLI		DATE: 08 - 06 - 2019	TIME: 15:00	

PROJECT: GOLOMOTI SOLAR PV **CLIENT: JCM**


SIEVE ANALYSIS (GRADATION) STANDARD: TRH14:1985


SIEVE (mm)	MASS RETAINED	PERCENTAGE			GRADATION SPECIFICATION			ZONE
		RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.500								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300								
5.000	0.00	0.00	100.00	100				
2.360	17.50	4.21	95.79	96				
1.180	39.50	9.51	90.49	90				
0.600	70.00	16.85	83.15	83				
0.425	91.00	21.90	78.10	78				
0.300	114.50	27.56	72.44	72				
0.150	174.00	41.88	58.12	58				
0.075	208.00	50.06	49.94	50				
0 pan	207.50	49.94						
TOTAL (g)	415.50							




REMARKS: SAMPLED FROM TRIAL PIT 08 @ 2.500-4.000M. SOLAR PV SITE INVESTIGATION

PAGE No.

 GEOCONSULT +265 0888 846 543 sabelli@geoconsult.cc	LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP08 / NMC023 / 30APR19		
	SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 30 - 04 - 2019	TIME: 16:28	
	LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
	GOLOMOTI - SOLAR PV	0 673 025	8 402 675	(m)	0.100-0.800
	TYPE OF MATERIAL: MOIST DARK BROWN SANDY SILTY CLAY				
TESTED BY: C. NDALAMA		DATE: 05 - 05 - 2019	TIME: 13:38		
CHECKED BY: G. KACHIWALA		DATE: 06 - 05 - 2019	TIME: 09:46		
APPROVED BY: M. SABELLI		DATE: 06 - 05 - 2019	TIME: 10:00		
PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM		
NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: ASTM D7263					
MASS OF WET SOIL + CONTAINER (g)		370.5			
MASS OF DRY SOIL AND CONTAINER (g)		340.5			
CONTAINER No.		GC12			
MASS OF CONTAINER (g)		69.5			
MASS OF DRY SOIL (g)		271.0			
MASS OF WATER (g)		30.0			
MOISTURE CONTENT %		11.1			
AVERAGE MOISTURE CONTENT %		11.1			
REMARKS: SAMPLED FROM TRIAL PIT 07 @0.100-0.800M. SOLAR PV SITE INVESTIGATION				PAGE No.	

 GEOCONSULT +265 0888 846 543 sabelli@geoconsult.cc	LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP08 / NMC024 / 30APR19		
	SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 30 - 04 - 2019	TIME: 16:28	
	LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
	GOLOMOTI - SOLAR PV	0 673 025	8 402 675	(m)	0.800-2.500
	TYPE OF MATERIAL: MOIST BROWN GRAVELLY SANDY SILTY CLAY WITH SPOTS OF HARD AND WHITISH DECOMPOSED ROCK				
	TESTED BY: C. NDALAMA		DATE: 05 - 05 - 2019	TIME: 13:38	
	CHECKED BY: G. KACHIWALA		DATE: 06 - 05 - 2019	TIME: 09:46	
	APPROVED BY: M. SABELLI		DATE: 06 - 05 - 2019	TIME: 10:00	
	PROJECT: GOLOMOTI SOLAR PV		CLIENT: JCM		
	NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: ASTM D7263				
MASS OF WET SOIL + CONTAINER (g)		386.5			
MASS OF DRY SOIL AND CONTAINER (g)		360.0			
CONTAINER No.		GC2B			
MASS OF CONTAINER (g)		73.0			
MASS OF DRY SOIL (g)		287.0			
MASS OF WATER (g)		26.5			
MOISTURE CONTENT %		9.2			
AVERAGE MOISTURE CONTENT %		9.2			
REMARKS: SAMPLED FROM TRIAL PIT 07 @0.800-2.500M. SOLAR PV SITE INVESTIGATION				PAGE No.	

 GEOCONSULT +265 0888 846 543 sabelli@geoconsult.cc	LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP08 / NMC025 / 30APR19		
	SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 30 - 04 - 2019	TIME: 16:28	
	LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
	GOLOMOTI - SOLAR PV	0 673 025	8 402 675	(m)	2.500-4.000
	TYPE OF MATERIAL: MOIST BROWN REDDISH SANDY SILTY LATERITE GRAVEL				
	TESTED BY: C. NDALAMA		DATE: 05 - 05 - 2019	TIME: 13:38	
	CHECKED BY: G. KACHIWALA		DATE: 06 - 05 - 2019	TIME: 09:46	
APPROVED BY: M. SABELLI		DATE: 06 - 05 - 2019	TIME: 10:00		
PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM		
NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: ASTM D7263					
MASS OF WET SOIL + CONTAINER (g)			347.5		
MASS OF DRY SOIL AND CONTAINER (g)			326.5		
CONTAINER No.			GC1		
MASS OF CONTAINER (g)			74.0		
MASS OF DRY SOIL (g)			252.5		
MASS OF WATER (g)			21.0		
MOISTURE CONTENT %			8.3		
AVERAGE MOISTURE CONTENT %			8.3		
REMARKS: SAMPLED FROM TRIAL PIT 07 @2.500-4.000M. SOLAR PV SITE INVESTIGATION					PAGE No.



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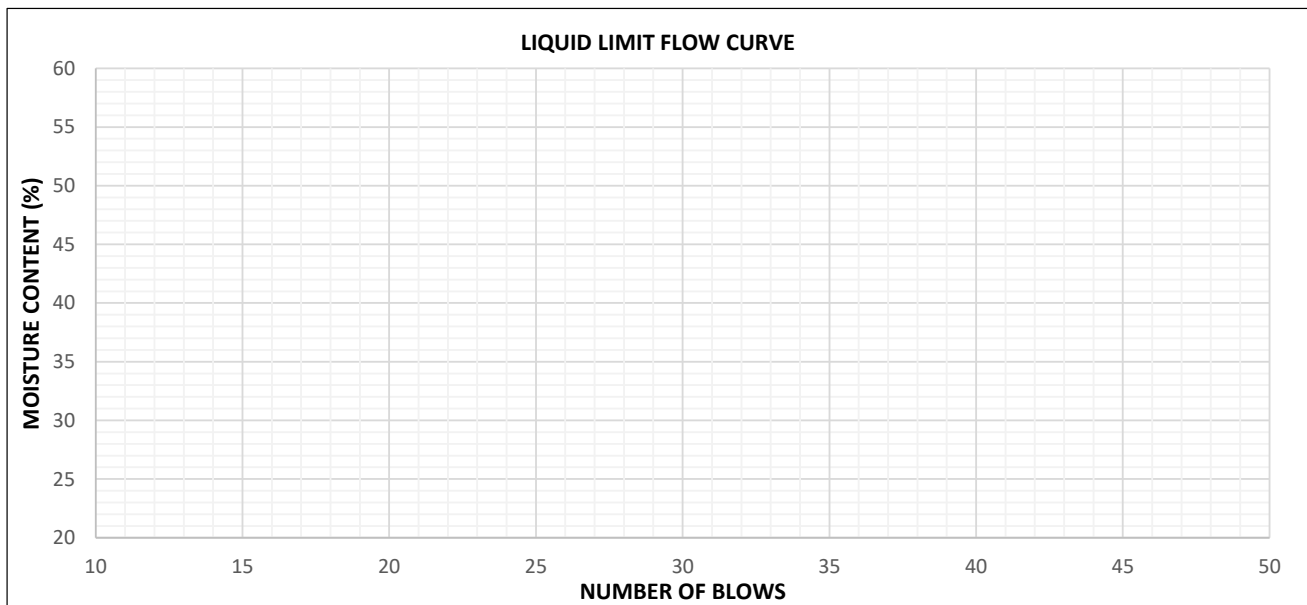
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP08 / AL023 / 30APR19	
SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 30 - 04 - 2019	TIME: 16:28
LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION
GOLOMOTI - SOLAR PV	0 673 025	8 402 675	(m)
DEPTH (m) 0.100-0.800			
TYPE OF MATERIAL: MOIST DARK BROWN SANDY SILTY CLAY			
TESTED BY: M. MILANZI		DATE: 28 - 05 - 2019	TIME: 11:52
CHECKED BY: G. KACHIWALA		DATE: 31 - 05 - 2019	TIME: 09:35
APPROVED BY: M. SABELLI		DATE: 31 - 05 - 2019	TIME: 14:18
PROJECT: GOLOMOTI SOLAR PV		CLIENT: JCM	

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
	1	2	3	4	1	2	3
TEST No.							
CONTAINER No.	R20		C13		C1	R10	R17
MASS OF WET SOIL + CONTAINER(g)	44.5		41.5		46.0	42.0	44.0
MASS OF DRY SOIL + CONTAINER(g)	39.5		37.0		44.0	40.0	41.0
MASS OF CONTAINER (g)	28		28		35	31.5	27.5
MASS OF DRY SOIL (g)	11.5		9.0		9.0	8.5	13.5
MASS OF WATER (g)	5.00		4.50		2.00	2.00	3.00
MOISTURE CONTENT %	43.5	43.5	50.0	49.5	22.2	23.5	22.2
No. BLOWS	26		23			22.7	

LINEAR SHRINKAGE	14
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	12.4
LINEAR SHRINKAGE %	12.9
LIQUID LIMIT (LL) %	46.5
PLASTIC LIMIT (PL) %	22.7
PLASTICITY INDEX (PI)	24
NATURAL MOISTURE CONTENT %	11.1
FINENESS INDEX	1632



REMARKS: SAMPLED FROM TRIAL PIT 08 @ 0.100-0.800M. SOLAR PV SITE INVESTIGATION



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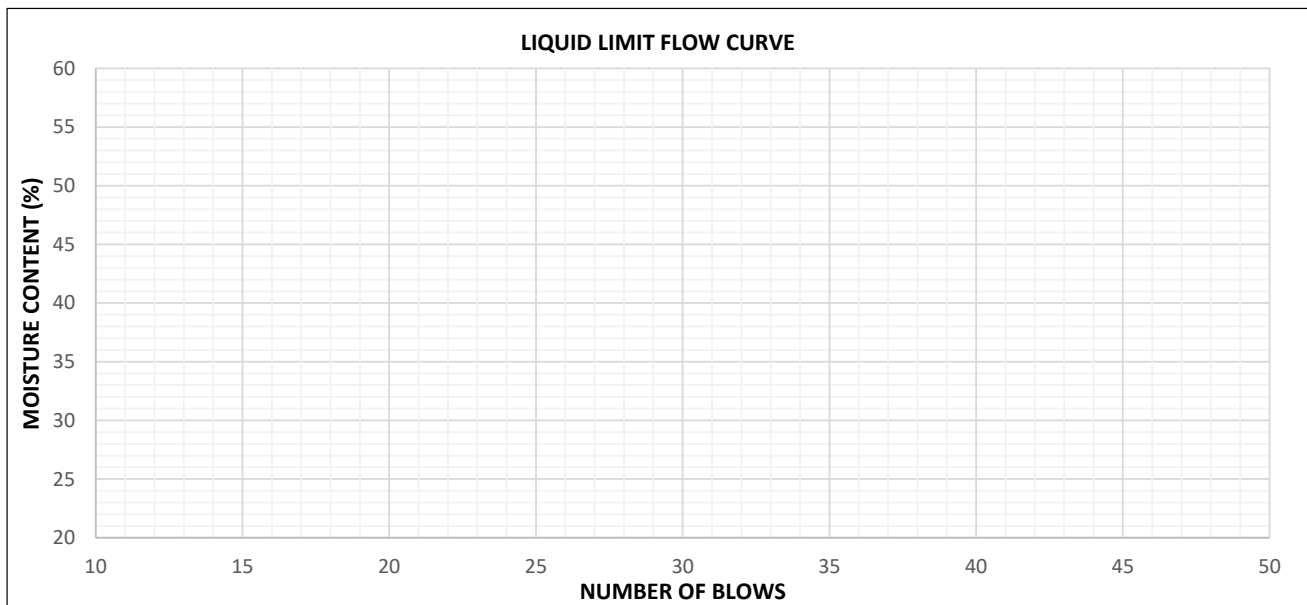
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LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP08 / AL024 / 30APR19	
SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 30 - 04 - 2019	TIME: 16:28
LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION
GOLOMOTI - SOLAR PV	0 673 025	8 402 675	(m)
DEPTH (m) 0.800-2.500			
TYPE OF MATERIAL: MOIST BROWN GRAVELLY SANDY SILTY CLAY WITH SPOTS OF HARD AND WHITISH DECOMPOSED ROCK			
TESTED BY: M. MILANZI		DATE: 28 - 05 - 2019	TIME: 08:18
CHECKED BY: S. THANGATO		DATE: 31 - 05 - 2019	TIME: 09:35
APPROVED BY: M. SABELLI		DATE: 31 - 05 - 2019	TIME: 14:18
PROJECT: GOLOMOTI SOLAR PV		CLIENT: JCM	

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
	1	2	3	4	1	2	3
TEST No.							
CONTAINER No.	R27		C14		C31	C8	R4
MASS OF WET SOIL + CONTAINER(g)	44.0		46.5		42.5	41.5	43.5
MASS OF DRY SOIL + CONTAINER(g)	40.0		42.0		40.5	39.5	41.5
MASS OF CONTAINER (g)	29.5		31		30	29	31
MASS OF DRY SOIL (g)	10.5		11.0		10.5	10.5	10.5
MASS OF WATER (g)	4.00		4.50		2.00	2.00	2.00
MOISTURE CONTENT %	38.1	38.1	40.9	39.3	19.0	19.0	19.0
No. BLOWS	26		16			19.0	

LINEAR SHRINKAGE	5
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	12.8
LINEAR SHRINKAGE %	9.4
LIQUID LIMIT (LL) %	38.7
PLASTIC LIMIT (PL) %	19.0
PLASTICITY INDEX (PI)	20
NATURAL MOISTURE CONTENT %	9.2
FINENESS INDEX	1020



REMARKS: SAMPLED FROM TRIAL PIT 08 @ 0.800-2.500M. SOLAR PV SITE INVESTIGATION

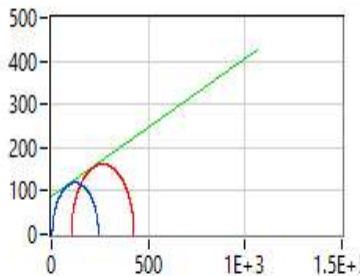
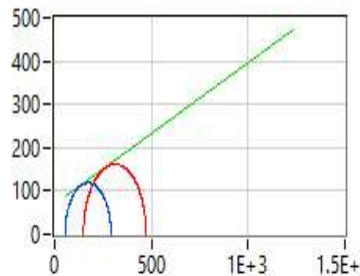
Triaxial test - UU BS 1377 part 7, 1377 part 8				
	Site :	GOLOMOTI SOLAR PV	Levy date :	24-Jun-19
	Technician's name :		Date of test :	24-Jun-19
GEOCONSULT LIMITED P.O. BOX 40 LILONGWE	File N° :	23	Survey depth (m) :	1.000
	Survey N° :	TRIAL PIT No. 8	Level of water (m) :	
	Kind of soil :	MOIST BROWN REDDISH SANDY SILTY LATERITE GRAVEL		

Identification of samples :

Ovo, Total stress of the soil in situ (kPa) : 0.000	Uo, Pore pressure of the soil in situ (kPa) : 0.000
Category of soil : Steep/Strongly overconsolidated	Kind of drainage : Without lateral drain
ρ_s , Grain density (kg/m ³) : 0.000	
S_m : <input type="checkbox"/>	S_d : <input type="checkbox"/>

Samples before test :									Samples after saturation :		
N°	Hi (mm)	Di (mm)	mi (g)	ρ_i (kg/m ³)	ρ_{di} (kg/m ³)	wi (%)	ei	Si (%)	Ucp (kPa)	ΔV_{sat} (mm ³)	B (%)
1	76.00	38	177.0	2054	1700	20.82	-1.000	-0.000		0.000	0.000
2	76.00	38	172.5	2001	1659	20.63	-1.000	-0.000		0.000	0.000

Samples after consolidation :							Samples after shearing							
N°	Hs (mm)	Ds (mm)	ΔV_s (mm ³)	T100 (min)	Vmax (μ m/min)	σ'_c (kPa)	Hf (mm)	Df (mm)	mf (g)	md (g)	wf (%)	ρ_{df} (kg/m ³)	ef	Srf (%)
1	76.00	38.00	0.000	0.000	0.000	0.000	76.00	38.00	176.5	146.5	20.48	1700	-1.000	-0.000
2	76.00	38.00	0.000	0.000	0.000	0.000	76.00	38.00	171.5	143.0	19.93	1659	-1.000	-0.000

Total stress :	Effective stress :	Comments :												
 <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><th colspan="2">Mohr</th></tr> <tr><td>C (kPa)</td><td>85.55</td></tr> <tr><td>ϕ (°)</td><td>17.75</td></tr> </table>	Mohr		C (kPa)	85.55	ϕ (°)	17.75	 <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><th>Mohr</th><th>Lambe</th></tr> <tr><td>C' (kPa)</td><td>68.34 / 64.93</td></tr> <tr><td>ϕ' (°)</td><td>18.18 / 17.33</td></tr> </table>	Mohr	Lambe	C' (kPa)	68.34 / 64.93	ϕ' (°)	18.18 / 17.33	<p>Visa :</p>
Mohr														
C (kPa)	85.55													
ϕ (°)	17.75													
Mohr	Lambe													
C' (kPa)	68.34 / 64.93													
ϕ' (°)	18.18 / 17.33													
		p.1/3												

3.12 Trial Pit 09



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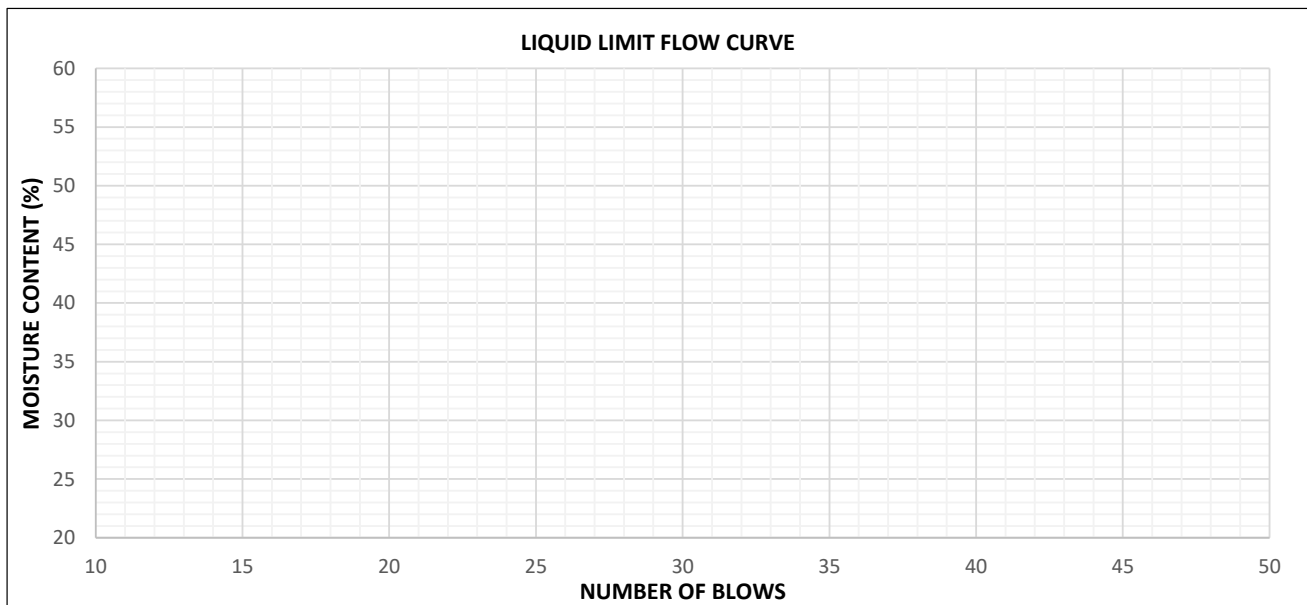
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP09 / AL028 / 01MAY19	
SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 01 - 05 - 2019	TIME: 09:59
LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION
GOLOMOTI - SOLAR PV	0 673 013	8 402 587	(m)
DEPTH (m) 2.500-4.000			
TYPE OF MATERIAL: MOIST BROWN REDDISH STIFF LATERITE GRAVELLEY SANDY SILTY CLAY			
TESTED BY: M. MILANZI		DATE: 24 - 05 - 2019	TIME: 11:52
CHECKED BY: G. KACHIWALA		DATE: 31 - 05 - 2019	TIME: 09:35
APPROVED BY: M. SABELLI		DATE: 31 - 05 - 2019	TIME: 14:18
PROJECT: GOLOMOTI SOLAR PV		CLIENT: JCM	

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
	1	2	3	4	1	2	3
TEST No.							
CONTAINER No.	R30		C11		R24	K2	C15
MASS OF WET SOIL + CONTAINER(g)	57.0		57.0		45.5	40.5	46.5
MASS OF DRY SOIL + CONTAINER(g)	49.5		48.5		43.5	38.5	44.0
MASS OF CONTAINER (g)	29		29		32.5	27.5	30.5
MASS OF DRY SOIL (g)	20.5		19.5		11.0	11.0	13.5
MASS OF WATER (g)	7.50		8.50		2.00	2.00	2.50
MOISTURE CONTENT %	36.6	36.2	43.6	41.8	18.2	18.2	18.5
No. BLOWS	23		16			18.3	

LINEAR SHRINKAGE	1
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	12.5
LINEAR SHRINKAGE %	12.0
LIQUID LIMIT (LL) %	39.0
PLASTIC LIMIT (PL) %	18.3
PLASTICITY INDEX (PI)	21
NATURAL MOISTURE CONTENT %	9.9
FINENESS INDEX	1344



REMARKS: SAMPLED FROM TRIAL PIT 09 @ 2.500-4.000M. SOLAR PV SITE INVESTIGATION



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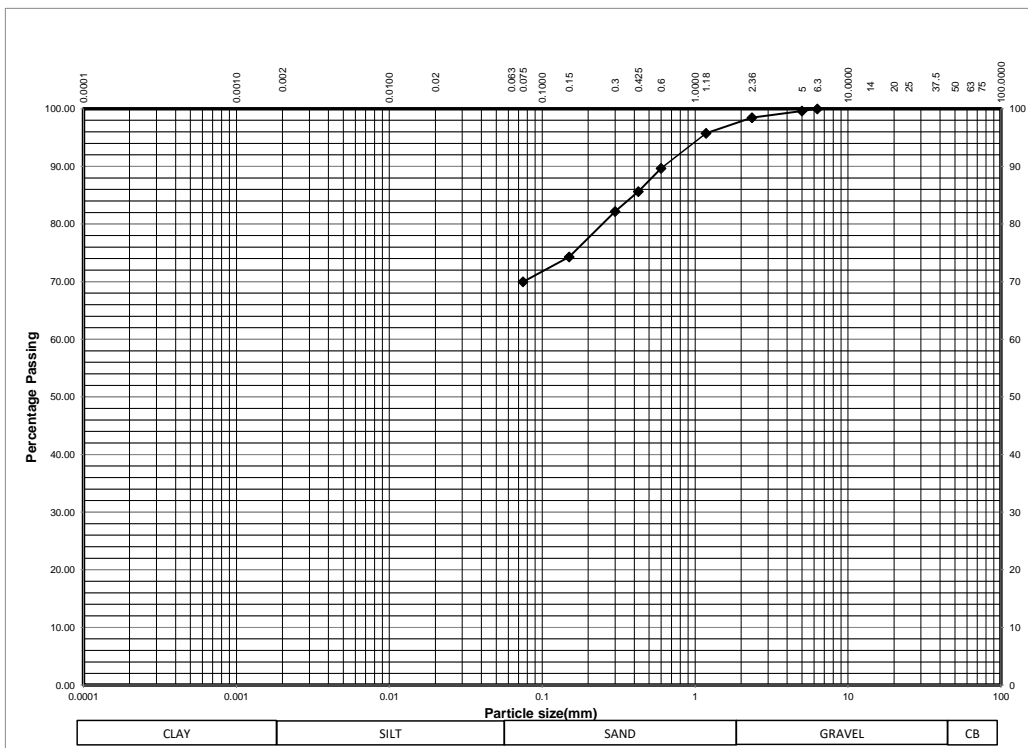
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP09 / G026 / 01MAY19		
SAMPLED BY: GEOCONSULT LAB TEAM		DATE: 01 / 05 / 2019	TIME: 09:10	
LOCATION:	EASTING	NORTHING	ELEVATION	DEPTH (m)
GOLOMOTI - SOLAR PV	0 673 013	8 402 587	(m)	0.100-1.000
TYPE OF MATERIAL: MOIST DARK GREY SANDY SILTY CLAY				
TESTED BY: G. KONDE		DATE: 25 - 05 - 2019	TIME: 11:20	
CHECKED BY: E. NKHUKU		DATE: 29 - 05 - 2019	TIME: 13:30	
APPROVED BY: M. SABELLI		DATE: 29 - 05 - 2019	TIME: 15:00	

PROJECT: GOLOMOTI SOLAR PV **CLIENT: JCM**

SIEVE ANALYSIS (GRADATION) STANDARD: TRH14:1985

SIEVE (mm)	MASS RETAINED	PERCENTAGE			GRADATION SPECIFICATION			ZONE
		RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.500								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300	0.00	0.00	100.00	100				
5.000	2.00	0.40	99.60	100				
2.360	7.50	1.52	98.48	98				
1.180	21.00	4.25	95.75	96				
0.600	51.00	10.31	89.69	90				
0.425	71.00	14.36	85.64	86				
0.300	88.00	17.80	82.20	82				
0.150	127.00	25.68	74.32	74				
0.075	148.50	30.03	69.97	70				
0 pan	346.00	69.97						
TOTAL (g)	494.50							



REMARKS: SAMPLED FROM TRIAL PIT 09 @ 0.100-1.000M. SOLAR PV SITE INVESTIGATION

PAGE No.



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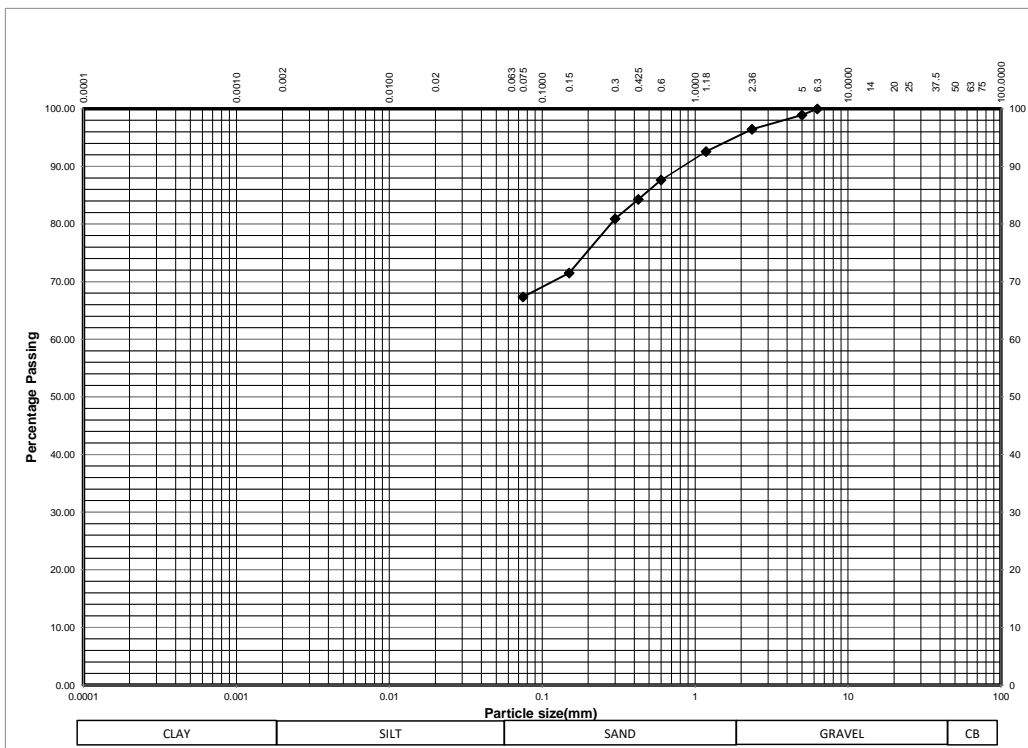
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP09 / G027 / 01MAY19		
SAMPLED BY: GEOCONSULT LAB TEAM		DATE: 01 / 05 / 2019	TIME: 09:42	
LOCATION:	EASTING	NORTHING	ELEVATION	DEPTH (m)
GOLOMOTI - SOLAR PV	0 673 013	8 402 587	(m)	1.000-2.500
TYPE OF MATERIAL: MOIST BROWN STIFF GRAVELLEY SANDY SILTY CLAY CONTAINS SPOTS OF WHITISH DECOMPOSED ROCK				
TESTED BY: G. KONDE		DATE: 25 - 05 - 2019	TIME: 11:20	
CHECKED BY: E. NKHUKU		DATE: 29 - 05 - 2019	TIME: 13:30	
APPROVED BY: M. SABELLI		DATE: 29 - 05 - 2019	TIME: 15:00	

PROJECT: GOLOMOTI SOLAR PV **CLIENT: JCM**

SIEVE ANALYSIS (GRADATION) STANDARD: TRH14:1985

SIEVE (mm)	MASS RETAINED	PERCENTAGE			GRADATION SPECIFICATION			ZONE
		RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.500								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300	0.00	0.00	100.00	100				
5.000	5.50	1.09	98.91	99				
2.360	18.00	3.56	96.44	96				
1.180	37.50	7.42	92.58	93				
0.600	62.50	12.36	87.64	88				
0.425	79.50	15.73	84.27	84				
0.300	96.50	19.09	80.91	81				
0.150	144.00	28.49	71.51	72				
0.075	165.00	32.64	67.36	67				
0 pan	340.50	67.36						
TOTAL (g)	505.50							



REMARKS: SAMPLED FROM TRIAL PIT 09 @ 1.000-2.500M. SOLAR PV SITE INVESTIGATION

PAGE No.



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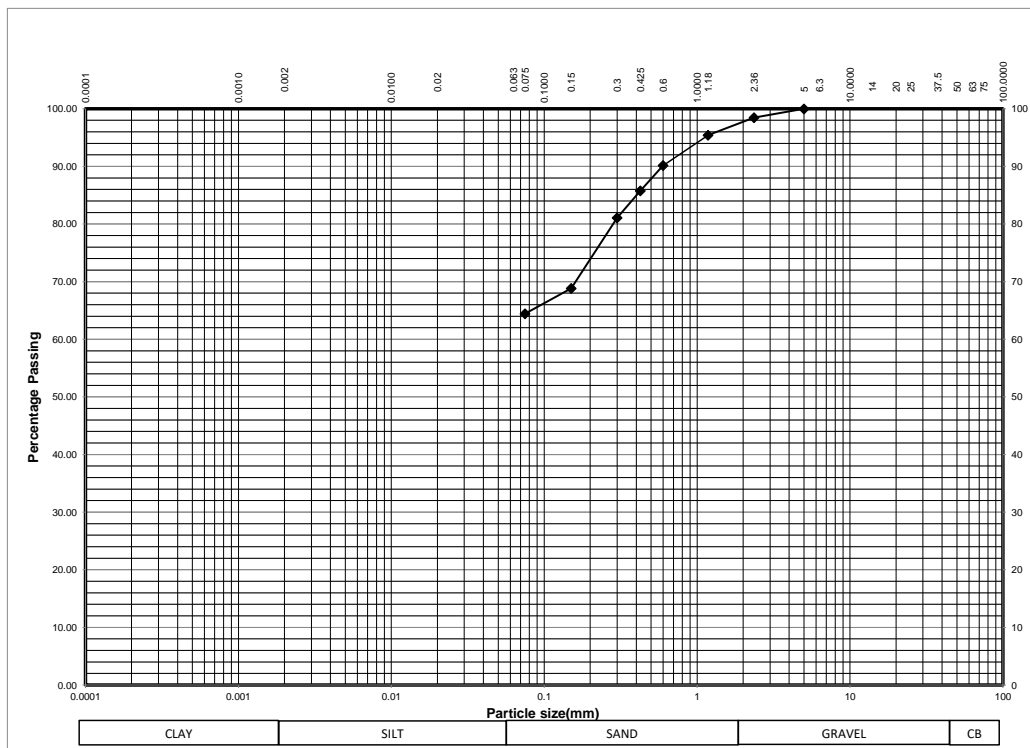
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LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP09 / G028 / 01MAY19		
SAMPLED BY: GEOCONSULT LAB TEAM		DATE: 01 / 05 / 2019	TIME: 09:59	
LOCATION:	EASTING	NORTHING	ELEVATION	DEPTH (m)
GOLOMOTI - SOLAR PV	0 673 013	8 402 587	(m)	2.500-3.700
TYPE OF MATERIAL: MOIST BROWN REDDISH STIFF LATERITE GRAVELLEY SANDY SILTY CLAY				
TESTED BY: G. KONDE		DATE: 25 - 05 - 2019	TIME: 11:20	
CHECKED BY: E. NKHUKU		DATE: 29 - 05 - 2019	TIME: 13:30	
APPROVED BY: M. SABELLI		DATE: 29 - 05 - 2019	TIME: 15:00	

PROJECT: GOLOMOTI SOLAR PV **CLIENT: JCM**


SIEVE ANALYSIS (GRADATION) STANDARD: TRH14:1985


SIEVE (mm)	MASS RETAINED	PERCENTAGE			GRADATION SPECIFICATION			ZONE
		RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.500								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300								
5.000	0.00	0.00	100.00	100				
2.360	7.00	1.53	98.47	98				
1.180	21.00	4.60	95.40	95				
0.600	45.00	9.85	90.15	90				
0.425	65.00	14.22	85.78	86				
0.300	86.50	18.93	81.07	81				
0.150	142.50	31.18	68.82	69				
0.075	162.50	35.56	64.44	64				
0 pan	294.50	64.44						
TOTAL (g)	457.00							




REMARKS: SAMPLED FROM TRIAL PIT 09 @ 2.500-3.700M. SOLAR PV SITE INVESTIGATION

PAGE No.

 GEOCONSULT +265 0888 846 543 sabelli@geoconsult.cc	LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP09 / NMC026 / 01MAY19		
	SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 01 - 05 - 2019	TIME: 09:10	
	LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
	GOLOMOTI - SOLAR PV	0 673 013	8 402 587	(m)	0.200-1.000
	TYPE OF MATERIAL: MOIST DARK GREY SANDY SILTY CLAY				
TESTED BY: C. NDALAMA		DATE: 05 - 05 - 2019	TIME: 13:38		
CHECKED BY: G. KACHIWALA		DATE: 06 - 05 - 2019	TIME: 09:46		
APPROVED BY: M. SABELLI		DATE: 06 - 05 - 2019	TIME: 10:00		
PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM		
NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: ASTM D7263					
MASS OF WET SOIL + CONTAINER (g)		342.5			
MASS OF DRY SOIL AND CONTAINER (g)		318.0			
CONTAINER No.		GCC			
MASS OF CONTAINER (g)		96.0			
MASS OF DRY SOIL (g)		222.0			
MASS OF WATER (g)		24.5			
MOISTURE CONTENT %		11.0			
AVERAGE MOISTURE CONTENT %		11.0			
REMARKS: SAMPLED FROM TRIAL PIT 09 @0.200-1.000M. SOLAR PV SITE INVESTIGATION				PAGE No.	

 GEOCONSULT +265 0888 846 543 sabelli@geoconsult.cc	LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP09 / NMC027 / 01MAY19		
	SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 01 - 05 - 2019	TIME: 09:10	
	LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
	GOLOMOTI - SOLAR PV	0 673 013	8 402 587	(m)	1.000-2.500
	TYPE OF MATERIAL: MOIST BROWN STIFF GRAVELLY SANDY SILTY CLAY CONTAINS SPOTS OF WHITISH DECOMPOSED ROCK				
	TESTED BY: C. NDALAMA		DATE: 05 - 05 - 2019	TIME: 13:38	
	CHECKED BY: G. KACHIWALA		DATE: 06 - 05 - 2019	TIME: 09:46	
	APPROVED BY: M. SABELLI		DATE: 06 - 05 - 2019	TIME: 10:00	
	PROJECT: GOLOMOTI SOLAR PV		CLIENT: JCM		
	NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: ASTM D7263				
MASS OF WET SOIL + CONTAINER (g)		384.5			
MASS OF DRY SOIL AND CONTAINER (g)		354.5			
CONTAINER No.		GC65			
MASS OF CONTAINER (g)		104.0			
MASS OF DRY SOIL (g)		250.5			
MASS OF WATER (g)		30.0			
MOISTURE CONTENT %		12.0			
AVERAGE MOISTURE CONTENT %		12.0			
REMARKS: SAMPLED FROM TRIAL PIT 09 @1.000-2.500M. SOLAR PV SITE INVESTIGATION				PAGE No.	

 GEOCONSULT +265 0888 846 543 sabelli@geoconsult.cc	LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP09 / NMC028 / 01MAY19		
	SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 01 - 05 - 2019	TIME: 09:59	
	LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
	GOLOMOTI - SOLAR PV	0 673 013	8 402 587	(m)	2.500-4.000
	TYPE OF MATERIAL: MOIST BROWN REDDISH STIFF LATERITE GRAVELLY SANDY SILTY CLAY				
	TESTED BY: C. NDALAMA		DATE: 05 - 05 - 2019	TIME: 13:38	
	CHECKED BY: G. KACHIWALA		DATE: 06 - 05 - 2019	TIME: 09:46	
APPROVED BY: M. SABELLI		DATE: 06 - 05 - 2019	TIME: 10:00		
PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM		
NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: ASTM D7263					
MASS OF WET SOIL + CONTAINER (g)		385.5			
MASS OF DRY SOIL AND CONTAINER (g)		358.5			
CONTAINER No.		GCV			
MASS OF CONTAINER (g)		84.5			
MASS OF DRY SOIL (g)		274.0			
MASS OF WATER (g)		27.0			
MOISTURE CONTENT %		9.9			
AVERAGE MOISTURE CONTENT %		9.9			
REMARKS: SAMPLED FROM TRIAL PIT 09 @2.500-4.000M. SOLAR PV SITE INVESTIGATION				PAGE No.	



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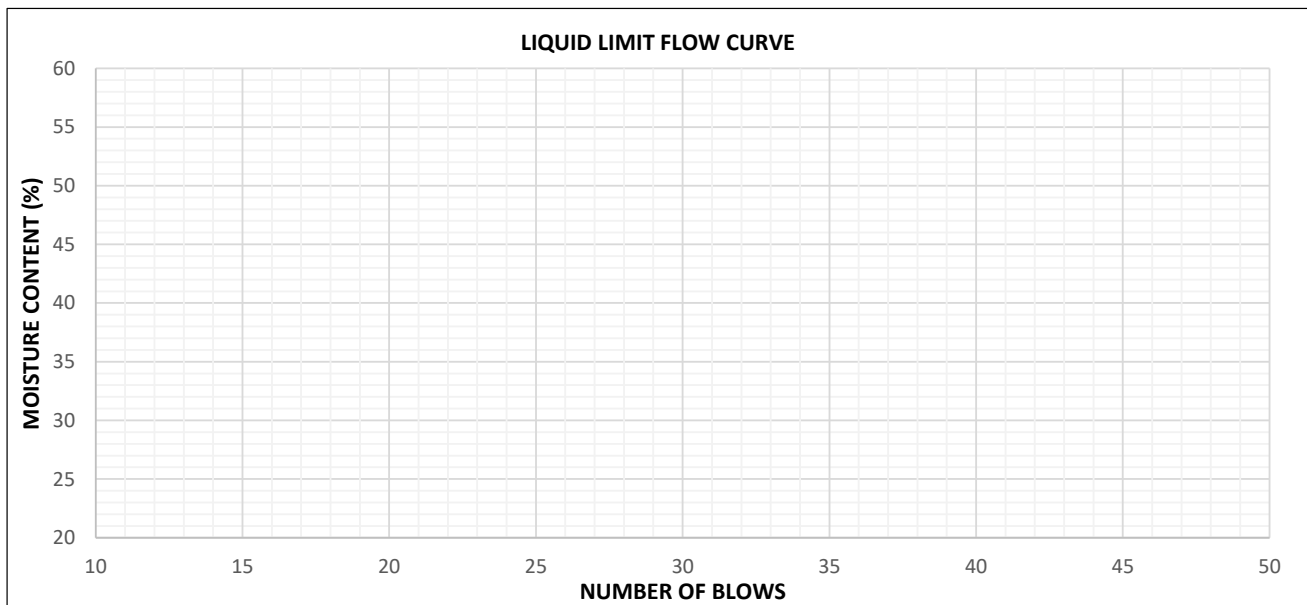
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP09 / AL026 / 01MAY19	
SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 01 - 05 - 2019	TIME: 09:10
LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION
GOLOMOTI - SOLAR PV	0 673 013	8 402 587	(m)
DEPTH (m) 0.200-1.000			
TYPE OF MATERIAL: MOIST DARK GREY SANDY SILTY CLAY			
TESTED BY: M. MILANZI		DATE: 24 - 05 - 2019	TIME: 14:05
CHECKED BY: G. KACHIWALA		DATE: 31 - 05 - 2019	TIME: 09:35
APPROVED BY: M. SABELLI		DATE: 31 - 05 - 2019	TIME: 14:18
PROJECT: GOLOMOTI SOLAR PV		CLIENT: JCM	

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
	1	2	3	4	1	2	3
TEST No.							
CONTAINER No.	R7		C8		C18	C25	C4
MASS OF WET SOIL + CONTAINER(g)	53.0		59.5		36.0	35.0	35.5
MASS OF DRY SOIL + CONTAINER(g)	46.5		50.5		34.5	33.0	34.0
MASS OF CONTAINER (g)	29.5		29		26.5	22	25.5
MASS OF DRY SOIL (g)	17.0		21.5		8.0	11.0	8.5
MASS OF WATER (g)	6.50		9.00		1.50	2.00	1.50
MOISTURE CONTENT %	38.2	39.0	41.9	40.2	18.8	18.2	17.6
No. BLOWS	30		16			18.2	

LINEAR SHRINKAGE	8
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	12.3
LINEAR SHRINKAGE %	13.8
LIQUID LIMIT (LL) %	39.6
PLASTIC LIMIT (PL) %	18.2
PLASTICITY INDEX (PI)	21
NATURAL MOISTURE CONTENT %	11.0
FINENESS INDEX	1470



REMARKS: SAMPLED FROM TRIAL PIT 09 @ 0.200-1.000M. SOLAR PV SITE INVESTIGATION



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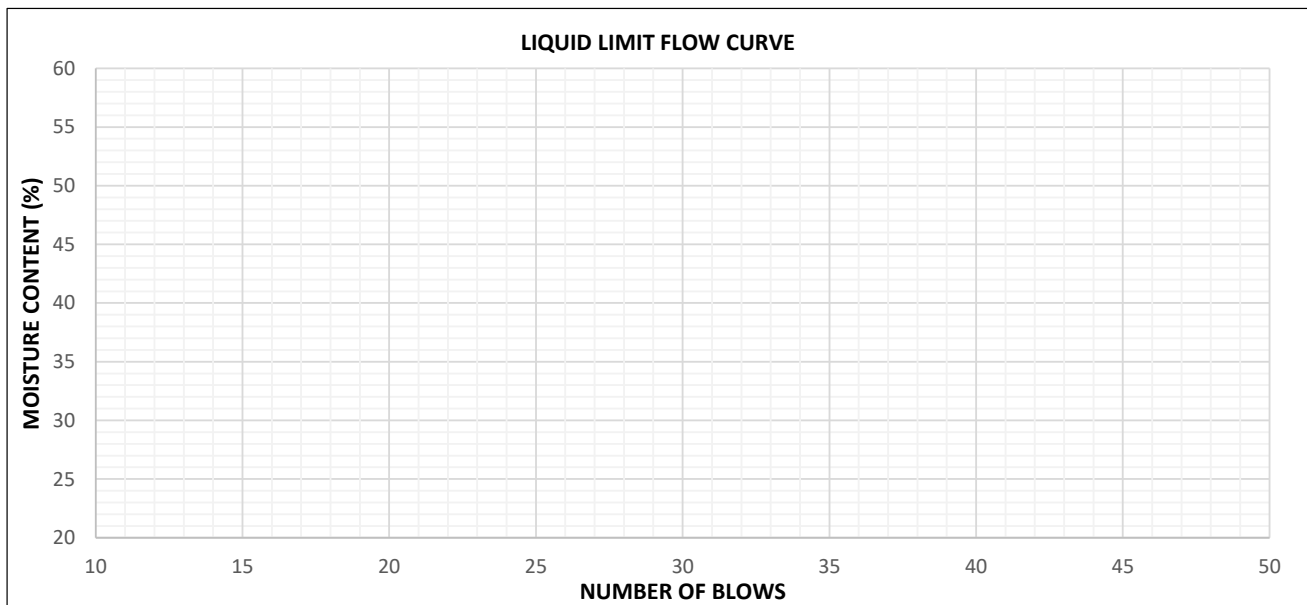
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LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP09 / AL027 / 01MAY19	
SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 01 - 05 - 2019	TIME: 09:42
LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION
GOLOMOTI - SOLAR PV	0 673 013	8 402 587	(m)
DEPTH (m) 1.000-2.500			
TYPE OF MATERIAL: MOIST BROWN STIFF GRAVELLEY SANDY SILTY CLAY CONTAINS SPOTS OF WHITISH DECOMPOSED ROCK			
TESTED BY: M. MILANZI		DATE: 24 - 05 - 2019	TIME: 11:52
CHECKED BY: G. KACHIWALA		DATE: 31 - 05 - 2019	TIME: 09:35
APPROVED BY: M. SABELLI		DATE: 31 - 05 - 2019	TIME: 14:18
PROJECT: GOLOMOTI SOLAR PV		CLIENT: JCM	

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
	1	2	3	4	1	2	3
TEST No.							
CONTAINER No.	C31		C2		C26	R13	K29
MASS OF WET SOIL + CONTAINER(g)	46.5		55.5		36.5	38.5	36.5
MASS OF DRY SOIL + CONTAINER(g)	41.5		46.5		35.5	37.5	35.5
MASS OF CONTAINER (g)	30		26		29	31	29
MASS OF DRY SOIL (g)	11.5		20.5		6.5	6.5	6.5
MASS OF WATER (g)	5.00		9.00		1.00	1.00	1.00
MOISTURE CONTENT %	43.5	43.5	43.9	41.7	15.4	15.4	15.4
No. BLOWS	25		15			15.4	

LINEAR SHRINKAGE	6
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	12.4
LINEAR SHRINKAGE %	12.9
LIQUID LIMIT (LL) %	42.6
PLASTIC LIMIT (PL) %	15.4
PLASTICITY INDEX (PI)	27
NATURAL MOISTURE CONTENT %	12.0
FINENESS INDEX	1809



REMARKS: SAMPLED FROM TRIAL PIT 09 @ 1.000-2.500M. SOLAR PV SITE INVESTIGATION

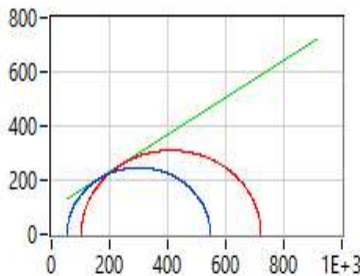
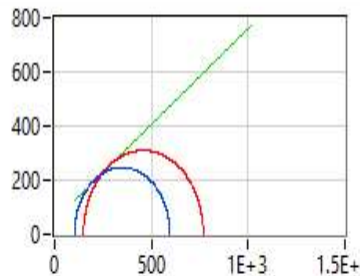
Triaxial test - UU BS 1377 part 7, 1377 part 8				
	Site :	GOLOMOTI SOLAR PV	Levy date :	24-Jun-19
	Technician's name :		Date of test :	24-Jun-19
GEOCONSULT LIMITED P.O. BOX 40 LILONGWE	File N° :	22	Survey depth (m) :	
	Survey N° :	TRIAL PIT No. 09	Level of water (m) :	
	Kind of soil :	MOIST BROWN STIFF GRAVELLY SANDY SILTY CLAY CONTAINS SPOTS OF WHITISH		

Identification of samples :

Ovo, Total stress of the soil in situ (kPa) : 0.000	Uo, Pore pressure of the soil in situ (kPa) : 0.000
Category of soil : Steep/Strongly overconsolidated	Kind of drainage : Without lateral drain
ρ_s , Grain density (kg/m ³) : 0.000	
S_m : <input type="checkbox"/>	S_d : <input type="checkbox"/>

Samples before test :									Samples after saturation :		
N°	Hi (mm)	Di (mm)	mi (g)	ρ_i (kg/m ³)	ρ_{di} (kg/m ³)	wi (%)	ei	Si (%)	Ucp (kPa)	ΔV_{sat} (mm ³)	B (%)
1	75.00	38	160.0	1881	1593	18.08	-1.000	-0.000		0.000	0.000
2	75.00	38	165.0	1940	1646	17.86	-1.000	-0.000		0.000	0.000

Samples after consolidation :							Samples after shearing							
N°	Hs (mm)	Ds (mm)	ΔV_s (mm ³)	T100 (min)	Vmax ($\mu\text{m}/\text{min}$)	σ'_c (kPa)	Hf (mm)	Df (mm)	mf (g)	md (g)	wf (%)	ρ_{df} (kg/m ³)	ef	Srf (%)
1	75.00	38.00	0.000	0.000	0.000	0.000	75.00	38.00	160.0	135.5	18.08	1593	-1.000	-0.000
2	75.00	38.00	0.000	0.000	0.000	0.000	75.00	38.00	165.0	140.0	17.86	1646	-1.000	-0.000

Total stress :	Effective stress :	Comments :															
 <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="2">Mohr</th> </tr> </thead> <tbody> <tr> <td>C (kPa)</td> <td>92.88</td> </tr> <tr> <td>ϕ (°)</td> <td>34.49</td> </tr> </tbody> </table>	Mohr		C (kPa)	92.88	ϕ (°)	34.49	 <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th></th> <th>Mohr</th> <th>Lambe</th> </tr> </thead> <tbody> <tr> <td>C' (kPa)</td> <td>55.97</td> <td>45.76</td> </tr> <tr> <td>ϕ' (°)</td> <td>35.16</td> <td>29.94</td> </tr> </tbody> </table>		Mohr	Lambe	C' (kPa)	55.97	45.76	ϕ' (°)	35.16	29.94	<div style="border: 1px solid black; height: 100px; width: 100%;"></div>
Mohr																	
C (kPa)	92.88																
ϕ (°)	34.49																
	Mohr	Lambe															
C' (kPa)	55.97	45.76															
ϕ' (°)	35.16	29.94															
Visa :		p.1/3															

Triaxial test - UU BS 1377 part 7, 1377 part 8	
Site :	GOLOMOTI SOLAR PV
Levy date :	14-Jun-19
Technician's name :	Date of test :
	14-Jun-19
File N° :	13
Survey depth (m) :	2.000
Survey N° :	TRIAL PIT No. 09
Level of water (m) :	
Kind of soil :	Moist Stiff Gravelley Sandy Silty CLAY contains spots of Whitish Decomposed Rock

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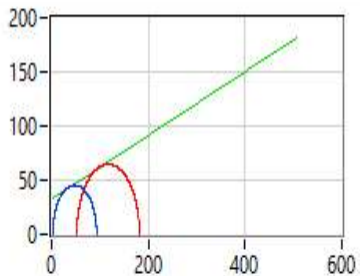
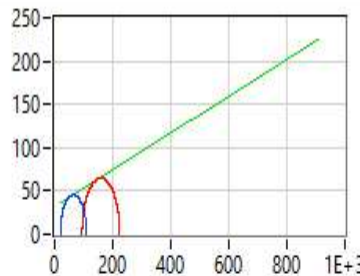
P.O. BOX 40 LILONGWE

Identification of samples :

Ovo, Total stress of the soil in situ (kPa) : 0.000	Uo, Pore pressure of the soil in situ (kPa) : 0.000
Category of soil : Steep/Strongly overconsolidated	Kind of drainage : Without lateral drain
ρ_s , Grain density (kg/m ³) : 0.000	
S_m : <input type="checkbox"/>	S_d : <input type="checkbox"/>

Samples before test :									Samples after saturation :		
N°	Hi (mm)	Di (mm)	mi (g)	ρ_i (kg/m ³)	ρ_{di} (kg/m ³)	wi (%)	ei	Si (%)	Ucp (kPa)	ΔV_{sat} (mm ³)	B (%)
1	72.00	38	156.5	1917	1653	15.93	-1.000	-0.000		0.000	0.000
2	72.00	38	169.0	2070	1757	17.77	-1.000	-0.000		0.000	0.000

Samples after consolidation :							Samples after shearing							
N°	Hs (mm)	Ds (mm)	ΔV_s (mm ³)	T100 (min)	Vmax ($\mu\text{m}/\text{min}$)	σ'_c (kPa)	Hf (mm)	Df (mm)	mf (g)	md (g)	wf (%)	ρ_{df} (kg/m ³)	ef	Srf (%)
1	72.00	38.00	0.000	0.000	0.000	0.000	72.00	38.00	160.0	135.0	18.52	1653	-1.000	-0.000
2	72.00	38.00	0.000	0.000	0.000	0.000	72.00	38.00	168.5	143.5	17.42	1757	-1.000	-0.000

Total stress :	Effective stress :	Comments :												
 <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><th colspan="2">Mohr</th></tr> <tr><td>C (kPa)</td><td>33.36</td></tr> <tr><td>ϕ (°)</td><td>16.32</td></tr> </table>	Mohr		C (kPa)	33.36	ϕ (°)	16.32	 <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><th>Mohr</th><th>Lambe</th></tr> <tr><td>C' (kPa)</td><td>32.88 / 32.18</td></tr> <tr><td>ϕ' (°)</td><td>11.84 / 11.60</td></tr> </table>	Mohr	Lambe	C' (kPa)	32.88 / 32.18	ϕ' (°)	11.84 / 11.60	<p>Visa :</p> <p style="text-align: right;">p.1/3</p>
Mohr														
C (kPa)	33.36													
ϕ (°)	16.32													
Mohr	Lambe													
C' (kPa)	32.88 / 32.18													
ϕ' (°)	11.84 / 11.60													

3.13 Trial Pit 10



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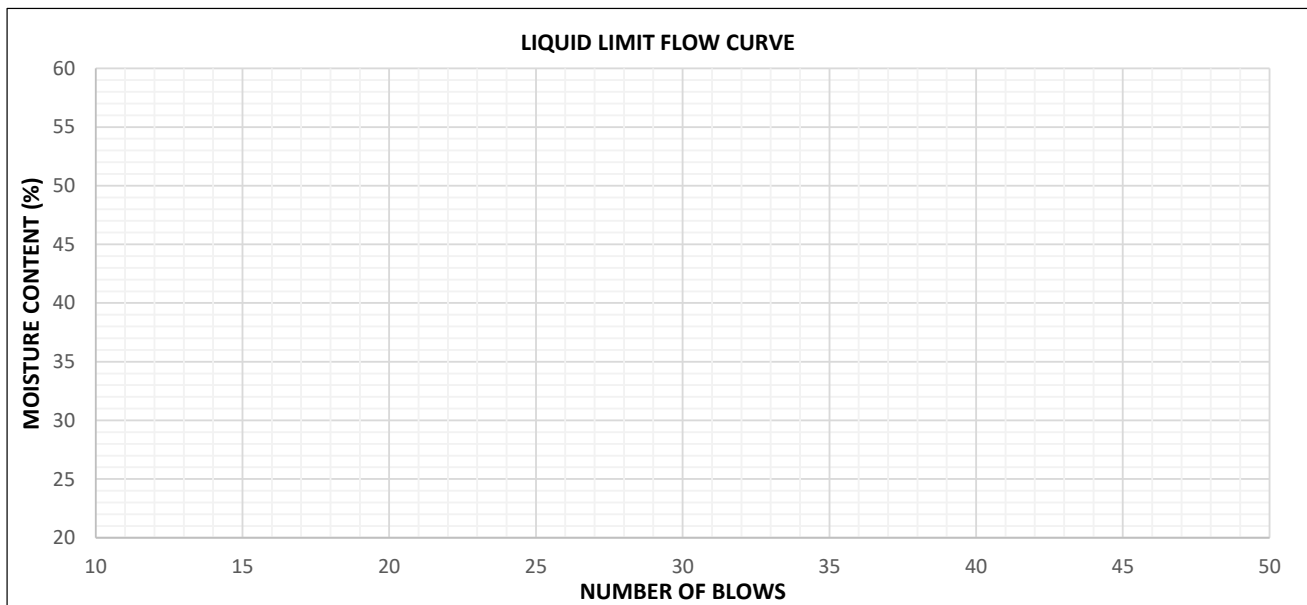
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP10 / AL031 / 01MAY19		
SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 01 - 05 - 2019	TIME: 11:23	
LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
GOLOMOTI - SOLAR PV	0 673 006	8 402 499	548 (m)	3.000-4.000
TYPE OF MATERIAL: MOIST BROWN GRAVELLEY SANDY SILTY CLAY				
TESTED BY: M. MILANZI		DATE: 24 - 05 - 2019	TIME: 11:02	
CHECKED BY: S. THANGATO		DATE: 31 - 05 - 2019	TIME: 09:35	
APPROVED BY: M. SABELLI		DATE: 31 - 05 - 2019	TIME: 14:18	
PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM	

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
	1	2	3	4	1	2	3
TEST No.							
CONTAINER No.	C13		R14		R22	RA1	R3
MASS OF WET SOIL + CONTAINER(g)	56.5		59.0		36.5	36.5	39.0
MASS OF DRY SOIL + CONTAINER(g)	49.0		50.5		35.5	35.5	37.5
MASS OF CONTAINER (g)	28		29		30	30	29.5
MASS OF DRY SOIL (g)	21.0		21.5		5.5	5.5	8.0
MASS OF WATER (g)	7.50		8.50		1.00	1.00	1.50
MOISTURE CONTENT %	35.7	36.1	39.5	38.0	18.2	18.2	18.8
No. BLOWS	28		17			18.4	

LINEAR SHRINKAGE	3
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	12.8
LINEAR SHRINKAGE %	9.4
LIQUID LIMIT (LL) %	37.0
PLASTIC LIMIT (PL) %	18.4
PLASTICITY INDEX (PI)	19
NATURAL MOISTURE CONTENT %	12.4
FINENESS INDEX	893



REMARKS: SAMPLED FROM TRIAL PIT 10 @ 3.000-4.000M. SOLAR PV SITE INVESTIGATION



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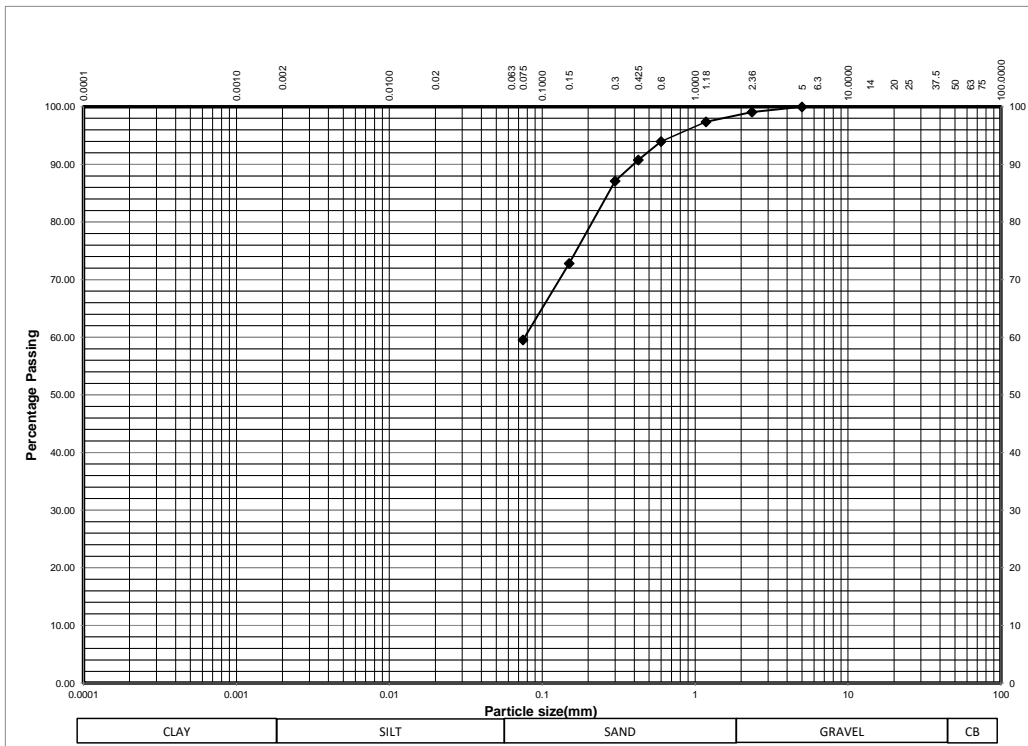
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP10 / G029 / 01MAY19		
SAMPLED BY: GEOCONSULT LAB TEAM		DATE: 01 / 05 / 2019	TIME: 11:23	
LOCATION:	EASTING	NORTHING	ELEVATION	DEPTH (m)
GOLOMOTI - SOLAR PV	0 673 006	8 402 499	(m)	0.100-2.000
TYPE OF MATERIAL: MOIST DARK BROWN SANDY SILTY CLAY				
TESTED BY: G. KONDE		DATE: 28 - 05 - 2019	TIME: 11:20	
CHECKED BY: E. NKHUKU		DATE: 29 - 05 - 2019	TIME: 13:30	
APPROVED BY: M. SABELLI		DATE: 29 - 05 - 2019	TIME: 15:00	

PROJECT: GOLOMOTI SOLAR PV **CLIENT: JCM**

SIEVE ANALYSIS (GRADATION) STANDARD: TRH14:1985

SIEVE (mm)	MASS RETAINED	PERCENTAGE			GRADATION SPECIFICATION			ZONE
		RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.500								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300								
5.000	0.00	0.00	100.00	100				
2.360	4.50	0.93	99.07	99				
1.180	12.50	2.59	97.41	97				
0.600	29.00	6.02	93.98	94				
0.425	44.50	9.23	90.77	91				
0.300	62.00	12.86	87.14	87				
0.150	131.00	27.18	72.82	73				
0.075	195.00	40.46	59.54	60				
0 pan	287.00	59.54						
TOTAL (g)	482.00							



REMARKS: SAMPLED FROM TRIAL PIT 10 @ 0.100-2.000M. SOLAR PV SITE INVESTIGATION

PAGE No.



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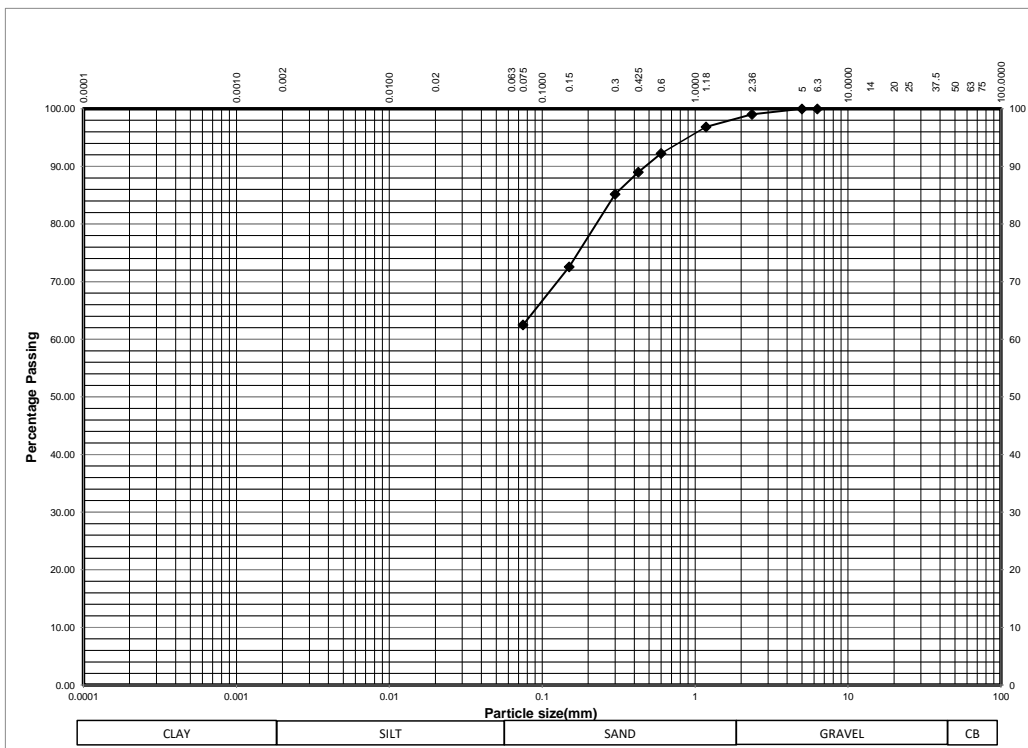
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP10 / G030 / 01MAY19		
SAMPLED BY: GEOCONSULT LAB TEAM		DATE: 01 / 05 / 2019	TIME: 11:23	
LOCATION:	EASTING	NORTHING	ELEVATION	DEPTH (m)
GOLOMOTI - SOLAR PV	0 673 006	8 402 499	(m)	2.000-3.000
TYPE OF MATERIAL: MOIST DARK BROWN STIFF SANDY SILTY CLAY				
TESTED BY: C. NDALAMA		DATE: 28 - 05 - 2019	TIME: 08:17	
CHECKED BY: G. KACHIWALA		DATE: 29 - 05 - 2019	TIME: 13:30	
APPROVED BY: M. SABELLI		DATE: 29 - 05 - 2019	TIME: 15:00	

PROJECT: GOLOMOTI SOLAR PV **CLIENT: JCM**

SIEVE ANALYSIS (GRADATION) STANDARD: TRH14:1985

SIEVE (mm)	MASS RETAINED	PERCENTAGE			GRADATION SPECIFICATION			ZONE
		RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.500								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300	0.00	0.00	100.00	100				
5.000	0.00	0.00	100.00	100				
2.360	3.50	0.95	99.05	99				
1.180	11.50	3.13	96.88	97				
0.600	28.50	7.74	92.26	92				
0.425	40.50	11.01	88.99	89				
0.300	54.50	14.81	85.19	85				
0.150	101.00	27.45	72.55	73				
0.075	138.00	37.50	62.50	63				
0 pan	230.00	62.50						
TOTAL (g)	368.00							



REMARKS: SAMPLED FROM TRIAL PIT 10 @ 2.000-3.000M. SOLAR PV SITE INVESTIGATION

PAGE No.



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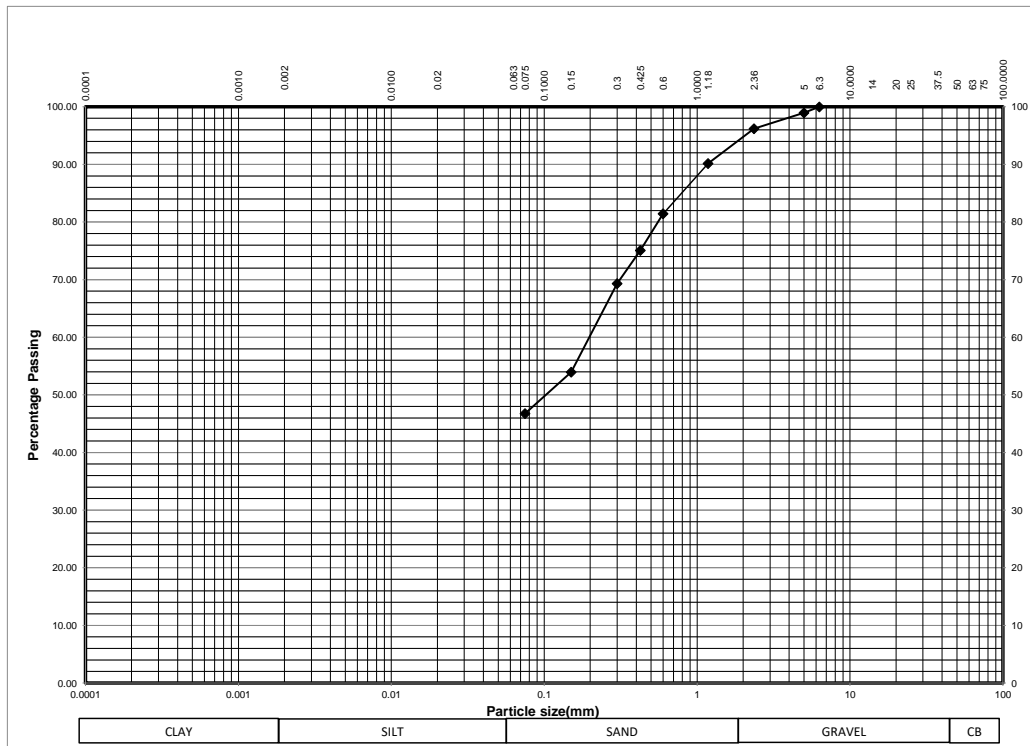
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP10 / G031 / 01MAY19		
SAMPLED BY: GEOCONSULT LAB TEAM		DATE: 01 / 05 / 2019	TIME: 11:23	
LOCATION:	EASTING	NORTHING	ELEVATION	DEPTH (m)
GOLOMOTI - SOLAR PV	0 673 006	8 402 499	(m)	3.000-4.000
TYPE OF MATERIAL: MOIST BROWN GRAVELLY SANDY SILTY CLAY				
TESTED BY: G. KONDE		DATE: 28 - 05 - 2019	TIME: 11:20	
CHECKED BY: G. KACHIWALA		DATE: 29 - 05 - 2019	TIME: 13:30	
APPROVED BY: M. SABELLI		DATE: 29 - 05 - 2019	TIME: 15:00	

PROJECT: GOLOMOTI SOLAR PV **CLIENT: JCM**


SIEVE ANALYSIS (GRADATION) STANDARD: TRH14:1985


SIEVE (mm)	MASS RETAINED	PERCENTAGE			GRADATION SPECIFICATION			ZONE
		RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.500								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300	0.00	0.00	100.00	100				
5.000	5.00	1.03	98.97	99				
2.360	18.50	3.79	96.21	96				
1.180	48.00	9.85	90.15	90				
0.600	90.50	18.56	81.44	81				
0.425	121.50	24.92	75.08	75				
0.300	149.50	30.67	69.33	69				
0.150	224.50	46.05	53.95	54				
0.075	259.50	53.23	46.77	47				
0 pan	228.00	46.77						
TOTAL (g)	487.50							




REMARKS: SAMPLED FROM TRIAL PIT 10 @ 3.000-4.000M. SOLAR PV SITE INVESTIGATION

PAGE No.

 GEOCONSULT +265 0888 846 543 sabelli@geoconsult.cc	LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP010 / NMC029 / 01MAY19		
	SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 01 - 05 - 2019	TIME: 11:23	
	LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
	GOLOMOTI - SOLAR PV	0 673 006	8 402 499	(m)	0.100-2.000
	TYPE OF MATERIAL: MOIST DARK BROWN SANDY SILTY CLAY				
	TESTED BY: C. NDALAMA		DATE: 05 - 05 - 2019	TIME: 13:38	
	CHECKED BY: G. KACHIWALA		DATE: 06 - 05 - 2019	TIME: 09:46	
	APPROVED BY: M. SABELLI		DATE: 06 - 05 - 2019	TIME: 10:00	
	PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM	
	NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: ASTM D7263				
MASS OF WET SOIL + CONTAINER (g)			336.0		
MASS OF DRY SOIL AND CONTAINER (g)			299.0		
CONTAINER No.			GC7		
MASS OF CONTAINER (g)			73.5		
MASS OF DRY SOIL (g)			225.5		
MASS OF WATER (g)			37.0		
MOISTURE CONTENT %			16.4		
AVERAGE MOISTURE CONTENT %			16.4		
REMARKS: SAMPLED FROM TRIAL PIT 09 @0.100-2.000M. SOLAR PV SITE INVESTIGATION					PAGE No.

 GEOCONSULT +265 0888 846 543 sabelli@geoconsult.cc	LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP010 / NMC030 / 01MAY19		
	SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 01 - 05 - 2019	TIME: 11:23	
	LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
	GOLOMOTI - SOLAR PV	0 673 006	8 402 499	(m)	2.000-3.000
	TYPE OF MATERIAL: MOIST DARK BROWN STIFF SANDY SILTY CLAY				
	TESTED BY: C. NDALAMA		DATE: 05 - 05 - 2019	TIME: 13:38	
	CHECKED BY: G. KACHIWALA		DATE: 06 - 05 - 2019	TIME: 09:46	
APPROVED BY: M. SABELLI		DATE: 06 - 05 - 2019	TIME: 10:00		
PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM		
NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: ASTM D7263					
MASS OF WET SOIL + CONTAINER (g)			376.0		
MASS OF DRY SOIL AND CONTAINER (g)			344.0		
CONTAINER No.			GC28C		
MASS OF CONTAINER (g)			89.0		
MASS OF DRY SOIL (g)			255.0		
MASS OF WATER (g)			32.0		
MOISTURE CONTENT %			12.5		
AVERAGE MOISTURE CONTENT %			12.5		
REMARKS: SAMPLED FROM TRIAL PIT 09 @2.000-3.000M. SOLAR PV SITE INVESTIGATION					PAGE No.

 GEOCONSULT +265 0888 846 543 sabelli@geoconsult.cc	LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP010 / NMC031 / 01MAY19		
	SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 01 - 05 - 2019	TIME: 11:23	
	LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
	GOLOMOTI - SOLAR PV	0 673 006	8 402 499	(m)	3.000-4.000
	TYPE OF MATERIAL: MOIST BROWN GEAVELLY SANDY SILTY CLAY				
TESTED BY: C. NDALAMA		DATE: 05 - 05 - 2019	TIME: 13:38		
CHECKED BY: G. KACHIWALA		DATE: 06 - 05 - 2019	TIME: 09:46		
APPROVED BY: M. SABELLI		DATE: 06 - 05 - 2019	TIME: 10:00		
PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM		
NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: ASTM D7263					
MASS OF WET SOIL + CONTAINER (g)		292.0			
MASS OF DRY SOIL AND CONTAINER (g)		265.5			
CONTAINER No.		GC14B			
MASS OF CONTAINER (g)		52.0			
MASS OF DRY SOIL (g)		213.5			
MASS OF WATER (g)		26.5			
MOISTURE CONTENT %		12.4			
AVERAGE MOISTURE CONTENT %		12.4			
REMARKS: SAMPLED FROM TRIAL PIT 10@3.000-4.000M. SOLAR PV SITE INVESTIGATION				PAGE No.	



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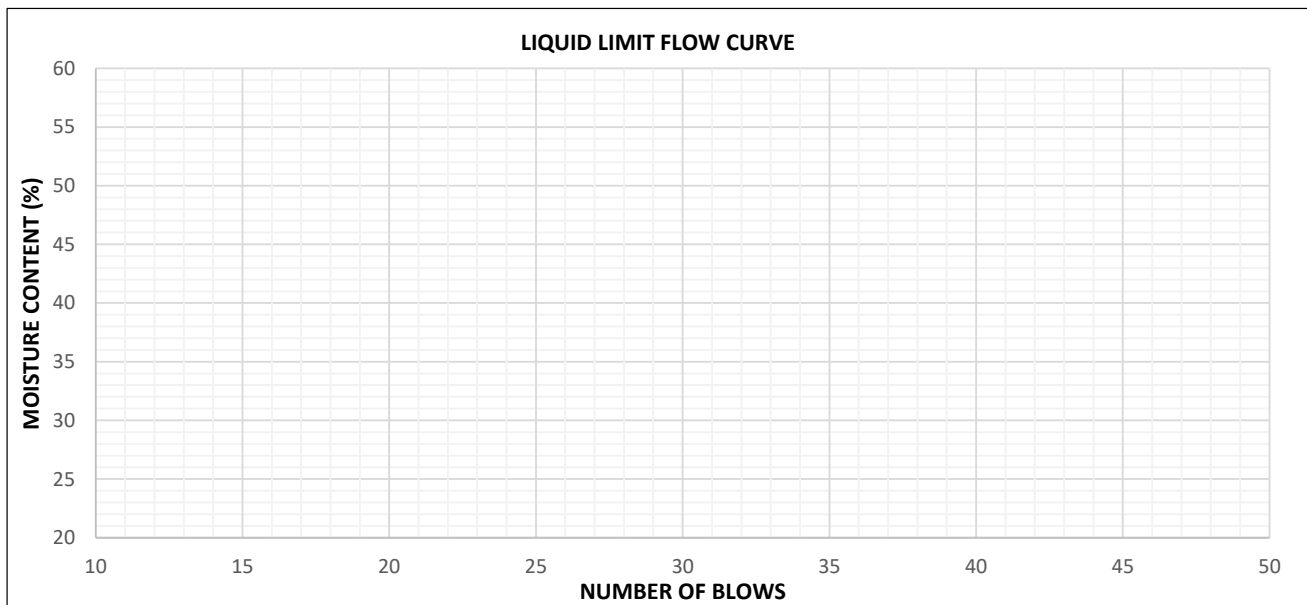
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP10 / AL029 / 01MAY19	
SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 01 - 05 - 2019	TIME: 11:23
LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION
GOLOMOTI - SOLAR PV	0 643 006	8 402 499	(m)
DEPTH (m) 0.100-2.000			
TYPE OF MATERIAL: MOIST DARK BROWN SANDY SILTY CLAY			
TESTED BY: M. MILANZI		DATE: 27 - 05 - 2019	TIME: 15:41
CHECKED BY: G. KACHIWALA		DATE: 31 - 05 - 2019	TIME: 09:35
APPROVED BY: M. SABELLI		DATE: 31 - 05 - 2019	TIME: 14:18
PROJECT: GOLOMOTI SOLAR PV		CLIENT: JCM	

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
	1	2	3	4	1	2	3
TEST No.							
CONTAINER No.	R18		C17		C19	R20	R17
MASS OF WET SOIL + CONTAINER(g)	48.5		52.5		39.5	37.0	40.0
MASS OF DRY SOIL + CONTAINER(g)	44.0		46.0		37.0	35.5	38.0
MASS OF CONTAINER (g)	29		26		25	28	28
MASS OF DRY SOIL (g)	15.0		20.0		12.0	7.5	10.0
MASS OF WATER (g)	4.50		6.50		2.50	1.50	2.00
MOISTURE CONTENT %	30.0	30.6	32.5	32.2	20.8	20.0	20.0
No. BLOWS	34		22			20.3	

LINEAR SHRINKAGE	19
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	13.5
LINEAR SHRINKAGE %	3.7
LIQUID LIMIT (LL) %	31.4
PLASTIC LIMIT (PL) %	20.3
PLASTICITY INDEX (PI)	11
NATURAL MOISTURE CONTENT %	11.0
FINENESS INDEX	660



REMARKS: SAMPLED FROM TRIAL PIT 10 @ 0.100-2.000M. SOLAR PV SITE INVESTIGATION



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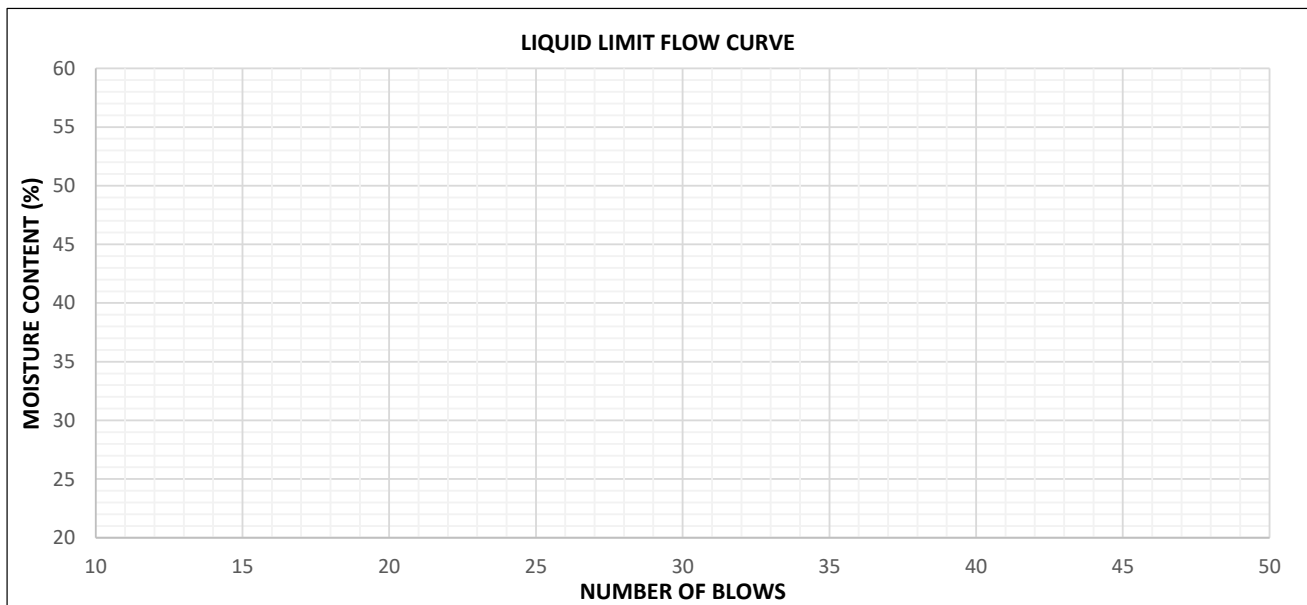
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP10 / AL030 / 01MAY19	
SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 01 - 05 - 2019	TIME: 11:23
LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION
GOLOMOTI - SOLAR PV	0 643 006	8 402 499	(m)
DEPTH (m) 2.000-3.000			
TYPE OF MATERIAL: MOIST DARK BROWN STIFF SANDY SILTY CLAY			
TESTED BY: M. MILANZI		DATE: 27 - 05 - 2019	TIME: 15:41
CHECKED BY: G. KACHIWALA		DATE: 31 - 05 - 2019	TIME: 09:35
APPROVED BY: M. SABELLI		DATE: 31 - 05 - 2019	TIME: 14:18
PROJECT: GOLOMOTI SOLAR PV		CLIENT: JCM	

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
	1	2	3	4	1	2	3
TEST No.							
CONTAINER No.	R18		C17		C19	R20	R17
MASS OF WET SOIL + CONTAINER(g)	48.5		52.5		39.5	37.0	40.0
MASS OF DRY SOIL + CONTAINER(g)	44.0		46.0		37.0	35.5	38.0
MASS OF CONTAINER (g)	30.5		29.5		25	28	28
MASS OF DRY SOIL (g)	13.5		16.5		12.0	7.5	10.0
MASS OF WATER (g)	4.50		6.50		2.50	1.50	2.00
MOISTURE CONTENT %	33.3	34.0	39.4	39.0	20.8	20.0	20.0
No. BLOWS	34		22			20.3	

LINEAR SHRINKAGE	19
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	13.0
LINEAR SHRINKAGE %	7.7
LIQUID LIMIT (LL) %	36.5
PLASTIC LIMIT (PL) %	20.3
PLASTICITY INDEX (PI)	16
NATURAL MOISTURE CONTENT %	12.5
FINENESS INDEX	1008



REMARKS: SAMPLED FROM TRIAL PIT 10 @ 2.000-3.000M. SOLAR PV SITE INVESTIGATION

Triaxial test - UU BS 1377 part 7, 1377 part 8	
Site :	GOLOMOTI SOALR PV
Levy date :	26-Jun-19
Technician's name :	Date of test :
	26-Jun-19
File N° :	30
Survey depth (m) :	1.000
Survey N° :	TRIAL PIT No. 10
Level of water (m) :	
Kind of soil :	Moist Dark Brown Sandy Silty CLAY

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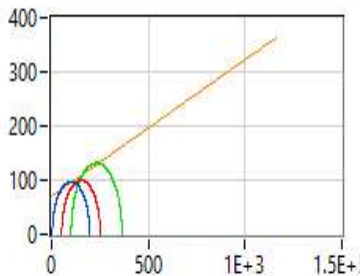
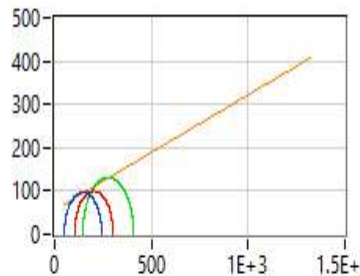
P.O. BOX 40 LILONGWE

Identification of samples :

Ovo, Total stress of the soil in situ (kPa) :	0.000	Uo, Pore pressure of the soil in situ (kPa) :	0.000
Category of soil :	Soft/Granular	Kind of drainage :	Without lateral drain
ρ_s , Grain density (kg/m ³) :	0.000		
S_m :	<input type="checkbox"/>	S_d :	<input type="checkbox"/>

Samples before test :									Samples after saturation :		
N°	Hi (mm)	Di (mm)	mi (g)	ρ_i (kg/m ³)	ρ_{di} (kg/m ³)	wi (%)	ei	Si (%)	Ucp (kPa)	ΔV_{sat} (mm ³)	B (%)
1	76.00	38	162.0	1880	1520	23.66	-1.000	-0.000		0.000	0.000
2	76.00	38	159.0	1845	1497	23.26	-1.000	-0.000		0.000	0.000
3	76.00	38	159.0	1845	1479	24.71	-1.000	-0.000		0.000	0.000

Samples after consolidation :							Samples after shearing							
N°	Hs (mm)	Ds (mm)	ΔV_s (mm ³)	T100 (min)	Vmax (μ m/min)	σ'_c (kPa)	Hf (mm)	Df (mm)	mf (g)	md (g)	wf (%)	ρ_{df} (kg/m ³)	ef	Srf (%)
1	76.00	38.00	0.000	0.000	0.000	0.000	76.00	38.00	162.0	131.0	23.66	1520	-1.000	-0.000
2	76.00	38.00	0.000	0.000	0.000	0.000	76.00	38.00	159.0	129.0	23.26	1497	-1.000	-0.000
3	76.00	38.00	0.000	0.000	0.000	0.000	76.00	38.00	158.0	127.5	23.92	1479	-1.000	-0.000

Total stress :	Effective stress :	Comments :															
 <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th></th> <th>Mohr</th> </tr> </thead> <tbody> <tr> <td>C (kPa)</td> <td>69.22</td> </tr> <tr> <td>ϕ (°)</td> <td>14.23</td> </tr> </tbody> </table>		Mohr	C (kPa)	69.22	ϕ (°)	14.23	 <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th></th> <th>Mohr</th> <th>Lambe</th> </tr> </thead> <tbody> <tr> <td>C' (kPa)</td> <td>54.50</td> <td>51.77</td> </tr> <tr> <td>ϕ' (°)</td> <td>15.01</td> <td>15.45</td> </tr> </tbody> </table>		Mohr	Lambe	C' (kPa)	54.50	51.77	ϕ' (°)	15.01	15.45	<div style="border: 1px solid black; height: 100px; width: 100%;"></div>
	Mohr																
C (kPa)	69.22																
ϕ (°)	14.23																
	Mohr	Lambe															
C' (kPa)	54.50	51.77															
ϕ' (°)	15.01	15.45															
Visa :		p.1/3															

3.14 Trial Pit 11



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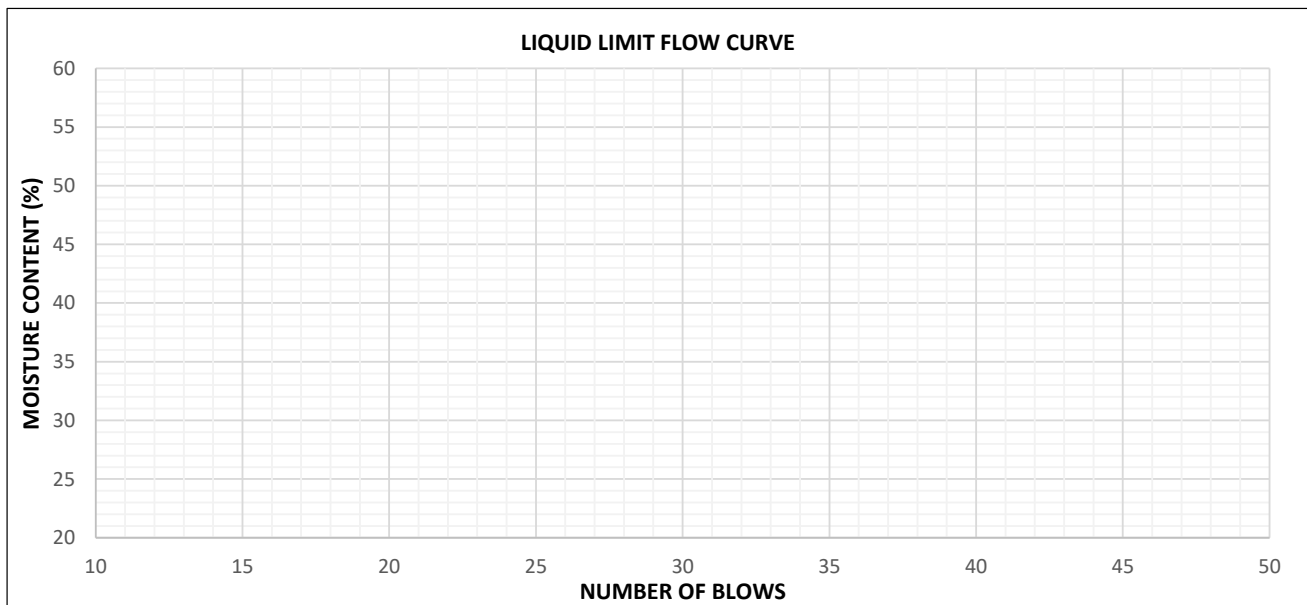
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP11 / AL033 / 01MAY19	
SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 01 - 05 - 2019	TIME: 12:45
LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION
GOLOMOTI - SOLAR PV	0 672 996	8 402 377	(m)
DEPTH (m) 2.000-4.200			
TYPE OF MATERIAL: MOIST BROWN SANDY SILTY CLAY			
TESTED BY: M. MILANZI		DATE: 24 - 05 - 2019	TIME: 14:44
CHECKED BY: S. THANGATO		DATE: 31 - 05 - 2019	TIME: 09:35
APPROVED BY: M. SABELLI		DATE: 31 - 05 - 2019	TIME: 14:18
PROJECT: GOLOMOTI SOLAR PV		CLIENT: JCM	

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
	1	2	3	4	1	2	3
TEST No.							
CONTAINER No.	C20		C17		R10	R27	R8
MASS OF WET SOIL + CONTAINER(g)	54.0		56.5		44.5	44.5	44.0
MASS OF DRY SOIL + CONTAINER(g)	48.5		48.5		42.5	42.0	41.5
MASS OF CONTAINER (g)	30		26.5		32.5	30	29
MASS OF DRY SOIL (g)	18.5		22.0		10.0	12.0	12.5
MASS OF WATER (g)	5.50		8.00		2.00	2.50	2.50
MOISTURE CONTENT %	29.7	30.0	36.4	35.3	20.0	20.8	20.0
No. BLOWS	28		18			20.3	

LINEAR SHRINKAGE	4
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	12.9
LINEAR SHRINKAGE %	8.5
LIQUID LIMIT (LL) %	32.6
PLASTIC LIMIT (PL) %	20.3
PLASTICITY INDEX (PI)	12
NATURAL MOISTURE CONTENT %	13.0
FINENESS INDEX	576



REMARKS: SAMPLED FROM TRIAL PIT 11 @ 2.000-4.200M. SOLAR PV SITE INVESTIGATION



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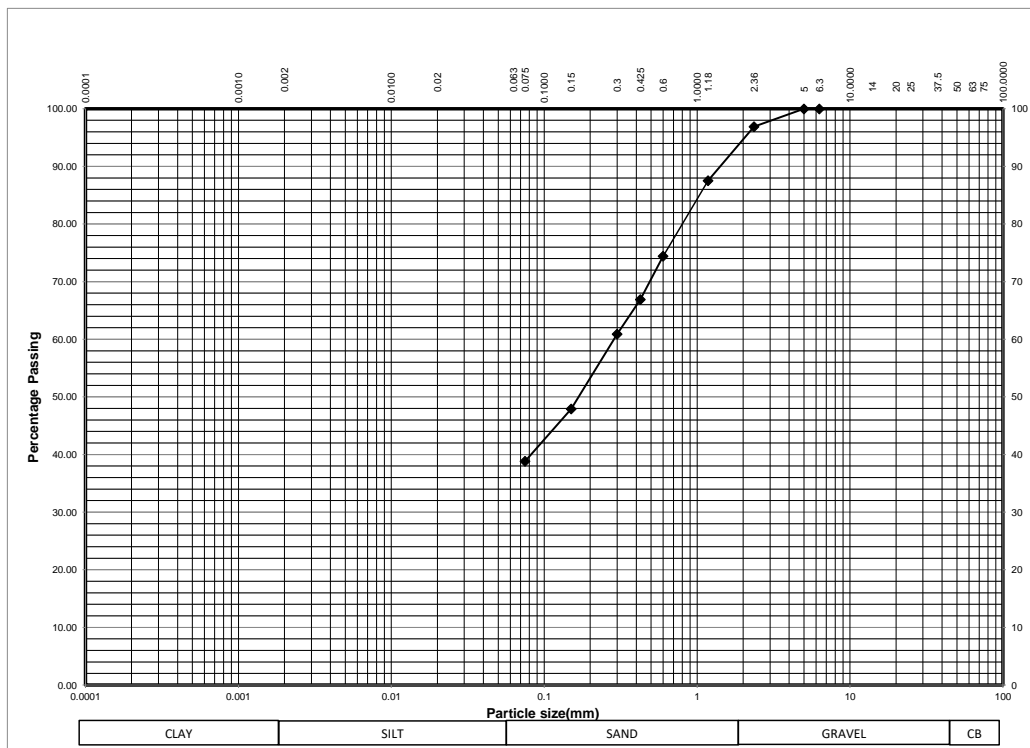
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LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP11 / G032 / 01MAY19		
SAMPLED BY: GEOCONSULT LAB TEAM		DATE: 01 / 05 / 2019	TIME: 12:17	
LOCATION:	EASTING	NORTHING	ELEVATION	DEPTH (m)
GOLOMOTI - SOLAR PV	0 672 996	8 402 377	(m)	0.100-2.000
TYPE OF MATERIAL: MOIST DARK BROWN SANDY SILTY CLAY				
TESTED BY: G. KONDE		DATE: 28 - 05 - 2019	TIME: 11:20	
CHECKED BY: G. KACHIWALA		DATE: 29 - 05 - 2019	TIME: 13:30	
APPROVED BY: M. SABELLI		DATE: 29 - 05 - 2019	TIME: 15:00	

PROJECT: GOLOMOTI SOLAR PV **CLIENT: JCM**

SIEVE ANALYSIS (GRADATION) STANDARD: TRH14:1985

SIEVE (mm)	MASS RETAINED	PERCENTAGE			GRADATION SPECIFICATION			ZONE
		RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.500								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300	0.00	0.00	100.00	100				
5.000	0.00	0.00	100.00	100				
2.360	12.00	3.12	96.88	97				
1.180	48.00	12.47	87.53	88				
0.600	98.50	25.58	74.42	74				
0.425	127.50	33.12	66.88	67				
0.300	150.50	39.09	60.91	61				
0.150	200.50	52.08	47.92	48				
0.075	235.50	61.17	38.83	39				
0 pan	149.50	38.83						
TOTAL (g)	385.00							



REMARKS: SAMPLED FROM TRIAL PIT 11 @ 0.100-2.000M. SOLAR PV SITE INVESTIGATION

PAGE No.



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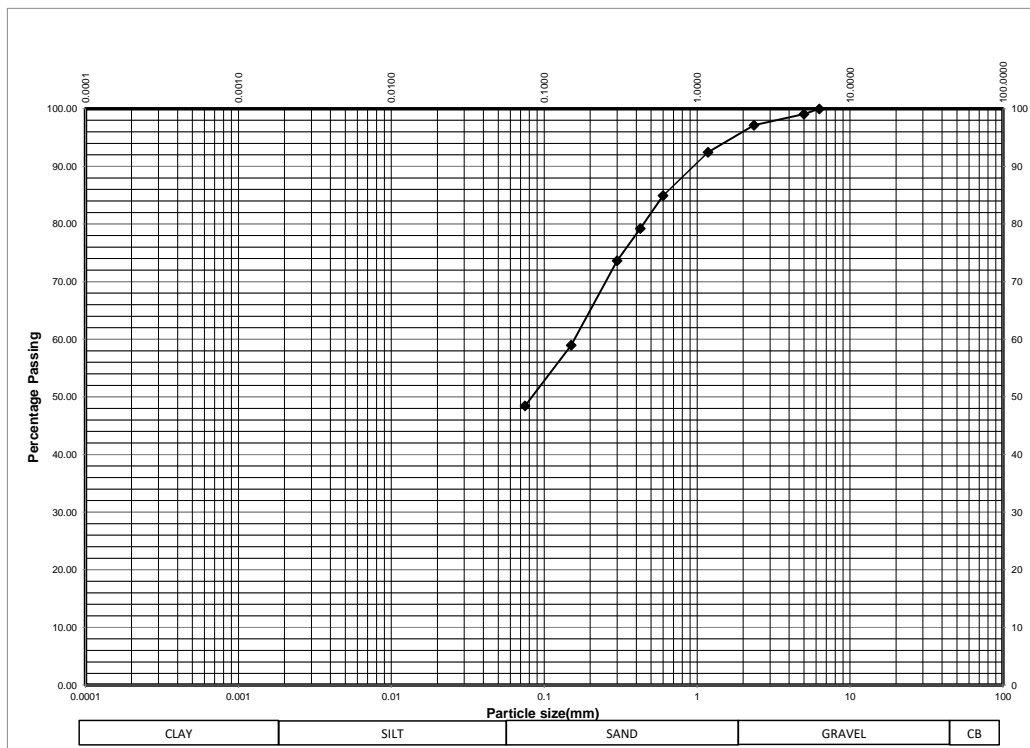
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LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP11 / G033 / 01MAY19		
SAMPLED BY: GEOCONSULT LAB TEAM		DATE: 01 / 05 / 2019	TIME: 12:45	
LOCATION:	EASTING	NORTHING	ELEVATION	DEPTH (m)
GOLOMOTI - SOLAR PV	0 672 996	8 402 377	(m)	2.000-4.200
TYPE OF MATERIAL: MOIST BROWN SANDY SILTY CLAY				
TESTED BY: G. KONDE		DATE: 28 - 05 - 2019	TIME: 11:20	
CHECKED BY: E. NKHUKU		DATE: 29 - 05 - 2019	TIME: 13:30	
APPROVED BY: M. SABELLI		DATE: 29 - 05 - 2019	TIME: 15:00	

PROJECT: GOLOMOTI SOLAR PV **CLIENT: JCM**


SIEVE ANALYSIS (GRADATION) STANDARD: TRH14:1985


SIEVE (mm)	MASS RETAINED	PERCENTAGE			GRADATION SPECIFICATION			ZONE
		RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.500								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300	0.00	0.00	100.00	100				
5.000	3.50	0.91	99.09	99				
2.360	11.00	2.86	97.14	97				
1.180	29.00	7.53	92.47	92				
0.600	58.00	15.06	84.94	85				
0.425	80.00	20.78	79.22	79				
0.300	101.50	26.36	73.64	74				
0.150	158.00	41.04	58.96	59				
0.075	198.50	51.56	48.44	48				
0 pan	186.50	48.44						
TOTAL (g)	385.00							



REMARKS: SAMPLED FROM TRIAL PIT 11 @ 2.000-4.200M. SOLAR PV SITE INVESTIGATION

PAGE No.

 GEOCONSULT +265 0888 846 543 sabelli@geoconsult.cc	LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP011 / NMC032 / 01MAY19		
	SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 01 - 05 - 2019	TIME: 12:45	
	LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
	GOLOMOTI - SOLAR PV	0 672 996	8 402 377	(m)	0.100-2.000
	TYPE OF MATERIAL: MOIST DARK BROWN SANDY SILTY CLAY				
	TESTED BY: C. NDALAMA		DATE: 05 - 05 - 2019	TIME: 13:38	
	CHECKED BY: G. KACHIWALA		DATE: 06 - 05 - 2019	TIME: 09:46	
	APPROVED BY: M. SABELLI		DATE: 06 - 05 - 2019	TIME: 10:00	
	PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM	
	NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: ASTM D7263				
MASS OF WET SOIL + CONTAINER (g)		336.0			
MASS OF DRY SOIL AND CONTAINER (g)		301.0			
CONTAINER No.		GC7			
MASS OF CONTAINER (g)		73.5			
MASS OF DRY SOIL (g)		227.5			
MASS OF WATER (g)		35.0			
MOISTURE CONTENT %		15.4			
AVERAGE MOISTURE CONTENT %		15.4			
REMARKS: SAMPLED FROM TRIAL PIT 09 @0.100-2.000M. SOLAR PV SITE INVESTIGATION				PAGE No.	

 GEOCONSULT +265 0888 846 543 sabelli@geoconsult.cc	LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP011 / NMC033 / 01MAY19		
	SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 01 - 05 - 2019	TIME: 12:45	
	LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
	GOLOMOTI - SOLAR PV	0 672 996	8 402 377	(m)	2.000-4.200
	TYPE OF MATERIAL: MOIST BROWN SANDY SILTY CLAY				
	TESTED BY: C. NDALAMA		DATE: 05 - 05 - 2019	TIME: 13:38	
	CHECKED BY: G. KACHIWALA		DATE: 06 - 05 - 2019	TIME: 09:46	
	APPROVED BY: M. SABELLI		DATE: 06 - 05 - 2019	TIME: 10:00	
	PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM	
	NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: ASTM D7263				
MASS OF WET SOIL + CONTAINER (g)		386.0			
MASS OF DRY SOIL AND CONTAINER (g)		350.0			
CONTAINER No.		GC7			
MASS OF CONTAINER (g)		73.5			
MASS OF DRY SOIL (g)		276.5			
MASS OF WATER (g)		36.0			
MOISTURE CONTENT %		13.0			
AVERAGE MOISTURE CONTENT %		13.0			
REMARKS: SAMPLED FROM TRIAL PIT 09 @2.000-4.200M. SOLAR PV SITE INVESTIGATION				PAGE No.	



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LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP11 / AL032 / 01MAY19	
SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 01 - 05 - 2019	TIME: 12:17
LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION
GOLOMOTI - SOLAR PV	0 672 996	8 402 377	(m)
DEPTH (m) 0.100-2.000			

TYPE OF MATERIAL: MOIST DARK BROWN SANDY SILTY CLAY

TESTED BY: M. MILANZI	DATE: 27 - 05 - 2019	TIME: 11:02
CHECKED BY: G. KACHIWALA	DATE: 31 - 05 - 2019	TIME: 09:35
APPROVED BY: M. SABELLI	DATE: 31 - 05 - 2019	TIME: 14:18

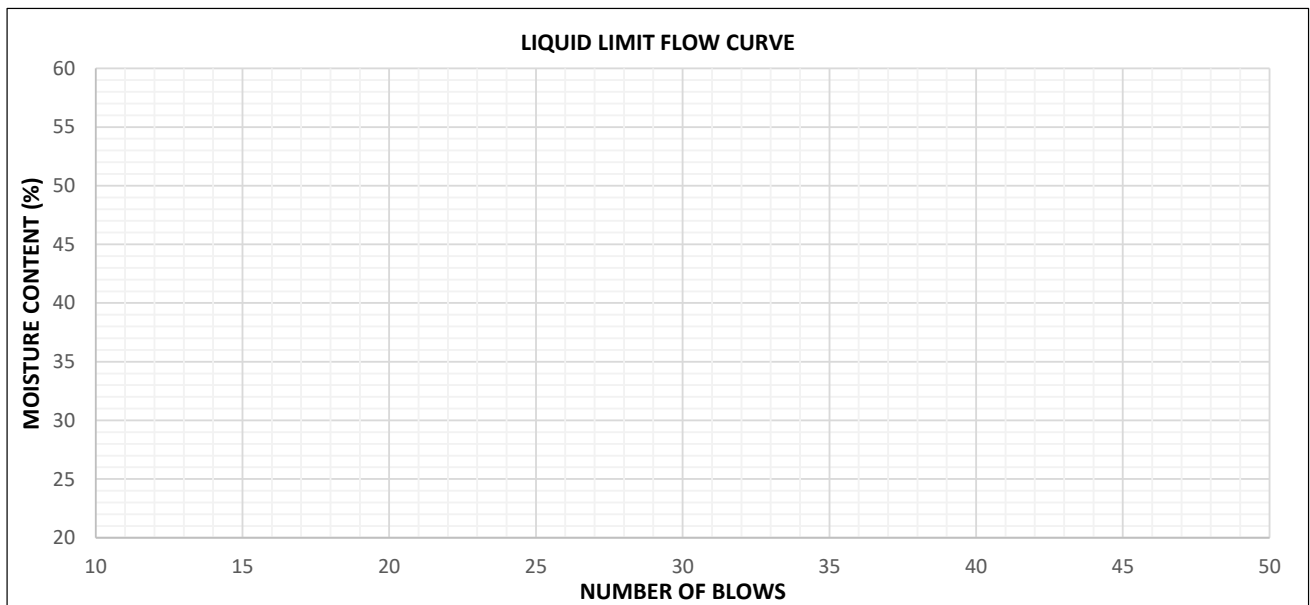
PROJECT: GOLOMOTI SOLAR PV

CLIENT: JCM

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
	1	2	3	4	1	2	3
TEST No.							
CONTAINER No.	R24		R16		R21	K3	R14
MASS OF WET SOIL + CONTAINER(g)	53.5		52.5		34.5	39.0	35.5
MASS OF DRY SOIL + CONTAINER(g)	47.5		45.5		33.5	37.5	34.5
MASS OF CONTAINER (g)	31.5		28.5		27	28	28
MASS OF DRY SOIL (g)	16.0		17.0		6.5	9.5	6.5
MASS OF WATER (g)	6.00		7.00		1.00	1.47	1.00
MOISTURE CONTENT %	37.5	36.8	41.2	39.5	15.4	15.4	15.4
No. BLOWS	21		16			15.4	

LINEAR SHRINKAGE	6
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	12.7
LINEAR SHRINKAGE %	10.2
LIQUID LIMIT (LL) %	38.1
PLASTIC LIMIT (PL) %	15.4
PLASTICITY INDEX (PI)	23
NATURAL MOISTURE CONTENT %	15.4
FINENESS INDEX	1357



REMARKS: SAMPLED FROM TRIAL PIT 11 @ 0.100-2.000M. SOLAR PV SITE INVESTIGATION

Triaxial test - UU BS 1377 part 7, 1377 part 8				
	Site :	GOLOMOTI SOLAR PV	Levy date :	25-Jun-19
	Technician's name :		Date of test :	25-Jun-19
GEOCONSULT LIMITED P.O. BOX 40 LILONGWE	File N° :	25	Survey depth (m) :	1.000
	Survey N° :	TRIAL PIT No. 11	Level of water (m) :	
	Kind of soil :	Moist Dark Brown Sandy Silty CLAY		

Identification of samples :

Ovo, Total stress of the soil in situ (kPa) :	0.000	Uo, Pore pressure of the soil in situ (kPa) :	0.000
Category of soil :	Soft/Granular	Kind of drainage :	Without lateral drain
ρ_s , Grain density (kg/m ³) :	0.000		
S _m :	<input type="checkbox"/>	S _d :	<input type="checkbox"/>

Samples before test :									Samples after saturation :		
N ^o	H _i (mm)	D _i (mm)	m _i (g)	ρ_i (kg/m ³)	ρ_{di} (kg/m ³)	w _i (%)	e _i	S _i (%)	U _{cp} (kPa)	ΔV_{sat} (mm ³)	B (%)
1	76.00	38	175.0	2030	1740	16.67	-1.000	-0.000		0.000	0.000
2	76.00	38	171.0	1984	1734	14.38	-1.000	-0.000		0.000	0.000

Samples after consolidation :							Samples after shearing							
N ^o	H _s (mm)	D _s (mm)	ΔV_s (mm ³)	T100 (min)	V _{max} (μ m/min)	σ'_c (kPa)	H _f (mm)	D _f (mm)	m _f (g)	m _d (g)	w _f (%)	ρ_{df} (kg/m ³)	e _f	S _f (%)
1	76.00	38.00	0.000	0.000	0.000	0.000	76.00	38.00	174.5	150.0	16.33	1740	-1.000	-0.000
2	76.00	38.00	0.000	0.000	0.000	0.000	76.00	38.00	171.5	149.5	14.72	1734	-1.000	-0.000

Total stress :	Effective stress :	Comments :																		
<table border="1" style="margin-left: auto; margin-right: auto;"> <tr><th colspan="2" style="text-align: center;">Mohr</th></tr> <tr><td style="text-align: center;">C (kPa)</td><td style="text-align: center;">40.12</td></tr> <tr><td style="text-align: center;">ϕ (°)</td><td style="text-align: center;">17.37</td></tr> </table>	Mohr		C (kPa)	40.12	ϕ (°)	17.37	<table border="1" style="margin-left: auto; margin-right: auto;"> <tr><th colspan="2" style="text-align: center;">Mohr</th><th colspan="2" style="text-align: center;">Lambe</th></tr> <tr><td style="text-align: center;">C' (kPa)</td><td style="text-align: center;">43.62</td><td style="text-align: center;">42.71</td><td></td></tr> <tr><td style="text-align: center;">ϕ' (°)</td><td style="text-align: center;">11.76</td><td style="text-align: center;">11.52</td><td></td></tr> </table>	Mohr		Lambe		C' (kPa)	43.62	42.71		ϕ' (°)	11.76	11.52		<p>Visa :</p>
Mohr																				
C (kPa)	40.12																			
ϕ (°)	17.37																			
Mohr		Lambe																		
C' (kPa)	43.62	42.71																		
ϕ' (°)	11.76	11.52																		
		p.1/3																		

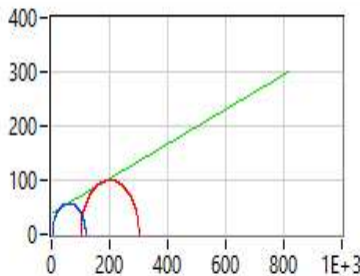
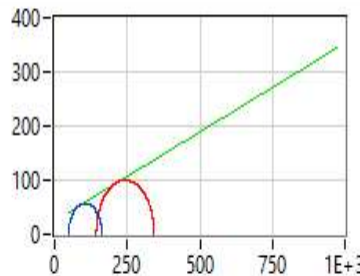
Triaxial test - UU BS 1377 part 7, 1377 part 8				
GEOCONSULT LIMITED P.O. BOX 40 LILONGWE	Site :	GOLOMOTI SOLAR PV	Levy date :	21-Jun-19
	Technician's name :		Date of test :	21-Jun-19
	File N° :	19	Survey depth (m) :	2.000
	Survey N° :	TRIL PIT No. 11	Level of water (m) :	
	Kind of soil :	MOIST BROWN SANDY SILTY CLAY		

Identification of samples :

Ovo, Total stress of the soil in situ (kPa) :	0.000	Uo, Pore pressure of the soil in situ (kPa) :	0.000
Category of soil :	Soft/Granular	Kind of drainage :	Without lateral drain
ρ_s , Grain density (kg/m ³) :	0.000		
S_m :	<input type="checkbox"/>	S_d :	<input type="checkbox"/>

Samples before test :									Samples after saturation :		
N°	Hi (mm)	Di (mm)	mi (g)	ρ_i (kg/m ³)	ρ_{di} (kg/m ³)	wi (%)	ei	Si (%)	Ucp (kPa)	ΔV_{sat} (mm ³)	B (%)
1	76.00	38	168.0	1949	1717	13.51	-1.000	-0.000		0.000	0.000
2	76.00	38	151.0	1752	1578	11.03	-1.000	-0.000		0.000	0.000

Samples after consolidation :							Samples after shearing							
N°	Hs (mm)	Ds (mm)	ΔV_s (mm ³)	T100 (min)	Vmax (μm/min)	σ'_c (kPa)	Hf (mm)	Df (mm)	mf (g)	md (g)	wf (%)	ρ_{df} (kg/m ³)	ef	Srf (%)
1	76.00	38.00	0.000	0.000	0.000	0.000	76.00	38.00	167.0	148.0	12.84	1717	-1.000	-0.000
2	76.00	38.00	0.000	0.000	0.000	0.000	76.00	38.00	148.5	136.0	9.191	1578	-1.000	-0.000

Total stress :	Effective stress :	Comments :																		
 <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="2" style="text-align: center;">Mohr</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">C (kPa)</td> <td style="text-align: center;">40.95</td> </tr> <tr> <td style="text-align: center;">ϕ (°)</td> <td style="text-align: center;">17.66</td> </tr> </tbody> </table>	Mohr		C (kPa)	40.95	ϕ (°)	17.66	 <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="2" style="text-align: center;">Mohr</th> <th colspan="2" style="text-align: center;">Lambe</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">C' (kPa)</td> <td style="text-align: center;">26.03</td> <td style="text-align: center;">24.75</td> <td> </td> </tr> <tr> <td style="text-align: center;">ϕ' (°)</td> <td style="text-align: center;">18.04</td> <td style="text-align: center;">17.21</td> <td> </td> </tr> </tbody> </table>	Mohr		Lambe		C' (kPa)	26.03	24.75		ϕ' (°)	18.04	17.21		<div style="border: 1px solid black; height: 100px; width: 100%;"></div>
Mohr																				
C (kPa)	40.95																			
ϕ (°)	17.66																			
Mohr		Lambe																		
C' (kPa)	26.03	24.75																		
ϕ' (°)	18.04	17.21																		
Visa :		p.1/3																		

3.15 Trial Pit 12



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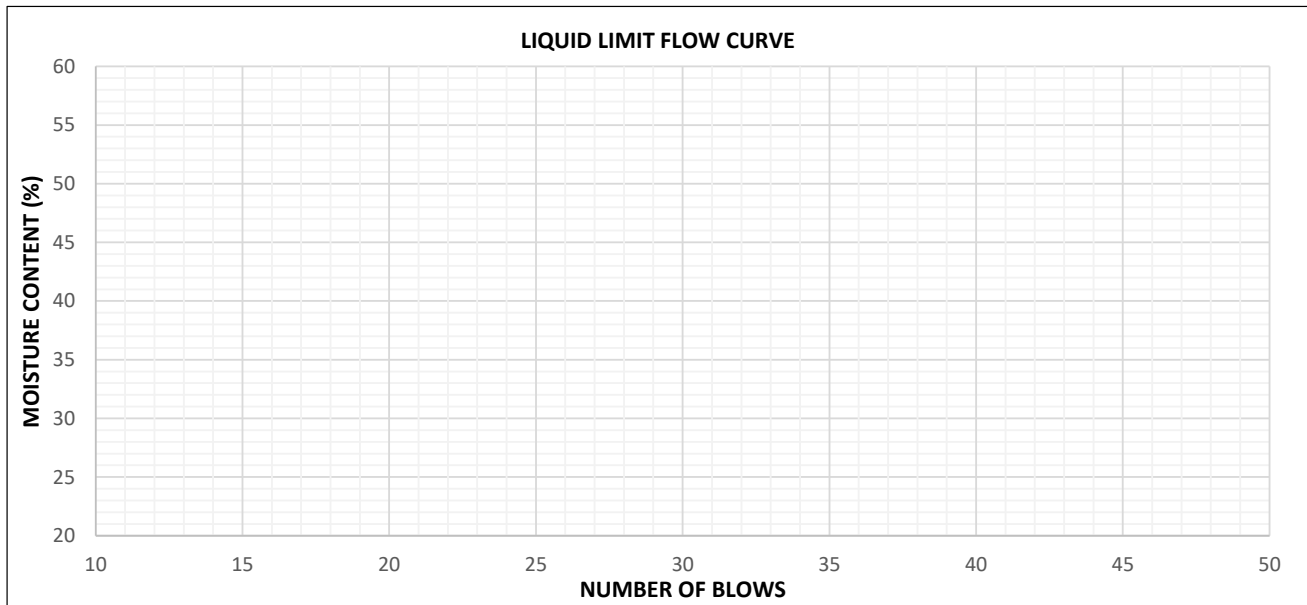
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP12 / AL036 / 02MAY19	
SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 02 - 05 - 2019	TIME: 09:57
LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION
GOLOMOTI - SOLAR PV	0 672 650	8 402 797	(m)
DEPTH (m) 3.000-3.800			
TYPE OF MATERIAL: MOIST BROWN REDDISH STIFF GRAVELLY SANDY SILTY CLAY			
TESTED BY: M. MILANZI		DATE: 27 - 05 - 2019	TIME: 13:14
CHECKED BY: G. KACHIWALA		DATE: 31 - 05 - 2019	TIME: 09:35
APPROVED BY: M. SABELLI		DATE: 31 - 05 - 2019	TIME: 14:18
PROJECT: GOLOMOTI SOLAR PV		CLIENT: JCM	

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
	1	2	3	4	1	2	3
TEST No.							
CONTAINER No.	K3		R16		C14	R13	R5
MASS OF WET SOIL + CONTAINER(g)	65.5		63.0		46.0	42.0	42.5
MASS OF DRY SOIL + CONTAINER(g)	57.5		55.0		44.0	40.5	40.5
MASS OF CONTAINER (g)	28.5		28.5		31	31	27.5
MASS OF DRY SOIL (g)	29.0		26.5		13.0	9.5	13.0
MASS OF WATER (g)	8.00		8.00		2.00	1.50	2.00
MOISTURE CONTENT %	27.6	27.9	30.2	29.0	15.4	15.8	15.4
No. BLOWS	29		16			15.5	

LINEAR SHRINKAGE	12
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	13.2
LINEAR SHRINKAGE %	6.1
LIQUID LIMIT (LL) %	28.4
PLASTIC LIMIT (PL) %	15.5
PLASTICITY INDEX (PI)	13
NATURAL MOISTURE CONTENT %	9.3
FINENESS INDEX	840



REMARKS: SAMPLED FROM TRIAL PIT 12 @ 3.000-3.800M. SOLAR PV SITE INVESTIGATION



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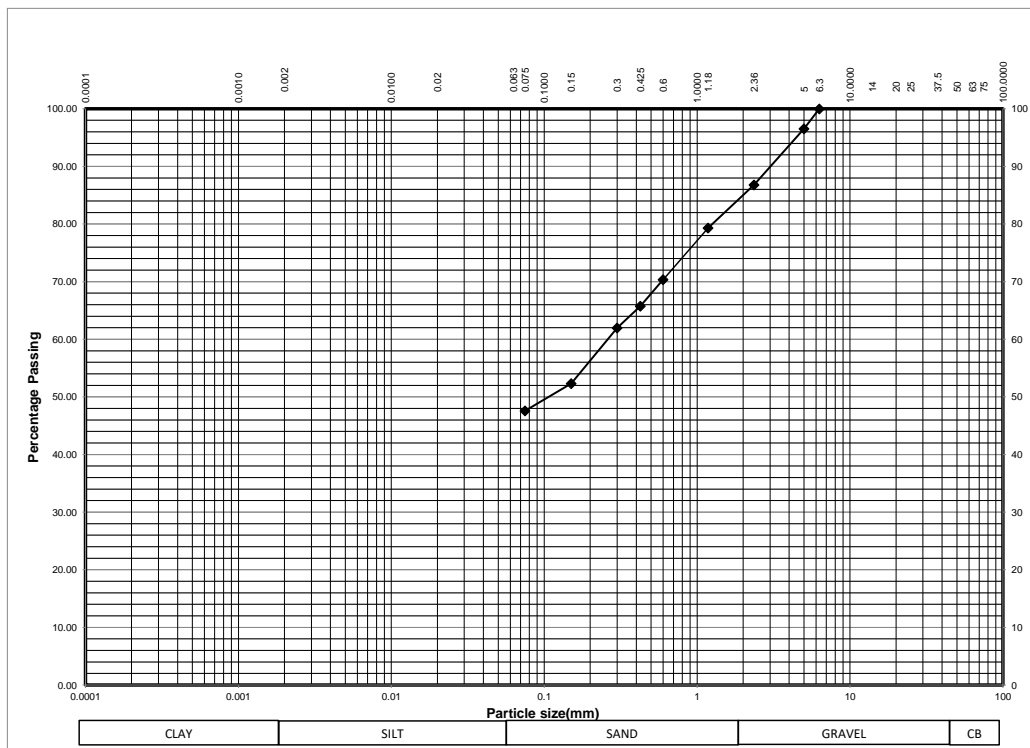
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP012 / G034 / 02MAY19		
SAMPLED BY: GEOCONSULT LAB TEAM		DATE: 02 / 05 / 2019	TIME: 08:49	
LOCATION:	EASTING	NORTHING	ELEVATION	DEPTH (m)
GOLOMOTI - SOLAR PV	0 672 650	8 403 797	(m)	0.100-1.500
TYPE OF MATERIAL: MOIST BROWN MOLTLED SANDY SILTY CLAY				
TESTED BY: C. NDALAMA		DATE: 31- 05 - 2019	TIME: 10:43	
CHECKED BY: G. KACHIWALA		DATE: 04 - 06 - 2019	TIME: 13:30	
APPROVED BY: M. SABELLI		DATE: 04 - 06 - 2019	TIME: 15:00	

PROJECT: GOLOMOTI SOLAR PV **CLIENT: JCM**

SIEVE ANALYSIS (GRADATION) STANDARD: TRH14:1985

SIEVE (mm)	MASS RETAINED	PERCENTAGE			GRADATION SPECIFICATION			ZONE
		RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.500								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300	0.00	0.00	100.00	100				
5.000	15.00	3.45	96.55	97				
2.360	57.50	13.22	86.78	87				
1.180	90.00	20.69	79.31	79				
0.600	129.00	29.66	70.34	70				
0.425	149.00	34.25	65.75	66				
0.300	165.50	38.05	61.95	62				
0.150	207.50	47.70	52.30	52				
0.075	228.00	52.41	47.59	48				
0 pan	207.00	47.59						
TOTAL (g)	435.00							



REMARKS: SAMPLED FROM TRIAL PIT 12 @ 0.100-1.500M. SOLAR PV SITE INVESTIGATION

PAGE No.



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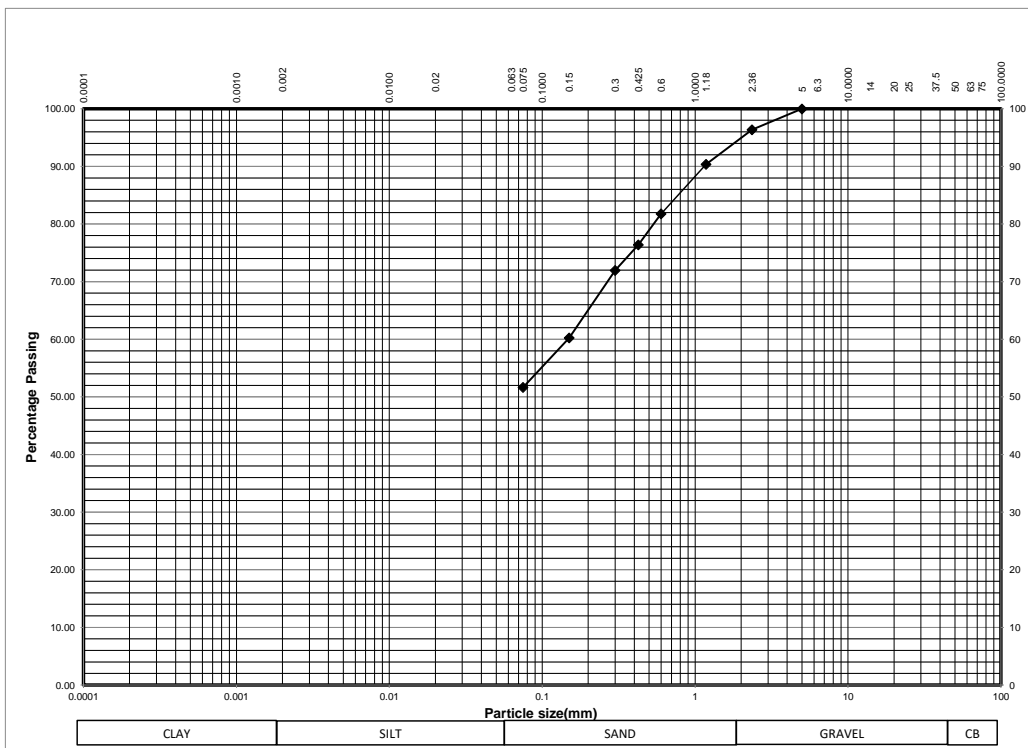
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP012 / G035 / 02MAY19		
SAMPLED BY: GEOCONSULT LAB TEAM		DATE: 02 / 05 / 2019	TIME: 09:57	
LOCATION:	EASTING	NORTHING	ELEVATION	DEPTH (m)
GOLOMOTI - SOLAR PV	0 672 650	8 402 797	(m)	1.500-3.000
TYPE OF MATERIAL: MOIST BROWN GRAVELLY SANDY SILTY CLAY				
TESTED BY: C. NDALAMA		DATE: 31- 05 - 2019	TIME: 10:43	
CHECKED BY: G. KACHIWALA		DATE: 04 - 06 - 2019	TIME: 13:30	
APPROVED BY: M. SABELLI		DATE: 04 - 06 - 2019	TIME: 15:00	

PROJECT: GOLOMOTI SOLAR PV **CLIENT: JCM**

SIEVE ANALYSIS (GRADATION) STANDARD: TRH14:1985

SIEVE (mm)	MASS RETAINED	PERCENTAGE			GRADATION SPECIFICATION			ZONE
		RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.500								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300								
5.000	0.00	0.00	100.00	100				
2.360	17.50	3.62	96.38	96				
1.180	46.50	9.63	90.37	90				
0.600	88.00	18.22	81.78	82				
0.425	114.00	23.60	76.40	76				
0.300	135.50	28.05	71.95	72				
0.150	192.00	39.75	60.25	60				
0.075	233.50	48.34	51.66	52				
0 pan	249.50	51.66						
TOTAL (g)	483.00							



REMARKS: SAMPLED FROM TRIAL PIT 12 @1.500-3.000M. SOLAR PV SITE INVESTIGATION

PAGE No.



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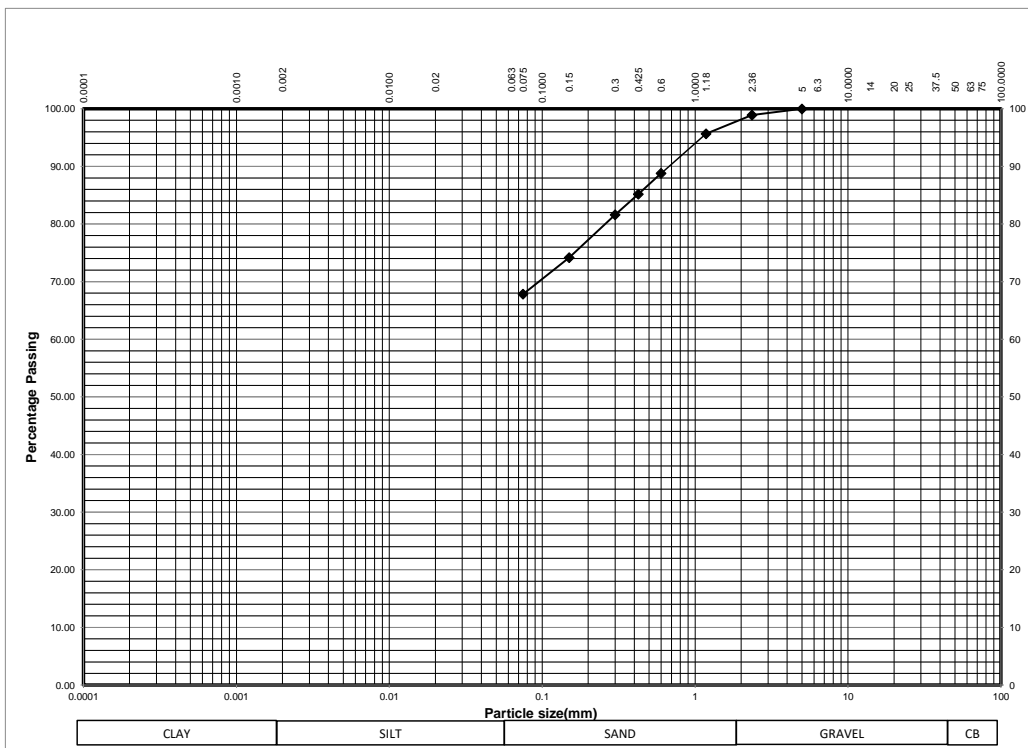
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP012 / G036 / 02MAY19		
SAMPLED BY: GEOCONSULT LAB TEAM		DATE: 02 / 05 / 2019	TIME: 09:57	
LOCATION:	EASTING	NORTHING	ELEVATION	DEPTH (m)
GOLOMOTI - SOLAR PV	0 672 650	8 402 797	(m)	3.000-3.800
TYPE OF MATERIAL: MOIST BROWN REDDISH STIFF GRAVELLY SANDY SILTY CLAY				
TESTED BY: C. NDALAMA		DATE: 31- 05 - 2019	TIME: 10:43	
CHECKED BY: G. KACHIWALA		DATE: 04 - 06 - 2019	TIME: 13:30	
APPROVED BY: M. SABELLI		DATE: 04 - 06 - 2019	TIME: 15:00	

PROJECT: GOLOMOTI SOLAR PV **CLIENT: JCM**


SIEVE ANALYSIS (GRADATION) STANDARD: TRH14:1985


SIEVE (mm)	MASS RETAINED	PERCENTAGE			GRADATION SPECIFICATION			ZONE
		RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.500								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300								
5.000	0.00	0.00	100.00	100				
2.360	6.00	1.10	98.90	99				
1.180	23.50	4.32	95.68	96				
0.600	61.00	11.21	88.79	89				
0.425	80.50	14.80	85.20	85				
0.300	100.00	18.38	81.62	82				
0.150	140.50	25.83	74.17	74				
0.075	175.00	32.17	67.83	68				
0 pan	369.00	67.83						
TOTAL (g)	544.00							




REMARKS: SAMPLED FROM TRIAL PIT 12 @ 3.000-3.800M. SOLAR PV SITE INVESTIGATION

PAGE No.

 GEOCONSULT +265 0888 846 543 sabelli@geoconsult.cc	LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP012 / NMC034 / 02MAY19		
	SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 02 - 05 - 2019	TIME: 08:49	
	LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
	GOLOMOTI - SOLAR PV	0 672 650	8 402 797	(m)	0.100-1.500
	TYPE OF MATERIAL: MOIST BROWN MOLTLED SANDY SILTY CLAY				
	TESTED BY: C. NDALAMA		DATE: 05 - 05 - 2019	TIME: 13:38	
	CHECKED BY: G. KACHIWALA		DATE: 06 - 05 - 2019	TIME: 09:46	
APPROVED BY: M. SABELLI		DATE: 06 - 05 - 2019	TIME: 10:00		
PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM		
NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: ASTM D7263					
MASS OF WET SOIL + CONTAINER (g)			325.5		
MASS OF DRY SOIL AND CONTAINER (g)			305.0		
CONTAINER No.			GC7		
MASS OF CONTAINER (g)			73.5		
MASS OF DRY SOIL (g)			231.5		
MASS OF WATER (g)			20.5		
MOISTURE CONTENT %			8.9		
AVERAGE MOISTURE CONTENT %			8.9		
REMARKS: SAMPLED FROM TRIAL PIT 12 @0.100-1.500M. SOLAR PV SITE INVESTIGATION					PAGE No.

 GEOCONSULT +265 0888 846 543 sabelli@geoconsult.cc	LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP012 / NMC035 / 02MAY19		
	SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 02 - 05 - 2019	TIME: 09:29	
	LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
	GOLOMOTI - SOLAR PV	0 372 650	8 402 797	(m)	1.500-3.000
	TYPE OF MATERIAL: MOIST BROWN GRAVELLY SANDY SILTY CLAY				
TESTED BY: C. NDALAMA		DATE: 05 - 05 - 2019	TIME: 13:38		
CHECKED BY: G. KACHIWALA		DATE: 06 - 05 - 2019	TIME: 09:46		
APPROVED BY: M. SABELLI		DATE: 06 - 05 - 2019	TIME: 10:00		
PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM		
NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: ASTM D7263					
MASS OF WET SOIL + CONTAINER (g)			338.0		
MASS OF DRY SOIL AND CONTAINER (g)			310.0		
CONTAINER No.			GC12		
MASS OF CONTAINER (g)			70.0		
MASS OF DRY SOIL (g)			240.0		
MASS OF WATER (g)			28.0		
MOISTURE CONTENT %			11.7		
AVERAGE MOISTURE CONTENT %			11.7		
REMARKS: SAMPLED FROM TRIAL PIT 12 @1.500-3.000M. SOLAR PV SITE INVESTIGATION				PAGE No.	

 GEOCONSULT +265 0888 846 543 sabelli@geoconsult.cc	LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP012 / NMC036 / 02MAY19		
	SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 02 - 05 - 2019	TIME: 09:29	
	LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
	GOLOMOTI - SOLAR PV	0 672 650	8 402 797	(m)	3.000-3.800
	TYPE OF MATERIAL: MOIST BROWN REDDISH STIFF LATERITE GRAVELLY SANDY SILTY CLAY				
TESTED BY: C. NDALAMA		DATE: 05 - 05 - 2019	TIME: 13:38		
CHECKED BY: G. KACHIWALA		DATE: 06 - 05 - 2019	TIME: 09:46		
APPROVED BY: M. SABELLI		DATE: 06 - 05 - 2019	TIME: 10:00		
PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM		
NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: ASTM D7263					
MASS OF WET SOIL + CONTAINER (g)		317.5			
MASS OF DRY SOIL AND CONTAINER (g)		295.0			
CONTAINER No.		GC116			
MASS OF CONTAINER (g)		52.0			
MASS OF DRY SOIL (g)		243.0			
MASS OF WATER (g)		22.5			
MOISTURE CONTENT %		9.3			
AVERAGE MOISTURE CONTENT %		9.3			
REMARKS: SAMPLED FROM TRIAL PIT 12 @3.000-3.800M. SOLAR PV SITE INVESTIGATION				PAGE No.	



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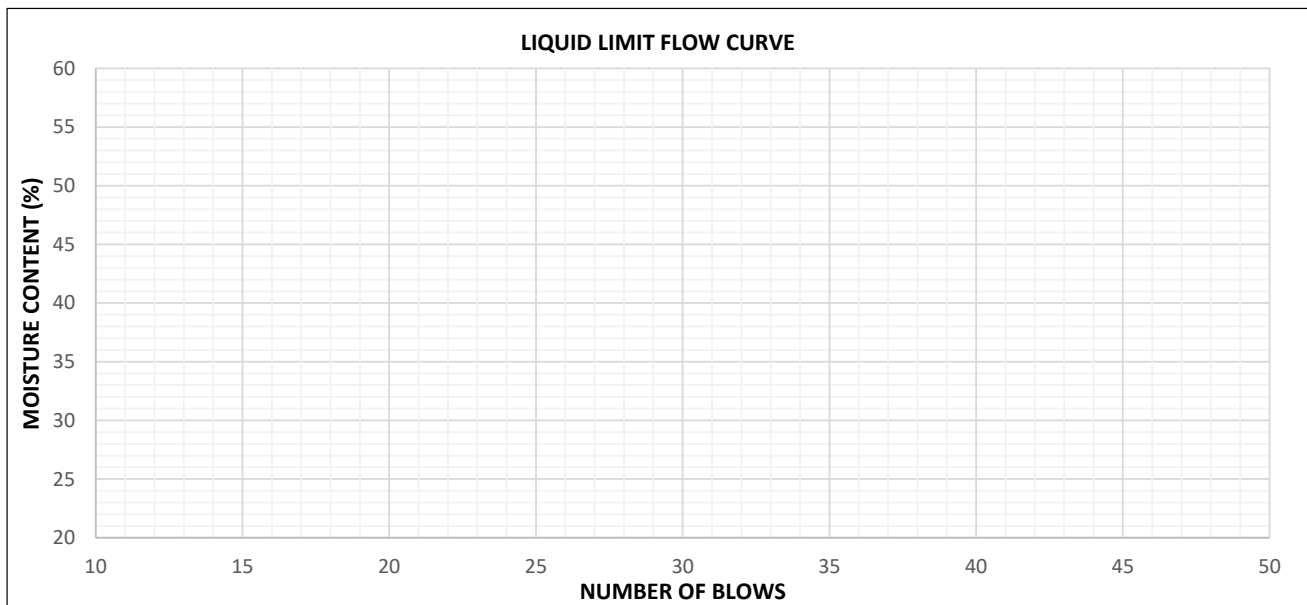
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP12 / AL034 / 02MAY19	
SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 02 - 05 - 2019	TIME: 09:29
LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION
GOLOMOTI - SOLAR PV	0 672 650	8 402 797	(m)
DEPTH (m) 0.100-1.500			
TYPE OF MATERIAL: MOIST BROWN MOLTLED SANDY SILTY CLAY			
TESTED BY: M. MILANZI		DATE: 27 - 05 - 2019	TIME: 13:14
CHECKED BY: S. THANGATO		DATE: 31 - 05 - 2019	TIME: 09:35
APPROVED BY: M. SABELLI		DATE: 31 - 05 - 2019	TIME: 14:18
PROJECT: GOLOMOTI SOLAR PV		CLIENT: JCM	

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
	1	2	3	4	1	2	3
TEST No.							
CONTAINER No.	R30		RAI		C8	C24	R4
MASS OF WET SOIL + CONTAINER(g)	51.0		50.0		43.0	42.0	42.5
MASS OF DRY SOIL + CONTAINER(g)	45.0		44.0		40.5	40.0	40.5
MASS OF CONTAINER (g)	28.5		29		29.5	31	31.5
MASS OF DRY SOIL (g)	16.5		15.0		11.0	9.0	9.0
MASS OF WATER (g)	6.00		6.00		2.50	2.00	2.00
MOISTURE CONTENT %	36.4	37.1	40.0	38.4	22.7	22.2	22.2
No. BLOWS	30		16			22.4	

LINEAR SHRINKAGE	10
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	13.0
LINEAR SHRINKAGE %	7.7
LIQUID LIMIT (LL) %	37.7
PLASTIC LIMIT (PL) %	22.4
PLASTICITY INDEX (PI)	15
NATURAL MOISTURE CONTENT %	8.9
FINENESS INDEX	720



REMARKS: SAMPLED FROM TRIAL PIT 11 @ 0.100-1.500M. SOLAR PV SITE INVESTIGATION



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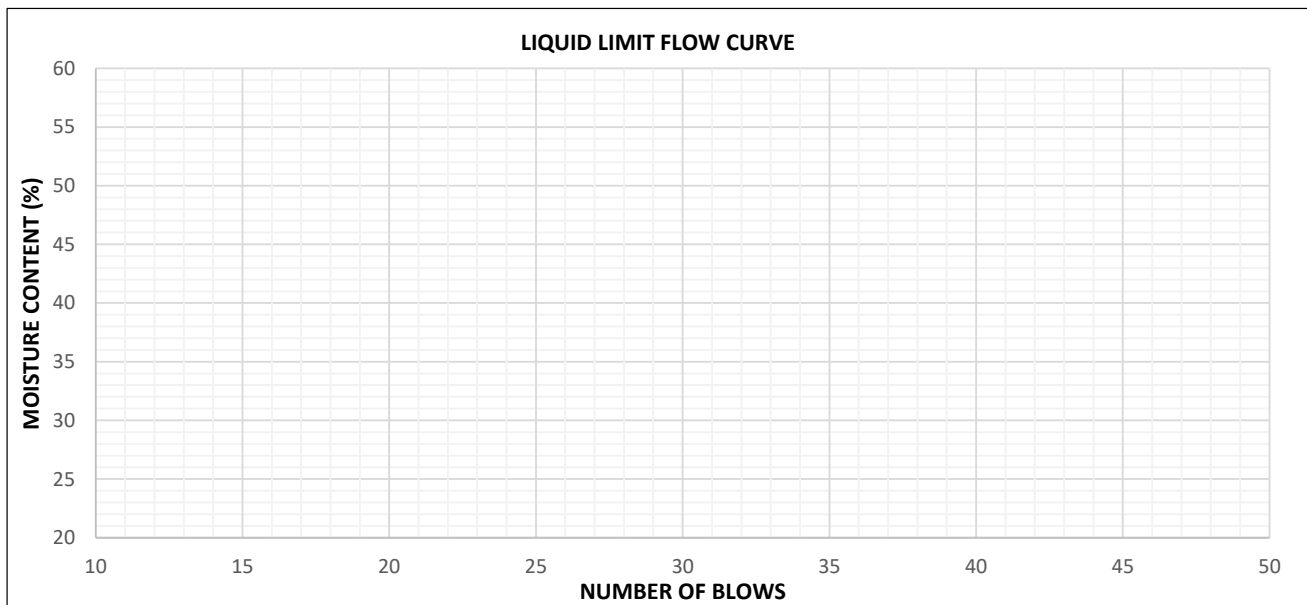
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SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 02 - 05 - 2019	TIME: 09:29
LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION
GOLOMOTI - SOLAR PV	0 672 650	8 402 797	(m)
DEPTH (m) 1.500-3.000			
TYPE OF MATERIAL: MOIST BROWN GRAVELLY SANDY SILTY CLAY			
TESTED BY: M. MILANZI		DATE: 27 - 05 - 2019	TIME: 13:14
CHECKED BY: S. THANGATO		DATE: 31 - 05 - 2019	TIME: 09:35
APPROVED BY: M. SABELLI		DATE: 31 - 05 - 2019	TIME: 14:18
PROJECT: GOLOMOTI SOLAR PV		CLIENT: JCM	

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
	1	2	3	4	1	2	3
TEST No.							
CONTAINER No.	R31		R10		C9	C20	R5
MASS OF WET SOIL + CONTAINER(g)	51.0		50.0		43.0	42.0	42.5
MASS OF DRY SOIL + CONTAINER(g)	45.0		44.0		40.5	40.0	40.5
MASS OF CONTAINER (g)	28		29.5		29	30.5	31
MASS OF DRY SOIL (g)	17.0		14.5		11.5	9.5	9.5
MASS OF WATER (g)	6.00		6.00		2.50	2.00	2.00
MOISTURE CONTENT %	35.3	36.0	41.4	39.7	21.7	21.1	21.1
No. BLOWS	30		17			21.3	

LINEAR SHRINKAGE	17
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	12.9
LINEAR SHRINKAGE %	8.5
LIQUID LIMIT (LL) %	37.9
PLASTIC LIMIT (PL) %	21.3
PLASTICITY INDEX (PI)	17
NATURAL MOISTURE CONTENT %	11.7
FINENESS INDEX	884



REMARKS: SAMPLED FROM TRIAL PIT 12 @ 1.500-3.000M. SOLAR PV SITE INVESTIGATION

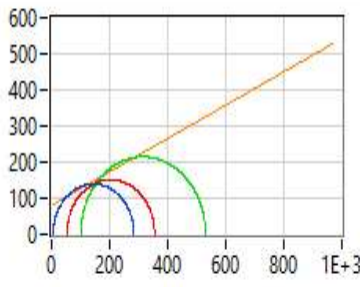
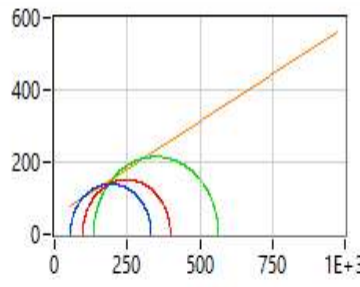
Triaxial test - UU BS 1377 part 7, 1377 part 8				
	Site :	GOLOMOTI SOLAR PV	Levy date :	14-Jun-19
	Technician's name :		Date of test :	14-Jun-19
GEOCONSULT LIMITED P.O. BOX 40 LILONGWE	File N° :	14	Survey depth (m) :	2.000
	Survey N° :	TRIAL PIT No. 12	Level of water (m) :	
	Kind of soil :	MOIST BROWN GRAVELLY SANDY SILTY CLAY		

Identification of samples :

Ovo, Total stress of the soil in situ (kPa) : 0.000	Uo, Pore pressure of the soil in situ (kPa) : 0.000
Category of soil : Steep/Strongly overconsolidated	Kind of drainage : Without lateral drain
ρ_s , Grain density (kg/m ³) : 0.000	
S_m : <input type="checkbox"/>	S_d : <input type="checkbox"/>

Samples before test :									Samples after saturation :		
N°	Hi (mm)	Di (mm)	mi (g)	ρ_i (kg/m ³)	ρ_{di} (kg/m ³)	wi (%)	ei	Si (%)	Ucp (kPa)	ΔV_{sat} (mm ³)	B (%)
1	71.00	38	166.0	2062	2049	0.606	-1.000	-0.000		0.000	0.000
2	72.00	38	162.0	1984	1672	18.68	-1.000	-0.000		0.000	0.000
3	71.00	38	165.5	2055	1776	15.73	-1.000	-0.000		0.000	0.000

Samples after consolidation :							Samples after shearing							
N°	Hs (mm)	Ds (mm)	ΔV_s (mm ³)	T100 (min)	Vmax ($\mu\text{m}/\text{min}$)	σ'_c (kPa)	Hf (mm)	Df (mm)	mf (g)	md (g)	wf (%)	ρ_{df} (kg/m ³)	ef	Srf (%)
1	71.00	38.00	0.000	0.000	0.000	0.000	71.00	38.00	166.0	165.0	0.606	2049	-1.000	-0.000
2	72.00	38.00	0.000	0.000	0.000	0.000	72.00	38.00	162.0	136.5	18.68	1672	-1.000	-0.000
3	71.00	38.00	0.000	0.000	0.000	0.000	71.00	38.00	165.5	143.0	15.73	1776	-1.000	-0.000

Total stress :	Effective stress :	Comments :												
 <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><th colspan="2">Mohr</th></tr> <tr><td>C (kPa)</td><td>79.55</td></tr> <tr><td>ϕ (°)</td><td>24.95</td></tr> </table>	Mohr		C (kPa)	79.55	ϕ (°)	24.95	 <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><th>Mohr</th><th>Lambe</th></tr> <tr><td>C' (kPa)</td><td>48.22 / 35.63</td></tr> <tr><td>ϕ' (°)</td><td>27.97 / 26.77</td></tr> </table>	Mohr	Lambe	C' (kPa)	48.22 / 35.63	ϕ' (°)	27.97 / 26.77	<div style="border: 1px solid black; height: 100px; width: 100%;"></div>
Mohr														
C (kPa)	79.55													
ϕ (°)	24.95													
Mohr	Lambe													
C' (kPa)	48.22 / 35.63													
ϕ' (°)	27.97 / 26.77													
Visa :		p.1/3												

3.16 Trial Pit 13



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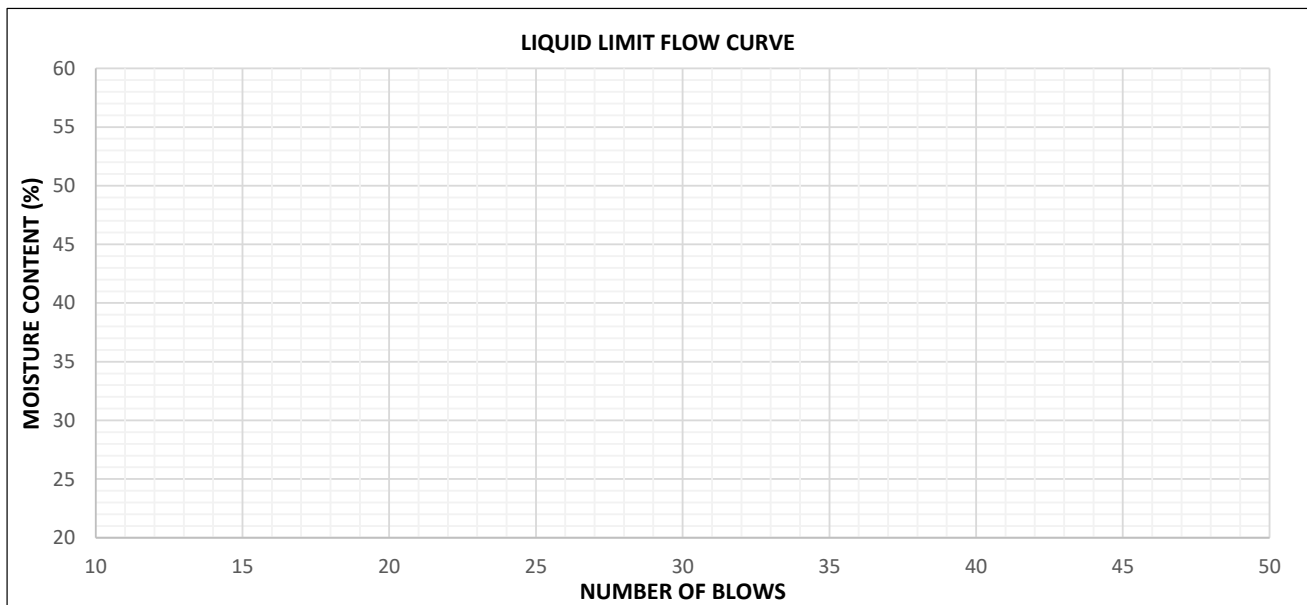
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP13 / AL039 / 02MAY19	
SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 02 - 05 - 2019	TIME: 10:15
LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION
GOLOMOTI - SOLAR PV	0 672 640	8 402 630	(m)
DEPTH (m) 2.000-4.000			
TYPE OF MATERIAL: MOIST BROWN STIFF LATERITE GRAVELLY SANDY SILTY CLAY			
TESTED BY: M. MILANZI		DATE: 28 - 05 - 2019	TIME: 14:14
CHECKED BY: G. KACHIWALA		DATE: 31 - 05 - 2019	TIME: 09:35
APPROVED BY: M. SABELLI		DATE: 31 - 05 - 2019	TIME: 14:18
PROJECT: GOLOMOTI SOLAR PV		CLIENT: JCM	

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
	1	2	3	4	1	2	3
TEST No.							
CONTAINER No.	C6		R20		C22	R18	R24
MASS OF WET SOIL + CONTAINER(g)	51.5		51.5		35.5	39.0	35.0
MASS OF DRY SOIL + CONTAINER(g)	45.5		44.5		34.5	37.0	33.5
MASS OF CONTAINER (g)	30.5		30		30.5	29	27.5
MASS OF DRY SOIL (g)	15.0		14.5		4.0	8.0	6.0
MASS OF WATER (g)	6.00		7.00		1.00	2.00	1.50
MOISTURE CONTENT %	40.0	40.8	48.3	46.8	25.0	25.0	25.0
No. BLOWS	34		18			25.0	

LINEAR SHRINKAGE	5
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	12.9
LINEAR SHRINKAGE %	8.5
LIQUID LIMIT (LL) %	43.8
PLASTIC LIMIT (PL) %	25.0
PLASTICITY INDEX (PI)	19
NATURAL MOISTURE CONTENT %	7.1
FINENESS INDEX	1064



REMARKS: SAMPLED FROM TRIAL PIT 13 @ 2.000-4.000M. SOLAR PV SITE INVESTIGATION



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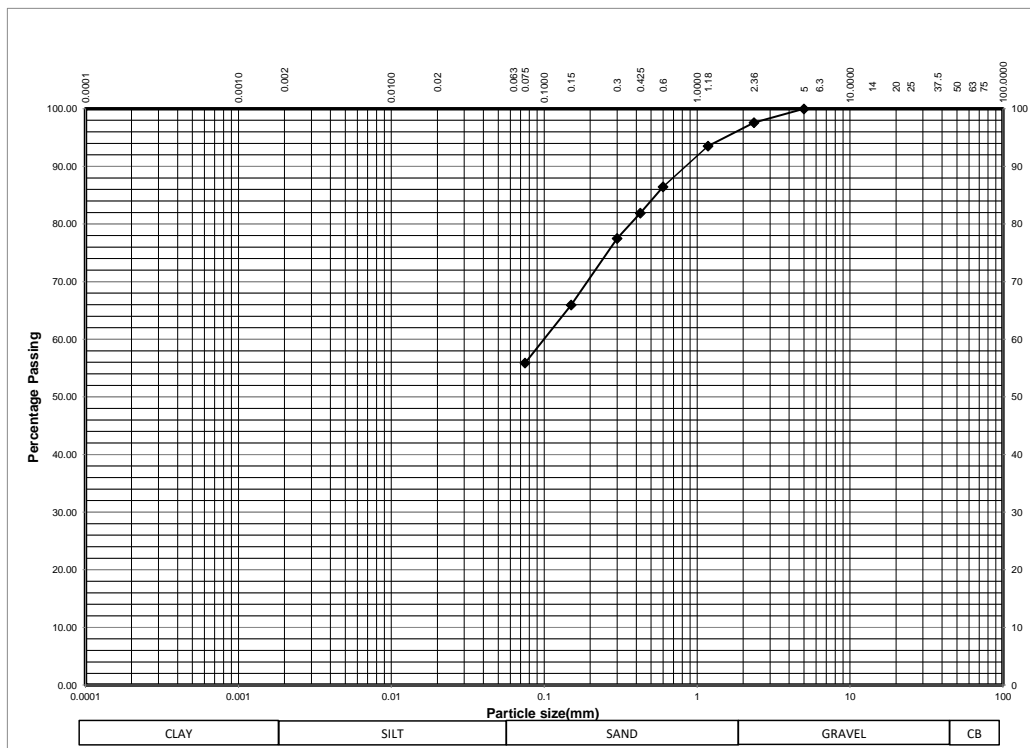
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LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP013 / G037 / 02MAY19		
SAMPLED BY: GEOCONSULT LAB TEAM		DATE: 02 / 05 / 2019	TIME: 08:27	
LOCATION:	EASTING	NORTHING	ELEVATION	DEPTH (m)
GOLOMOTI - SOLAR PV	0 672 640	8 402 630	(m)	0.100-1.000
TYPE OF MATERIAL: MOIST BROWN MOLTLED SANDY SILTY CLAY				
TESTED BY: C. NDALAMA		DATE: 28- 05 - 2019	TIME: 10:43	
CHECKED BY: G. KACHIWALA		DATE: 04 - 06 - 2019	TIME: 13:30	
APPROVED BY: M. SABELLI		DATE: 04 - 06 - 2019	TIME: 15:00	

PROJECT: GOLOMOTI SOLAR PV **CLIENT: JCM**

SIEVE ANALYSIS (GRADATION) STANDARD: TRH14:1985

SIEVE (mm)	MASS RETAINED	PERCENTAGE			GRADATION SPECIFICATION			ZONE
		RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.500								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300								
5.000	0.00	0.00	100.00	100				
2.360	11.50	2.39	97.61	98				
1.180	31.00	6.45	93.55	94				
0.600	65.00	13.53	86.47	86				
0.425	87.00	18.11	81.89	82				
0.300	108.00	22.48	77.52	78				
0.150	163.50	34.03	65.97	66				
0.075	212.00	44.12	55.88	56				
0 pan	268.50	55.88						
TOTAL (g)	480.50							



REMARKS: SAMPLED FROM TRIAL PIT 13 @ 0.100-1.000M. SOLAR PV SITE INVESTIGATION

PAGE No.



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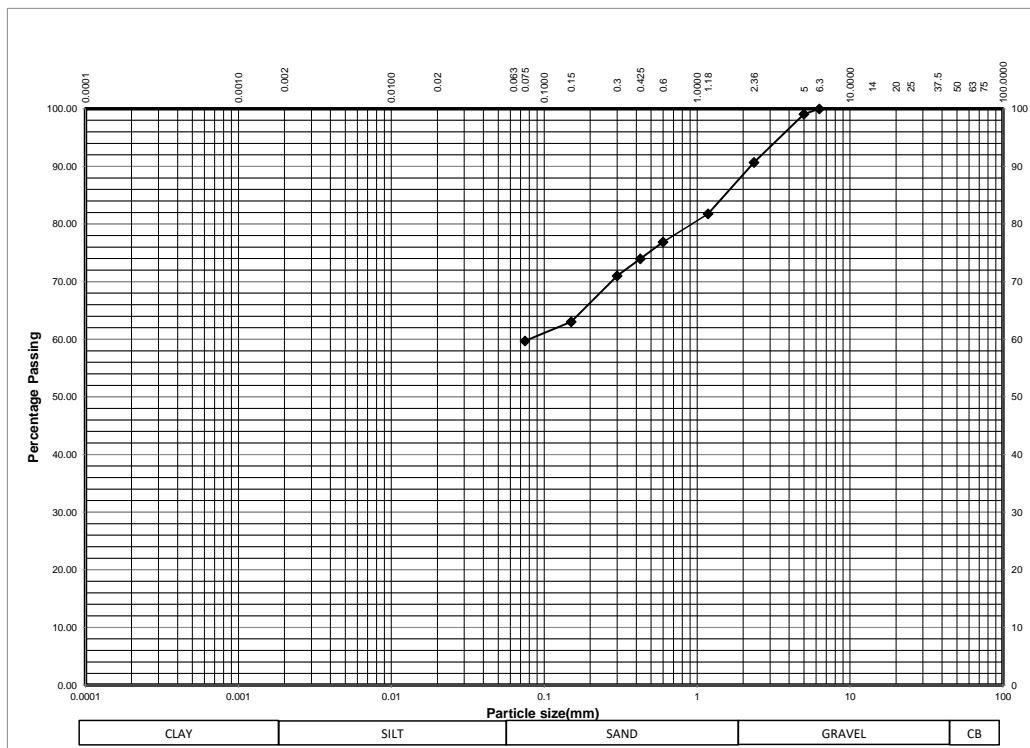
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP013 / G038 / 02MAY19		
SAMPLED BY: GEOCONSULT LAB TEAM		DATE: 02 / 05 / 2019	TIME: 08:27	
LOCATION:	EASTING	NORTHING	ELEVATION	DEPTH (m)
GOLOMOTI - SOLAR PV	0 672 640	8 402 630	(m)	1.000-2.000
TYPE OF MATERIAL: MOIST BROWN SANDY SILTY CLAY				
TESTED BY: C. NDALAMA		DATE: 28- 05 - 2019	TIME: 10:43	
CHECKED BY: G. KACHIWALA		DATE: 04 - 06 - 2019	TIME: 13:30	
APPROVED BY: M. SABELLI		DATE: 04 - 06 - 2019	TIME: 15:00	

PROJECT: GOLOMOTI SOLAR PV **CLIENT: JCM**

SIEVE ANALYSIS (GRADATION) STANDARD: TRH14:1985

SIEVE (mm)	MASS RETAINED	PERCENTAGE			GRADATION SPECIFICATION			ZONE
		RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.500								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300	0.00	0.00	100.00	100				
5.000	6.50	0.92	99.08	99				
2.360	65.50	9.29	90.71	91				
1.180	128.50	18.23	81.77	82				
0.600	163.00	23.12	76.88	77				
0.425	183.50	26.03	73.97	74				
0.300	204.50	29.01	70.99	71				
0.150	260.50	36.95	63.05	63				
0.075	284.00	40.28	59.72	60				
0 pan	421.00	59.72						
TOTAL (g)	705.00							



REMARKS: SAMPLED FROM TRIAL PIT 13 @ 1.000-2.000M. SOLAR PV SITE INVESTIGATION

PAGE No.



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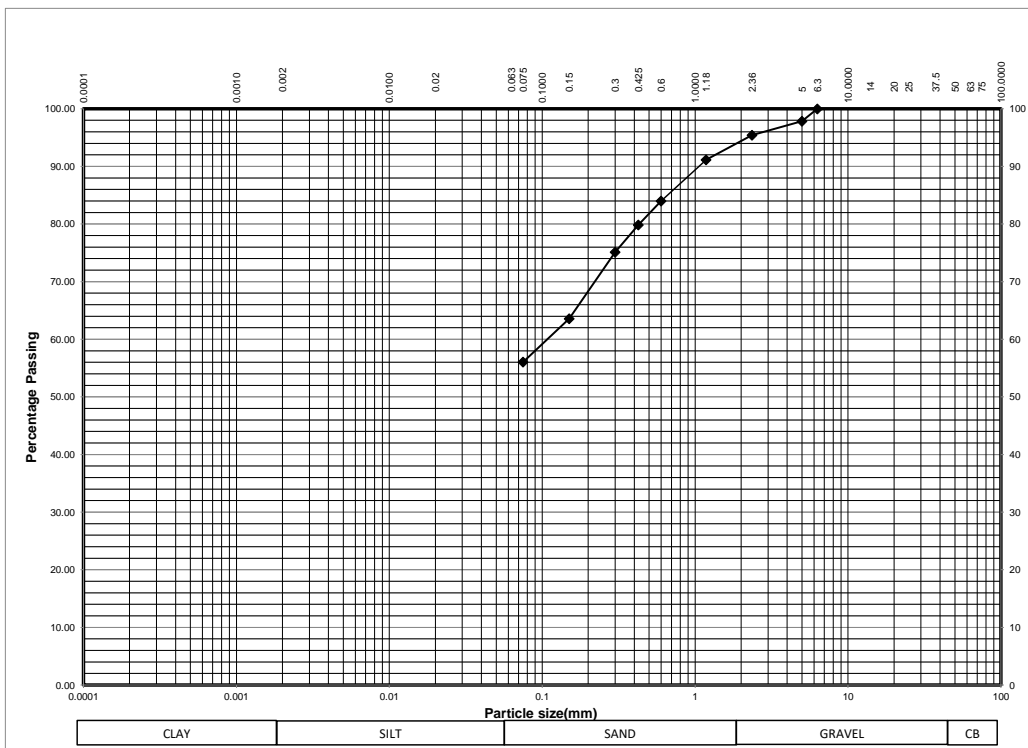
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP013 / G039 / 02MAY19		
SAMPLED BY: GEOCONSULT LAB TEAM		DATE: 02 / 05 / 2019	TIME: 08:27	
LOCATION:	EASTING	NORTHING	ELEVATION	DEPTH (m)
GOLOMOTI - SOLAR PV	0 672 640	8 402 630	(m)	2.000-4.000
TYPE OF MATERIAL: MOIST BROWN STIFF LATERITE GRAVELLY SANDY SILTY CLAY				
TESTED BY: C. NDALAMA		DATE: 28- 05 - 2019	TIME: 10:43	
CHECKED BY: G. KACHIWALA		DATE: 04 - 06 - 2019	TIME: 13:30	
APPROVED BY: M. SABELLI		DATE: 04 - 06 - 2019	TIME: 15:00	

PROJECT: GOLOMOTI SOLAR PV **CLIENT: JCM**


SIEVE ANALYSIS (GRADATION) STANDARD: TRH14:1985


SIEVE (mm)	MASS RETAINED	PERCENTAGE			GRADATION SPECIFICATION			ZONE
		RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.500								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300	0.00	0.00	100.00	100				
5.000	8.00	2.15	97.85	98				
2.360	17.00	4.57	95.43	95				
1.180	33.00	8.87	91.13	91				
0.600	59.50	15.99	84.01	84				
0.425	75.00	20.16	79.84	80				
0.300	92.50	24.87	75.13	75				
0.150	135.50	36.42	63.58	64				
0.075	163.50	43.95	56.05	56				
0 pan	208.50	56.05						
TOTAL (g)	372.00							




REMARKS: SAMPLED FROM TRIAL PIT 13 @ 2.000-4.000M. SOLAR PV SITE INVESTIGATION

PAGE No.

 GEOCONSULT +265 0888 846 543 sabelli@geoconsult.cc	LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP013 / NMC037 / 02MAY19		
	SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 02 - 05 - 2019	TIME: 08:27	
	LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
	GOLOMOTI - SOLAR PV	0 672 640	8 402 630	(m)	0.100-1.000
	TYPE OF MATERIAL: MOIST BROWN MOLTLED SANDY SILTY CLAY				
	TESTED BY: C. NDALAMA		DATE: 05 - 05 - 2019	TIME: 13:38	
	CHECKED BY: G. KACHIWALA		DATE: 06 - 05 - 2019	TIME: 09:46	
	APPROVED BY: M. SABELLI		DATE: 06 - 05 - 2019	TIME: 10:00	
	PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM	
	NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: ASTM D7263				
MASS OF WET SOIL + CONTAINER (g)		306.5			
MASS OF DRY SOIL AND CONTAINER (g)		294.5			
CONTAINER No.		GC19			
MASS OF CONTAINER (g)		67.0			
MASS OF DRY SOIL (g)		227.5			
MASS OF WATER (g)		12.0			
MOISTURE CONTENT %		5.3			
AVERAGE MOISTURE CONTENT %	5.3				
REMARKS: SAMPLED FROM TRIAL PIT 13 @0.100-1.000M. SOLAR PV SITE INVESTIGATION				PAGE No.	

 GEOCONSULT +265 0888 846 543 sabelli@geoconsult.cc	LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP013 / NMC038 / 02MAY19		
	SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 02 - 05 - 2019	TIME: 08:27	
	LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
	GOLOMOTI - SOLAR PV	0 672 640	8 402 630	(m)	1.000-2.000
	TYPE OF MATERIAL: MOIST BROWN SANDY SILTY CLAY				
	TESTED BY: C. NDALAMA		DATE: 05 - 05 - 2019	TIME: 13:38	
	CHECKED BY: G. KACHIWALA		DATE: 06 - 05 - 2019	TIME: 09:46	
	APPROVED BY: M. SABELLI		DATE: 06 - 05 - 2019	TIME: 10:00	
	PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM	
	NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: ASTM D7263				
MASS OF WET SOIL + CONTAINER (g)			309.5		
MASS OF DRY SOIL AND CONTAINER (g)			294.0		
CONTAINER No.			GC11		
MASS OF CONTAINER (g)			70.0		
MASS OF DRY SOIL (g)			224.0		
MASS OF WATER (g)			15.5		
MOISTURE CONTENT %			6.9		
AVERAGE MOISTURE CONTENT %			6.9		
REMARKS: SAMPLED FROM TRIAL PIT 13 @1.000-2.000M. SOLAR PV SITE INVESTIGATION					PAGE No.

 GEOCONSULT +265 0888 846 543 sabelli@geoconsult.cc	LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP013 / NMC039 / 02MAY19		
	SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 02 - 05 - 2019	TIME: 08:27	
	LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
	GOLOMOTI - SOLAR PV	0 672 640	8 402 630	(m)	2.000-4.000
	TYPE OF MATERIAL: MOIST BROWN STIFF LATERITE GRAVELLY SANDY SILTY CLAY				
TESTED BY: C. NDALAMA		DATE: 05 - 05 - 2019	TIME: 13:38		
CHECKED BY: G. KACHIWALA		DATE: 06 - 05 - 2019	TIME: 09:46		
APPROVED BY: M. SABELLI		DATE: 06 - 05 - 2019	TIME: 10:00		
PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM		
NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: ASTM D7263					
MASS OF WET SOIL + CONTAINER (g)		300.5			
MASS OF DRY SOIL AND CONTAINER (g)		285.0			
CONTAINER No.		GC111			
MASS OF CONTAINER (g)		65.5			
MASS OF DRY SOIL (g)		219.5			
MASS OF WATER (g)		15.5			
MOISTURE CONTENT %		7.1			
AVERAGE MOISTURE CONTENT %		7.1			
REMARKS: SAMPLED FROM TRIAL PIT 13 @2.000-4.000M. SOLAR PV SITE INVESTIGATION				PAGE No.	



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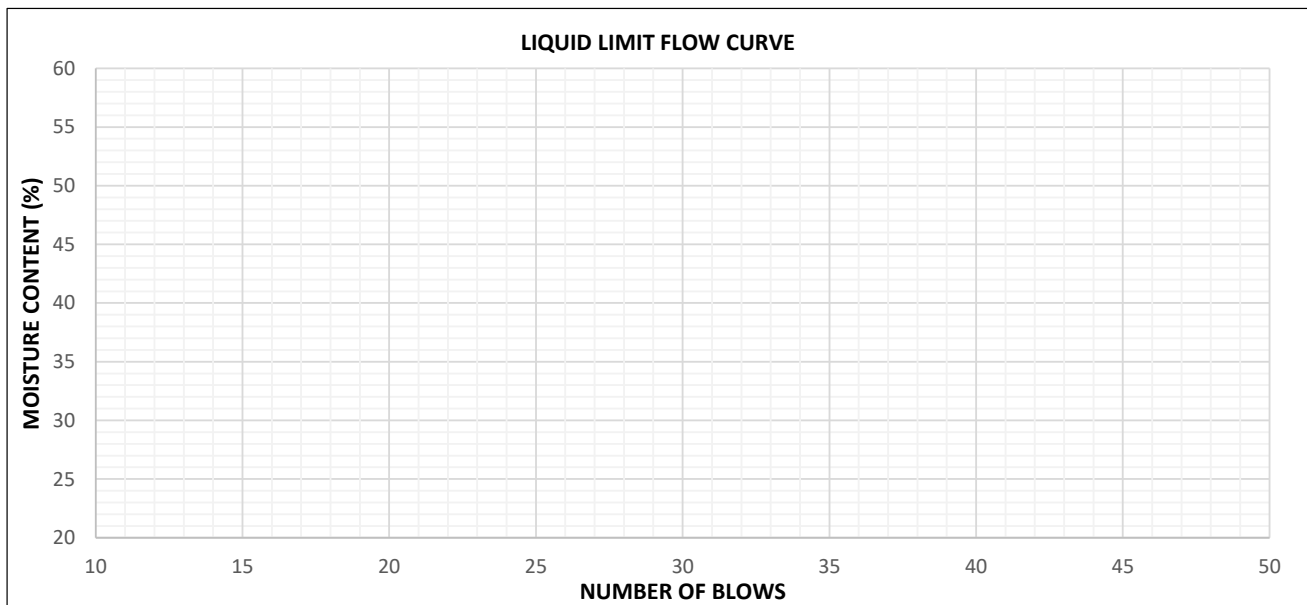
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP13 / AL037 / 02MAY19	
SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 02 - 05 - 2019	TIME: 07:15
LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION
GOLOMOTI - SOLAR PV	0 672 640	8 402 630	(m)
DEPTH (m) 0.200-1.000			
TYPE OF MATERIAL: MOIST BROWN MOLTLED SANDY SILTY CLAY			
TESTED BY: M. MILANZI		DATE: 27 - 05 - 2019	TIME: 13:14
CHECKED BY: G. KACHIWALA		DATE: 31 - 05 - 2019	TIME: 09:35
APPROVED BY: M. SABELLI		DATE: 31 - 05 - 2019	TIME: 14:18
PROJECT: GOLOMOTI SOLAR PV		CLIENT: JCM	

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
	1	2	3	4	1	2	3
TEST No.							
CONTAINER No.	K2		R8		C27	R19	C13
MASS OF WET SOIL + CONTAINER(g)	50.0		49.5		35.5	38.0	34.0
MASS OF DRY SOIL + CONTAINER(g)	45.5		45.0		34.5	37.0	33.0
MASS OF CONTAINER (g)	28		30		29	31.5	27.5
MASS OF DRY SOIL (g)	17.5		15.0		5.5	5.5	5.5
MASS OF WATER (g)	4.50		4.50		1.00	1.00	1.00
MOISTURE CONTENT %	25.7	26.2	30.0	28.8	18.2	18.2	18.2
No. BLOWS	33		17			18.2	

LINEAR SHRINKAGE	17
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	13.2
LINEAR SHRINKAGE %	6.1
LIQUID LIMIT (LL) %	27.5
PLASTIC LIMIT (PL) %	18.2
PLASTICITY INDEX (PI)	9
NATURAL MOISTURE CONTENT %	5.3
FINENESS INDEX	504



REMARKS: SAMPLED FROM TRIAL PIT 13 @ 0.200-1.000M. SOLAR PV SITE INVESTIGATION



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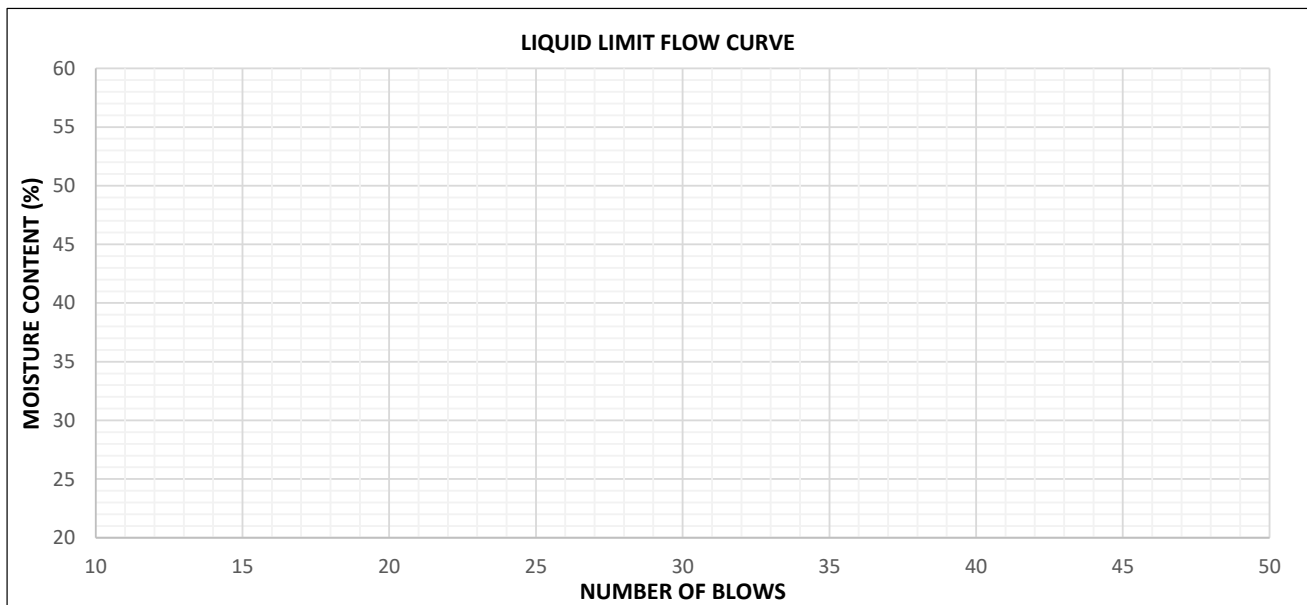
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP13 / AL038 / 02MAY19	
SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 02 - 05 - 2019	TIME: 10:15
LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION
GOLOMOTI - SOLAR PV	0 672 640	8 402 630	(m)
DEPTH (m) 1.000-2.000			
TYPE OF MATERIAL: MOIST BROWN MOLTLED SANDY SILTY CLAY			
TESTED BY: M. MILANZI		DATE: 28 - 05 - 2019	TIME: 13:14
CHECKED BY: G. KACHIWALA		DATE: 31 - 05 - 2019	TIME: 09:35
APPROVED BY: M. SABELLI		DATE: 31 - 05 - 2019	TIME: 14:18
PROJECT: GOLOMOTI SOLAR PV		CLIENT: JCM	

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
	1	2	3	4	1	2	3
TEST No.							
CONTAINER No.	K4		R18		C28	R16	C7
MASS OF WET SOIL + CONTAINER(g)	50.5		50.5		35.5	38.0	34.0
MASS OF DRY SOIL + CONTAINER(g)	45.5		45.5		34.5	37.0	33.0
MASS OF CONTAINER (g)	28		30		28	30.5	26.5
MASS OF DRY SOIL (g)	17.5		15.5		6.5	6.5	6.5
MASS OF WATER (g)	5.00		5.00		1.00	1.00	1.00
MOISTURE CONTENT %	28.6	29.1	32.3	31.0	15.4	15.4	15.4
No. BLOWS	32		16			15.4	

LINEAR SHRINKAGE	11
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	13.1
LINEAR SHRINKAGE %	6.9
LIQUID LIMIT (LL) %	30.1
PLASTIC LIMIT (PL) %	15.4
PLASTICITY INDEX (PI)	15
NATURAL MOISTURE CONTENT %	6.9
FINENESS INDEX	900



REMARKS: SAMPLED FROM TRIAL PIT 13 @ 1.000-2.000M. SOLAR PV SITE INVESTIGATION

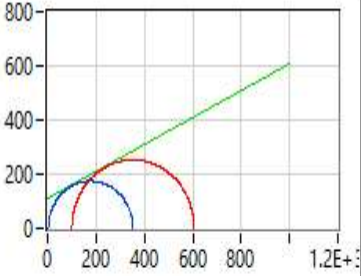
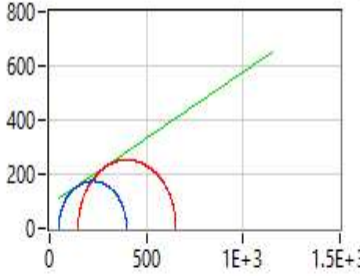
Triaxial test - UU BS 1377 part 7, 1377 part 8				
	Site :	GOLOMOTI SOLAR PV	Levy date :	28-Jun-19
	Technician's name :		Date of test :	28-Jun-19
GEOCONSULT LIMITED P.O. BOX 40 LILONGWE	File N° :	35	Survey depth (m) :	1.000
	Survey N° :	TRIAL PIT No. 13	Level of water (m) :	
	Kind of soil :	Moist Brown Sandy Silty CLAY		

Identification of samples :

Ovo, Total stress of the soil in situ (kPa) :	0.000	Uo, Pore pressure of the soil in situ (kPa) :	0.000
Category of soil :	Steep/Strongly overconsolidated	Kind of drainage :	Without lateral drain
ρs, Grain density (kg/m³) :	0.000		
Sm :	<input type="checkbox"/>	Sd :	<input type="checkbox"/>

Samples before test :									Samples after saturation :		
N°	Hi (mm)	Di (mm)	mi (g)	pi (kg/m³)	pdi (kg/m³)	wi (%)	ei	Si (%)	Ucp (kPa)	ΔVsat. (mm³)	B (%)
1	76.00	38	158.5	1839	1572	16.97	-1.000	-0.000		0.000	0.000
2	76.00	38	174.0	2019	1746	15.61	-1.000	-0.000		0.000	0.000

Samples after consolidation :							Samples after shearing							
N°	Hs (mm)	Ds (mm)	ΔVs (mm³)	T100 (min)	Vmax (μm/min)	σ'c (kPa)	Hf (mm)	Df (mm)	mf (g)	md (g)	wf (%)	pdf (kg/m³)	ef	Srf (%)
1	76.00	38.00	0.000	0.000	0.000	0.000	76.00	38.00	162.0	135.5	19.56	1572	-1.000	-0.000
2	76.00	38.00	0.000	0.000	0.000	0.000	76.00	38.00	175.5	150.5	16.61	1746	-1.000	-0.000

Total stress :	Effective stress :	Comments :																		
 <table border="1" style="margin: 10px auto; border-collapse: collapse;"> <tr><th colspan="2">Mohr</th></tr> <tr><td>C (kPa)</td><td>106.5</td></tr> <tr><td>φ (°)</td><td>26.50</td></tr> </table>	Mohr		C (kPa)	106.5	φ (°)	26.50	 <table border="1" style="margin: 10px auto; border-collapse: collapse;"> <tr><th colspan="2">Mohr</th><th colspan="2">Lambe</th></tr> <tr><td>C' (kPa)</td><td>85.20</td><td>76.46</td><td></td></tr> <tr><td>φ' (°)</td><td>26.19</td><td>23.81</td><td></td></tr> </table>	Mohr		Lambe		C' (kPa)	85.20	76.46		φ' (°)	26.19	23.81		<div style="border: 1px solid black; height: 100px; width: 100%;"></div> <div style="border-top: 1px solid black; padding-top: 5px;"> Visa : p.1/3 </div>
Mohr																				
C (kPa)	106.5																			
φ (°)	26.50																			
Mohr		Lambe																		
C' (kPa)	85.20	76.46																		
φ' (°)	26.19	23.81																		

3.17 Trial Pit 14



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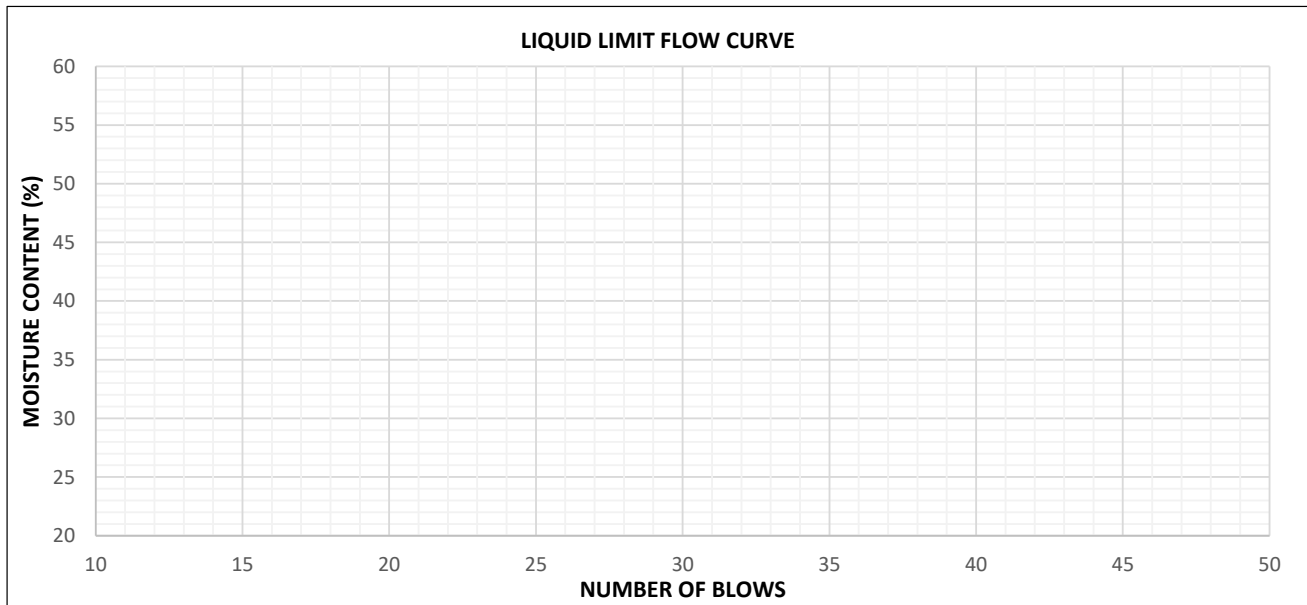
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP14 / AL041 / 01MAY19	
SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 01 - 05 - 2019	TIME: 10:15
LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION
GOLOMOTI - SOLAR PV	0 672 645	8 402 499	(m)
DEPTH (m) 1.000-3.800			
TYPE OF MATERIAL: MOIST BROWN SANDY SILTY CLAY			
TESTED BY: M. MILANZI		DATE: 10 - 06 - 2019	TIME: 10:20
CHECKED BY: G. KACHIWALA		DATE: 12 - 06 - 2019	TIME: 09:40
APPROVED BY: M. SABELLI		DATE: 12 - 06 - 2019	TIME: 14:28
PROJECT: GOLOMOTI SOLAR PV		CLIENT: JCM	

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
	1	2	3	4	1	2	3
TEST No.							
CONTAINER No.	C5		C3		RAI	N	R24
MASS OF WET SOIL + CONTAINER(g)	51.5		63.0		51.0	46.5	35.0
MASS OF DRY SOIL + CONTAINER(g)	44.5		50.5		46.5	42.5	33.5
MASS OF CONTAINER (g)	28.5		22.5		28.5	27	27.5
MASS OF DRY SOIL (g)	16.0		28.0		18.0	15.5	6.0
MASS OF WATER (g)	7.00		12.50		4.50	4.00	1.50
MOISTURE CONTENT %	43.8	44.2	44.6	43.8	25.0	25.8	25.0
No. BLOWS	29		20			25.3	

LINEAR SHRINKAGE	18
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	13.1
LINEAR SHRINKAGE %	6.9
LIQUID LIMIT (LL) %	44.0
PLASTIC LIMIT (PL) %	25.3
PLASTICITY INDEX (PI)	19
NATURAL MOISTURE CONTENT %	11.1
FINENESS INDEX	1235



REMARKS: SAMPLED FROM TRIAL PIT 14 @ 1.000-3.000M. SOLAR PV SITE INVESTIGATION



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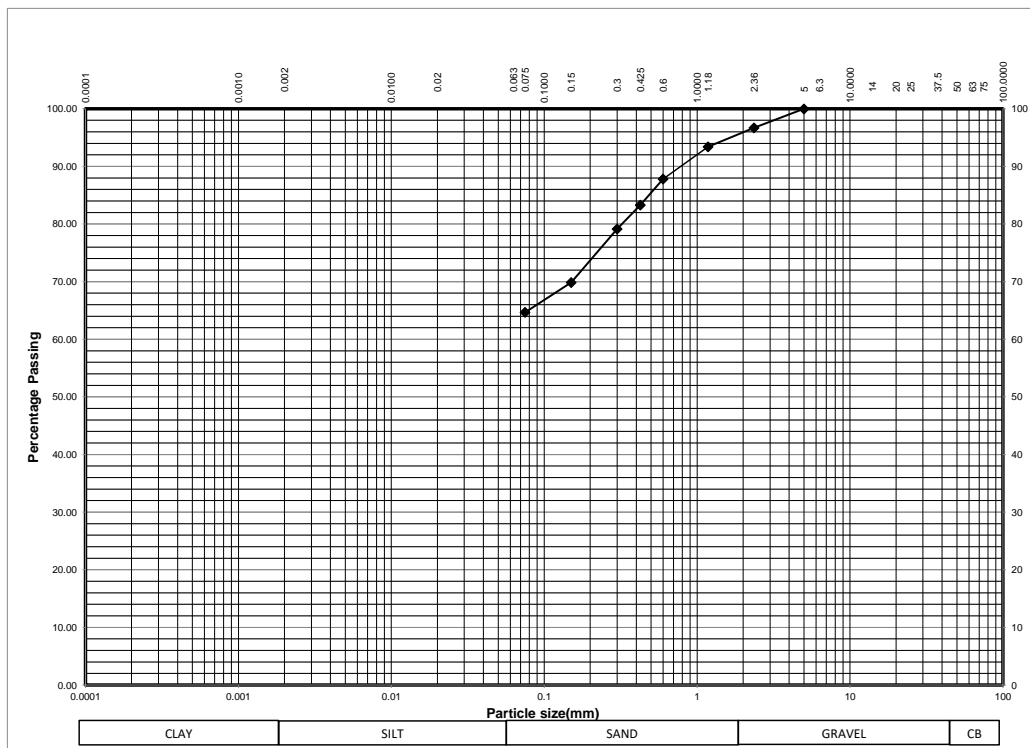
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LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP014 / G040 / 01MAY19		
SAMPLED BY: GEOCONSULT LAB TEAM		DATE: 02 / 05 / 2019	TIME: 17:36	
LOCATION:	EASTING	NORTHING	ELEVATION	DEPTH (m)
GOLOMOTI - SOLAR PV	0 672 645	8 402 499	(m)	0.100-1.000
TYPE OF MATERIAL: MOIST DARK BROWN SANDY SILTY CLAY				
TESTED BY: C. NDALAMA		DATE: 06- 06 - 2019	TIME: 13:20	
CHECKED BY: G. KACHIWALA		DATE: 07 - 06 - 2019	TIME: 13:30	
APPROVED BY: M. SABELLI		DATE: 07 - 06 - 2019	TIME: 15:00	

PROJECT: GOLOMOTI SOLAR PV **CLIENT: JCM**

SIEVE ANALYSIS (GRADATION) STANDARD: TRH14:1985

SIEVE (mm)	MASS RETAINED	PERCENTAGE			GRADATION SPECIFICATION			ZONE
		RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.500								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300								
5.000	0.00	0.00	100.00	100				
2.360	24.50	3.30	96.70	97				
1.180	49.00	6.59	93.41	93				
0.600	90.50	12.18	87.82	88				
0.425	124.00	16.69	83.31	83				
0.300	155.00	20.86	79.14	79				
0.150	224.00	30.15	69.85	70				
0.075	262.50	35.33	64.67	65				
0 pan	480.50	64.67						
TOTAL (g)	743.00							



REMARKS: SAMPLED FROM TRIAL PIT 14 @ 0.100-1.000M. SOLAR PV SITE INVESTIGATION

PAGE No.



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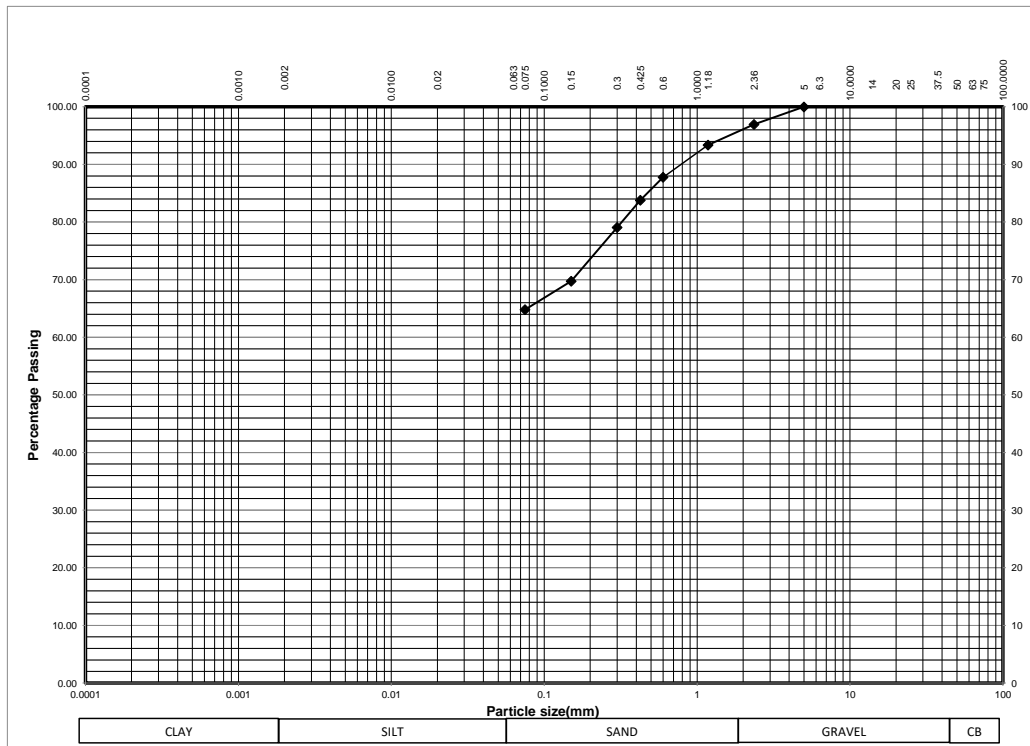
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LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP014 / G041 / 01MAY19		
SAMPLED BY: GEOCONSULT LAB TEAM		DATE: 01 / 05 / 2019	TIME: 17:36	
LOCATION:	EASTING	NORTHING	ELEVATION	DEPTH (m)
GOLOMOTI - SOLAR PV	0 672 645	8 403 499	(m)	1.000-3.800
TYPE OF MATERIAL: MOIST BROWN SANDY SILTY CLAY				
TESTED BY: C. NDALAMA		DATE: 06- 06 - 2019	TIME: 13:20	
CHECKED BY: G. KACHIWALA		DATE: 07 - 06 - 2019	TIME: 13:30	
APPROVED BY: M. SABELLI		DATE: 07 - 06 - 2019	TIME: 15:00	

PROJECT: GOLOMOTI SOLAR PV **CLIENT: JCM**


SIEVE ANALYSIS (GRADATION) STANDARD: TRH14:1985


SIEVE (mm)	MASS RETAINED	PERCENTAGE			GRADATION SPECIFICATION			ZONE
		RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.500								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300								
5.000	0.00	0.00	100.00	100				
2.360	22.50	3.04	96.96	97				
1.180	49.00	6.62	93.38	93				
0.600	90.50	12.23	87.77	88				
0.425	120.00	16.22	83.78	84				
0.300	155.00	20.95	79.05	79				
0.150	224.00	30.27	69.73	70				
0.075	260.50	35.20	64.80	65				
0 pan	479.50	64.80						
TOTAL (g)	740.00							



REMARKS: SAMPLED FROM TRIAL PIT 14 @ 1.000-3.800M. SOLAR PV SITE INVESTIGATION

PAGE No.

 GEOCONSULT +265 0888 846 543 sabelli@geoconsult.cc	LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP014 / NMC040 / 01MAY19		
	SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 01 - 05 - 2019	TIME: 09:29	
	LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
	GOLOMOTI - SOLAR PV	0 672 645	8 402 499	(m)	0.100-1.000
	TYPE OF MATERIAL: MOIST DARK BROWN SANDY SILTY CLAY				
TESTED BY: C. NDALAMA		DATE: 05 - 05 - 2019	TIME: 13:38		
CHECKED BY: G. KACHIWALA		DATE: 06 - 05 - 2019	TIME: 09:46		
APPROVED BY: M. SABELLI		DATE: 06 - 05 - 2019	TIME: 10:00		
PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM		
NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: ASTM D7263					
MASS OF WET SOIL + CONTAINER (g)		307.5			
MASS OF DRY SOIL AND CONTAINER (g)		294.0			
CONTAINER No.		GC18			
MASS OF CONTAINER (g)		67.5			
MASS OF DRY SOIL (g)		226.5			
MASS OF WATER (g)		13.5			
MOISTURE CONTENT %		6.0			
AVERAGE MOISTURE CONTENT %		6.0			
REMARKS: SAMPLED FROM TRIAL PIT 14 @0.100-1.000M. SOLAR PV SITE INVESTIGATION				PAGE No.	

 GEOCONSULT +265 0888 846 543 sabelli@geoconsult.cc	LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP014 / NMC041 / 01MAY19		
	SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 01 - 05 - 2019	TIME: 17:39	
	LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
	GOLOMOTI - SOLAR PV	0 672 645	8 402 499	(m)	1.000-3.800
	TYPE OF MATERIAL: MOIST BROWN SANDY SILTY CLAY				
	TESTED BY: C. NDALAMA		DATE: 05 - 05 - 2019	TIME: 13:58	
	CHECKED BY: G. KACHIWALA		DATE: 06 - 05 - 2019	TIME: 09:46	
	APPROVED BY: M. SABELLI		DATE: 06 - 05 - 2019	TIME: 10:00	
	PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM	
	NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: ASTM D7263				
MASS OF WET SOIL + CONTAINER (g)		378.0			
MASS OF DRY SOIL AND CONTAINER (g)		345.5			
CONTAINER No.		GC111			
MASS OF CONTAINER (g)		51.5			
MASS OF DRY SOIL (g)		294.0			
MASS OF WATER (g)		32.5			
MOISTURE CONTENT %		11.1			
AVERAGE MOISTURE CONTENT %		11.1			
REMARKS: SAMPLED FROM TRIAL PIT 14 @1.000-3.800M. SOLAR PV SITE INVESTIGATION				PAGE No.	



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LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP14 / AL040 / 01MAY19	
SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 01 - 05 - 2019	TIME: 10:15
LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION
GOLOMOTI - SOLAR PV	0 672 645	8 402 499	(m)
DEPTH (m) 0.100-1.000			

TYPE OF MATERIAL: MOIST DARK BROWN SANDY SILTY CLAY

TESTED BY: M. MILANZI	DATE: 10 - 06 - 2019	TIME: 10:20
CHECKED BY: G. KACHIWALA	DATE: 12 - 06 - 2019	TIME: 09:40
APPROVED BY: M. SABELLI	DATE: 12 - 06 - 2019	TIME: 14:28

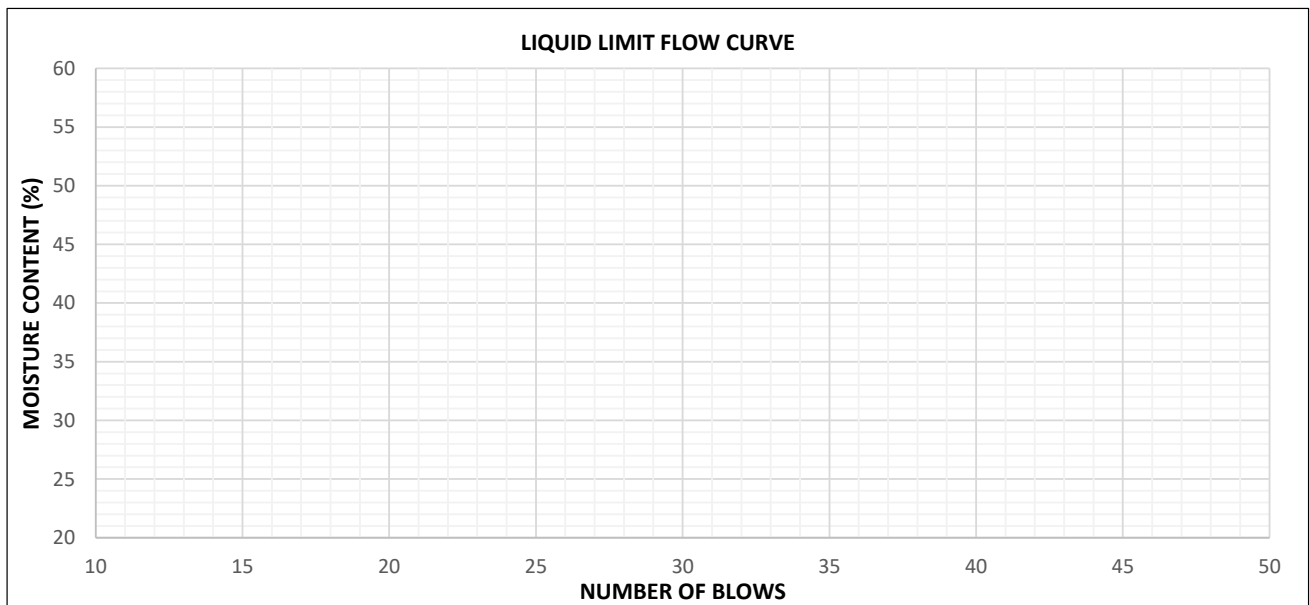
PROJECT: GOLOMOTI SOLAR PV

CLIENT: JCM

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
	1	2	3	4	1	2	3
TEST No.							
CONTAINER No.	C4		C3		RAI	N	R24
MASS OF WET SOIL + CONTAINER(g)	71.5		63.0		51.0	46.5	35.0
MASS OF DRY SOIL + CONTAINER(g)	58.5		50.5		46.5	42.5	33.5
MASS OF CONTAINER (g)	25		22.5		28.5	27	27.5
MASS OF DRY SOIL (g)	33.5		28.0		18.0	15.5	6.0
MASS OF WATER (g)	13.00		12.50		4.50	4.00	1.50
MOISTURE CONTENT %	38.8	39.2	44.6	43.8	25.0	25.8	25.0
No. BLOWS	29		20			25.3	

LINEAR SHRINKAGE	18
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	13.0
LINEAR SHRINKAGE %	7.7
LIQUID LIMIT (LL) %	41.5
PLASTIC LIMIT (PL) %	25.3
PLASTICITY INDEX (PI)	16
NATURAL MOISTURE CONTENT %	6.0
FINENESS INDEX	1040



REMARKS: SAMPLED FROM TRIAL PIT 14 @ 0.100-1.000M. SOLAR PV SITE INVESTIGATION

Triaxial test - UU BS 1377 part 7, 1377 part 8	
Site :	GOLOMOTI SOALR PV
Levy date :	26-Jun-19
Technician's name :	Date of test :
	26-Jun-19
File N° :	29
Survey depth (m) :	1.000
Survey N° :	TRIAL PIT No. 14
Level of water (m) :	
Kind of soil :	Moist Brown Sandy Silty CLAY

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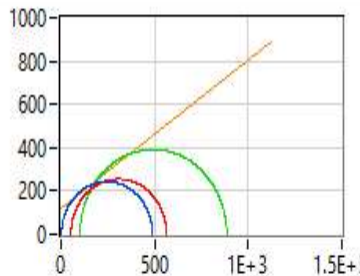
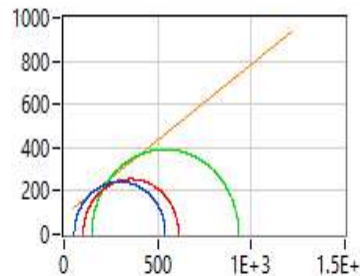
P.O. BOX 40 LILONGWE

Identification of samples :

Ovo, Total stress of the soil in situ (kPa) : 0.000	Uo, Pore pressure of the soil in situ (kPa) : 0.000
Category of soil : Steep/Strongly overconsolidated	Kind of drainage : Without lateral drain
ρ_s , Grain density (kg/m ³) : 0.000	
S_m : <input type="checkbox"/>	S_d : <input type="checkbox"/>

Samples before test :									Samples after saturation :		
N°	Hi (mm)	Di (mm)	mi (g)	ρ_i (kg/m ³)	ρ_{di} (kg/m ³)	wi (%)	ei	Si (%)	Ucp (kPa)	ΔV_{sat} (mm ³)	B (%)
1	76.00	38	167.0	1938	1618	19.71	-1.000	-0.000		0.000	0.000
2	76.00	38	166.0	1926	1601	20.29	-1.000	-0.000		0.000	0.000
3	76.00	38	169.0	1961	1636	19.86	-1.000	-0.000		0.000	0.000

Samples after consolidation :							Samples after shearing							
N°	Hs (mm)	Ds (mm)	ΔV_s (mm ³)	T100 (min)	Vmax ($\mu\text{m}/\text{min}$)	σ'_c (kPa)	Hf (mm)	Df (mm)	mf (g)	md (g)	wf (%)	ρ_{df} (kg/m ³)	ef	Srf (%)
1	76.00	38.00	0.000	0.000	0.000	0.000	76.00	38.00	168.0	139.5	20.43	1618	-1.000	-0.000
2	76.00	38.00	0.000	0.000	0.000	0.000	76.00	38.00	165.0	138.0	19.57	1601	-1.000	-0.000
3	76.00	38.00	0.000	0.000	0.000	0.000	76.00	38.00	167.5	141.0	18.79	1636	-1.000	-0.000

Total stress :	Effective stress :	Comments :												
 <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><th colspan="2">Mohr</th></tr> <tr><td>C (kPa)</td><td>119.9</td></tr> <tr><td>ϕ (°)</td><td>34.31</td></tr> </table>	Mohr		C (kPa)	119.9	ϕ (°)	34.31	 <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><th>Mohr</th><th>Lambe</th></tr> <tr><td>C' (kPa)</td><td>82.54 / 40.32</td></tr> <tr><td>ϕ' (°)</td><td>34.99 / 32.78</td></tr> </table>	Mohr	Lambe	C' (kPa)	82.54 / 40.32	ϕ' (°)	34.99 / 32.78	<p>Visa :</p>
Mohr														
C (kPa)	119.9													
ϕ (°)	34.31													
Mohr	Lambe													
C' (kPa)	82.54 / 40.32													
ϕ' (°)	34.99 / 32.78													
		p.1/3												

Triaxial test - UU BS 1377 part 7, 1377 part 8				
	Site :	GOLOMOTI SOLAR PV	Levy date :	25-Jun-19
	Technician's name :		Date of test :	25-Jun-19
GEOCONSULT LIMITED P.O. BOX 40 LILONGWE	File N° :	24	Survey depth (m) :	2.000
	Survey N° :	TRIAL PIT No. 14	Level of water (m) :	
	Kind of soil :	MOIST BROWN SANDY SILTY CLAY		

Identification of samples :

Ovo, Total stress of the soil in situ (kPa) :	0.000	Uo, Pore pressure of the soil in situ (kPa) :	0.000
Category of soil :	Soft/Granular	Kind of drainage :	Without lateral drain
ρ_s , Grain density (kg/m ³) :	0.000		
S_m :	<input type="checkbox"/>	S_d :	<input type="checkbox"/>

Samples before test :									Samples after saturation :		
N°	Hi (mm)	Di (mm)	mi (g)	ρ_i (kg/m ³)	ρ_{di} (kg/m ³)	wi (%)	ei	Si (%)	Ucp (kPa)	ΔV_{sat} (mm ³)	B (%)
1	76.00	38	164.0	1903	1514	25.67	-1.000	-0.000		0.000	0.000
2	76.00	38	163.0	1891	1526	23.95	-1.000	-0.000		0.000	0.000

Samples after consolidation :							Samples after shearing							
N°	Hs (mm)	Ds (mm)	ΔV_s (mm ³)	T100 (min)	Vmax (μm/min)	σ'_c (kPa)	Hf (mm)	Df (mm)	mf (g)	md (g)	wf (%)	ρ_{df} (kg/m ³)	ef	Srf (%)
1	76.00	38.00	0.000	0.000	0.000	0.000	76.00	38.00	164.0	130.5	25.67	1514	-1.000	-0.000
2	76.00	38.00	0.000	0.000	0.000	0.000	76.00	38.00	163.0	131.5	23.95	1526	-1.000	-0.000

Total stress :	Effective stress :	Comments :																		
<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="2" style="text-align: center;">Mohr</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">C (kPa)</td> <td style="text-align: center;">27.08</td> </tr> <tr> <td style="text-align: center;">ϕ (°)</td> <td style="text-align: center;">12.59</td> </tr> </tbody> </table>	Mohr		C (kPa)	27.08	ϕ (°)	12.59	<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="2" style="text-align: center;">Mohr</th> <th colspan="2" style="text-align: center;">Lambe</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">C' (kPa)</td> <td style="text-align: center;">27.78</td> <td style="text-align: center;">27.39</td> <td> </td> </tr> <tr> <td style="text-align: center;">ϕ' (°)</td> <td style="text-align: center;">9.591</td> <td style="text-align: center;">9.459</td> <td> </td> </tr> </tbody> </table>	Mohr		Lambe		C' (kPa)	27.78	27.39		ϕ' (°)	9.591	9.459		<div style="border: 1px solid black; height: 100px; width: 100%;"></div>
Mohr																				
C (kPa)	27.08																			
ϕ (°)	12.59																			
Mohr		Lambe																		
C' (kPa)	27.78	27.39																		
ϕ' (°)	9.591	9.459																		
Visa :		p.1/3																		

3.18 Trial Pit 15



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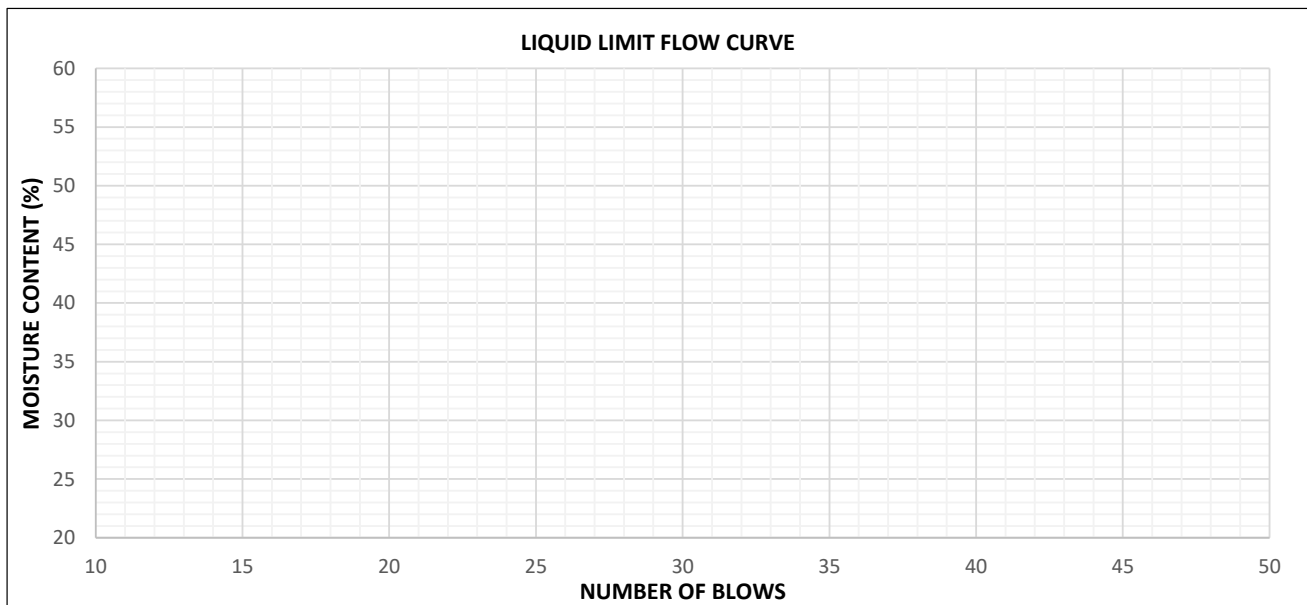
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP15 / AL044/ 01MAY19	
SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 01 - 05 - 2019	TIME: 11:15
LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION
GOLOMOTI - SOLAR PV	0 672 384	8 402 794	(m)
DEPTH (m) 2.500-4.300			
TYPE OF MATERIAL: MOIST BROWN REDDISH GRAVELLY SANDY SILTY CLAY			
TESTED BY: M. MILANZI		DATE: 06 - 06 - 2019	TIME: 13:35
CHECKED BY: G. KACHIWALA		DATE: 12 - 06 - 2019	TIME: 09:40
APPROVED BY: M. SABELLI		DATE: 12 - 06 - 2019	TIME: 14:28
PROJECT: GOLOMOTI SOLAR PV		CLIENT: JCM	

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
	1	2	3	4	1	2	3
TEST No.							
CONTAINER No.	C18		C15		R22	C4	R7
MASS OF WET SOIL + CONTAINER(g)	47.0		50.0		35.0	35.5	36.5
MASS OF DRY SOIL + CONTAINER(g)	41.5		44.5		34.0	33.5	35.5
MASS OF CONTAINER (g)	26.5		30		29	23.5	30.5
MASS OF DRY SOIL (g)	15.0		14.5		5.0	10.0	5.0
MASS OF WATER (g)	5.50		5.50		1.00	2.00	1.00
MOISTURE CONTENT %	36.7	37.0	37.9	36.8	20.0	20.0	20.0
No. BLOWS	28		18			20.0	

LINEAR SHRINKAGE	16
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	13.1
LINEAR SHRINKAGE %	6.9
LIQUID LIMIT (LL) %	36.9
PLASTIC LIMIT (PL) %	20.0
PLASTICITY INDEX (PI)	17
NATURAL MOISTURE CONTENT %	10.1
FINENESS INDEX	952



REMARKS: SAMPLED FROM TRIAL PIT 15 @ 2.500-4.300M. SOLAR PV SITE INVESTIGATION



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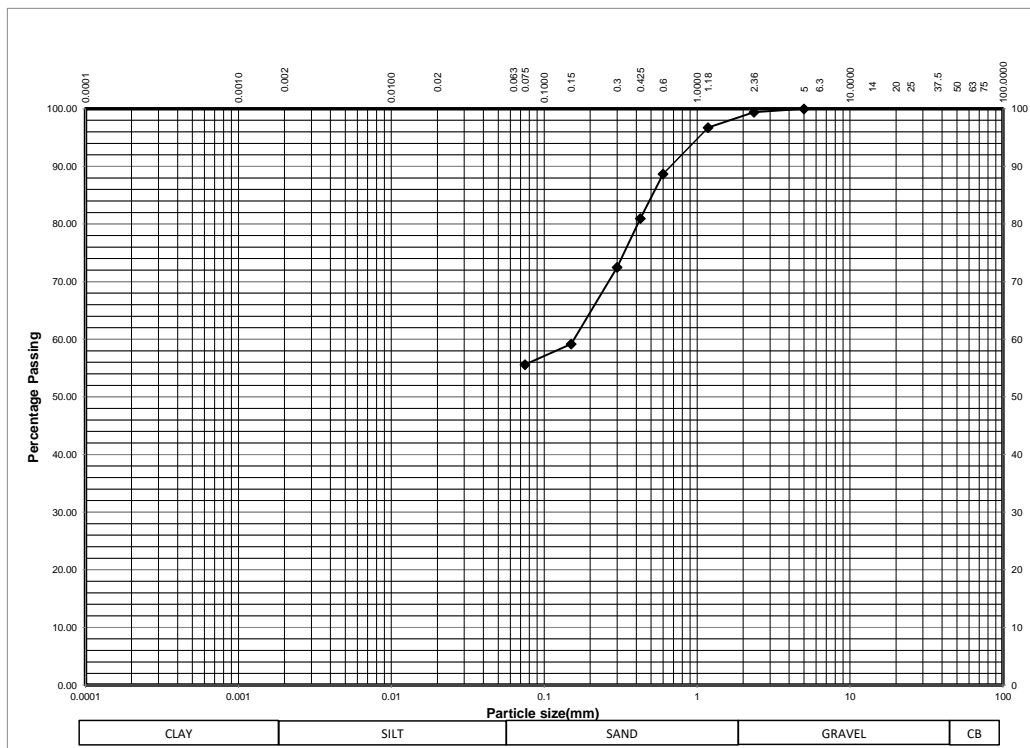
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP015 / G042 / 02MAY19		
SAMPLED BY: GEOCONSULT LAB TEAM		DATE: 02 / 05 / 2019	TIME: 10:34	
LOCATION:	EASTING	NORTHING	ELEVATION	DEPTH (m)
GOLOMOTI - SOLAR PV	0 672 384	8 402 794	(m)	0.100-0.600
TYPE OF MATERIAL: MOIST DARK BROWN SANDY SILTY CLAY				
TESTED BY: C. NDALAMA		DATE: 03 - 06 - 2019	TIME: 10:23	
CHECKED BY: G. KACHIWALA		DATE: 07 - 06 - 2019	TIME: 13:30	
APPROVED BY: M. SABELLI		DATE: 07 - 06 - 2019	TIME: 15:00	

PROJECT: GOLOMOTI SOLAR PV **CLIENT: JCM**

SIEVE ANALYSIS (GRADATION) STANDARD: TRH14:1985

SIEVE (mm)	MASS RETAINED	PERCENTAGE			GRADATION SPECIFICATION			ZONE
		RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.500								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300								
5.000	0.00	0.00	100.00	100				
2.360	5.50	0.59	99.41	99				
1.180	30.50	3.28	96.72	97				
0.600	105.00	11.30	88.70	89				
0.425	177.00	19.04	80.96	81				
0.300	255.50	27.49	72.51	73				
0.150	379.50	40.83	59.17	59				
0.075	412.50	44.38	55.62	56				
0 pan	517.00	55.62						
TOTAL (g)	929.50							



REMARKS: SAMPLED FROM TRIAL PIT 15 @ 0.100-0.600M. SOLAR PV SITE INVESTIGATION

PAGE No.



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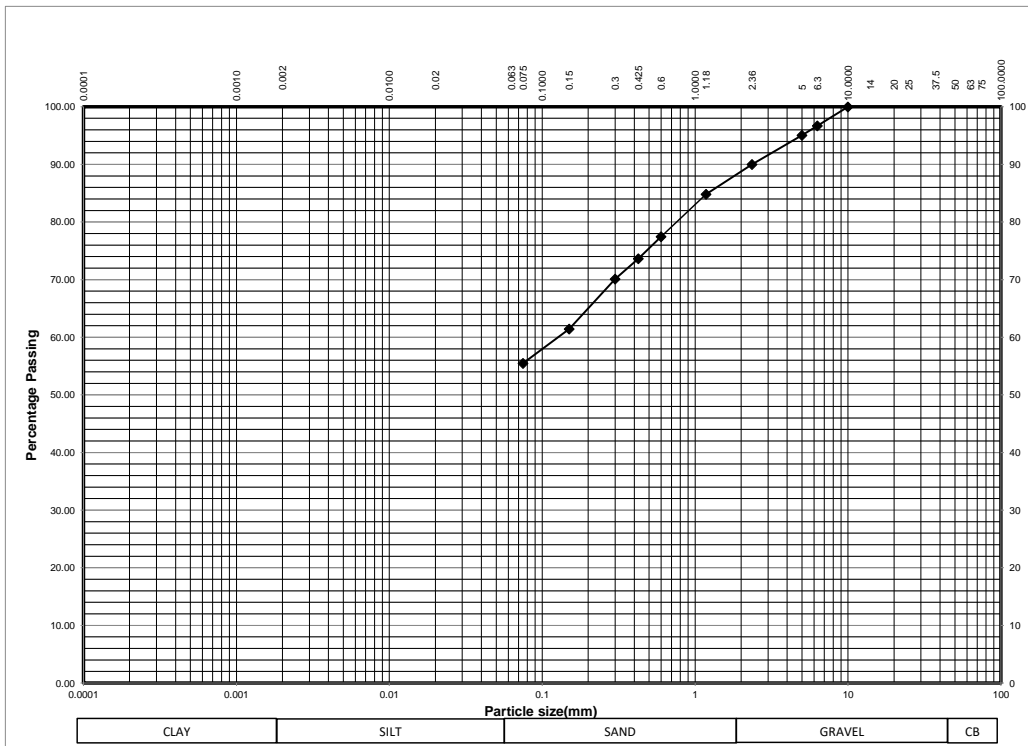
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP015 / G043 / 02MAY19		
SAMPLED BY: GEOCONSULT LAB TEAM		DATE: 02 / 05 / 2019	TIME: 10:34	
LOCATION:	EASTING	NORTHING	ELEVATION	DEPTH (m)
GOLOMOTI - SOLAR PV	0 672 616	8 403 213	(m)	0.600-2.500
TYPE OF MATERIAL: MOIST BROWN REDDISH SANDY SILTY CLAY				
TESTED BY: C. NDALAMA		DATE: 28 - 05 - 2019	TIME: 14:10	
CHECKED BY: G. KACHIWALA		DATE: 07 - 06 - 2019	TIME: 13:30	
APPROVED BY: M. SABELLI		DATE: 07 - 06 - 2019	TIME: 15:00	

PROJECT: GOLOMOTI SOLAR PV **CLIENT: JCM**

SIEVE ANALYSIS (GRADATION) STANDARD: TRH14:1985

SIEVE (mm)	MASS RETAINED	PERCENTAGE			GRADATION SPECIFICATION			ZONE
		RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.500								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000	0.00	0.00	100.00	100				
6.300	15.00	3.30	96.70	97				
5.000	22.50	4.95	95.05	95				
2.360	45.50	10.00	90.00	90				
1.180	69.00	15.16	84.84	85				
0.600	102.50	22.53	77.47	77				
0.425	120.00	26.37	73.63	74				
0.300	136.00	29.89	70.11	70				
0.150	175.50	38.57	61.43	61				
0.075	202.50	44.51	55.49	55				
0 pan	252.50	55.49						
TOTAL (g)	455.00							



REMARKS: SAMPLED FROM TRIAL PIT 15 @ 0.600-2.500M. SOLAR PV SITE INVESTIGATION

PAGE No.



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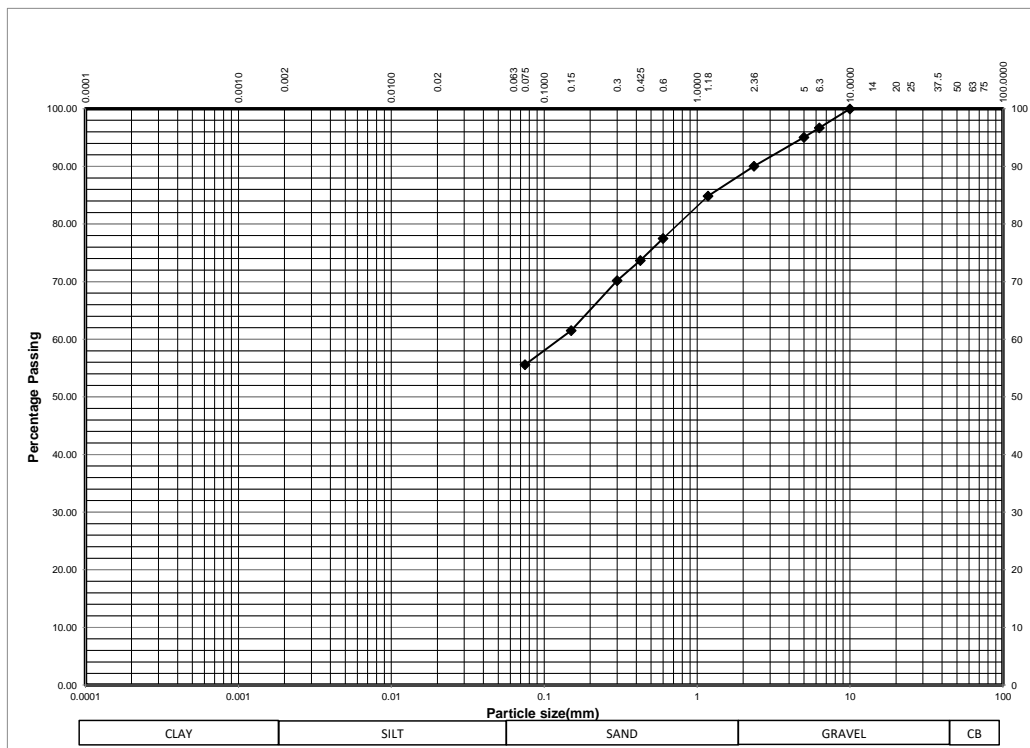
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LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP015 / G045 / 02MAY19		
SAMPLED BY: GEOCONSULT LAB TEAM		DATE: 02 / 05 / 2019	TIME: 11:15	
LOCATION:	EASTING	NORTHING	ELEVATION	DEPTH (m)
GOLOMOTI - SOLAR PV	0 672 616	8 403 794	(m)	2.500-4.300
TYPE OF MATERIAL: MOIST BROWN REDDISH GRAVELLY SANDY SILTY CLAY				
TESTED BY: C. NDALAMA		DATE: 28 - 05 - 2019	TIME: 14:10	
CHECKED BY: G. KACHIWALA		DATE: 07 - 06 - 2019	TIME: 13:30	
APPROVED BY: M. SABELLI		DATE: 07 - 06 - 2019	TIME: 15:00	

PROJECT: GOLOMOTI SOLAR PV **CLIENT: JCM**


SIEVE ANALYSIS (GRADATION) STANDARD: TRH14:1985


SIEVE (mm)	MASS RETAINED	PERCENTAGE			GRADATION SPECIFICATION			ZONE
		RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.500								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000	0.00	0.00	100.00	100				
6.300	15.00	3.29	96.71	97				
5.000	22.50	4.93	95.07	95				
2.360	45.50	9.98	90.02	90				
1.180	69.00	15.13	84.87	85				
0.600	102.50	22.48	77.52	78				
0.425	120.00	26.32	73.68	74				
0.300	136.00	29.82	70.18	70				
0.150	175.50	38.49	61.51	62				
0.075	202.50	44.41	55.59	56				
0 pan	253.50	55.59						
TOTAL (g)	456.00							




REMARKS: SAMPLED FROM TRIAL PIT 15 @ 2.500-4.300M. SOLAR PV SITE INVESTIGATION

PAGE No.

 GEOCONSULT +265 0888 846 543 sabelli@geoconsult.cc	LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP015 / NMC042 / 02MAY19		
	SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 02 - 05 - 2019	TIME: 10:34	
	LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
	GOLOMOTI - SOLAR PV	0 672 384	8 402 794	(m)	0.100-0.600
	TYPE OF MATERIAL: MOIST DARK BROWN SANDY SILTY CLAY				
	TESTED BY: C. NDALAMA		DATE: 06 - 05 - 2019	TIME: 14:38	
	CHECKED BY: G. KACHIWALA		DATE: 07 - 05 - 2019	TIME: 09:00	
	APPROVED BY: M. SABELLI		DATE: 07 - 05 - 2019	TIME: 13:00	
	PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM	
	NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: ASTM D7263				
MASS OF WET SOIL + CONTAINER (g)		281.0			
MASS OF DRY SOIL AND CONTAINER (g)		254.0			
CONTAINER No.		GC21			
MASS OF CONTAINER (g)		49.5			
MASS OF DRY SOIL (g)		204.5			
MASS OF WATER (g)		27.0			
MOISTURE CONTENT %		13.2			
AVERAGE MOISTURE CONTENT %		13.2			
REMARKS: SAMPLED FROM TRIAL PIT 15 @0.100-0.600M. SOLAR PV SITE INVESTIGATION				PAGE No.	

 GEOCONSULT +265 0888 846 543 sabelli@geoconsult.cc	LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP015 / NMC043 / 02MAY19		
	SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 02 - 05 - 2019	TIME: 11:15	
	LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
	GOLOMOTI - SOLAR PV	0 672 384	8 402 794	(m)	0.600-2.500
	TYPE OF MATERIAL: MOIST BROWN REDDISH SANDY SILTY CLAY				
TESTED BY: C. NDALAMA		DATE: 06 - 05 - 2019	TIME: 14:38		
CHECKED BY: G. KACHIWALA		DATE: 07 - 05 - 2019	TIME: 09:00		
APPROVED BY: M. SABELLI		DATE: 07 - 05 - 2019	TIME: 13:00		
PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM		
NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: ASTM D7263					
MASS OF WET SOIL + CONTAINER (g)		268.0			
MASS OF DRY SOIL AND CONTAINER (g)		244.0			
CONTAINER No.		GC5			
MASS OF CONTAINER (g)		49.5			
MASS OF DRY SOIL (g)		194.5			
MASS OF WATER (g)		24.0			
MOISTURE CONTENT %		12.3			
AVERAGE MOISTURE CONTENT %		12.3			
REMARKS: SAMPLED FROM TRIAL PIT 15 @0.600-2.500M. SOLAR PV SITE INVESTIGATION				PAGE No.	

 GEOCONSULT +265 0888 846 543 sabelli@geoconsult.cc	LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP015 / NMC044 / 02MAY19		
	SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 02 - 05 - 2019	TIME: 11:15	
	LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
	GOLOMOTI - SOLAR PV	0 672 384	8 402 794	(m)	2.500-4.300
	TYPE OF MATERIAL: MOIST BROWN REDDISH GRAVELLY SANDY SILTY CLAY				
	TESTED BY: C. NDALAMA		DATE: 06 - 05 - 2019	TIME: 14:38	
	CHECKED BY: G. KACHIWALA		DATE: 07 - 05 - 2019	TIME: 09:00	
	APPROVED BY: M. SABELLI		DATE: 07 - 05 - 2019	TIME: 13:00	
	PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM	
	NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: ASTM D7263				
MASS OF WET SOIL + CONTAINER (g)			268.0		
MASS OF DRY SOIL AND CONTAINER (g)			248.0		
CONTAINER No.			GC5		
MASS OF CONTAINER (g)			49.5		
MASS OF DRY SOIL (g)			198.5		
MASS OF WATER (g)			20.0		
MOISTURE CONTENT %			10.1		
AVERAGE MOISTURE CONTENT %			10.1		
REMARKS: SAMPLED FROM TRIAL PIT 15 @2.500-4.300M. SOLAR PV SITE INVESTIGATION					PAGE No.



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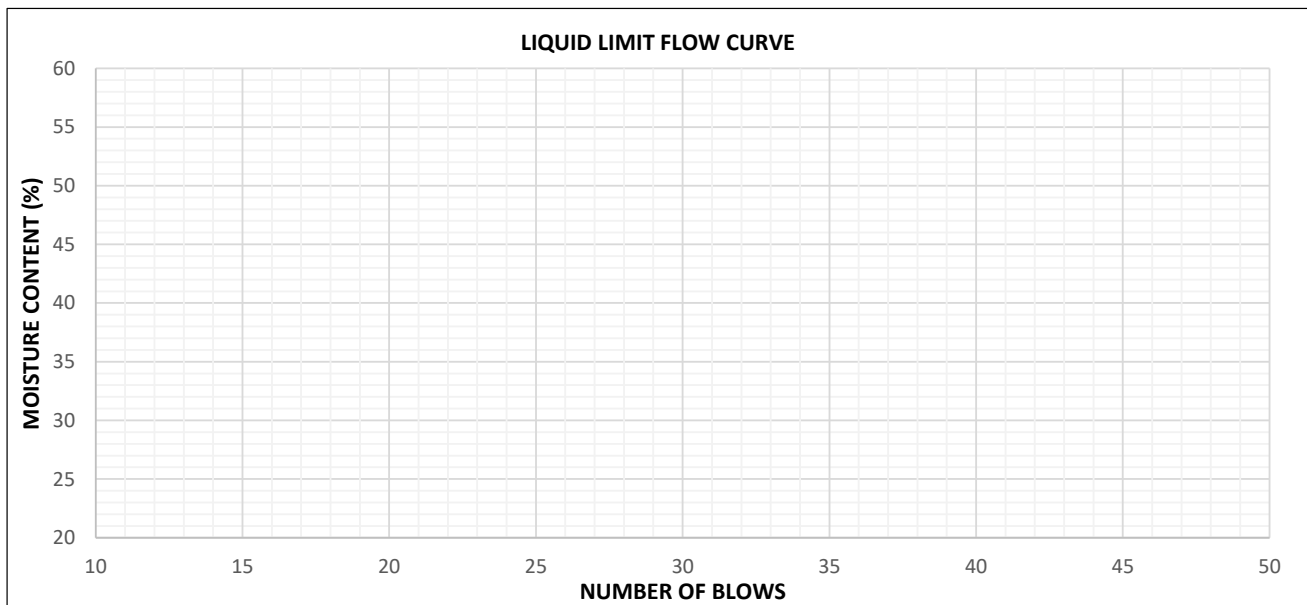
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP15 / AL042 / 01MAY19	
SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 01 - 05 - 2019	TIME: 10:34
LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION
GOLOMOTI - SOLAR PV	0 672 384	8 402 794	(m)
DEPTH (m) 0.000-0.600			
TYPE OF MATERIAL: MOIST DARK BROWN SANDY SILTY CLAY			
TESTED BY: M. MILANZI		DATE: 06 - 06 - 2019	TIME: 13:35
CHECKED BY: G. KACHIWALA		DATE: 12 - 06 - 2019	TIME: 09:40
APPROVED BY: M. SABELLI		DATE: 12 - 06 - 2019	TIME: 14:28
PROJECT: GOLOMOTI SOLAR PV		CLIENT: JCM	

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
	1	2	3	4	1	2	3
TEST No.							
CONTAINER No.	C4		C1		K2	C11	R12
MASS OF WET SOIL + CONTAINER(g)	50.5		50.5		40.0	42.0	42.5
MASS OF DRY SOIL + CONTAINER(g)	45.5		46.5		38.5	40.5	40.5
MASS OF CONTAINER (g)	25		35		28	30	27
MASS OF DRY SOIL (g)	20.5		11.5		10.5	10.5	13.5
MASS OF WATER (g)	5.00		4.00		1.50	1.50	2.00
MOISTURE CONTENT %	24.4	24.4	34.8	33.4	14.3	14.3	14.8
No. BLOWS	25		17			14.5	

LINEAR SHRINKAGE	5
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	13.1
LINEAR SHRINKAGE %	6.9
LIQUID LIMIT (LL) %	28.9
PLASTIC LIMIT (PL) %	14.5
PLASTICITY INDEX (PI)	14
NATURAL MOISTURE CONTENT %	13.2
FINENESS INDEX	784



REMARKS: SAMPLED FROM TRIAL PIT 15 @ 0.100-0.600M. SOLAR PV SITE INVESTIGATION



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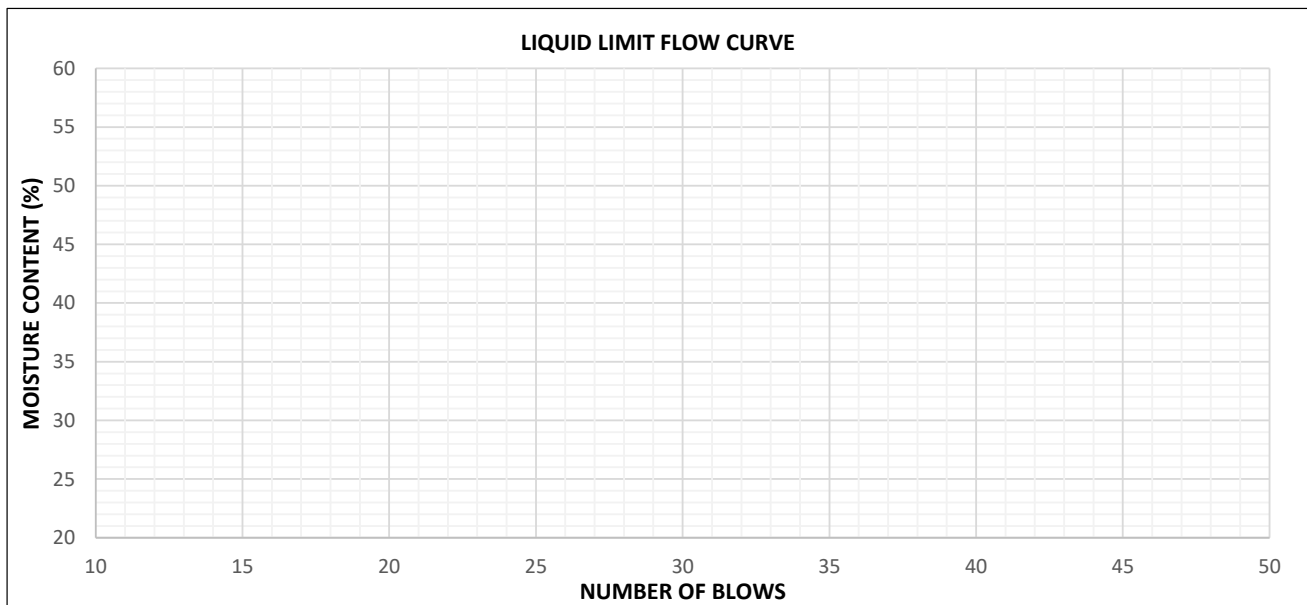
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP15 / AL043 / 01MAY19	
SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 01 - 05 - 2019	TIME: 10:38
LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION
GOLOMOTI - SOLAR PV	0 672 384	8 402 794	(m)
DEPTH (m) 0.600-2.500			
TYPE OF MATERIAL: MOIST BROWN REDDISH SANDY SILTY CLAY			
TESTED BY: M. MILANZI		DATE: 06 - 06 - 2019	TIME: 13:35
CHECKED BY: G. KACHIWALA		DATE: 12 - 06 - 2019	TIME: 09:40
APPROVED BY: M. SABELLI		DATE: 12 - 06 - 2019	TIME: 14:28
PROJECT: GOLOMOTI SOLAR PV		CLIENT: JCM	

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
	1	2	3	4	1	2	3
TEST No.							
CONTAINER No.	C15		C18		R20	C4	R9
MASS OF WET SOIL + CONTAINER(g)	48.0		50.5		35.0	35.5	36.5
MASS OF DRY SOIL + CONTAINER(g)	42.5		44.5		34.0	34.5	35.5
MASS OF CONTAINER (g)	26.5		30		28	28.5	29.5
MASS OF DRY SOIL (g)	16.0		14.5		6.0	6.0	6.0
MASS OF WATER (g)	5.50		6.00		1.00	1.00	1.00
MOISTURE CONTENT %	34.4	34.7	41.4	40.1	16.7	16.7	16.7
No. BLOWS	28		18			16.7	

LINEAR SHRINKAGE	16
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	12.6
LINEAR SHRINKAGE %	11.1
LIQUID LIMIT (LL) %	37.4
PLASTIC LIMIT (PL) %	16.7
PLASTICITY INDEX (PI)	21
NATURAL MOISTURE CONTENT %	12.3
FINENESS INDEX	1155



REMARKS: SAMPLED FROM TRIAL PIT 15 @ 0.600-2.500M. SOLAR PV SITE INVESTIGATION

		Triaxial test - UU BS 1377 part 7, 1377 part 8	
		Site : GOLOMOTI SOLAR PV	Levy date : 12-Jun-19
		Technicien's name :	Date of test : 12-Jun-19
GEOCONSULT LIMITED P.O. BOX 40 LILONGWE	File N° :	8	Survey depth (m) : 1.000
	Survey N° :	15	Level of water (m) :
	Kind of soil :	MOIST BROWN REDDISH SANDY SILTY CLAY	

Identification of samples :

Ovo, Total stress of the soil in situ (kPa) : 0.000	Uo, Pore pressure of the soil in situ (kPa) : 0.000
Category of soil : Steep/Strongly overconsolidated	Kind of drainage : Without lateral drain
ρ_s , Grain density (kg/m ³) : 0.000	
S_m : <input type="checkbox"/>	S_d : <input type="checkbox"/>

Samples before test :									Samples after saturation :		
N°	Hi (mm)	Di (mm)	mi (g)	ρ_i (kg/m ³)	ρ_{di} (kg/m ³)	wi (%)	ei	Si (%)	Ucp (kPa)	ΔV_{sat} (mm ³)	B (%)
1	75.00	38	151.0	1775	1464	21.29	-1.000	-0.000		0.000	0.000
2	75.00	38	166.0	1952	1593	22.51	-1.000	-0.000		0.000	0.000
3	76.00	38	158.5	1839	1491	23.35	-1.000	-0.000		0.000	0.000

Samples after consolidation :							Samples after shearing							
N°	Hs (mm)	Ds (mm)	ΔV_s (mm ³)	T100 (min)	Vmax (μ m/min)	σ'_c (kPa)	Hf (mm)	Df (mm)	mf (g)	md (g)	wf (%)	ρ_{df} (kg/m ³)	ef	Srf (%)
1	75.00	38.00	0.000	0.000	0.000	0.000	75.00	38.00	150.5	124.5	20.88	1464	-1.000	-0.000
2	75.00	38.00	0.000	0.000	0.000	0.000	75.00	38.00	164.0	135.5	21.03	1593	-1.000	-0.000
3	76.00	38.00	0.000	0.000	0.000	0.000	76.00	38.00	156.5	128.5	21.79	1491	-1.000	-0.000

Total stress :	Effective stress :	Comments :												
<table border="1" style="margin-top: 10px; width: 100%;"> <tr><th colspan="2">Mohr</th></tr> <tr><td>C (kPa)</td><td>29.34</td></tr> <tr><td>ϕ (°)</td><td>21.01</td></tr> </table>	Mohr		C (kPa)	29.34	ϕ (°)	21.01	<table border="1" style="margin-top: 10px; width: 100%;"> <tr><th>Mohr</th><th>Lambe</th></tr> <tr><td>C' (kPa)</td><td>11.83 / 10.98</td></tr> <tr><td>ϕ' (°)</td><td>21.75 / 20.33</td></tr> </table>	Mohr	Lambe	C' (kPa)	11.83 / 10.98	ϕ' (°)	21.75 / 20.33	<p>Visa :</p>
Mohr														
C (kPa)	29.34													
ϕ (°)	21.01													
Mohr	Lambe													
C' (kPa)	11.83 / 10.98													
ϕ' (°)	21.75 / 20.33													
		p.1/3												

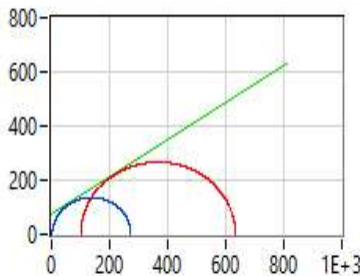
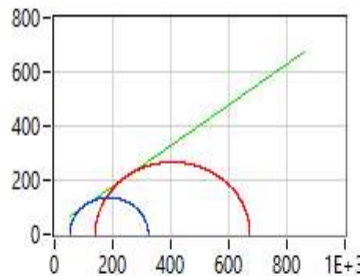
Triaxial test - UU BS 1377 part 7, 1377 part 8				
	Site :	GOLOMOTI SOLAR PV	Levy date :	10-Jun-19
	Technician's name :		Date of test :	10-Jun-19
GEOCONSULT LIMITED P.O. BOX 40 LILONGWE	File N° :	3	Survey depth (m) :	2.000
	Survey N° :	BH 15	Level of water (m) :	
	Kind of soil :	Moist Brown Reddish Sandy Silty CLAY		

Identification of samples :

Ovo, Total stress of the soil in situ (kPa) : 0.000	Uo, Pore pressure of the soil in situ (kPa) : 0.000
Category of soil : Steep/Strongly overconsolidated	Kind of drainage : Without lateral drain
ρ_s , Grain density (kg/m ³) : 0.000	
S_m : <input type="checkbox"/>	S_d : <input type="checkbox"/>

Samples before test :									Samples after saturation :		
N°	Hi (mm)	Di (mm)	mi (g)	ρ_i (kg/m ³)	ρ_{di} (kg/m ³)	wi (%)	ei	Si (%)	Ucp (kPa)	ΔV_{sat} (mm ³)	B (%)
1	76.00	38	157.0	1821	1549	17.60	-1.000	-0.000		0.000	0.000
2	76.00	38	163.5	1897	1589	19.34	-1.000	-0.000		0.000	0.000

Samples after consolidation :							Samples after shearing							
N°	Hs (mm)	Ds (mm)	ΔV_s (mm ³)	T100 (min)	Vmax (μm/min)	σ'_c (kPa)	Hf (mm)	Df (mm)	mf (g)	md (g)	wf (%)	ρ_{df} (kg/m ³)	ef	Srf (%)
1	76.00	38.00	0.000	0.000	0.000	0.000	76.00	38.00	157.0	133.5	17.60	1549	-1.000	-0.000
2	76.00	38.00	0.000	0.000	0.000	0.000	76.00	38.00	163.5	137.0	19.34	1589	-1.000	-0.000

Total stress :	Effective stress :	Comments :												
 <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><th colspan="2">Mohr</th></tr> <tr><td>C (kPa)</td><td>69.25</td></tr> <tr><td>ϕ (°)</td><td>34.86</td></tr> </table>	Mohr		C (kPa)	69.25	ϕ (°)	34.86	 <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><th>Mohr</th><th>Lambe</th></tr> <tr><td>C' (kPa)</td><td>29.02 / 23.25</td></tr> <tr><td>ϕ' (°)</td><td>36.76 / 30.90</td></tr> </table>	Mohr	Lambe	C' (kPa)	29.02 / 23.25	ϕ' (°)	36.76 / 30.90	<div style="border: 1px solid black; height: 100px; width: 100%;"></div>
Mohr														
C (kPa)	69.25													
ϕ (°)	34.86													
Mohr	Lambe													
C' (kPa)	29.02 / 23.25													
ϕ' (°)	36.76 / 30.90													
<div style="border: 1px solid black; height: 20px; width: 100%;"></div>		<div style="border: 1px solid black; padding: 2px;">p.1/3</div>												

3.19 Trial Pit 16



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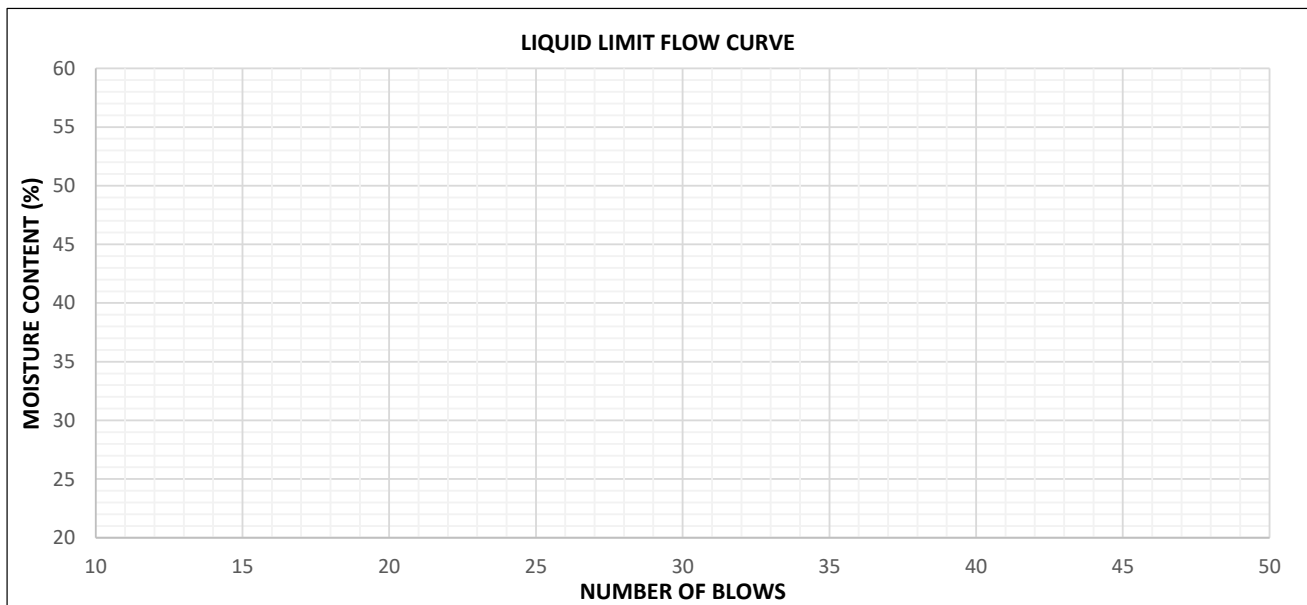
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP16 / AL046 / 01MAY19	
SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 01 - 05 - 2019	TIME: 16:15
LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION
GOLOMOTI - SOLAR PV	0 672 342	8 402 660	(m)
DEPTH (m) 1.000 -3.000			
TYPE OF MATERIAL: MOIST BROWN HARD SANDY SILTY CLAYEY LATERITE GRAVEL			
TESTED BY: M. MILANZI		DATE: 24 - 05 - 2019	TIME: 15:25
CHECKED BY: G. KACHIWALA		DATE: 12 - 06 - 2019	TIME: 10:40
APPROVED BY: M. SABELLI		DATE: 12 - 06 - 2019	TIME: 14:28
PROJECT: GOLOMOTI SOLAR PV		CLIENT: JCM	

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
	1	2	3	4	1	2	3
TEST No.							
CONTAINER No.	R22		C20		R11	C26	R21
MASS OF WET SOIL + CONTAINER(g)	50.5		55.5		48.5	50.5	44.5
MASS OF DRY SOIL + CONTAINER(g)	45.0		48.5		45.5	47.5	42.0
MASS OF CONTAINER (g)	29		30.5		29.5	31.5	29
MASS OF DRY SOIL (g)	16.0		18.0		16.0	16.0	13.0
MASS OF WATER (g)	5.50		7.00		3.00	3.00	2.50
MOISTURE CONTENT %	34.4	35.1	38.9	37.7	18.8	18.8	19.2
No. BLOWS	30		18			18.9	

LINEAR SHRINKAGE	6
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	13.1
LINEAR SHRINKAGE %	6.9
LIQUID LIMIT (LL) %	36.4
PLASTIC LIMIT (PL) %	18.9
PLASTICITY INDEX (PI)	17
NATURAL MOISTURE CONTENT %	5.5
FINENESS INDEX	663



REMARKS: SAMPLED FROM TRIAL PIT 16 @ 3.000-4.000M. SOLAR PV SITE INVESTIGATION



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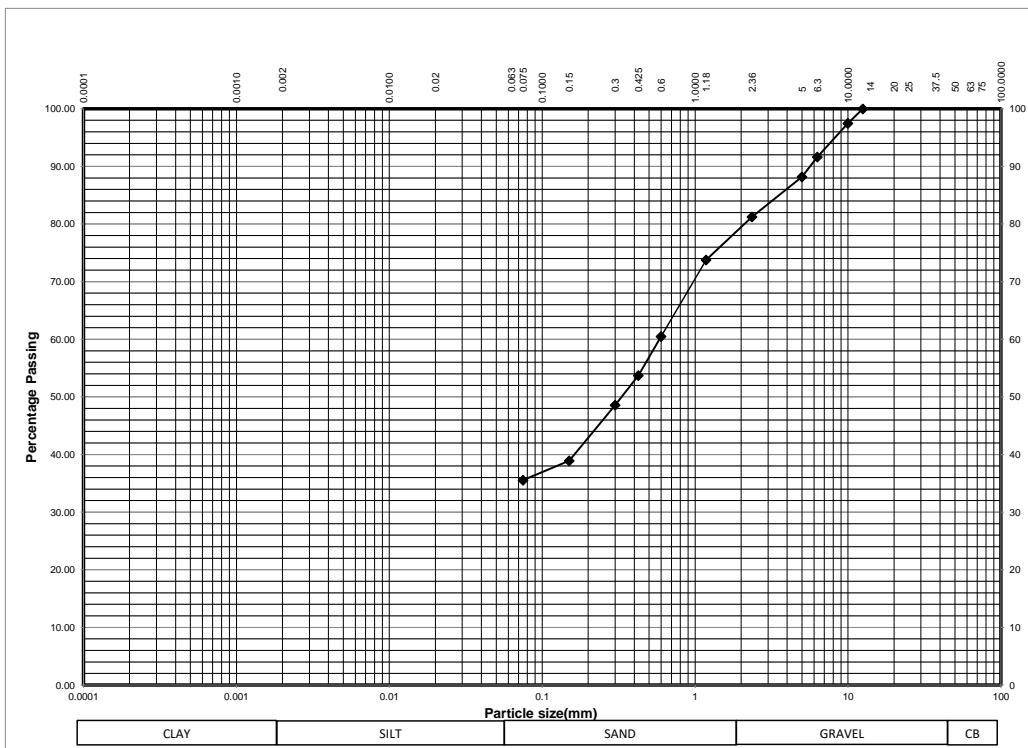
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP016 / G045 / 02MAY19		
SAMPLED BY: GEOCONSULT LAB TEAM		DATE: 02 / 05 / 2019	TIME: 11:15	
LOCATION:	EASTING	NORTHING	ELEVATION	DEPTH (m)
GOLOMOTI - SOLAR PV	0 672 342	8 402 660	(m)	0.300-1.000
TYPE OF MATERIAL: MOIST BROWN MOLTLED SANDY SILTY CLAY				
TESTED BY: C. NDALAMA		DATE: 28 - 05 - 2019	TIME: 14:10	
CHECKED BY: G. KACHIWALA		DATE: 07 - 06 - 2019	TIME: 13:30	
APPROVED BY: M. SABELLI		DATE: 07 - 06 - 2019	TIME: 15:00	

PROJECT: GOLOMOTI SOLAR PV **CLIENT: JCM**

SIEVE ANALYSIS (GRADATION) STANDARD: TRH14:1985

SIEVE (mm)	MASS RETAINED	PERCENTAGE			GRADATION SPECIFICATION			ZONE
		RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.500								
28.000								
25.000								
20.000								
14.000								
12.500	0.00	0.00	100.00	100				
10.000	10.50	2.51	97.49	97				
6.300	35.00	8.35	91.65	92				
5.000	49.50	11.81	88.19	88				
2.360	78.50	18.74	81.26	81				
1.180	110.00	26.25	73.75	74				
0.600	165.50	39.50	60.50	61				
0.425	194.00	46.30	53.70	54				
0.300	215.50	51.43	48.57	49				
0.150	256.00	61.10	38.90	39				
0.075	270.00	64.44	35.56	36				
0 pan	149.00	35.56						
TOTAL (g)	419.00							



REMARKS: SAMPLED FROM TRIAL PIT 16 @ 0.300-1.000M. SOLAR PV SITE INVESTIGATION

PAGE No.



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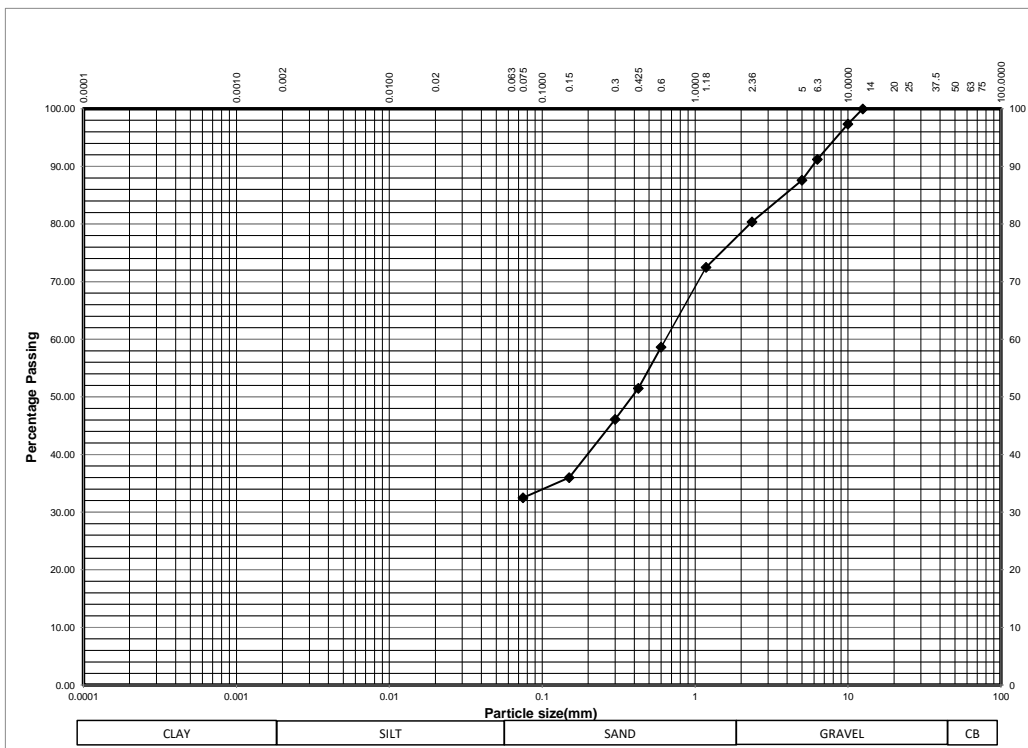
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP016 / G046 / 02MAY19		
SAMPLED BY: GEOCONSULT LAB TEAM		DATE: 02 / 05 / 2019	TIME: 11:15	
LOCATION:	EASTING	NORTHING	ELEVATION	DEPTH (m)
GOLOMOTI - SOLAR PV	0 672 342	8 402 660	(m)	1.000-3.000
TYPE OF MATERIAL: MOIST BROWN REDDISH SANDY SILTY CLAYEY LATERITE GRAVEL				
TESTED BY: C. NDALAMA		DATE: 28 - 05 - 2019	TIME: 14:10	
CHECKED BY: G. KACHIWALA		DATE: 07 - 06 - 2019	TIME: 13:30	
APPROVED BY: M. SABELLI		DATE: 07 - 06 - 2019	TIME: 15:00	

PROJECT: GOLOMOTI SOLAR PV **CLIENT: JCM**

SIEVE ANALYSIS (GRADATION) STANDARD: TRH14:1985

SIEVE (mm)	MASS RETAINED	PERCENTAGE			GRADATION SPECIFICATION			ZONE
		RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.500								
28.000								
25.000								
20.000								
14.000								
12.500	0.00	0.00	100.00	100				
10.000	10.50	2.63	97.38	97				
6.300	35.00	8.75	91.25	91				
5.000	49.50	12.38	87.63	88				
2.360	78.50	19.63	80.38	80				
1.180	110.00	27.50	72.50	73				
0.600	165.50	41.38	58.63	59				
0.425	194.00	48.50	51.50	52				
0.300	215.50	53.88	46.13	46				
0.150	256.00	64.00	36.00	36				
0.075	270.00	67.50	32.50	33				
0 pan	130.00	32.50						
TOTAL (g)	400.00							



REMARKS: SAMPLED FROM TRIAL PIT 16 @ 1.000-3.000M. SOLAR PV SITE INVESTIGATION **PAGE No.**



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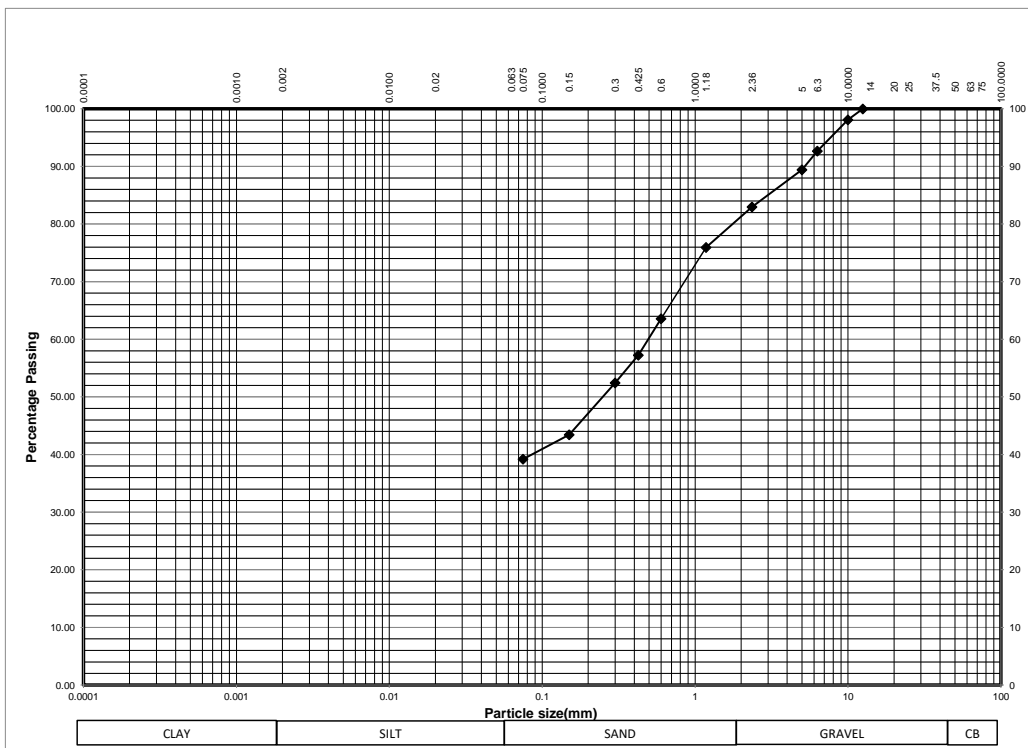
LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP016 / G047 / 02MAY19		
SAMPLED BY: GEOCONSULT LAB TEAM		DATE: 02 / 05 / 2019	TIME: 11:15	
LOCATION:	EASTING	NORTHING	ELEVATION	DEPTH (m)
GOLOMOTI - SOLAR PV	0 672 342	8 402 660	(m)	3.000-4.100
TYPE OF MATERIAL: MOIST BROWN HARD SANDY SILTY CLAYEY LATERITE GRAVEL				
TESTED BY: C. NDALAMA		DATE: 28 - 05 - 2019	TIME: 14:10	
CHECKED BY: G. KACHIWALA		DATE: 07 - 06 - 2019	TIME: 13:30	
APPROVED BY: M. SABELLI		DATE: 07 - 06 - 2019	TIME: 15:00	

PROJECT: GOLOMOTI SOLAR PV

CLIENT: JCM


SIEVE ANALYSIS (GRADATION) STANDARD: TRH14:1985


SIEVE (mm)	MASS RETAINED	PERCENTAGE			GRADATION SPECIFICATION			ZONE
		RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.500								
28.000								
25.000								
20.000								
14.000								
12.500	0.00	0.00	100.00	100				
10.000	8.50	1.89	98.11	98				
6.300	33.00	7.35	92.65	93				
5.000	47.50	10.58	89.42	89				
2.360	76.50	17.04	82.96	83				
1.180	108.00	24.05	75.95	76				
0.600	163.50	36.41	63.59	64				
0.425	192.00	42.76	57.24	57				
0.300	213.50	47.55	52.45	52				
0.150	254.00	56.57	43.43	43				
0.075	273.00	60.80	39.20	39				
0 pan	176.00	39.20						
TOTAL (g)	449.00							




REMARKS: SAMPLED FROM TRIAL PIT 16 @ 3.000-4.100M. SOLAR PV SITE INVESTIGATION

PAGE No.

 GEOCONSULT +265 0888 846 543 sabelli@geoconsult.cc	LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP016 / NMC045 / 02MAY19		
	SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 02 - 05 - 2019	TIME: 16:15	
	LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
	GOLOMOTI - SOLAR PV	0 672 342	8 402 660	(m)	0.300-1.000
	TYPE OF MATERIAL: MOIST BROWN MOLTLED SANDY SILTY CLAY				
	TESTED BY: C. NDALAMA		DATE: 06 - 05 - 2019	TIME: 14:38	
	CHECKED BY: G. KACHIWALA		DATE: 07 - 05 - 2019	TIME: 09:00	
	APPROVED BY: M. SABELLI		DATE: 07 - 05 - 2019	TIME: 13:00	
	PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM	
	NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: ASTM D7263				
MASS OF WET SOIL + CONTAINER (g)		374.0			
MASS OF DRY SOIL AND CONTAINER (g)		355.0			
CONTAINER No.		GC9			
MASS OF CONTAINER (g)		66.5			
MASS OF DRY SOIL (g)		288.5			
MASS OF WATER (g)		19.0			
MOISTURE CONTENT %		6.6			
AVERAGE MOISTURE CONTENT %		6.6			
REMARKS: SAMPLED FROM TRIAL PIT 16 @0.300-3.000M. SOLAR PV SITE INVESTIGATION				PAGE No.	

 GEOCONSULT +265 0888 846 543 sabelli@geoconsult.cc	LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP016 / NMC045 / 02MAY19		
	SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 02 - 05 - 2019	TIME: 16:15	
	LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
	GOLOMOTI - SOLAR PV	0 672 342	8 402 660	(m)	1.000-3.000
	TYPE OF MATERIAL: MOIST BROWN REDDISH SANDY SILTY CLAYEY LATERITE GRAVEL				
TESTED BY: C. NDALAMA		DATE: 06 - 05 - 2019	TIME: 14:38		
CHECKED BY: G. KACHIWALA		DATE: 07 - 05 - 2019	TIME: 09:00		
APPROVED BY: M. SABELLI		DATE: 07 - 05 - 2019	TIME: 13:00		
PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM		
NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: ASTM D7263					
MASS OF WET SOIL + CONTAINER (g)		370.5			
MASS OF DRY SOIL AND CONTAINER (g)		335.5			
CONTAINER No.		GC17			
MASS OF CONTAINER (g)		50.5			
MASS OF DRY SOIL (g)		285.0			
MASS OF WATER (g)		35.0			
MOISTURE CONTENT %		12.3			
AVERAGE MOISTURE CONTENT %		12.3			
REMARKS: SAMPLED FROM TRIAL PIT 16 @1.000-3.000M. SOLAR PV SITE INVESTIGATION				PAGE No.	

 GEOCONSULT +265 0888 846 543 sabelli@geoconsult.cc	LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP016 / NMC046 / 02MAY19		
	SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 02 - 05 - 2019	TIME: 16:15	
	LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
	GOLOMOTI - SOLAR PV	0 672 342	8 402 660	(m)	3.000-4.100
	TYPE OF MATERIAL: MOIST BROWN HARD SANDY SILTY CLAYEY LATERITE GRAVEL				
TESTED BY: C. NDALAMA		DATE: 06 - 05 - 2019	TIME: 14:38		
CHECKED BY: G. KACHIWALA		DATE: 07 - 05 - 2019	TIME: 09:00		
APPROVED BY: M. SABELLI		DATE: 07 - 05 - 2019	TIME: 13:00		
PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM		
NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: ASTM D7263					
MASS OF WET SOIL + CONTAINER (g)		418.0			
MASS OF DRY SOIL AND CONTAINER (g)		400.0			
CONTAINER No.		GC2B			
MASS OF CONTAINER (g)		73.0			
MASS OF DRY SOIL (g)		327.0			
MASS OF WATER (g)		18.0			
MOISTURE CONTENT %		5.5			
AVERAGE MOISTURE CONTENT %	5.5				
REMARKS: SAMPLED FROM TRIAL PIT 16 @3.000-4.100M. SOLAR PV SITE INVESTIGATION				PAGE No.	



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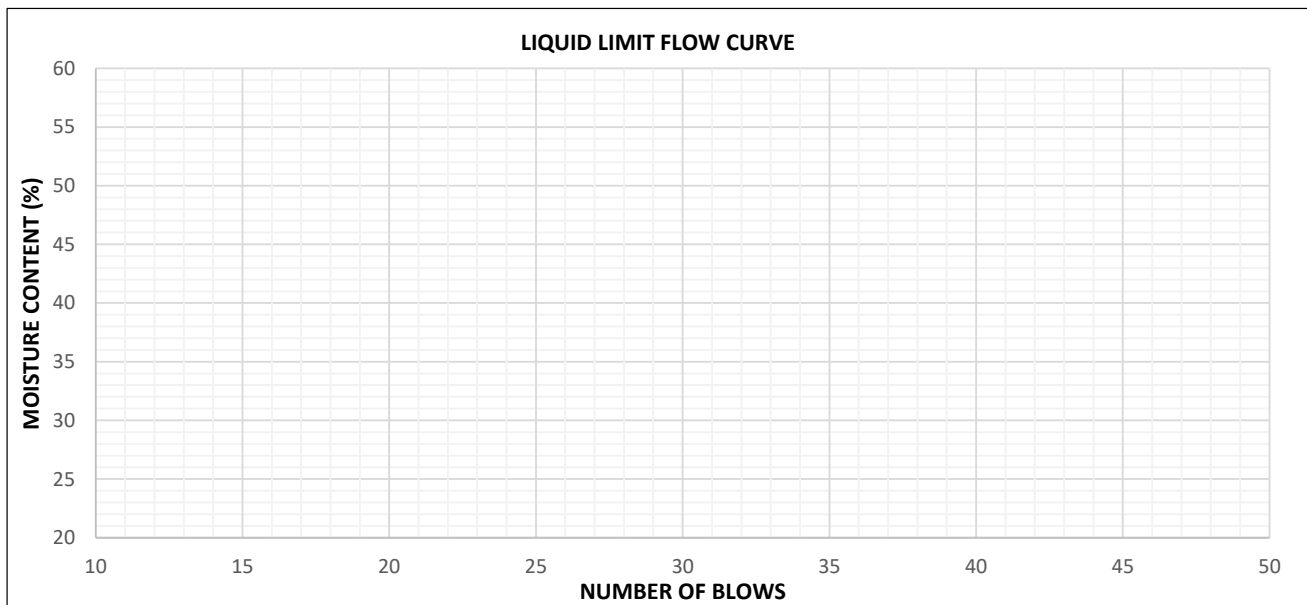
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LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP16 / AL045/ 01MAY19	
SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 01 - 05 - 2019	TIME: 16:15
LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION
GOLOMOTI - SOLAR PV	0 672 342	8 402 660	(m)
DEPTH (m) 0.300-1.000			
TYPE OF MATERIAL: MOIST BROWN MOLTLED SANDY SILTY CLAY			
TESTED BY: M. MILANZI		DATE: 24 - 05 - 2019	TIME: 15:02
CHECKED BY: G. KACHIWALA		DATE: 12 - 06 - 2019	TIME: 09:40
APPROVED BY: M. SABELLI		DATE: 12 - 06 - 2019	TIME: 14:28
PROJECT: GOLOMOTI SOLAR PV		CLIENT: JCM	

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
	1	2	3	4	1	2	3
TEST No.							
CONTAINER No.	R18		C16		R19	C24	R21
MASS OF WET SOIL + CONTAINER(g)	50.0		54.0		47.5	49.5	44.0
MASS OF DRY SOIL + CONTAINER(g)	45.0		48.0		45.0	46.5	42.0
MASS OF CONTAINER (g)	29.5		28.5		33	32	32
MASS OF DRY SOIL (g)	15.5		19.5		12.0	14.5	10.0
MASS OF WATER (g)	5.00		6.00		2.50	3.00	2.00
MOISTURE CONTENT %	32.3	32.6	30.8	29.5	20.8	20.7	20.0
No. BLOWS	27		16			20.5	

LINEAR SHRINKAGE	4
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	13.2
LINEAR SHRINKAGE %	6.1
LIQUID LIMIT (LL) %	31.1
PLASTIC LIMIT (PL) %	20.5
PLASTICITY INDEX (PI)	11
NATURAL MOISTURE CONTENT %	6.6
FINENESS INDEX	396



REMARKS: SAMPLED FROM TRIAL PIT 16 @ 0.300-1.000M. SOLAR PV SITE INVESTIGATION



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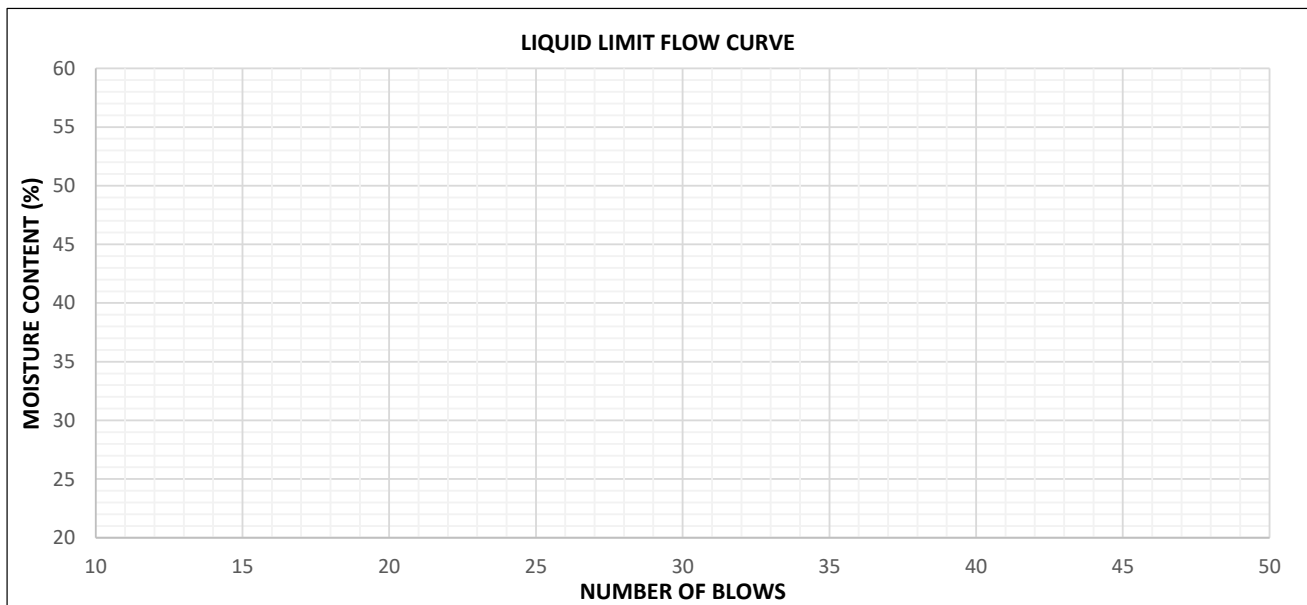
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LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP16 / AL046 / 01MAY19	
SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 01 - 05 - 2019	TIME: 16:15
LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION
GOLOMOTI - SOLAR PV	0 672 342	8 402 660	(m)
DEPTH (m) 1.000 -3.000			
TYPE OF MATERIAL: MOIST BROWN REDDISH SANDY SILTY CLAYEY LATERITE GRAVEL			
TESTED BY: M. MILANZI		DATE: 24 - 05 - 2019	TIME: 15:25
CHECKED BY: G. KACHIWALA		DATE: 12 - 06 - 2019	TIME: 10:40
APPROVED BY: M. SABELLI		DATE: 12 - 06 - 2019	TIME: 14:28
PROJECT: GOLOMOTI SOLAR PV		CLIENT: JCM	

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
	1	2	3	4	1	2	3
TEST No.							
CONTAINER No.	R20		C18		R16	C20	R20
MASS OF WET SOIL + CONTAINER(g)	50.5		54.5		48.0	49.5	44.0
MASS OF DRY SOIL + CONTAINER(g)	45.5		47.5		45.0	47.0	41.5
MASS OF CONTAINER (g)	30		28		28	32.5	27.5
MASS OF DRY SOIL (g)	15.5		19.5		17.0	14.5	14.0
MASS OF WATER (g)	5.00		7.00		3.00	2.50	2.50
MOISTURE CONTENT %	32.3	32.6	35.9	34.5	17.6	17.2	17.9
No. BLOWS	29		17			17.6	

LINEAR SHRINKAGE	5
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	12.9
LINEAR SHRINKAGE %	8.5
LIQUID LIMIT (LL) %	33.5
PLASTIC LIMIT (PL) %	17.6
PLASTICITY INDEX (PI)	16
NATURAL MOISTURE CONTENT %	12.3
FINENESS INDEX	528



REMARKS: SAMPLED FROM TRIAL PIT 16 @ 1.000-3.000M. SOLAR PV SITE INVESTIGATION

Triaxial test - UU BS 1377 part 7, 1377 part 8	
Site :	GOLOMOTI SOLAR PV
Levy date :	14-Jun-19
Technician's name :	Date of test :
	14-Jun-19
File N° :	12
Survey depth (m) :	2.000
Survey N° :	TRIAL PIT No. 16
Level of water (m) :	
Kind of soil :	Moist Brown Reddish Sandy Clayey LATERITE GRAVEL

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Identification of samples :

Ovo, Total stress of the soil in situ (kPa) : 0.000	Uo, Pore pressure of the soil in situ (kPa) : 0.000
Category of soil : Steep/Strongly overconsolidated	Kind of drainage : Without lateral drain
ρ_s , Grain density (kg/m ³) : 0.000	
S_m : <input type="checkbox"/>	S_d : <input type="checkbox"/>

Samples before test :									Samples after saturation :		
N°	Hi (mm)	Di (mm)	mi (g)	ρ_i (kg/m ³)	ρ_{di} (kg/m ³)	wi (%)	ei	Si (%)	Ucp (kPa)	ΔV_{sat} (mm ³)	B (%)
1	76.00	38	142.5	1653	1613	2.518	-1.000	-0.000		0.010	0.000
2	75.00	38	166.0	1952	1593	22.51	-1.000	-0.000		0.000	0.000

Samples after consolidation :							Samples after shearing							
N°	Hs (mm)	Ds (mm)	ΔV_s (mm ³)	T100 (min)	Vmax ($\mu\text{m}/\text{min}$)	σ'_c (kPa)	Hf (mm)	Df (mm)	mf (g)	md (g)	wf (%)	ρ_{df} (kg/m ³)	ef	Srf (%)
1	76.00	38.00	0.000	0.000	0.000	0.000	76.00	38.00	142.0	139.0	2.158	1613	-1.000	-0.000
2	75.00	38.00	0.000	0.000	0.000	0.000	75.00	38.00	164.0	135.5	21.03	1593	-1.000	-0.000

Total stress :	Effective stress :	Comments :												
<table border="1" style="margin-left: auto; margin-right: auto;"> <tr><th colspan="2">Mohr</th></tr> <tr><td>C (kPa)</td><td>40.61</td></tr> <tr><td>ϕ (°)</td><td>15.15</td></tr> </table>	Mohr		C (kPa)	40.61	ϕ (°)	15.15	<table border="1" style="margin-left: auto; margin-right: auto;"> <tr><th>Mohr</th><th>Lambe</th></tr> <tr><td>C' (kPa)</td><td>39.76 38.95</td></tr> <tr><td>ϕ' (°)</td><td>11.62 11.39</td></tr> </table>	Mohr	Lambe	C' (kPa)	39.76 38.95	ϕ' (°)	11.62 11.39	<p>Visa :</p>
Mohr														
C (kPa)	40.61													
ϕ (°)	15.15													
Mohr	Lambe													
C' (kPa)	39.76 38.95													
ϕ' (°)	11.62 11.39													
		p.1/3												

3.20 Trial Pit 17



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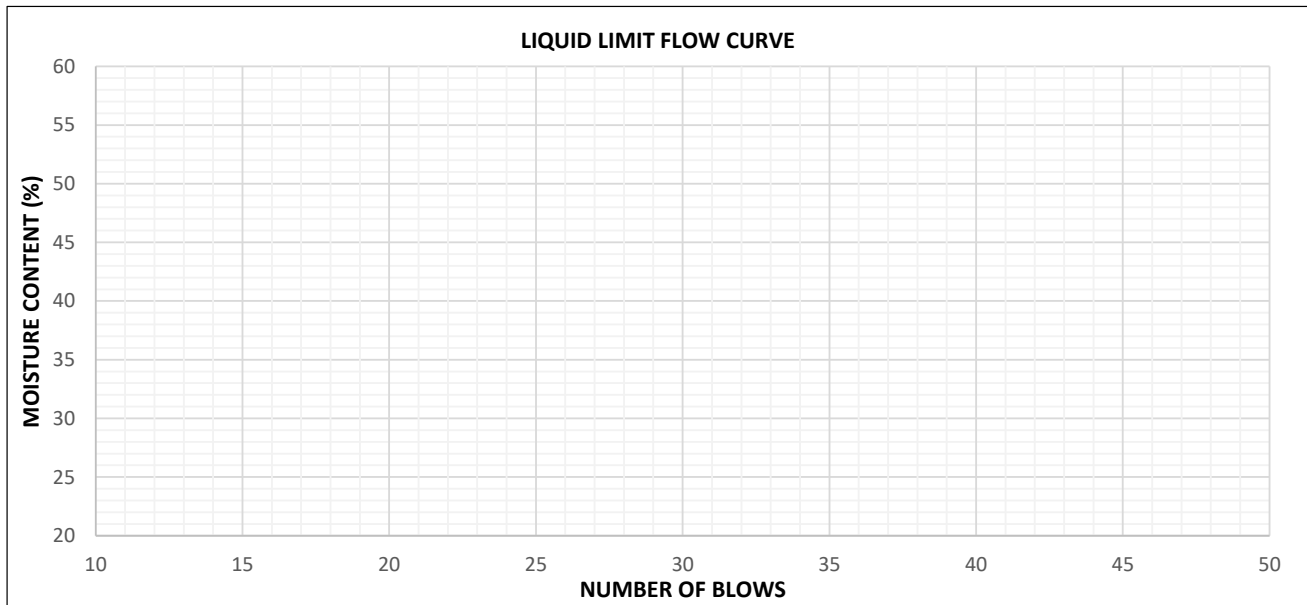
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LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP17 / AL050 / 02MAY19	
SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 02 - 05 - 2019	TIME: 16:15
LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION
GOLOMOTI - SOLAR PV	0 672 016	8 402 656	(m)
DEPTH (m) 2.500 -4.100			
TYPE OF MATERIAL: MOIST BROWN REDDISH STIFF LATERITE GRAVELLY SANDY SILTY CLAY			
TESTED BY: M. MILANZI		DATE: 08 - 06 - 2019	TIME: 11:01
CHECKED BY: G. KACHIWALA		DATE: 12 - 06 - 2019	TIME: 10:40
APPROVED BY: M. SABELLI		DATE: 12 - 06 - 2019	TIME: 14:28
PROJECT: GOLOMOTI SOLAR PV		CLIENT: JCM	

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
	1	2	3	4	1	2	3
TEST No.							
CONTAINER No.	R4		R21		R27	R30	C17
MASS OF WET SOIL + CONTAINER(g)	57.0		56.0		47.5	48.0	47.0
MASS OF DRY SOIL + CONTAINER(g)	52.5		50.0		44.5	45.0	44.0
MASS OF CONTAINER (g)	32.5		27		22.5	22	22
MASS OF DRY SOIL (g)	20.0		23.0		22.0	23.0	22.0
MASS OF WATER (g)	4.50		6.00		3.00	3.00	3.00
MOISTURE CONTENT %	22.5	22.5	26.1	25.0	13.6	13.0	13.6
No. BLOWS	26		16			13.4	

LINEAR SHRINKAGE	7
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	13.2
LINEAR SHRINKAGE %	6.1
LIQUID LIMIT (LL) %	23.8
PLASTIC LIMIT (PL) %	13.4
PLASTICITY INDEX (PI)	10
NATURAL MOISTURE CONTENT %	
FINENESS INDEX	



REMARKS: SAMPLED FROM TRIAL PIT 17 @ 2.500-4.100M. SOLAR PV SITE INVESTIGATION



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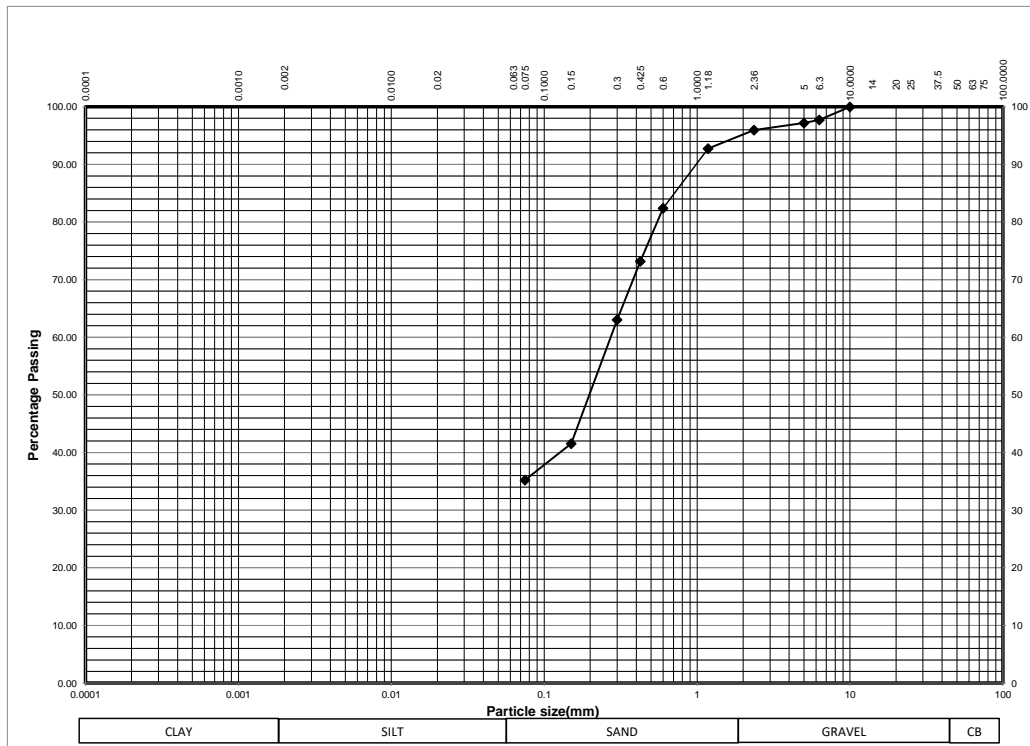
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LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP017 / G048 / 02MAY19		
SAMPLED BY: GEOCONSULT LAB TEAM		DATE: 02 / 05 / 2019	TIME: 17:41	
LOCATION:	EASTING	NORTHING	ELEVATION	DEPTH (m)
GOLOMOTI - SOLAR PV	0 672 016	8 402 656	(m)	0.100-0.600
TYPE OF MATERIAL: MOIST DARK BROWN SANDY SILTY CLAY				
TESTED BY: C. NDALAMA		DATE: 03 - 06 - 2019	TIME: 10:02	
CHECKED BY: G. KACHIWALA		DATE: 07 - 06 - 2019	TIME: 13:30	
APPROVED BY: M. SABELLI		DATE: 07 - 06 - 2019	TIME: 15:00	

PROJECT: GOLOMOTI SOLAR PV **CLIENT: JCM**

SIEVE ANALYSIS (GRADATION) STANDARD: TRH14:1985

SIEVE (mm)	MASS RETAINED	PERCENTAGE			GRADATION SPECIFICATION			ZONE
		RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.500								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000	0.00	0.00	100.00	100				
6.300	19.00	2.26	97.74	98				
5.000	23.50	2.79	97.21	97				
2.360	34.00	4.04	95.96	96				
1.180	61.00	7.25	92.75	93				
0.600	148.00	17.59	82.41	82				
0.425	225.50	26.80	73.20	73				
0.300	311.00	36.96	63.04	63				
0.150	492.00	58.47	41.53	42				
0.075	545.00	64.77	35.23	35				
0 pan	296.50	35.23						
TOTAL (g)	841.50							



REMARKS: SAMPLED FROM TRIAL PIT 17 @ 0.100-0.600M. SOLAR PV SITE INVESTIGATION

PAGE No.



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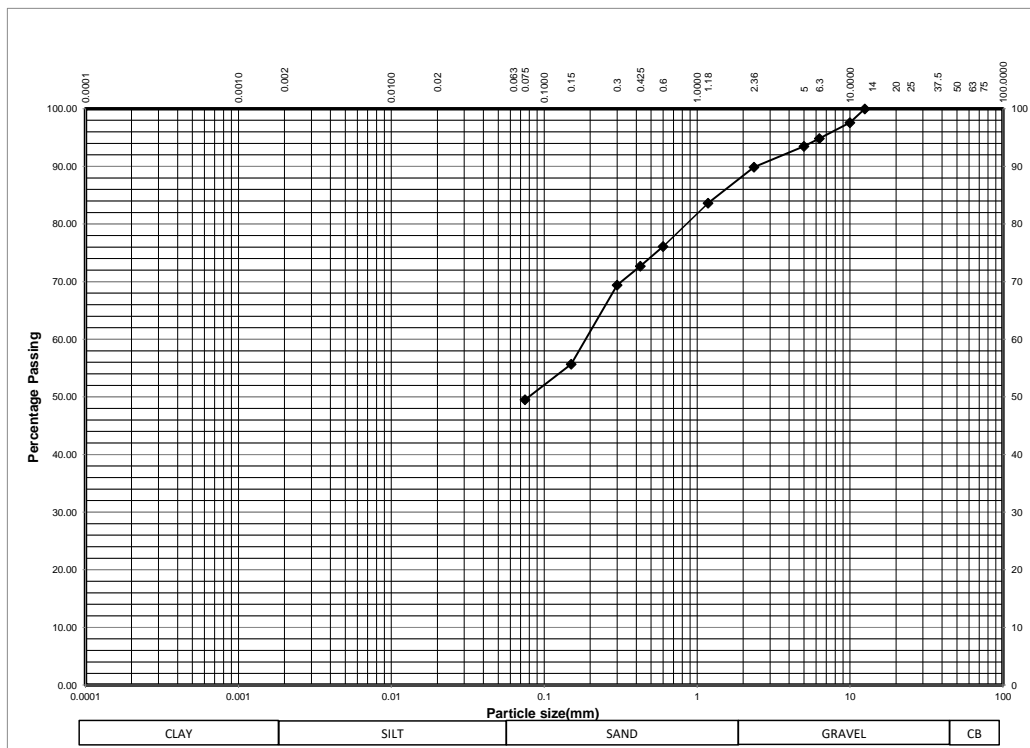
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LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP017 / G049 / 02MAY19		
SAMPLED BY: GEOCONSULT LAB TEAM		DATE: 02 / 05 / 2019	TIME: 17:41	
LOCATION:	EASTING	NORTHING	ELEVATION	DEPTH (m)
GOLOMOTI - SOLAR PV	0 672 016	8 402 656	(m)	0.600-2.500
TYPE OF MATERIAL: MOIST DARK GRAVELLY SANDY SILTY CLAY				
TESTED BY: C. NDALAMA		DATE: 03 - 06 - 2019	TIME: 11:30	
CHECKED BY: G. KACHIWALA		DATE: 07 - 06 - 2019	TIME: 13:30	
APPROVED BY: M. SABELLI		DATE: 07 - 06 - 2019	TIME: 15:00	

PROJECT: GOLOMOTI SOLAR PV **CLIENT: JCM**

SIEVE ANALYSIS (GRADATION) STANDARD: TRH14:1985

SIEVE (mm)	MASS RETAINED	PERCENTAGE			GRADATION SPECIFICATION			ZONE
		RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.500								
28.000								
25.000								
20.000								
14.000								
12.500	0.00	0.00	100.00	100				
10.000	21.00	2.38	97.62	98				
6.300	45.50	5.16	94.84	95				
5.000	57.50	6.52	93.48	93				
2.360	89.50	10.14	89.86	90				
1.180	144.50	16.37	83.63	84				
0.600	211.00	23.91	76.09	76				
0.425	241.00	27.31	72.69	73				
0.300	270.00	30.59	69.41	69				
0.150	391.00	44.31	55.69	56				
0.075	445.50	50.48	49.52	50				
0 pan	437.00	49.52						
TOTAL (g)	882.50							



REMARKS: SAMPLED FROM TRIAL PIT 17 @ 0.600-2.500M. SOLAR PV SITE INVESTIGATION

PAGE No.



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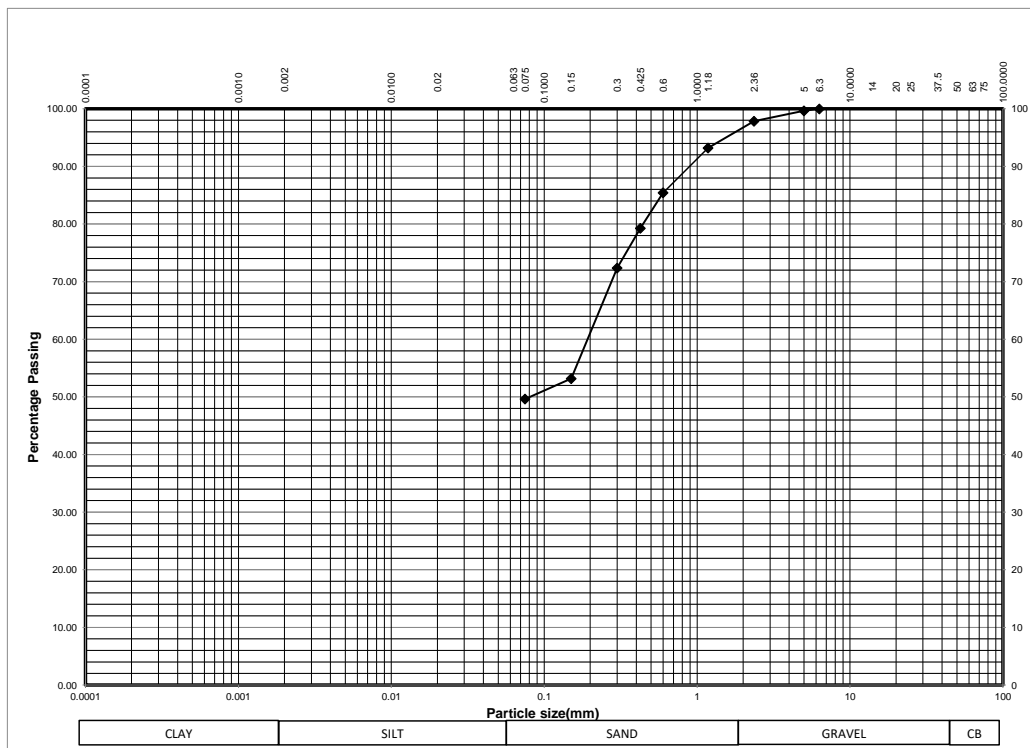
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sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP017 / G050 / 02MAY19		
SAMPLED BY: GEOCONSULT LAB TEAM		DATE: 02 / 05 / 2019	TIME: 17:41	
LOCATION:	EASTING	NORTHING	ELEVATION	DEPTH (m)
GOLOMOTI - SOLAR PV	0 672 016	8 402 656	(m)	2.500-4.100
TYPE OF MATERIAL: MOIST DARK BROWN REDDISH STIFF GRAVELLY SANDY SILTY CLAY				
TESTED BY: C. NDALAMA		DATE: 30 - 05 - 2019	TIME: 14:15	
CHECKED BY: G. KACHIWALA		DATE: 07 - 06 - 2019	TIME: 13:30	
APPROVED BY: M. SABELLI		DATE: 07 - 06 - 2019	TIME: 15:00	

PROJECT: GOLOMOTI SOLAR PV **CLIENT: JCM**


SIEVE ANALYSIS (GRADATION) STANDARD: TRH14:1985


SIEVE (mm)	MASS RETAINED	PERCENTAGE			GRADATION SPECIFICATION			ZONE
		RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.500								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300	0.00	0.00	100.00	100				
5.000	8.00	0.36	99.64	100				
2.360	48.00	2.17	97.83	98				
1.180	150.50	6.79	93.21	93				
0.600	323.00	14.57	85.43	85				
0.425	459.00	20.71	79.29	79				
0.300	612.00	27.61	72.39	72				
0.150	1038.00	46.83	53.17	53				
0.075	1116.50	50.37	49.63	50				
0 pan	1100.00	49.63						
TOTAL (g)	2216.50							




REMARKS: SAMPLED FROM TRIAL PIT 17 @2.500-4.100M. SOLAR PV SITE INVESTIGATION

PAGE No.

 GEOCONSULT +265 0888 846 543 sabelli@geoconsult.cc	LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP017 / NMC048 / 02MAY19		
	SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 02 - 05 - 2019	TIME: 17:41	
	LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
	GOLOMOTI - SOLAR PV	0 672 016	8 402 656	(m)	0.100-0.600
	TYPE OF MATERIAL: MOIST DARK BROWN SANDY SILTY CLAY				
	TESTED BY: C. NDALAMA		DATE: 06 - 05 - 2019	TIME: 10:02	
	CHECKED BY: G. KACHIWALA		DATE: 07 - 05 - 2019	TIME: 09:00	
	APPROVED BY: M. SABELLI		DATE: 07 - 05 - 2019	TIME: 13:00	
	PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM	
	NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: ASTM D7263				
MASS OF WET SOIL + CONTAINER (g)		297.0			
MASS OF DRY SOIL AND CONTAINER (g)		266.5			
CONTAINER No.		GC19			
MASS OF CONTAINER (g)		47.5			
MASS OF DRY SOIL (g)		219.0			
MASS OF WATER (g)		30.5			
MOISTURE CONTENT %		13.9			
AVERAGE MOISTURE CONTENT %		13.9			
REMARKS: SAMPLED FROM TRIAL PIT 17 @0.100-0.600M. SOLAR PV SITE INVESTIGATION				PAGE No.	

 GEOCONSULT +265 0888 846 543 sabelli@geoconsult.cc	LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP017 / NMC048 / 02MAY19		
	SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 02 - 05 - 2019	TIME: 17:41	
	LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
	GOLOMOTI - SOLAR PV	0 672 016	8 402 660	(m)	0.600-2.500
	TYPE OF MATERIAL: MOIST BROWN GRAVELLY SANDY SILTY CLAY				
	TESTED BY: C. NDALAMA		DATE: 06 - 05 - 2019	TIME: 14:38	
	CHECKED BY: G. KACHIWALA		DATE: 07 - 05 - 2019	TIME: 09:00	
	APPROVED BY: M. SABELLI		DATE: 07 - 05 - 2019	TIME: 13:00	
	PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM	
	NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: ASTM D7263				
MASS OF WET SOIL + CONTAINER (g)		334.0			
MASS OF DRY SOIL AND CONTAINER (g)		305.0			
CONTAINER No.		GC10			
MASS OF CONTAINER (g)		66.0			
MASS OF DRY SOIL (g)		239.0			
MASS OF WATER (g)		29.0			
MOISTURE CONTENT %		12.1			
AVERAGE MOISTURE CONTENT %		12.1			
REMARKS: SAMPLED FROM TRIAL PIT 17 @0.600-2.500M. SOLAR PV SITE INVESTIGATION				PAGE No.	

 GEOCONSULT +265 0888 846 543 sabelli@geoconsult.cc	LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP017 / NMC049 / 02MAY19		
	SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 02 - 05 - 2019	TIME: 17:41	
	LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
	GOLOMOTI - SOLAR PV	0 672 016	8 402 656	(m)	2.500-4.100
	TYPE OF MATERIAL: MOIST BROWN REDDISH STIFF LATERITE GRAVELLY SANDY SILTY CLAY				
TESTED BY: C. NDALAMA		DATE: 06 - 05 - 2019	TIME: 14:38		
CHECKED BY: G. KACHIWALA		DATE: 07 - 05 - 2019	TIME: 09:00		
APPROVED BY: M. SABELLI		DATE: 07 - 05 - 2019	TIME: 13:00		
PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM		
NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: ASTM D7263					
MASS OF WET SOIL + CONTAINER (g)		366.0			
MASS OF DRY SOIL AND CONTAINER (g)		336.0			
CONTAINER No.		GC9			
MASS OF CONTAINER (g)		66.5			
MASS OF DRY SOIL (g)		269.5			
MASS OF WATER (g)		30.0			
MOISTURE CONTENT %		11.1			
AVERAGE MOISTURE CONTENT %		11.1			
REMARKS: SAMPLED FROM TRIAL PIT 17 @2.500-4.100M. SOLAR PV SITE INVESTIGATION				PAGE No.	



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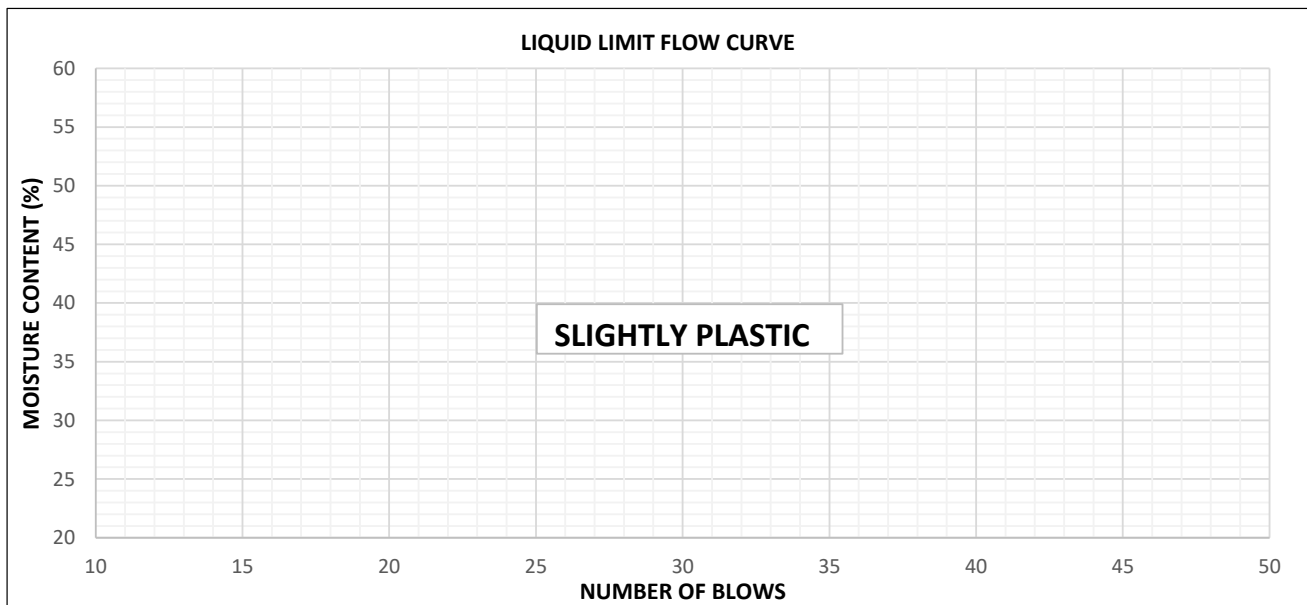
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LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP17 / AL047 / 02MAY19	
SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 02 - 05 - 2019	TIME: 17:41
LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION
GOLOMOTI - SOLAR PV	0 672 016	8 402 656	(m)
DEPTH (m) 0.100 -0.600			
TYPE OF MATERIAL: MOIST DARK BROWN SANDY SILTY CLAY			
TESTED BY: S. MATCHADO		DATE: 10 - 06 - 2019	TIME: 10:44
CHECKED BY: G. KACHIWALA		DATE: 12 - 06 - 2019	TIME: 10:40
APPROVED BY: M. SABELLI		DATE: 12 - 06 - 2019	TIME: 14:28
PROJECT: GOLOMOTI SOLAR PV		CLIENT: JCM	

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
	1	2	3	4	1	2	3
TEST No.							
CONTAINER No.	SP	SP	SP	SP	SP	SP	SP
MASS OF WET SOIL + CONTAINER(g)							
MASS OF DRY SOIL + CONTAINER(g)							
MASS OF CONTAINER (g)							
MASS OF DRY SOIL (g)							
MASS OF WATER (g)							
MOISTURE CONTENT %							
No. BLOWS							

LINEAR SHRINKAGE	3
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	13.7
LINEAR SHRINKAGE %	2.2
LIQUID LIMIT (LL) %	0.0
PLASTIC LIMIT (PL) %	0.0
PLASTICITY INDEX (PI)	0
NATURAL MOISTURE CONTENT %	13.9
FINENESS INDEX	



REMARKS: SAMPLED FROM TRIAL PIT 17 @ 0.100-0.600M. SOLAR PV SITE INVESTIGATION



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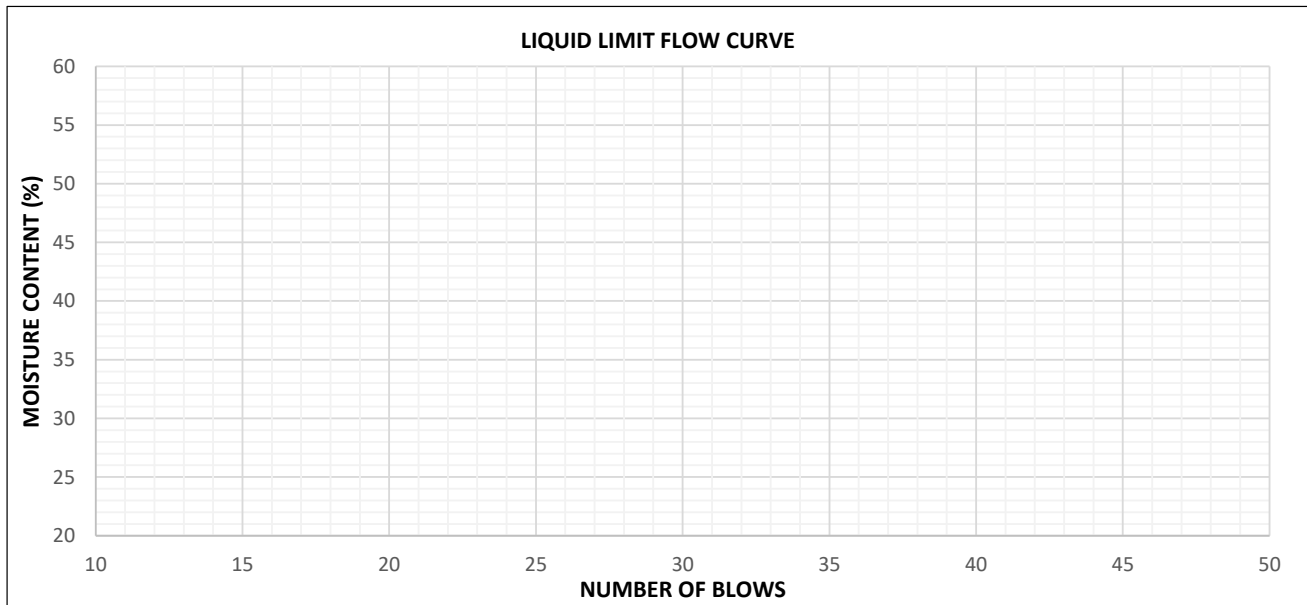
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP17 / AL049 / 02MAY19	
SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 02 - 05 - 2019	TIME: 16:15
LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION
GOLOMOTI - SOLAR PV	0 672 016	8 402 656	(m)
DEPTH (m) 0.600 -2.500			
TYPE OF MATERIAL: MOIST BROWN GRAVELLY SANDY SILTY CLAY			
TESTED BY: M. MILANZI		DATE: 24 - 05 - 2019	TIME: 15:25
CHECKED BY: G. KACHIWALA		DATE: 12 - 06 - 2019	TIME: 10:40
APPROVED BY: M. SABELLI		DATE: 12 - 06 - 2019	TIME: 14:28
PROJECT: GOLOMOTI SOLAR PV		CLIENT: JCM	

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
	1	2	3	4	1	2	3
TEST No.							
CONTAINER No.	C12		C24		R11	C31	R26
MASS OF WET SOIL + CONTAINER(g)	65.0		60.0		47.5	43.5	46.0
MASS OF DRY SOIL + CONTAINER(g)	56.0		52.5		43.5	41.0	43.5
MASS OF CONTAINER (g)	28		32.5		25.5	30	32.5
MASS OF DRY SOIL (g)	28.0		20.0		18.0	11.0	11.0
MASS OF WATER (g)	9.00		7.50		4.00	2.50	2.50
MOISTURE CONTENT %	32.1	32.1	37.5	36.0	22.2	22.7	22.7
No. BLOWS	25		17			22.6	

LINEAR SHRINKAGE	15
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	13.3
LINEAR SHRINKAGE %	5.3
LIQUID LIMIT (LL) %	34.1
PLASTIC LIMIT (PL) %	22.6
PLASTICITY INDEX (PI)	12
NATURAL MOISTURE CONTENT %	12.1
FINENESS INDEX	600



REMARKS: SAMPLED FROM TRIAL PIT 17 @ 0.600-2.500M. SOLAR PV SITE INVESTIGATION

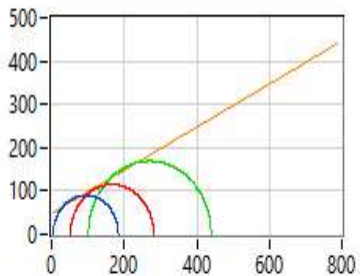
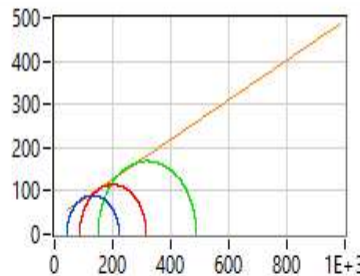
Triaxial test - UU BS 1377 part 7, 1377 part 8		
	Site : GOLOMOTI SOLAR PV	Levy date : 11-Jun-19
	Technician's name :	Date of test : 11-Jun-19
GEOCONSULT LIMITED P.O. BOX 40 LILONGWE	File N° : 4	Survey depth (m) : 1.000
	Survey N° : BH 17	Level of water (m) :
	Kind of soil :	Moist Brown Gravelley Sandy Silty CLAY

Identification of samples :

Ovo, Total stress of the soil in situ (kPa) : 0.000	Uo, Pore pressure of the soil in situ (kPa) : 0.000
Category of soil : Steep/Strongly overconsolidated	Kind of drainage : Without lateral drain
ρ_s , Grain density (kg/m ³) : 0.000	
S_m : <input type="checkbox"/>	S_d : <input type="checkbox"/>

Samples before test :									Samples after saturation :		
N°	Hi (mm)	Di (mm)	mi (g)	ρ_i (kg/m ³)	ρ_{di} (kg/m ³)	wi (%)	ei	Si (%)	Ucp (kPa)	ΔV_{sat} (mm ³)	B (%)
1	76.00	38	144.5	1676	1456	15.14	-1.000	-0.000		0.010	0.000
2	76.00	38	132.5	1537	1346	14.22	-1.000	-0.000		0.000	0.002
3	76.00	38	143.5	1665	1450	14.80	-1.000	-0.000		0.000	0.000

Samples after consolidation :							Samples after shearing							
N°	Hs (mm)	Ds (mm)	ΔV_s (mm ³)	T100 (min)	Vmax (μm/min)	σ'_c (kPa)	Hf (mm)	Df (mm)	mf (g)	md (g)	wf (%)	ρ_{df} (kg/m ³)	ef	Srf (%)
1	76.00	38.00	0.000	0.000	0.000	0.000	76.00	38.00	143.5	125.5	14.34	1456	-1.000	-0.000
2	76.00	38.00	0.000	0.000	0.000	0.000	76.00	38.00	132.0	116.0	13.79	1346	-1.000	-0.000
3	76.00	38.00	0.000	0.000	0.000	0.000	76.00	38.00	143.5	125.0	14.80	1450	-1.000	-0.000

Total stress :	Effective stress :	Comments :												
 <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><th colspan="2">Mohr</th></tr> <tr><td>C (kPa)</td><td>48.92</td></tr> <tr><td>ϕ (°)</td><td>26.33</td></tr> </table>	Mohr		C (kPa)	48.92	ϕ (°)	26.33	 <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><th>Mohr</th><th>Lambe</th></tr> <tr><td>C' (kPa)</td><td>35.95 / 31.65</td></tr> <tr><td>ϕ' (°)</td><td>24.63 / 23.18</td></tr> </table>	Mohr	Lambe	C' (kPa)	35.95 / 31.65	ϕ' (°)	24.63 / 23.18	<div style="border: 1px solid black; height: 100px; width: 100%;"></div>
Mohr														
C (kPa)	48.92													
ϕ (°)	26.33													
Mohr	Lambe													
C' (kPa)	35.95 / 31.65													
ϕ' (°)	24.63 / 23.18													
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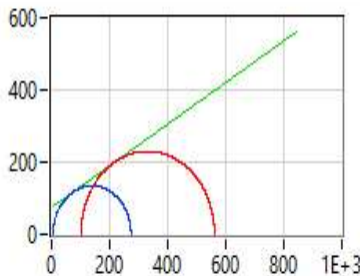
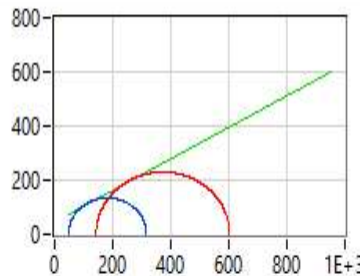
Triaxial test - UU BS 1377 part 7, 1377 part 8		
	Site : GOLOMOTI SOLAR PV	Levy date : 12-Jun-19
	Technicien's name :	Date of test : 12-Jun-19
GEOCONSULT LIMITED P.O. BOX 40 LILONGWE	File N° : 7	Survey depth (m) : 2.000
	Survey N° : BH 17	Level of water (m) :
	Kind of soil :	Moist Brown Gravelley Sandy Silty CLAY

Identification of samples :

Ovo, Total stress of the soil in situ (kPa) :	0.000	Uo, Pore pressure of the soil in situ (kPa) :	0.000
Category of soil :	Steep/Strongly overconsolidated	Kind of drainage :	Without lateral drain
ρ_s , Grain density (kg/m ³) :	0.000		
S_m :	<input type="checkbox"/>	S_d :	<input type="checkbox"/>

Samples before test :									Samples after saturation :		
N°	Hi (mm)	Di (mm)	mi (g)	ρ_i (kg/m ³)	ρ_{di} (kg/m ³)	wi (%)	ei	Si (%)	Ucp (kPa)	ΔV_{sat} (mm ³)	B (%)
1	76.00	38	156.0	1810	1578	14.71	-1.000	-0.000		0.000	0.000
2	76.00	38	161.0	1868	1630	14.59	-1.000	-0.000		0.000	0.000

Samples after consolidation :							Samples after shearing							
N°	Hs (mm)	Ds (mm)	ΔV_s (mm ³)	T100 (min)	Vmax (μm/min)	σ'_c (kPa)	Hf (mm)	Df (mm)	mf (g)	md (g)	wf (%)	ρ_{df} (kg/m ³)	ef	Srf (%)
1	76.00	38.00	0.000	0.000	0.000	0.000	76.00	38.00	156.0	136.0	14.71	1578	-1.000	-0.000
2	76.00	38.00	0.000	0.000	0.000	0.000	76.00	38.00	161.0	140.5	14.59	1630	-1.000	-0.000

Total stress :	Effective stress :	Comments :																		
 <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="2" style="text-align: center;">Mohr</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">C (kPa)</td> <td style="text-align: center;">74.69</td> </tr> <tr> <td style="text-align: center;">ϕ (°)</td> <td style="text-align: center;">29.97</td> </tr> </tbody> </table>	Mohr		C (kPa)	74.69	ϕ (°)	29.97	 <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="2" style="text-align: center;">Mohr</th> <th colspan="2" style="text-align: center;">Lambe</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">C' (kPa)</td> <td style="text-align: center;">49.85</td> <td style="text-align: center;">43.13</td> <td></td> </tr> <tr> <td style="text-align: center;">ϕ' (°)</td> <td style="text-align: center;">30.10</td> <td style="text-align: center;">26.63</td> <td></td> </tr> </tbody> </table>	Mohr		Lambe		C' (kPa)	49.85	43.13		ϕ' (°)	30.10	26.63		<div style="border: 1px solid black; height: 100px; width: 100%;"></div>
Mohr																				
C (kPa)	74.69																			
ϕ (°)	29.97																			
Mohr		Lambe																		
C' (kPa)	49.85	43.13																		
ϕ' (°)	30.10	26.63																		
Visa :		p.1/3																		

3.21 Trial Pit 18



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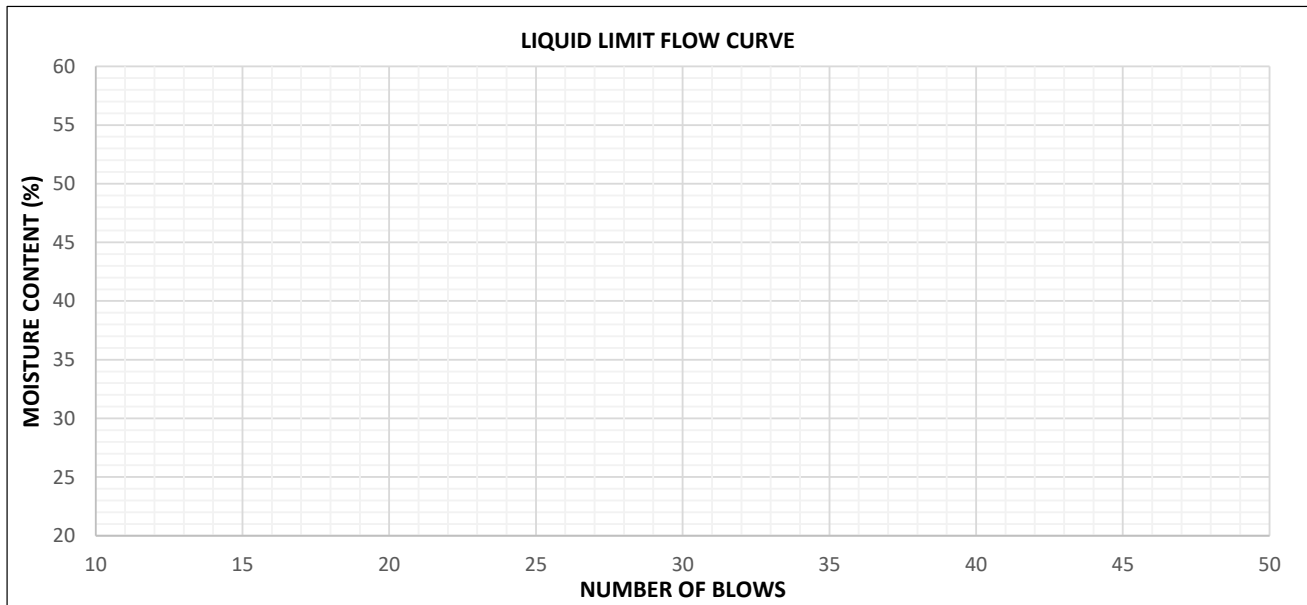
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP18 / AL053 / 03MAY19	
SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 03 - 05 - 2019	TIME: 10:36
LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION
GOLOMOTI - SOLAR PV	0 671 938	8 402 608	(m)
DEPTH (m) 2.000 -4.000			
TYPE OF MATERIAL: MOIST BROWN REDDISH LATERITE GRAVELLY SANDY SILTY CLAY			
TESTED BY: M. MILANZI		DATE: 11 - 06 - 2019	TIME: 15:25
CHECKED BY: G. KACHIWALA		DATE: 12 - 06 - 2019	TIME: 10:40
APPROVED BY: M. SABELLI		DATE: 12 - 06 - 2019	TIME: 14:28
PROJECT: GOLOMOTI SOLAR PV		CLIENT: JCM	

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
	1	2	3	4	1	2	3
TEST No.							
CONTAINER No.	C12		R30		C1	R26	R19
MASS OF WET SOIL + CONTAINER(g)	61.0		63.5		52.0	47.5	47.0
MASS OF DRY SOIL + CONTAINER(g)	53.0		55.0		49.5	45.5	45.0
MASS OF CONTAINER (g)	28		30.5		34.5	33.5	33
MASS OF DRY SOIL (g)	25.0		24.5		15.0	12.0	12.0
MASS OF WATER (g)	8.00		8.50		2.50	2.00	2.00
MOISTURE CONTENT %	32.0	32.6	34.7	33.7	16.7	16.7	16.7
No. BLOWS	30		19			16.7	

LINEAR SHRINKAGE	18
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	12.9
LINEAR SHRINKAGE %	8.5
LIQUID LIMIT (LL) %	33.1
PLASTIC LIMIT (PL) %	16.7
PLASTICITY INDEX (PI)	16
NATURAL MOISTURE CONTENT %	13.2
FINENESS INDEX	1024



REMARKS: SAMPLED FROM TRIAL PIT 18 @ 2.000-4.000M. SOLAR PV SITE INVESTIGATION



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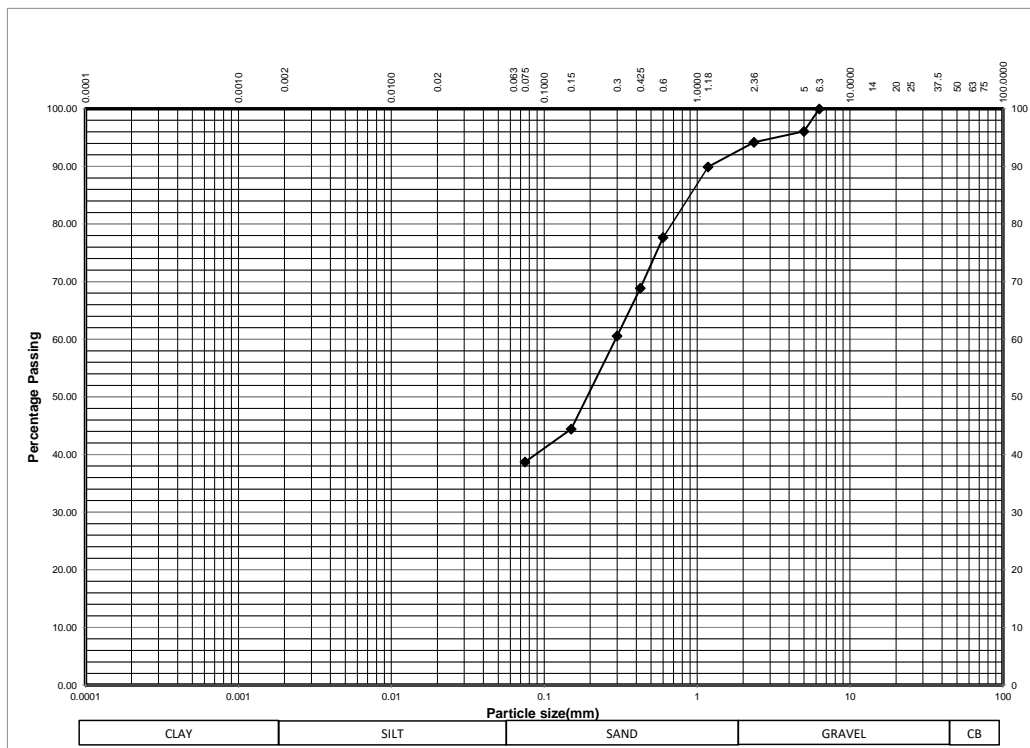
LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP018 / G051 / 03MAY19		
SAMPLED BY: GEOCONSULT LAB TEAM		DATE: 03 / 05 / 2019	TIME: 10:27	
LOCATION:	EASTING	NORTHING	ELEVATION	DEPTH (m)
GOLOMOTI - SOLAR PV	0 671 938	8 402 608	(m)	0.200-0.500
TYPE OF MATERIAL: MOIST LIGHT BROWN SANDY SILTY CLAY				
TESTED BY: C. NDALAMA		DATE: 10 - 06 - 2019	TIME: 11:00	
CHECKED BY: G. KACHIWALA		DATE: 11 - 06 - 2019	TIME: 13:30	
APPROVED BY: M. SABELLI		DATE: 11 - 06 - 2019	TIME: 15:00	

PROJECT: GOLOMOTI SOLAR PV

CLIENT: JCM

SIEVE ANALYSIS (GRADATION) STANDARD: TRH14:1985

SIEVE (mm)	MASS RETAINED	PERCENTAGE		GRADATION SPECIFICATION	ZONE
		RETAINED	PASSING		
75.000				BASE	
50.000				SUBBASE	
37.500				SL SEAL	
28.000					
25.000					
20.000					
14.000					
12.500					
10.000					
6.300	0.00	0.00	100.00	100	
5.000	16.50	3.92	96.08	96	
2.360	24.50	5.82	94.18	94	
1.180	42.50	10.10	89.90	90	
0.600	94.00	22.33	77.67	78	
0.425	131.00	31.12	68.88	69	
0.300	166.00	39.43	60.57	61	
0.150	234.00	55.58	44.42	44	
0.075	258.00	61.28	38.72	39	
0 pan	163.00	38.72			
TOTAL (g)	421.00				



REMARKS: SAMPLED FROM TRIAL PIT 18 @0.200-0.500M. SOLAR PV SITE INVESTIGATION

PAGE No.



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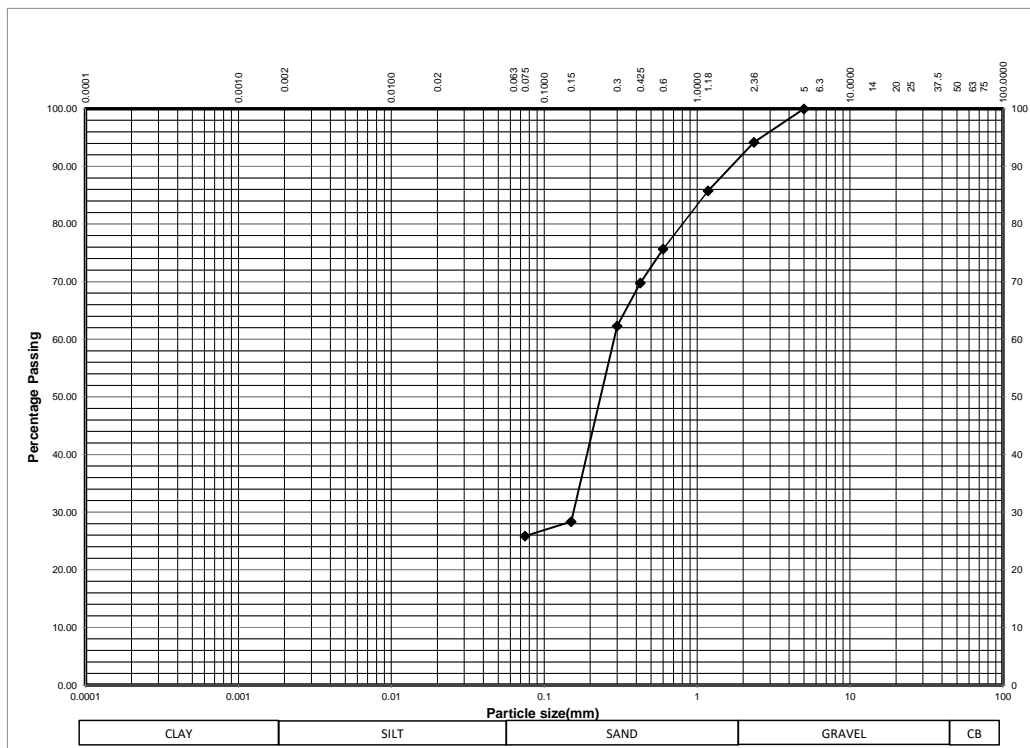
+265 0888 846 543
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP018 / G052 / 03MAY19		
SAMPLED BY: GEOCONSULT LAB TEAM		DATE: 03 / 05 / 2019	TIME: 10:27	
LOCATION:	EASTING	NORTHING	ELEVATION	DEPTH (m)
GOLOMOTI - SOLAR PV	0 671 938	8 402 608	(m)	0.500-2.000
TYPE OF MATERIAL: MOIST BROWN SOFT SANDY SILTY CLAYEY LATERITE GRAVEL				
TESTED BY: C. NDALAMA		DATE: 10 - 06 - 2019	TIME: 11:20	
CHECKED BY: G. KACHIWALA		DATE: 11 - 06 - 2019	TIME: 13:30	
APPROVED BY: M. SABELLI		DATE: 11 - 06 - 2019	TIME: 15:00	

PROJECT: GOLOMOTI SOLAR PV **CLIENT: JCM**

SIEVE ANALYSIS (GRADATION) STANDARD: TRH14:1985

SIEVE (mm)	MASS RETAINED	PERCENTAGE			GRADATION SPECIFICATION			ZONE
		RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.500								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300								
5.000	0.00	0.00	100.00	100				
2.360	52.00	5.81	94.19	94				
1.180	127.50	14.24	85.76	86				
0.600	218.00	24.34	75.66	76				
0.425	270.50	30.21	69.79	70				
0.300	337.50	37.69	62.31	62				
0.150	641.50	71.64	28.36	28				
0.075	664.00	74.15	25.85	26				
0 pan	231.50	25.85						
TOTAL (g)	895.50							



REMARKS: SAMPLED FROM TRIAL PIT 18 @0.500-2.000M. SOLAR PV SITE INVESTIGATION

PAGE No.



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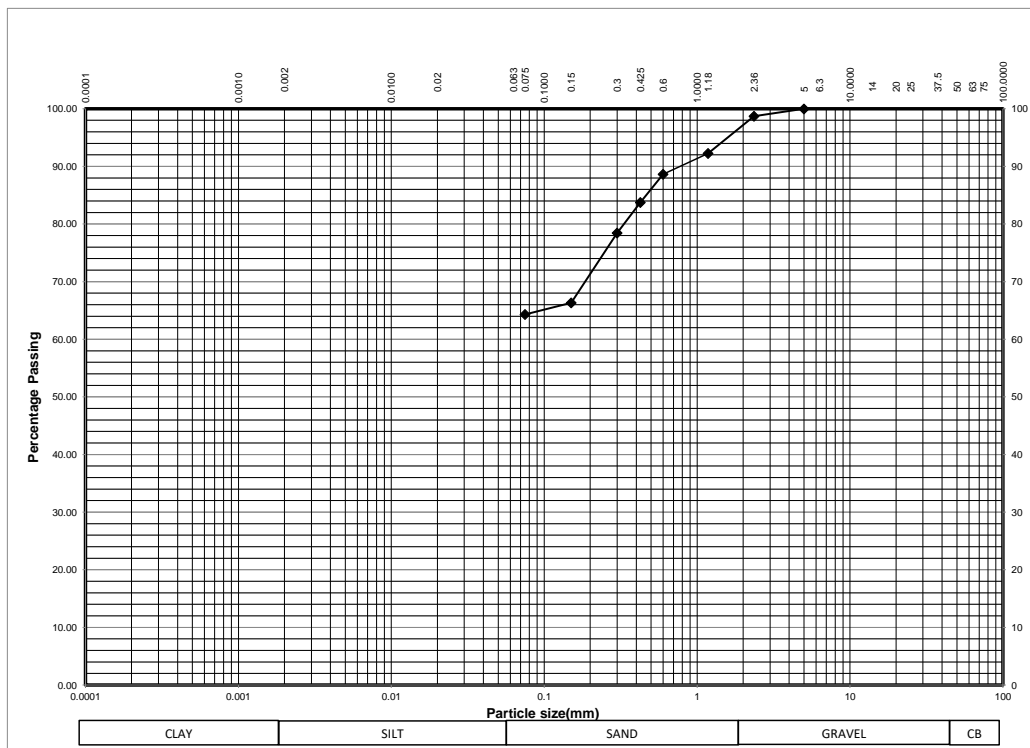
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LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP018 / G053 / 03MAY19		
SAMPLED BY: GEOCONSULT LAB TEAM		DATE: 03 / 05 / 2019	TIME: 10:27	
LOCATION:	EASTING	NORTHING	ELEVATION	DEPTH (m)
GOLOMOTI - SOLAR PV	0 671 938	8 402 608	(m)	2.000-4.000
TYPE OF MATERIAL: MOIST BROWN REDDISH SANDY SILTY CLAYEY LATERITE GRAVEL				
TESTED BY: C. NDALAMA		DATE: 10 - 06 - 2019	TIME: 11:20	
CHECKED BY: G. KACHIWALA		DATE: 11 - 06 - 2019	TIME: 13:30	
APPROVED BY: M. SABELLI		DATE: 11 - 06 - 2019	TIME: 15:00	

PROJECT: GOLOMOTI SOLAR PV **CLIENT: JCM**


SIEVE ANALYSIS (GRADATION) STANDARD: TRH14:1985


SIEVE (mm)	MASS RETAINED	PERCENTAGE			GRADATION SPECIFICATION			ZONE
		RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.500								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300								
5.000	0.00	0.00	100.00	100				
2.360	43.50	1.31	98.69	99				
1.180	258.00	7.75	92.25	92				
0.600	378.00	11.35	88.65	89				
0.425	541.50	16.26	83.74	84				
0.300	718.00	21.56	78.44	78				
0.150	1121.00	33.66	66.34	66				
0.075	1188.50	35.69	64.31	64				
0 pan	2141.50	64.31						
TOTAL (g)	3330.00							




REMARKS: SAMPLED FROM TRIAL PIT 18 @2.000-4.000M. SOLAR PV SITE INVESTIGATION

PAGE No.

 GEOCONSULT +265 0888 846 543 sabelli@geoconsult.cc	LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP018 / NMC051 / 02MAY19		
	SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 02 - 05 - 2019	TIME: 09:35	
	LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
	GOLOMOTI - SOLAR PV	0 671 938	8 402 608	(m)	0.200-0.500
	TYPE OF MATERIAL: MOIST LIGHT BROWN SANDY SILTY CLAY				
	TESTED BY: C. NDALAMA		DATE: 06 - 05 - 2019	TIME: 14:38	
CHECKED BY: G. KACHIWALA		DATE: 07 - 05 - 2019	TIME: 09:00		
APPROVED BY: M. SABELLI		DATE: 07 - 05 - 2019	TIME: 13:00		
PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM		
NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: ASTM D7263					
MASS OF WET SOIL + CONTAINER (g)			292.0		
MASS OF DRY SOIL AND CONTAINER (g)			280.5		
CONTAINER No.			GC12		
MASS OF CONTAINER (g)			50.0		
MASS OF DRY SOIL (g)			230.5		
MASS OF WATER (g)			11.5		
MOISTURE CONTENT %			5.0		
AVERAGE MOISTURE CONTENT %			5.0		
REMARKS: SAMPLED FROM TRIAL PIT 18 @0.200-0.500M. SOLAR PV SITE INVESTIGATION					PAGE No.

 GEOCONSULT +265 0888 846 543 sabelli@geoconsult.cc	LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP018 / NMC052 / 02MAY19		
	SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 02 - 05 - 2019	TIME: 17:41	
	LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
	GOLOMOTI - SOLAR PV	0 671 938	8 402 608	(m)	0.500-2.000
	TYPE OF MATERIAL: MOIST BROWN SOFT SANDY SILTY CLAYEY LATERITE GRAVEL				
	TESTED BY: C. NDALAMA		DATE: 06 - 05 - 2019	TIME: 14:38	
CHECKED BY: G. KACHIWALA		DATE: 07 - 05 - 2019	TIME: 09:00		
APPROVED BY: M. SABELLI		DATE: 07 - 05 - 2019	TIME: 13:00		
PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM		
NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: ASTM D7263					
MASS OF WET SOIL + CONTAINER (g)		292.0			
MASS OF DRY SOIL AND CONTAINER (g)		279.5			
CONTAINER No.		GC19			
MASS OF CONTAINER (g)		55.5			
MASS OF DRY SOIL (g)		224.0			
MASS OF WATER (g)		12.5			
MOISTURE CONTENT %		5.6			
AVERAGE MOISTURE CONTENT %		5.6			
REMARKS: SAMPLED FROM TRIAL PIT 18 @0.500-2.000M. SOLAR PV SITE INVESTIGATION				PAGE No.	

 GEOCONSULT +265 0888 846 543 sabelli@geoconsult.cc	LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP018 / NMC053 / 02MAY19		
	SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 02 - 05 - 2019	TIME: 17:41	
	LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
	GOLOMOTI - SOLAR PV	0 671 938	8 402 608	(m)	2.000-4.000
	TYPE OF MATERIAL: MOIST BROWN REDDISH SANDY SILTY CLAYEY LATERITE GRAVEL				
	TESTED BY: C. NDALAMA		DATE: 06 - 05 - 2019	TIME: 14:38	
	CHECKED BY: G. KACHIWALA		DATE: 07 - 05 - 2019	TIME: 09:00	
APPROVED BY: M. SABELLI		DATE: 07 - 05 - 2019	TIME: 13:00		
PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM		
NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: ASTM D7263					
MASS OF WET SOIL + CONTAINER (g)		207.0			
MASS OF DRY SOIL AND CONTAINER (g)		190.5			
CONTAINER No.		GC22			
MASS OF CONTAINER (g)		65.5			
MASS OF DRY SOIL (g)		125.0			
MASS OF WATER (g)		16.5			
MOISTURE CONTENT %		13.2			
AVERAGE MOISTURE CONTENT %		13.2			
REMARKS: SAMPLED FROM TRIAL PIT 18 @2.000-4.000M. SOLAR PV SITE INVESTIGATION				PAGE No.	



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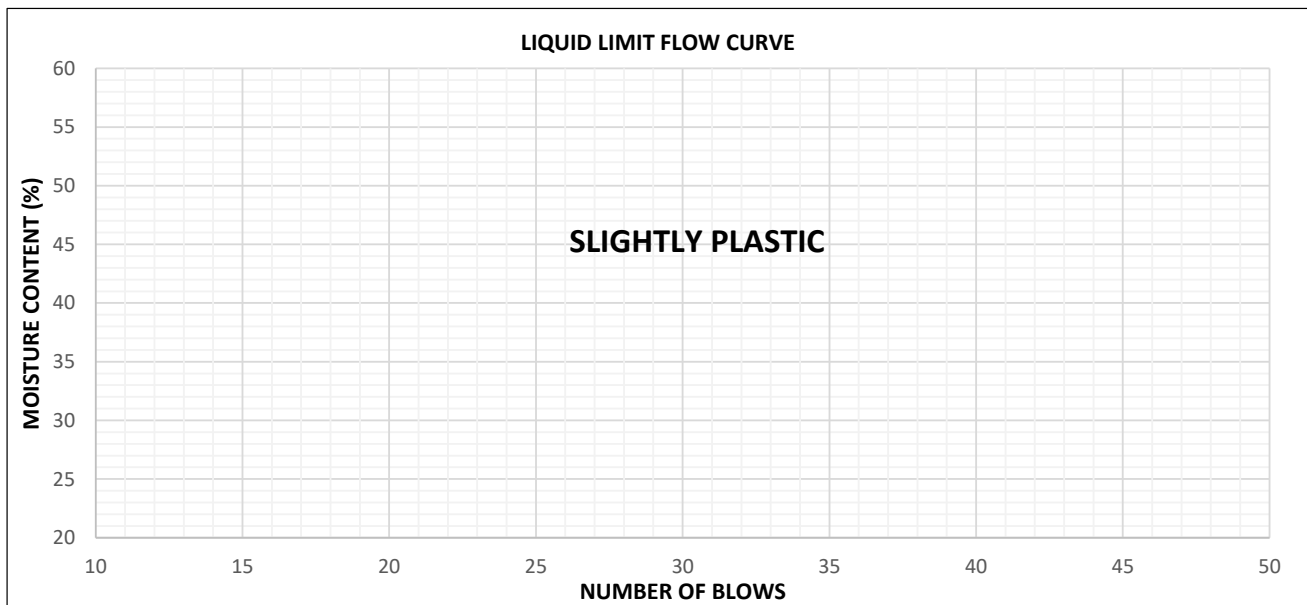
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LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP18 / AL050 / 02MAY19	
SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 03 - 05 - 2019	TIME: 16:15
LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION
GOLOMOTI - SOLAR PV	0 671 938	8 402 608	(m)
DEPTH (m) 0.200 -0.500			
TYPE OF MATERIAL: MOIST LIGHT BROWN SANDY SILTY CLAY			
TESTED BY: M. MILANZI		DATE: 28 - 05 - 2019	TIME: 09:25
CHECKED BY: G. KACHIWALA		DATE: 17 - 06 - 2019	TIME: 10:40
APPROVED BY: M. SABELLI		DATE: 17 - 06 - 2019	TIME: 14:28
PROJECT: GOLOMOTI SOLAR PV		CLIENT: JCM	

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
	1	2	3	4	1	2	3
TEST No.							
CONTAINER No.	SP	SP	SP	SP	SP	SP	SP
MASS OF WET SOIL + CONTAINER(g)							
MASS OF DRY SOIL + CONTAINER(g)							
MASS OF CONTAINER (g)							
MASS OF DRY SOIL (g)							
MASS OF WATER (g)							
MOISTURE CONTENT %							
No. BLOWS							

LINEAR SHRINKAGE	15
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	13.7
LINEAR SHRINKAGE %	2.2
LIQUID LIMIT (LL) %	0.0
PLASTIC LIMIT (PL) %	0.0
PLASTICITY INDEX (PI)	0
NATURAL MOISTURE CONTENT %	5.0
FINENESS INDEX	



REMARKS: SAMPLED FROM TRIAL PIT 18 @ 0.200-0.500M. SOLAR PV SITE INVESTIGATION



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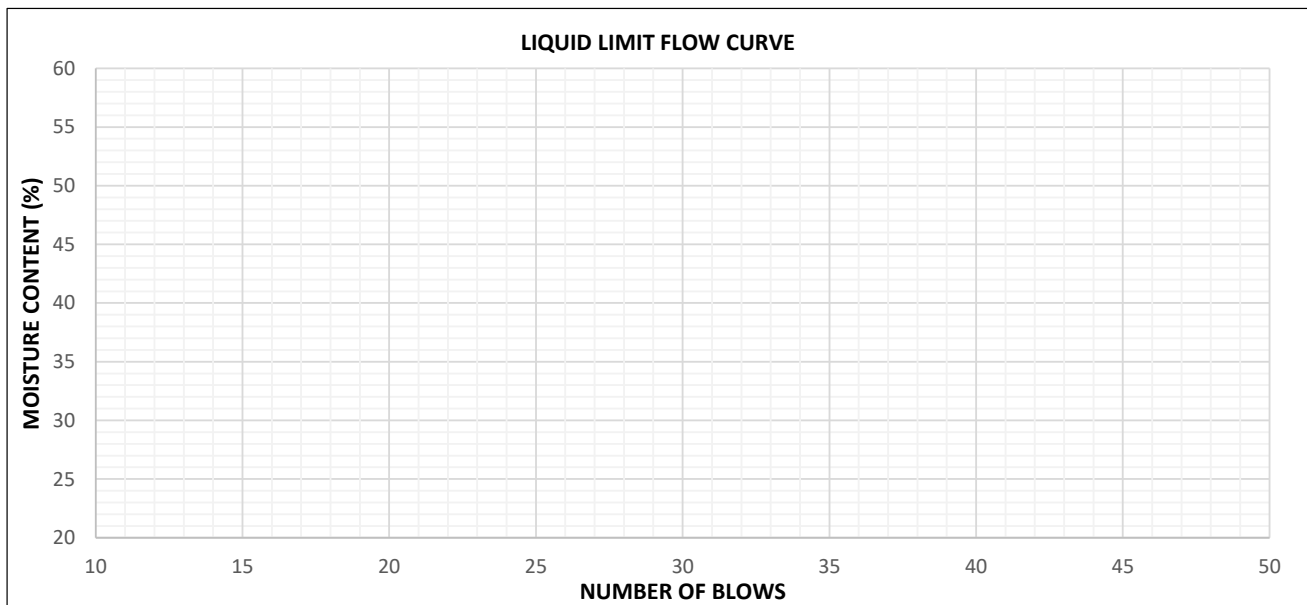
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP18 / AL052 / 03MAY19	
SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 03 - 05 - 2019	TIME: 10:32
LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION
GOLOMOTI - SOLAR PV	0 671 938	8 402 608	(m)
DEPTH (m) 0.500 -2.000			
TYPE OF MATERIAL: MOIST BROWN SOFT SANDY SILTY CLAYEY LATERITE GRAVEL			
TESTED BY: M. MILANZI		DATE: 24 - 05 - 2019	TIME: 15:25
CHECKED BY: G. KACHIWALA		DATE: 12 - 06 - 2019	TIME: 10:40
APPROVED BY: M. SABELLI		DATE: 12 - 06 - 2019	TIME: 14:28
PROJECT: GOLOMOTI SOLAR PV		CLIENT: JCM	

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
	1	2	3	4	1	2	3
TEST No.							
CONTAINER No.	C14		R17		C27	C16	C3
MASS OF WET SOIL + CONTAINER(g)	46.5		60.5		38.5	41.0	38.0
MASS OF DRY SOIL + CONTAINER(g)	42.5		52.5		37.0	38.5	35.5
MASS OF CONTAINER (g)	30.5		30.5		29.5	26.5	23
MASS OF DRY SOIL (g)	12.0		22.0		7.5	12.0	12.5
MASS OF WATER (g)	4.00		8.00		1.50	2.50	2.50
MOISTURE CONTENT %	33.3	34.0	36.4	35.3	20.0	20.8	20.0
No. BLOWS	30		18			20.3	

LINEAR SHRINKAGE	5
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	13.2
LINEAR SHRINKAGE %	6.1
LIQUID LIMIT (LL) %	34.6
PLASTIC LIMIT (PL) %	20.3
PLASTICITY INDEX (PI)	14
NATURAL MOISTURE CONTENT %	5.6
FINENESS INDEX	364



REMARKS: SAMPLED FROM TRIAL PIT 18 @ 0.500-2.000M. SOLAR PV SITE INVESTIGATION

Triaxial test - UU BS 1377 part 7, 1377 part 8				
	Site :	GOLOMOTI SOLAR PV	Levy date :	11-Jun-19
	Technician's name :		Date of test :	11-Jun-19
GEOCONSULT LIMITED P.O. BOX 40 LILONGWE	File N° :	5	Survey depth (m) :	1.000
	Survey N° :	TP 18	Level of water (m) :	
	Kind of soil :	Moist Brown Soft Sandy Silty Clayey LATERITE GRAVEL		

Identification of samples :

Ovo, Total stress of the soil in situ (kPa) : 0.000	Uo, Pore pressure of the soil in situ (kPa) : 0.000
Category of soil : Steep/Strongly overconsolidated	Kind of drainage : Without lateral drain
ρ_s , Grain density (kg/m ³) : 0.000	
S_m : <input type="checkbox"/>	S_d : <input type="checkbox"/>

Samples before test :									Samples after saturation :		
N°	Hi (mm)	Di (mm)	mi (g)	ρ_i (kg/m ³)	ρ_{di} (kg/m ³)	wi (%)	ei	Si (%)	Ucp (kPa)	ΔV_{sat} (mm ³)	B (%)
1	76.00	38	173.5	2013	1729	16.44	-1.000	-0.000		0.000	0.000
2	76.00	38	174.5	2025	1734	16.72	-1.000	-0.000		0.000	0.000
3	75.00	38	170.0	1999	1734	15.25	-1.000	-0.000		0.000	0.000

Samples after consolidation :							Samples after shearing							
N°	Hs (mm)	Ds (mm)	ΔV_s (mm ³)	T100 (min)	Vmax (μm/min)	σ'_c (kPa)	Hf (mm)	Df (mm)	mf (g)	md (g)	wf (%)	ρ_{df} (kg/m ³)	ef	Srf (%)
1	76.00	38.00	0.000	0.000	0.000	0.000	76.00	38.00	173.0	149.0	16.11	1729	-1.000	-0.000
2	76.00	38.00	0.000	0.000	0.000	0.000	76.00	38.00	174.0	149.5	16.39	1734	-1.000	-0.000
3	75.00	38.00	0.000	0.000	0.000	0.000	75.00	38.00	169.0	147.5	14.58	1734	-1.000	-0.000

Total stress :	Effective stress :	Comments :																		
<table border="1" style="margin-top: 10px; width: 100%;"> <tr><th colspan="2">Mohr</th></tr> <tr><td>C (kPa)</td><td>NaN</td></tr> <tr><td>ϕ (°)</td><td>NaN</td></tr> </table>	Mohr		C (kPa)	NaN	ϕ (°)	NaN	<table border="1" style="margin-top: 10px; width: 100%;"> <tr><th colspan="2">Mohr</th><th colspan="2">Lambe</th></tr> <tr><td>C' (kPa)</td><td>14.95</td><td>C'</td><td>14.53</td></tr> <tr><td>ϕ' (°)</td><td>27.43</td><td>ϕ'</td><td>24.79</td></tr> </table>	Mohr		Lambe		C' (kPa)	14.95	C'	14.53	ϕ' (°)	27.43	ϕ'	24.79	<p>Visa :</p>
Mohr																				
C (kPa)	NaN																			
ϕ (°)	NaN																			
Mohr		Lambe																		
C' (kPa)	14.95	C'	14.53																	
ϕ' (°)	27.43	ϕ'	24.79																	
		p.1/3																		

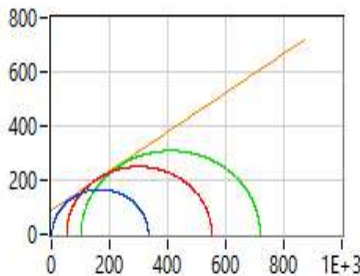
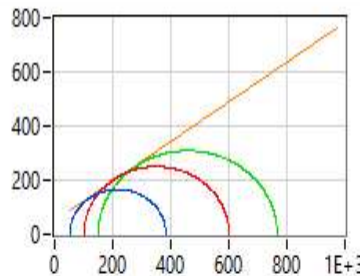
Triaxial test - UU BS 1377 part 7, 1377 part 8				
	Site :	GOLOMOTI SOLAR PV	Levy date :	10-Jun-19
	Technician's name :		Date of test :	10-Jun-19
GEOCONSULT LIMITED P.O. BOX 40 LILONGWE	File N° :	2	Survey depth (m) :	2.000
	Survey N° :	TRIAL PIT No. 18	Level of water (m) :	
	Kind of soil :	Moist Brown Reddish Sandy Silty Clayey LATERITE GRAVEL		

Identification of samples :

Ovo, Total stress of the soil in situ (kPa) : 0.000	Uo, Pore pressure of the soil in situ (kPa) : 0.000
Category of soil : Steep/Strongly overconsolidated	Kind of drainage : Without lateral drain
ρ_s , Grain density (kg/m ³) : 0.000	
S_m : <input type="checkbox"/>	S_d : <input type="checkbox"/>

Samples before test :									Samples after saturation :		
N°	Hi (mm)	Di (mm)	mi (g)	ρ_i (kg/m ³)	ρ_{di} (kg/m ³)	wi (%)	ei	Si (%)	Ucp (kPa)	ΔV_{sat} (mm ³)	B (%)
1	76.00	38	157.0	1821	1584	15.02	-1.000	-0.000		0.000	0.000
2	76.00	38	157.5	1827	1601	14.13	-1.000	-0.000		0.000	0.000
3	76.00	38	165.5	1920	1671	14.93	-1.000	-0.000		0.000	0.000

Samples after consolidation :							Samples after shearing							
N°	Hs (mm)	Ds (mm)	ΔV_s (mm ³)	T100 (min)	Vmax (μm/min)	σ'_c (kPa)	Hf (mm)	Df (mm)	mf (g)	md (g)	wf (%)	ρ_{df} (kg/m ³)	ef	Srf (%)
1	76.00	38.00	0.000	0.000	0.000	0.000	76.00	38.00	157.0	136.5	15.02	1584	-1.000	-0.000
2	76.00	38.00	0.000	0.000	0.000	0.000	76.00	38.00	157.5	138.0	14.13	1601	-1.000	-0.000
3	76.00	38.00	0.000	0.000	0.000	0.000	76.00	38.00	165.0	144.0	14.58	1671	-1.000	-0.000

Total stress :	Effective stress :	Comments :												
 <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><th colspan="2">Mohr</th></tr> <tr><td>C (kPa)</td><td>88.25</td></tr> <tr><td>ϕ (°)</td><td>35.94</td></tr> </table>	Mohr		C (kPa)	88.25	ϕ (°)	35.94	 <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><th>Mohr</th><th>Lambe</th></tr> <tr><td>C' (kPa)</td><td>50.70 / 37.90</td></tr> <tr><td>ϕ' (°)</td><td>36.30 / 30.75</td></tr> </table>	Mohr	Lambe	C' (kPa)	50.70 / 37.90	ϕ' (°)	36.30 / 30.75	<p>Visa :</p>
Mohr														
C (kPa)	88.25													
ϕ (°)	35.94													
Mohr	Lambe													
C' (kPa)	50.70 / 37.90													
ϕ' (°)	36.30 / 30.75													
		p.1/3												

3.22 Trial Pit 19



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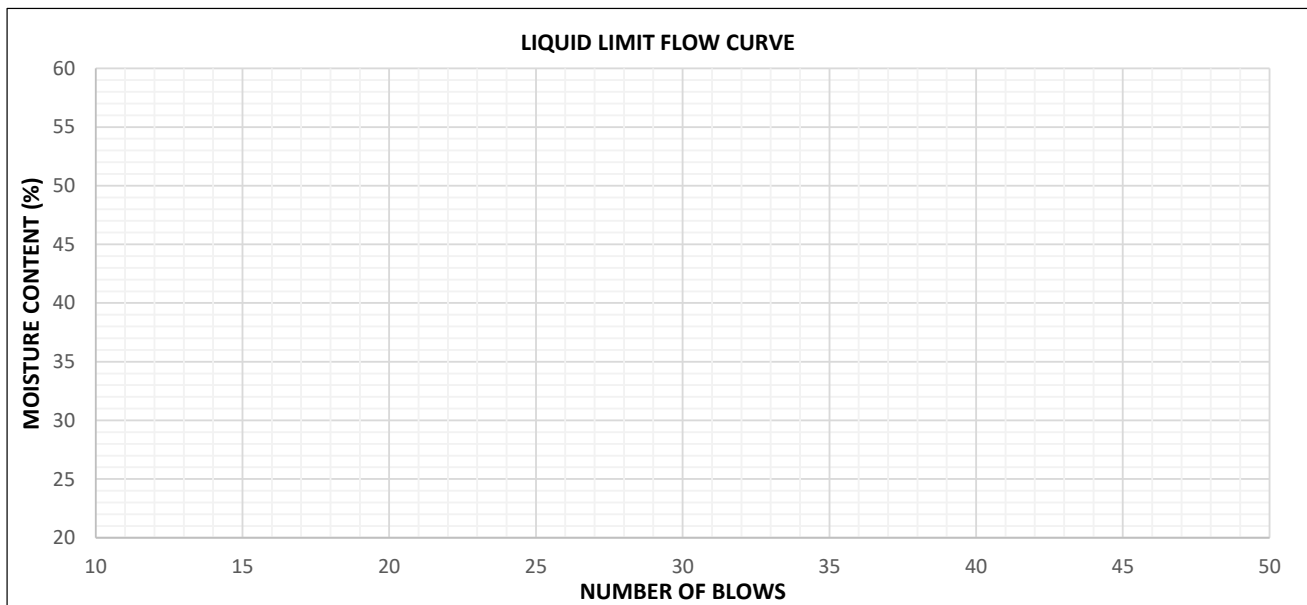
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP19 / AL056 / 03MAY19	
SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 03 - 05 - 2019	TIME: 14:56
LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION
GOLOMOTI - SOLAR PV	0 671 989	8 402 554	(m)
DEPTH (m) 2.000 -4.100			
TYPE OF MATERIAL: MOIST BROWN REDDISH GRAVELLY SANDY SILTY CLAY			
TESTED BY: M. MILANZI		DATE: 11 - 06 - 2019	TIME: 09:30
CHECKED BY: G. KACHIWALA		DATE: 12 - 06 - 2019	TIME: 10:40
APPROVED BY: M. SABELLI		DATE: 12 - 06 - 2019	TIME: 14:28
PROJECT: GOLOMOTI SOLAR PV		CLIENT: JCM	

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
	1	2	3	4	1	2	3
TEST No.							
CONTAINER No.	K2		C2		C21	C19	R4
MASS OF WET SOIL + CONTAINER(g)	68.0		41.5		39.5	41.0	41.5
MASS OF DRY SOIL + CONTAINER(g)	58.0		38.5		38.5	38.5	40.0
MASS OF CONTAINER (g)	28		30.5		33	25	32
MASS OF DRY SOIL (g)	30.0		8.0		5.5	13.5	8.0
MASS OF WATER (g)	10.00		3.00		1.00	2.50	1.50
MOISTURE CONTENT %	33.3	33.7	37.5	37.1	18.2	18.5	18.8
No. BLOWS	29		24			18.5	

LINEAR SHRINKAGE	17
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	13.0
LINEAR SHRINKAGE %	7.7
LIQUID LIMIT (LL) %	35.4
PLASTIC LIMIT (PL) %	18.5
PLASTICITY INDEX (PI)	17
NATURAL MOISTURE CONTENT %	11.2
FINENESS INDEX	918



REMARKS: SAMPLED FROM TRIAL PIT 19 @ 2.000-4.100M. SOLAR PV SITE INVESTIGATION



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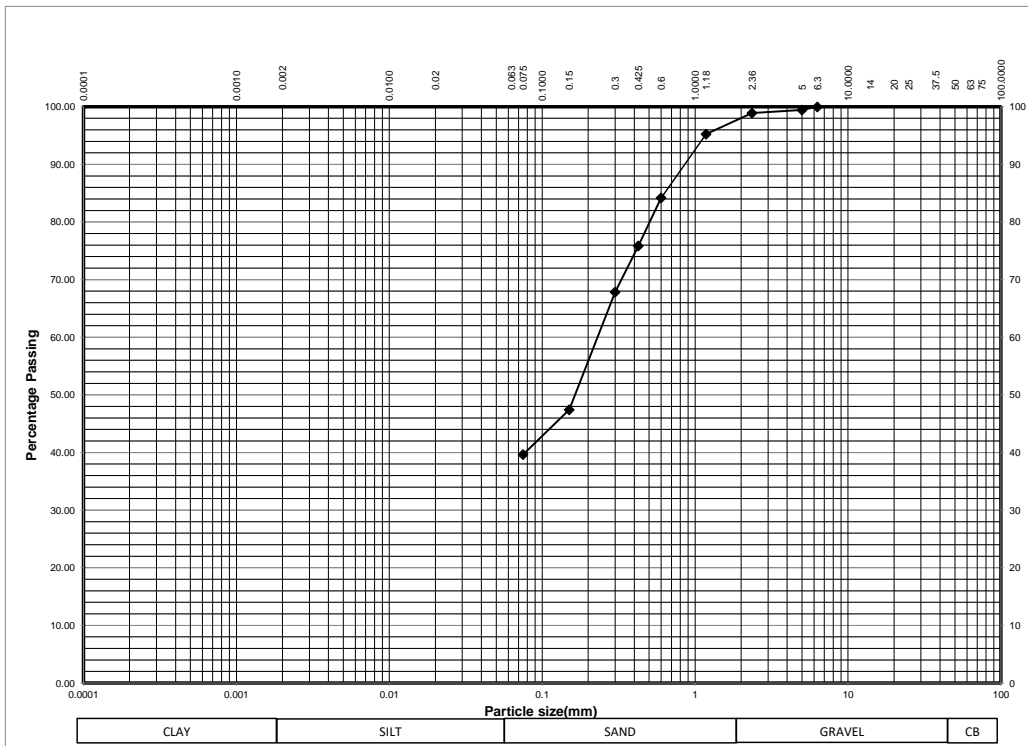
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP018 / G054 / 03MAY19		
SAMPLED BY: GEOCONSULT LAB TEAM		DATE: 02 / 05 / 2019	TIME: 14:05	
LOCATION:	EASTING	NORTHING	ELEVATION	DEPTH (m)
GOLOMOTI - SOLAR PV	0 671 989	8 402 554	(m)	0.100-0.500
TYPE OF MATERIAL: MOIST DARK BROWN SANDY SILTY CLAY				
TESTED BY: C. NDALAMA		DATE: 10 - 06 - 2019	TIME: 13:20	
CHECKED BY: G. KACHIWALA		DATE: 11 - 06 - 2019	TIME: 10:30	
APPROVED BY: M. SABELLI		DATE: 11 - 06 - 2019	TIME: 11:00	

PROJECT: GOLOMOTI SOLAR PV **CLIENT: JCM**

SIEVE ANALYSIS (GRADATION) STANDARD: TRH14:1985

SIEVE (mm)	MASS RETAINED	PERCENTAGE			GRADATION SPECIFICATION			ZONE
		RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.500								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300	0.00	0.00	100.00	100				
5.000	3.50	0.53	99.47	99				
2.360	7.00	1.07	98.93	99				
1.180	31.00	4.74	95.26	95				
0.600	103.50	15.81	84.19	84				
0.425	158.00	24.14	75.86	76				
0.300	210.50	32.16	67.84	68				
0.150	344.00	52.56	47.44	47				
0.075	395.00	60.35	39.65	40				
0 pan	259.50	39.65						
TOTAL (g)	654.50							



REMARKS: SAMPLED FROM TRIAL PIT 19 @0.100-0.500M. SOLAR PV SITE INVESTIGATION

PAGE No.



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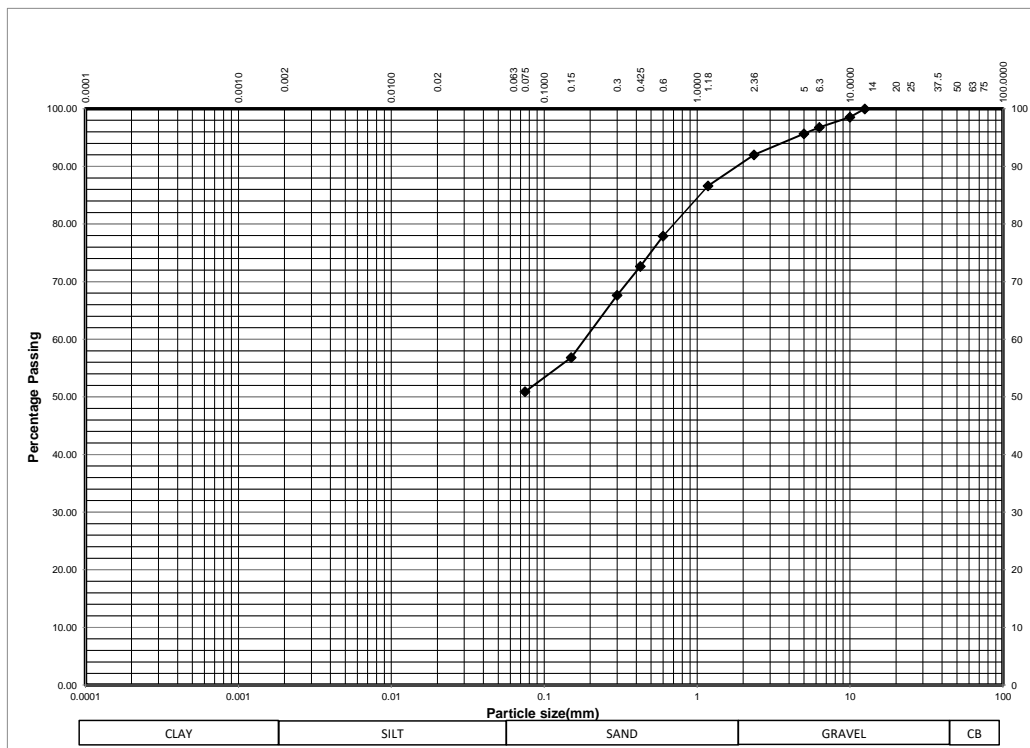
+265 0888 846 543
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LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP019 / G055 / 02MAY19		
SAMPLED BY: GEOCONSULT LAB TEAM		DATE: 02 / 05 / 2019	TIME: 14:05	
LOCATION:	EASTING	NORTHING	ELEVATION	DEPTH (m)
GOLOMOTI - SOLAR PV	0 671 989	8 402 554	(m)	0.500-2.000
TYPE OF MATERIAL: MOIST BROWN REDDISH SANDY SILTY CLAY				
TESTED BY: C. NDALAMA		DATE: 10 - 06 - 2019	TIME: 13:35	
CHECKED BY: G. KACHIWALA		DATE: 11 - 06 - 2019	TIME: 10:30	
APPROVED BY: M. SABELLI		DATE: 11 - 06 - 2019	TIME: 11:00	

PROJECT: GOLOMOTI SOLAR PV **CLIENT: JCM**

SIEVE ANALYSIS (GRADATION) STANDARD: TRH14:1985

SIEVE (mm)	MASS RETAINED	PERCENTAGE			GRADATION SPECIFICATION			ZONE
		RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.500								
28.000								
25.000								
20.000								
14.000								
12.500	0.00	0.00	100.00	100				
10.000	13.00	1.46	98.54	99				
6.300	28.50	3.20	96.80	97				
5.000	38.50	4.33	95.67	96				
2.360	71.00	7.98	92.02	92				
1.180	119.00	13.37	86.63	87				
0.600	196.50	22.08	77.92	78				
0.425	243.50	27.36	72.64	73				
0.300	288.00	32.36	67.64	68				
0.150	384.00	43.15	56.85	57				
0.075	437.00	49.10	50.90	51				
0 pan	453.00	50.90						
TOTAL (g)	890.00							



REMARKS: SAMPLED FROM TRIAL PIT 19 @0.500-2.000M. SOLAR PV SITE INVESTIGATION

PAGE No.



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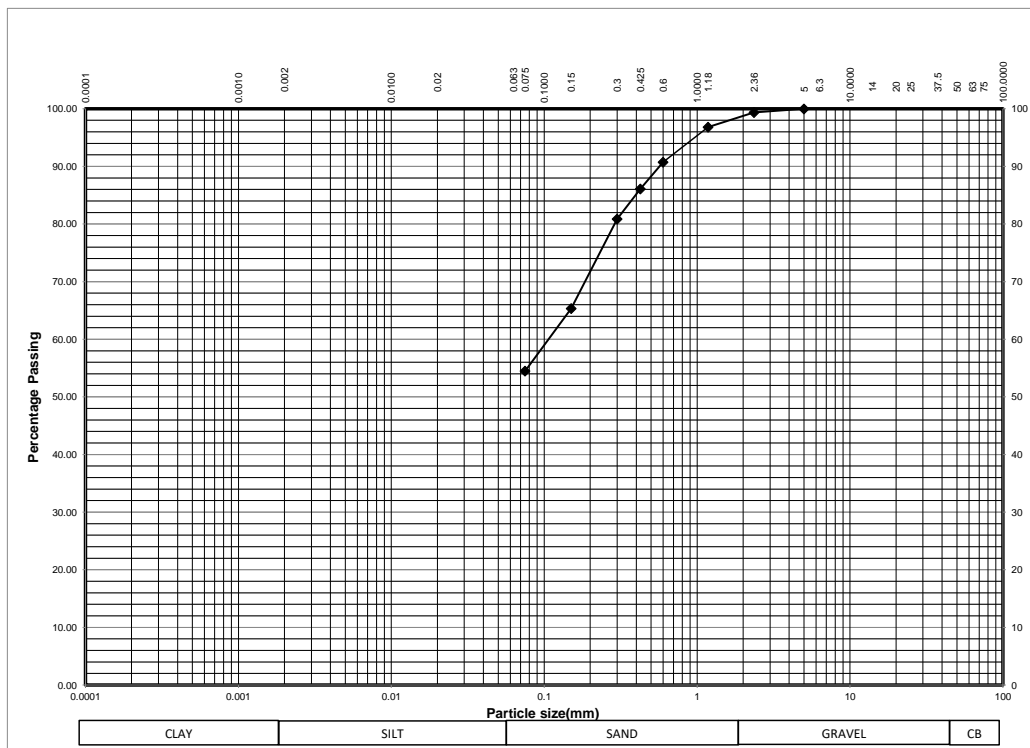
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LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP019 / G055 / 02MAY19		
SAMPLED BY: GEOCONSULT LAB TEAM		DATE: 02 / 05 / 2019	TIME: 14:05	
LOCATION:	EASTING	NORTHING	ELEVATION	DEPTH (m)
GOLOMOTI - SOLAR PV	0 671 989	8 402 554	(m)	2.000-4.100
TYPE OF MATERIAL: MOIST BROWN REDDISH GRAVELLY SANDY SILTY CLAY				
TESTED BY: C. NDALAMA		DATE: 10 - 06 - 2019	TIME: 13:35	
CHECKED BY: G. KACHIWALA		DATE: 11 - 06 - 2019	TIME: 10:30	
APPROVED BY: M. SABELLI		DATE: 11 - 06 - 2019	TIME: 11:00	

PROJECT: GOLOMOTI SOLAR PV **CLIENT: JCM**


SIEVE ANALYSIS (GRADATION) STANDARD: TRH14:1985


SIEVE (mm)	MASS RETAINED	PERCENTAGE			GRADATION SPECIFICATION			ZONE
		RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.500								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300								
5.000	0.00	0.00	100.00	100				
2.360	4.50	0.64	99.36	99				
1.180	22.50	3.18	96.82	97				
0.600	65.50	9.24	90.76	91				
0.425	98.50	13.90	86.10	86				
0.300	135.50	19.12	80.88	81				
0.150	245.60	34.66	65.34	65				
0.075	322.50	45.52	54.48	54				
0 pan	386.00	54.48						
TOTAL (g)	708.50							




REMARKS: SAMPLED FROM TRIAL PIT 19 @2.000-4.100M. SOLAR PV SITE INVESTIGATION

PAGE No.

 GEOCONSULT +265 0888 846 543 sabelli@geoconsult.cc	LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP019 / NMC054 / 02MAY19		
	SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 02 - 05 - 2019	TIME: 17:41	
	LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
	GOLOMOTI - SOLAR PV	0 671 989	8 402 554	(m)	0.100-0.500
	TYPE OF MATERIAL: MOIST DARK BROWN SANDY SILTY CLAY				
TESTED BY: C. NDALAMA		DATE: 06 - 05 - 2019	TIME: 14:38		
CHECKED BY: G. KACHIWALA		DATE: 07 - 05 - 2019	TIME: 09:00		
APPROVED BY: M. SABELLI		DATE: 07 - 05 - 2019	TIME: 13:00		
PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM		
NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: ASTM D7263					
MASS OF WET SOIL + CONTAINER (g)			293.0		
MASS OF DRY SOIL AND CONTAINER (g)			280.5		
CONTAINER No.			GC20		
MASS OF CONTAINER (g)			50.0		
MASS OF DRY SOIL (g)			230.5		
MASS OF WATER (g)			12.5		
MOISTURE CONTENT %			5.4		
AVERAGE MOISTURE CONTENT %			5.4		
REMARKS: SAMPLED FROM TRIAL PIT 19 @0.100-0.500M. SOLAR PV SITE INVESTIGATION					PAGE No.

 GEOCONSULT +265 0888 846 543 sabelli@geoconsult.cc	LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP019 / NMC055 / 02MAY19		
	SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 02 - 05 - 2019	TIME: 17:41	
	LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
	GOLOMOTI - SOLAR PV	0 671 989	8 402 554	(m)	0.500-2.000
	TYPE OF MATERIAL: MOIST BROWN REDDISH SANDY SILTY CLAY				
	TESTED BY: C. NDALAMA		DATE: 06 - 05 - 2019	TIME: 14:38	
	CHECKED BY: G. KACHIWALA		DATE: 07 - 05 - 2019	TIME: 09:00	
	APPROVED BY: M. SABELLI		DATE: 07 - 05 - 2019	TIME: 13:00	
	PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM	
	NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: ASTM D7263				
MASS OF WET SOIL + CONTAINER (g)		290.0			
MASS OF DRY SOIL AND CONTAINER (g)		266.5			
CONTAINER No.		GC15			
MASS OF CONTAINER (g)		47.5			
MASS OF DRY SOIL (g)		219.0			
MASS OF WATER (g)		23.5			
MOISTURE CONTENT %		10.7			
AVERAGE MOISTURE CONTENT %		10.7			
REMARKS: SAMPLED FROM TRIAL PIT 18 @0.500-2.000M. SOLAR PV SITE INVESTIGATION				PAGE No.	

 GEOCONSULT +265 0888 846 543 sabelli@geoconsult.cc	LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP018 / NMC056 / 02MAY19		
	SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 02 - 05 - 2019	TIME: 17:41	
	LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
	GOLOMOTI - SOLAR PV	0 671 989	8 402 554	(m)	2.000-4.100
	TYPE OF MATERIAL: MOIST BROWN REDDISH GRAVELLY SANDY SILTY CLAY				
TESTED BY: C. NDALAMA		DATE: 06 - 05 - 2019	TIME: 14:38		
CHECKED BY: G. KACHIWALA		DATE: 07 - 05 - 2019	TIME: 09:00		
APPROVED BY: M. SABELLI		DATE: 07 - 05 - 2019	TIME: 13:00		
PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM		
NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: ASTM D7263					
MASS OF WET SOIL + CONTAINER (g)		290.0			
MASS OF DRY SOIL AND CONTAINER (g)		265.5			
CONTAINER No.		GC16			
MASS OF CONTAINER (g)		47.5			
MASS OF DRY SOIL (g)		218.0			
MASS OF WATER (g)		24.5			
MOISTURE CONTENT %		11.2			
AVERAGE MOISTURE CONTENT %		11.2			
REMARKS: SAMPLED FROM TRIAL PIT 19 @2.000-4.100M. SOLAR PV SITE INVESTIGATION				PAGE No.	



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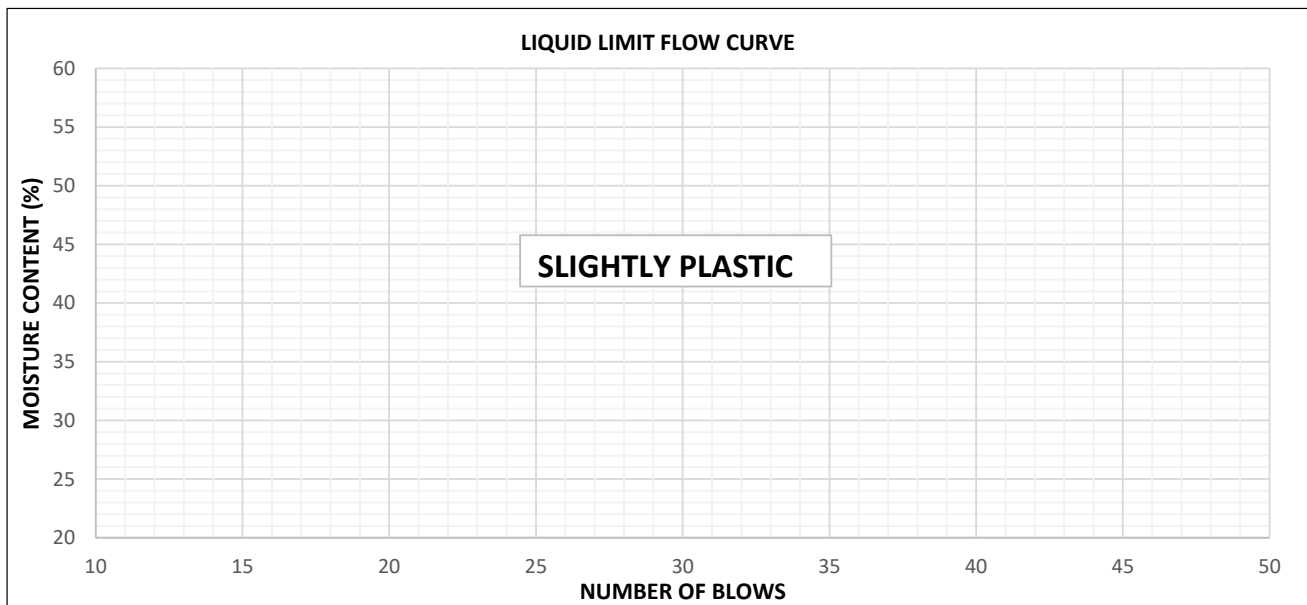
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LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP19 / AL054 / 03MAY19	
SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 03 - 05 - 2019	TIME: 10:36
LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION
GOLOMOTI - SOLAR PV	0 671 989	8 402 554	(m)
DEPTH (m) 0.100 -0.500			
TYPE OF MATERIAL: MOIST DARK BROWN SANDY SILTY CLAY			
TESTED BY: C. NDALAMA		DATE: 10 - 06 - 2019	TIME: 15:25
CHECKED BY: G. KACHIWALA		DATE: 12 - 06 - 2019	TIME: 10:40
APPROVED BY: M. SABELLI		DATE: 12 - 06 - 2019	TIME: 14:28
PROJECT: GOLOMOTI SOLAR PV		CLIENT: JCM	

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
	1	2	3	4	1	2	3
TEST No.							
CONTAINER No.	SP	SP	SP	SP	SP	SP	SP
MASS OF WET SOIL + CONTAINER(g)							
MASS OF DRY SOIL + CONTAINER(g)							
MASS OF CONTAINER (g)							
MASS OF DRY SOIL (g)							
MASS OF WATER (g)							
MOISTURE CONTENT %							
No. BLOWS							

LINEAR SHRINKAGE	19
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	13.8
LINEAR SHRINKAGE %	1.4
LIQUID LIMIT (LL) %	0.0
PLASTIC LIMIT (PL) %	0.0
PLASTICITY INDEX (PI)	0
NATURAL MOISTURE CONTENT %	5.4
FINENESS INDEX	



REMARKS: SAMPLED FROM TRIAL PIT 19 @ 0.100-0.500M. SOLAR PV SITE INVESTIGATION



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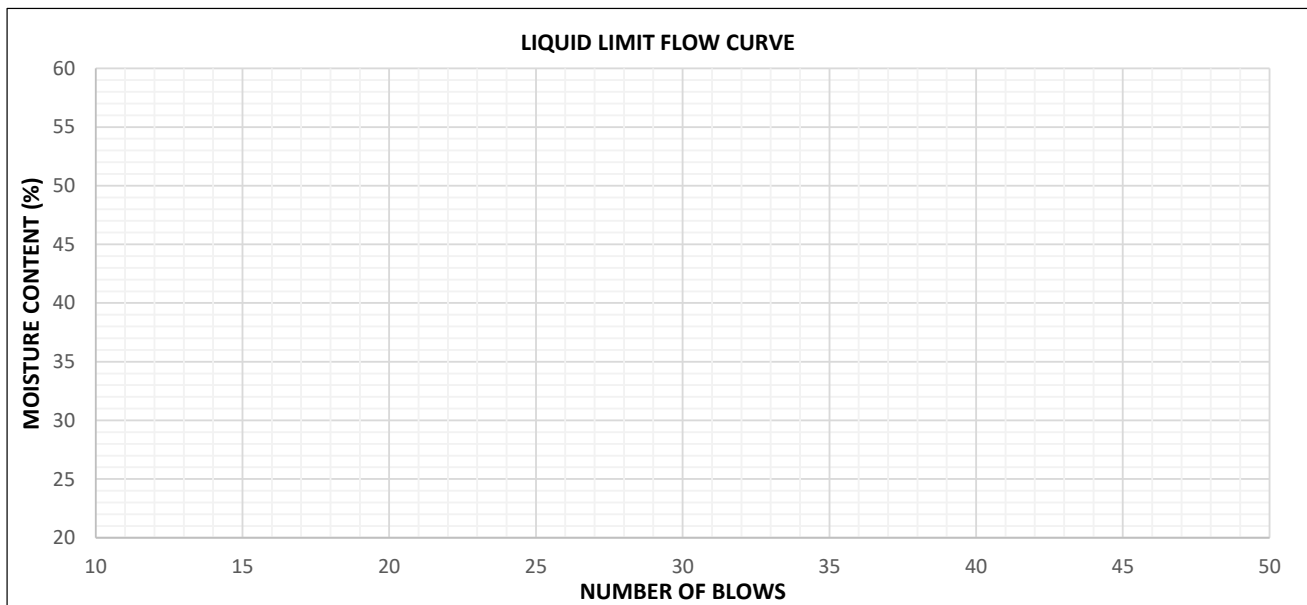
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LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP19 / AL055 / 03MAY19	
SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 03 - 05 - 2019	TIME: 14:56
LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION
GOLOMOTI - SOLAR PV	0 671 989	8 402 554	(m)
DEPTH (m) 0.500 -2.000			
TYPE OF MATERIAL: MOIST BROWN REDDISH SANDY SILTY CLAY			
TESTED BY: M. MILANZI		DATE: 11 - 06 - 2019	TIME: 15:25
CHECKED BY: G. KACHIWALA		DATE: 12 - 06 - 2019	TIME: 10:40
APPROVED BY: M. SABELLI		DATE: 12 - 06 - 2019	TIME: 14:28
PROJECT: GOLOMOTI SOLAR PV		CLIENT: JCM	

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
	1	2	3	4	1	2	3
TEST No.							
CONTAINER No.	C2		C5		R19	C19	R4
MASS OF WET SOIL + CONTAINER(g)	43.5		48.5		40.0	41.0	41.5
MASS OF DRY SOIL + CONTAINER(g)	39.0		43.5		38.0	38.5	40.0
MASS OF CONTAINER (g)	26		30.5		27	25	32
MASS OF DRY SOIL (g)	13.0		13.0		11.0	13.5	8.0
MASS OF WATER (g)	4.50		5.00		2.00	2.50	1.50
MOISTURE CONTENT %	34.6	35.3	38.5	37.3	18.2	18.5	18.8
No. BLOWS	30		19			18.5	

LINEAR SHRINKAGE	2
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	12.9
LINEAR SHRINKAGE %	8.5
LIQUID LIMIT (LL) %	36.3
PLASTIC LIMIT (PL) %	18.5
PLASTICITY INDEX (PI)	18
NATURAL MOISTURE CONTENT %	10.7
FINENESS INDEX	918



REMARKS: SAMPLED FROM TRIAL PIT 19 @ 0.500-2.000M. SOLAR PV SITE INVESTIGATION

		Triaxial test - UU BS 1377 part 7, 1377 part 8	
		Site : GOLOMOTI SOLAR PV	Levy date : 13-Jun-19
		Technician's name :	Date of test : 13-Jun-19
GEOCONSULT LIMITED P.O. BOX 40 LILONGWE	File N° :	6	Survey depth (m) : 2.000
	Survey N° :	TRIAL PIT No. 19	Level of water (m) :
	Kind of soil :	MOIST BROWN REDDISH GRAVELLY SANDY SILTY CLAY	

Identification of samples :

Ovo, Total stress of the soil in situ (kPa) : 0.000	Uo, Pore pressure of the soil in situ (kPa) : 0.000
Category of soil : Steep/Strongly overconsolidated	Kind of drainage : Without lateral drain
ρ_s , Grain density (kg/m ³) : 0.000	
S_m : <input type="checkbox"/>	S_d : <input type="checkbox"/>

Samples before test :									Samples after saturation :		
N°	Hi (mm)	Di (mm)	mi (g)	ρ_i (kg/m ³)	ρ_{di} (kg/m ³)	wi (%)	ei	Si (%)	Ucp (kPa)	ΔV_{sat} (mm ³)	B (%)
1	76.00	38	157.5	1827	1549	17.98	-1.000	-0.000		0.000	0.000
2	76.00	38	161.5	1874	1589	17.88	-1.000	-0.000		0.000	0.000
3	76.00	38	173.5	2013	1729	16.44	-1.000	-0.000		0.000	0.000

Samples after consolidation :							Samples after shearing							
N°	Hs (mm)	Ds (mm)	ΔV_s (mm ³)	T100 (min)	Vmax ($\mu\text{m}/\text{min}$)	σ'_c (kPa)	Hf (mm)	Df (mm)	mf (g)	md (g)	wf (%)	ρ_{df} (kg/m ³)	ef	Srf (%)
1	76.00	38.00	0.000	0.000	0.000	0.000	76.00	38.00	157.0	133.5	17.60	1549	-1.000	-0.000
2	76.00	38.00	0.000	0.000	0.000	0.000	76.00	38.00	160.5	137.0	17.15	1589	-1.000	-0.000
3	76.00	38.00	0.000	0.000	0.000	0.000	76.00	38.00	173.0	149.0	16.11	1729	-1.000	-0.000

Total stress :	Effective stress :	Comments :														
<table border="1" style="margin-left: auto; margin-right: auto;"> <tr><th colspan="2">Mohr</th></tr> <tr><td>C (kPa)</td><td>28.04</td></tr> <tr><td>ϕ (°)</td><td>29.16</td></tr> </table>	Mohr		C (kPa)	28.04	ϕ (°)	29.16	<table border="1" style="margin-left: auto; margin-right: auto;"> <tr><th>Mohr</th><th>Lambe</th></tr> <tr><td>C' (kPa)</td><td>12.92</td><td>14.05</td></tr> <tr><td>ϕ' (°)</td><td>26.39</td><td>24.08</td></tr> </table>	Mohr	Lambe	C' (kPa)	12.92	14.05	ϕ' (°)	26.39	24.08	<p>Visa :</p>
Mohr																
C (kPa)	28.04															
ϕ (°)	29.16															
Mohr	Lambe															
C' (kPa)	12.92	14.05														
ϕ' (°)	26.39	24.08														
		p.1/3														

Triaxial test - UU BS 1377 part 7, 1377 part 8				
	Site :	GOLOMOTI SOLAR PV	Levy date :	13-Jun-19
	Technician's name :		Date of test :	13-Jun-19
GEOCONSULT LIMITED P.O. BOX 40 LILONGWE	File N° :	6	Survey depth (m) :	2.000
	Survey N° :	TRIAL PIT No. 19	Level of water (m) :	
	Kind of soil :	MOIST BROWN REDDISH GRAVELLY SANDY SILTY CLAY		

Identification of samples :

Ovo, Total stress of the soil in situ (kPa) : 0.000	Uo, Pore pressure of the soil in situ (kPa) : 0.000
Category of soil : Steep/Strongly overconsolidated	Kind of drainage : Without lateral drain
ρ_s , Grain density (kg/m ³) : 0.000	
S_m : <input type="checkbox"/>	S_d : <input type="checkbox"/>

Samples before test :									Samples after saturation :		
N°	Hi (mm)	Di (mm)	mi (g)	ρ_i (kg/m ³)	ρ_{di} (kg/m ³)	wi (%)	ei	Si (%)	Ucp (kPa)	ΔV_{sat} (mm ³)	B (%)
1	76.00	38	161.0	1868	1584	17.95	-1.000	-0.000		0.000	0.002
2	76.00	38	173.5	2013	1729	16.44	-1.000	-0.000		0.000	0.000

Samples after consolidation :							Samples after shearing							
N°	Hs (mm)	Ds (mm)	ΔV_s (mm ³)	T100 (min)	Vmax ($\mu\text{m}/\text{min}$)	σ'_c (kPa)	Hf (mm)	Df (mm)	mf (g)	md (g)	wf (%)	ρ_{df} (kg/m ³)	ef	Srf (%)
1	76.00	38.00	0.000	0.000	0.000	0.000	76.00	38.00	160.5	136.5	17.58	1584	-1.000	-0.000
2	76.00	38.00	0.000	0.000	0.000	0.000	76.00	38.00	173.0	149.0	16.11	1729	-1.000	-0.000

Total stress :	Effective stress :	Comments :														
<table border="1" style="margin-left: auto; margin-right: auto;"> <tr><th colspan="2">Mohr</th></tr> <tr><td>C (kPa)</td><td>33.92</td></tr> <tr><td>ϕ (°)</td><td>27.60</td></tr> </table>	Mohr		C (kPa)	33.92	ϕ (°)	27.60	<table border="1" style="margin-left: auto; margin-right: auto;"> <tr><th>Mohr</th><th>Lambe</th></tr> <tr><td>C' (kPa)</td><td>13.28</td><td>11.39</td></tr> <tr><td>ϕ' (°)</td><td>30.98</td><td>27.24</td></tr> </table>	Mohr	Lambe	C' (kPa)	13.28	11.39	ϕ' (°)	30.98	27.24	<div style="border: 1px solid black; height: 100px; width: 100%;"></div>
Mohr																
C (kPa)	33.92															
ϕ (°)	27.60															
Mohr	Lambe															
C' (kPa)	13.28	11.39														
ϕ' (°)	30.98	27.24														
<div style="border: 1px solid black; padding: 2px;">Visa :</div>		<div style="border: 1px solid black; padding: 2px;">p.1/3</div>														

3.23 Trial Pit 20



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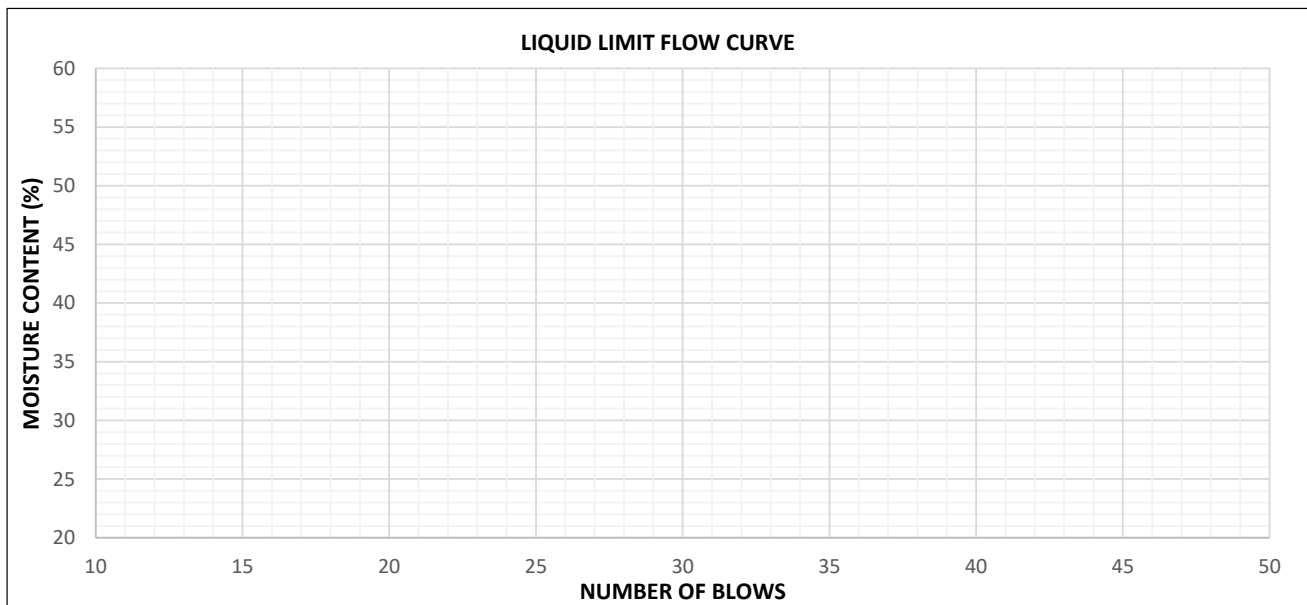
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP20 / AL059 / 03MAY19	
SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 03 - 05 - 2019	TIME: 16:56
LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION
GOLOMOTI - SOLAR PV	0 671 990	8 402 438	(m)
DEPTH (m) 2.000 -4.000			
TYPE OF MATERIAL: MOIST BROWN REDDISH LATERITE GRAVELLY SANDY SILTY CLAY			
TESTED BY: M. MILANZI		DATE: 28 - 05 - 2019	TIME: 09:30
CHECKED BY: G. KACHIWALA		DATE: 29 - 05 - 2019	TIME: 10:40
APPROVED BY: M. SABELLI		DATE: 29 - 05 - 2019	TIME: 14:28
PROJECT: GOLOMOTI SOLAR PV		CLIENT: JCM	

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
	1	2	3	4	1	2	3
TEST No.							
CONTAINER No.	R11		14		R12	C6	R20
MASS OF WET SOIL + CONTAINER(g)	47.0		46.0		44.0	45.6	43.0
MASS OF DRY SOIL + CONTAINER(g)	42.5		42.0		42.5	43.8	42.0
MASS OF CONTAINER (g)	28		30		29	28.5	33
MASS OF DRY SOIL (g)	14.5		12.0		13.5	15.3	9.0
MASS OF WATER (g)	4.50		4.00		1.50	1.80	1.00
MOISTURE CONTENT %	31.0	31.3	33.3	32.0	11.1	11.8	11.1
No. BLOWS	28		16			11.3	

LINEAR SHRINKAGE	19
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	12.6
LINEAR SHRINKAGE %	11.1
LIQUID LIMIT (LL) %	31.7
PLASTIC LIMIT (PL) %	11.3
PLASTICITY INDEX (PI)	20
NATURAL MOISTURE CONTENT %	12.4
FINENESS INDEX	940



REMARKS: SAMPLED FROM TRIAL PIT 20 @ 2.000-4.000M. SOLAR PV SITE INVESTIGATION



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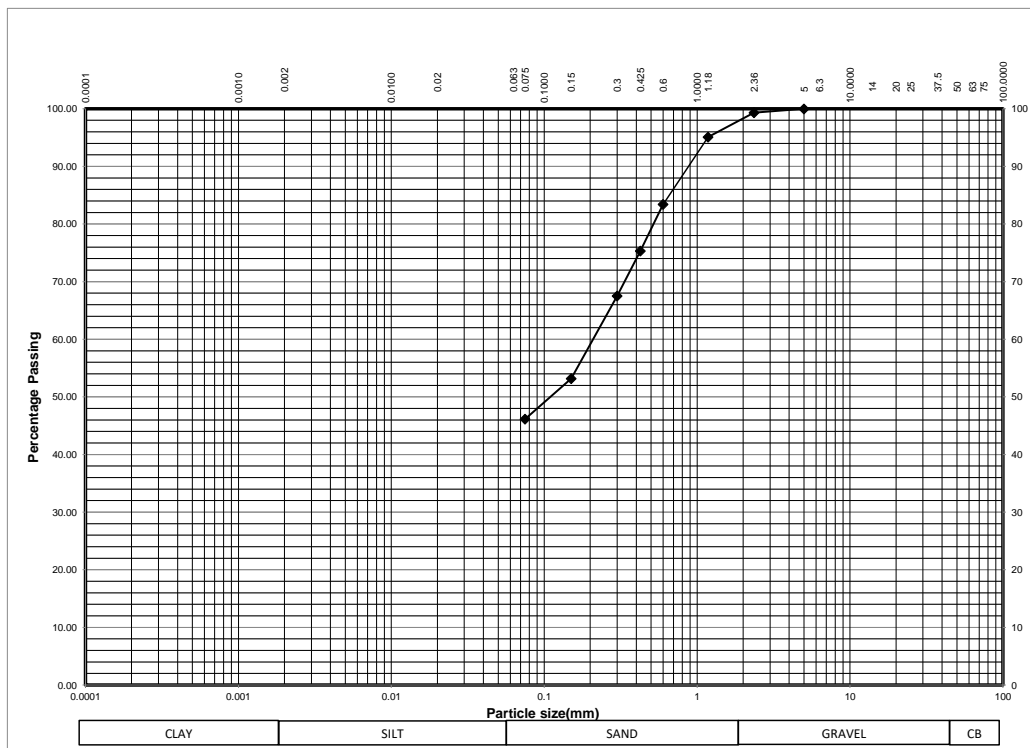
+265 0888 846 543
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP020 / G057 / 03MAY19		
SAMPLED BY: GEOCONSULT LAB TEAM		DATE: 03 / 05 / 2019	TIME: 16:58	
LOCATION:	EASTING	NORTHING	ELEVATION	DEPTH (m)
GOLOMOTI - SOLAR PV	0 671 990	8 402 438	(m)	0.100-1.000
TYPE OF MATERIAL: MOIST DARK BROWN SANDY SILTY CLAY				
TESTED BY: Y. NANG'OMBA		DATE: 06 - 06 - 2019	TIME: 14:35	
CHECKED BY: G. KACHIWALA		DATE: 11 - 06 - 2019	TIME: 10:30	
APPROVED BY: M. SABELLI		DATE: 11 - 06 - 2019	TIME: 11:00	

PROJECT: GOLOMOTI SOLAR PV **CLIENT: JCM**

SIEVE ANALYSIS (GRADATION) STANDARD: TRH14:1985

SIEVE (mm)	MASS RETAINED	PERCENTAGE			GRADATION SPECIFICATION			ZONE
		RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.500								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300								
5.000	0.00	0.00	100.00	100				
2.360	2.50	0.66	99.34	99				
1.180	18.50	4.91	95.09	95				
0.600	62.50	16.58	83.42	83				
0.425	93.00	24.67	75.33	75				
0.300	122.50	32.49	67.51	68				
0.150	176.50	46.82	53.18	53				
0.075	203.00	53.85	46.15	46				
0 pan	174.00	46.15						
TOTAL (g)	377.00							



REMARKS: SAMPLED FROM TRIAL PIT 20 @0.100-1.000M. SOLAR PV SITE INVESTIGATION

PAGE No.



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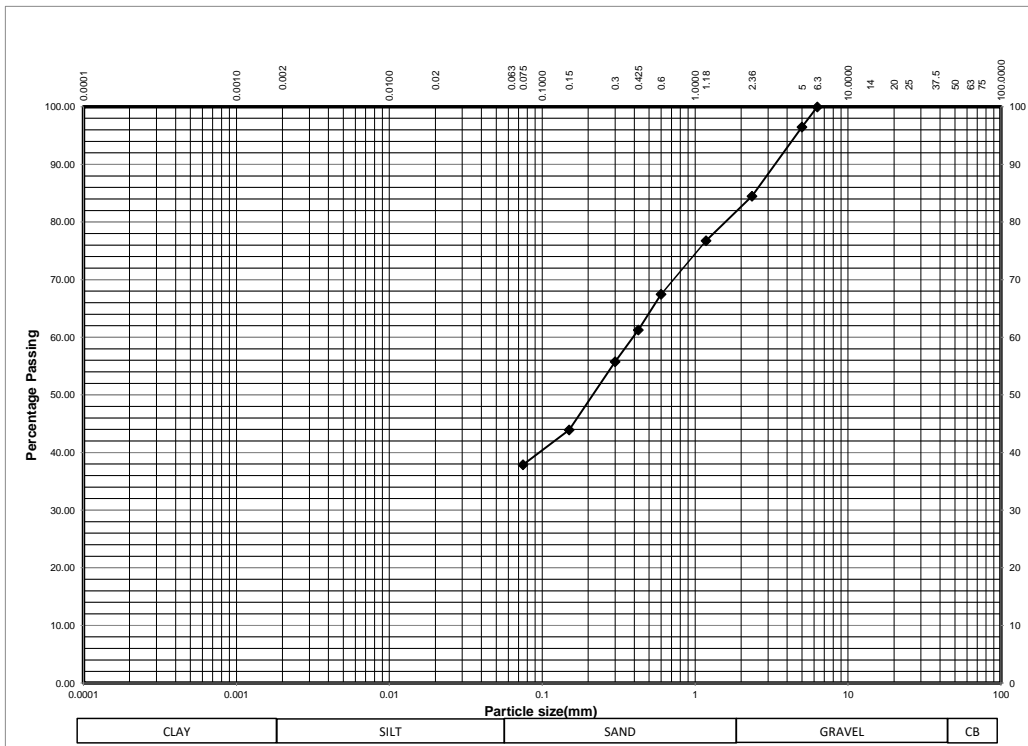
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP020 / G058 / 03MAY19		
SAMPLED BY: GEOCONSULT LAB TEAM		DATE: 03 / 05 / 2019	TIME: 16:58	
LOCATION:	EASTING	NORTHING	ELEVATION	DEPTH (m)
GOLOMOTI - SOLAR PV	0 671 990	8 402 438	(m)	1.000-2.000
TYPE OF MATERIAL: MOIST BROWN REDDISH GRAVELLY SANDY SILTY CLAY				
TESTED BY: Y. NANG'OMBA		DATE: 06 - 06 - 2019	TIME: 14:35	
CHECKED BY: G. KACHIWALA		DATE: 11 - 06 - 2019	TIME: 10:30	
APPROVED BY: M. SABELLI		DATE: 11 - 06 - 2019	TIME: 11:00	

PROJECT: GOLOMOTI SOLAR PV **CLIENT: JCM**

SIEVE ANALYSIS (GRADATION) STANDARD: TRH14:1985

SIEVE (mm)	MASS RETAINED	PERCENTAGE			GRADATION SPECIFICATION			ZONE
		RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.500								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300	0.00	0.00	100.00	100				
5.000	12.50	3.52	96.48	96				
2.360	55.00	15.49	84.51	85				
1.180	82.50	23.24	76.76	77				
0.600	115.50	32.54	67.46	67				
0.425	137.50	38.73	61.27	61				
0.300	157.00	44.23	55.77	56				
0.150	199.00	56.06	43.94	44				
0.075	220.50	62.11	37.89	38				
0 pan	134.50	37.89						
TOTAL (g)	355.00							



REMARKS: SAMPLED FROM TRIAL PIT 20 @1.0000-2.000M. SOLAR PV SITE INVESTIGATION

PAGE No.



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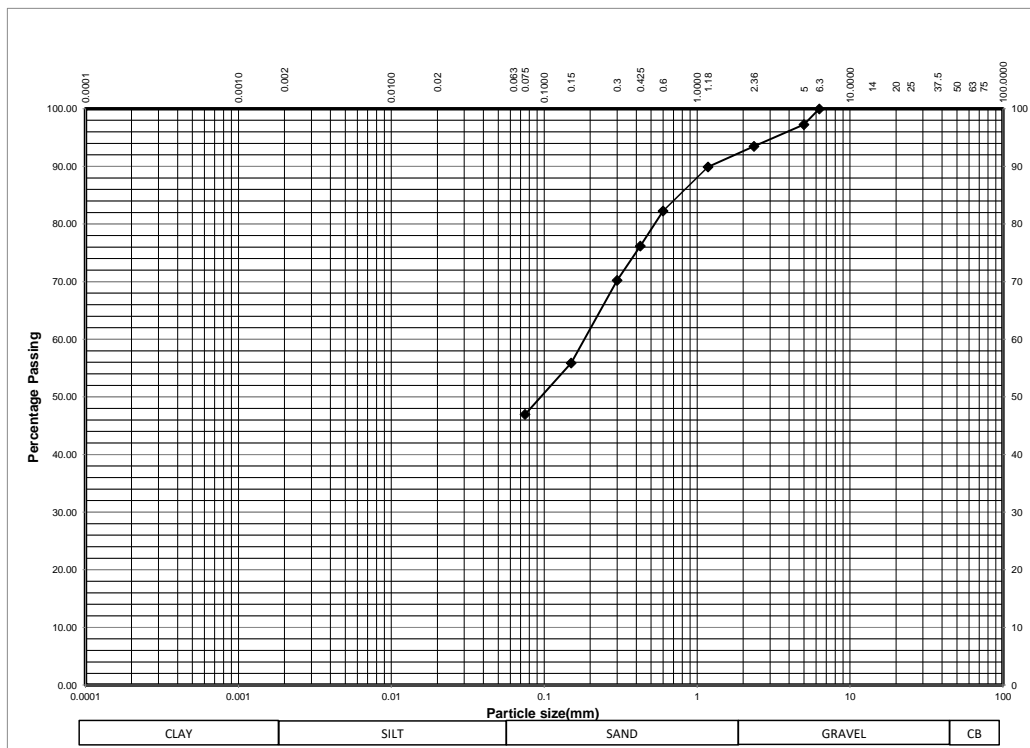
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LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP020 / G059 / 03MAY19		
SAMPLED BY: GEOCONSULT LAB TEAM		DATE: 03 / 05 / 2019	TIME: 16:58	
LOCATION:	EASTING	NORTHING	ELEVATION	DEPTH (m)
GOLOMOTI - SOLAR PV	0 671 990	8 402 438	(m)	2.000-4.200
TYPE OF MATERIAL: MOIST BROWN REDDISH LATERITE GRAVELLY SANDY SILTY CLAY				
TESTED BY: Y. NANG'OMBA		DATE: 06 - 06 - 2019	TIME: 14:35	
CHECKED BY: G. KACHIWALA		DATE: 11 - 06 - 2019	TIME: 10:30	
APPROVED BY: M. SABELLI		DATE: 11 - 06 - 2019	TIME: 11:00	

PROJECT: GOLOMOTI SOLAR PV **CLIENT: JCM**


SIEVE ANALYSIS (GRADATION) STANDARD: TRH14:1985


SIEVE (mm)	MASS		PERCENTAGE		GRADATION SPECIFICATION			ZONE
	RETAINED	RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.500								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300	0.00	0.00	100.00	100				
5.000	13.00	2.73	97.27	97				
2.360	31.00	6.50	93.50	94				
1.180	48.00	10.06	89.94	90				
0.600	84.50	17.71	82.29	82				
0.425	113.50	23.79	76.21	76				
0.300	142.00	29.77	70.23	70				
0.150	210.50	44.13	55.87	56				
0.075	253.00	53.04	46.96	47				
0 pan	224.00	46.96						
TOTAL (g)	477.00							




REMARKS: SAMPLED FROM TRIAL PIT 20 @2.000-4.200M. SOLAR PV SITE INVESTIGATION

PAGE No.

 GEOCONSULT +265 0888 846 543 sabelli@geoconsult.cc	LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP020 / NMC057 / 03MAY19		
	SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 03 - 05 - 2019	TIME: 17:41	
	LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
	GOLOMOTI - SOLAR PV	0 671 990	8 402 438	(m)	0.100-1.000
	TYPE OF MATERIAL: MOIST DARK BROWN SANDY SILTY CLAY				
	TESTED BY: C. NDALAMA		DATE: 06 - 05 - 2019	TIME: 14:38	
	CHECKED BY: G. KACHIWALA		DATE: 07 - 05 - 2019	TIME: 09:00	
	APPROVED BY: M. SABELLI		DATE: 07 - 05 - 2019	TIME: 13:00	
	PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM	
	NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: ASTM D7263				
MASS OF WET SOIL + CONTAINER (g)		287.0			
MASS OF DRY SOIL AND CONTAINER (g)		266.5			
CONTAINER No.		GC10			
MASS OF CONTAINER (g)		55.0			
MASS OF DRY SOIL (g)		211.5			
MASS OF WATER (g)		20.5			
MOISTURE CONTENT %		9.7			
AVERAGE MOISTURE CONTENT %		9.7			
REMARKS: SAMPLED FROM TRIAL PIT 20 @0.100-1.000M. SOLAR PV SITE INVESTIGATION				PAGE No.	

 GEOCONSULT +265 0888 846 543 sabelli@geoconsult.cc	LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP020 / NMC058 / 03MAY19		
	SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 03 - 05 - 2019	TIME: 17:41	
	LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
	GOLOMOTI - SOLAR PV	0 671 990	8 402 438	(m)	1.000-2.000
	TYPE OF MATERIAL: MOIST BROWN REDDISH GRAVELLY SANDY SILTY CLAY				
	TESTED BY: C. NDALAMA		DATE: 06 - 05 - 2019	TIME: 14:38	
	CHECKED BY: G. KACHIWALA		DATE: 07 - 05 - 2019	TIME: 09:00	
APPROVED BY: M. SABELLI		DATE: 07 - 05 - 2019	TIME: 13:00		
PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM		
NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: ASTM D7263					
MASS OF WET SOIL + CONTAINER (g)		280.0			
MASS OF DRY SOIL AND CONTAINER (g)		258.5			
CONTAINER No.		GC10			
MASS OF CONTAINER (g)		50.5			
MASS OF DRY SOIL (g)		208.0			
MASS OF WATER (g)		21.5			
MOISTURE CONTENT %		10.3			
AVERAGE MOISTURE CONTENT %		10.3			
REMARKS: SAMPLED FROM TRIAL PIT 20 @1.000-2.000M. SOLAR PV SITE INVESTIGATION				PAGE No.	

 GEOCONSULT +265 0888 846 543 sabelli@geoconsult.cc	LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP020 / NMC059 / 03MAY19		
	SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 03 - 05 - 2019	TIME: 17:41	
	LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
	GOLOMOTI - SOLAR PV	0 671 990	8 402 438	(m)	2.000-4.000
	TYPE OF MATERIAL: MOIST BROWN REDDISH LATERITE GRAVELLY SANDY SILTY CLAY				
	TESTED BY: C. NDALAMA		DATE: 06 - 05 - 2019	TIME: 14:38	
	CHECKED BY: G. KACHIWALA		DATE: 07 - 05 - 2019	TIME: 09:00	
	APPROVED BY: M. SABELLI		DATE: 07 - 05 - 2019	TIME: 13:00	
	PROJECT: GOLOMOTI SOLAR PV			CLIENT: JCM	
	NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: ASTM D7263				
MASS OF WET SOIL + CONTAINER (g)		270.0			
MASS OF DRY SOIL AND CONTAINER (g)		245.5			
CONTAINER No.		GC11			
MASS OF CONTAINER (g)		48.5			
MASS OF DRY SOIL (g)		197.0			
MASS OF WATER (g)		24.5			
MOISTURE CONTENT %		12.4			
AVERAGE MOISTURE CONTENT %		12.4			
REMARKS: SAMPLED FROM TRIAL PIT 20 @2.000-4.000M. SOLAR PV SITE INVESTIGATION				PAGE No.	



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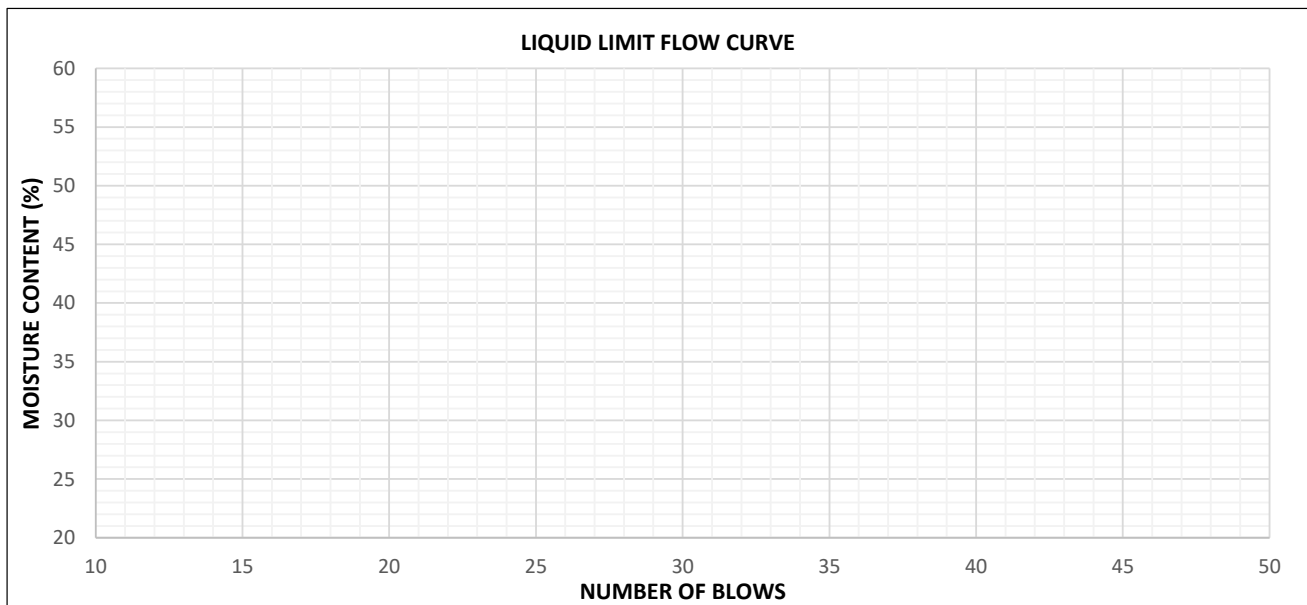
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LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP20 / AL057 / 03MAY19	
SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 03 - 05 - 2019	TIME: 16:56
LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION
GOLOMOTI - SOLAR PV	0 671 990	8 402 438	(m)
DEPTH (m) 0.100 -1.000			
TYPE OF MATERIAL: MOIST DARK BROWN SANDY SILTY CLAY			
TESTED BY: M. MILANZI		DATE: 28 - 05 - 2019	TIME: 09:30
CHECKED BY: G. KACHIWALA		DATE: 29 - 05 - 2019	TIME: 10:40
APPROVED BY: M. SABELLI		DATE: 29 - 05 - 2019	TIME: 14:28
PROJECT: GOLOMOTI SOLAR PV		CLIENT: JCM	

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
	1	2	3	4	1	2	3
TEST No.							
CONTAINER No.	R21		R28		R22	C321	R27
MASS OF WET SOIL + CONTAINER(g)	47.0		46.0		44.0	45.6	43.0
MASS OF DRY SOIL + CONTAINER(g)	42.0		41.5		41.5	42.8	41.0
MASS OF CONTAINER (g)	28		30.5		30	30	31.5
MASS OF DRY SOIL (g)	14.0		11.0		11.5	12.8	9.5
MASS OF WATER (g)	5.00		4.50		2.50	2.80	2.00
MOISTURE CONTENT %	35.7	36.1	40.9	38.9	21.7	21.9	21.1
No. BLOWS	27		15			21.6	

LINEAR SHRINKAGE	13
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	12.8
LINEAR SHRINKAGE %	9.4
LIQUID LIMIT (LL) %	37.5
PLASTIC LIMIT (PL) %	21.6
PLASTICITY INDEX (PI)	16
NATURAL MOISTURE CONTENT %	9.7
FINENESS INDEX	736



REMARKS: SAMPLED FROM TRIAL PIT 20 @ 0.100-1.000M. SOLAR PV SITE INVESTIGATION



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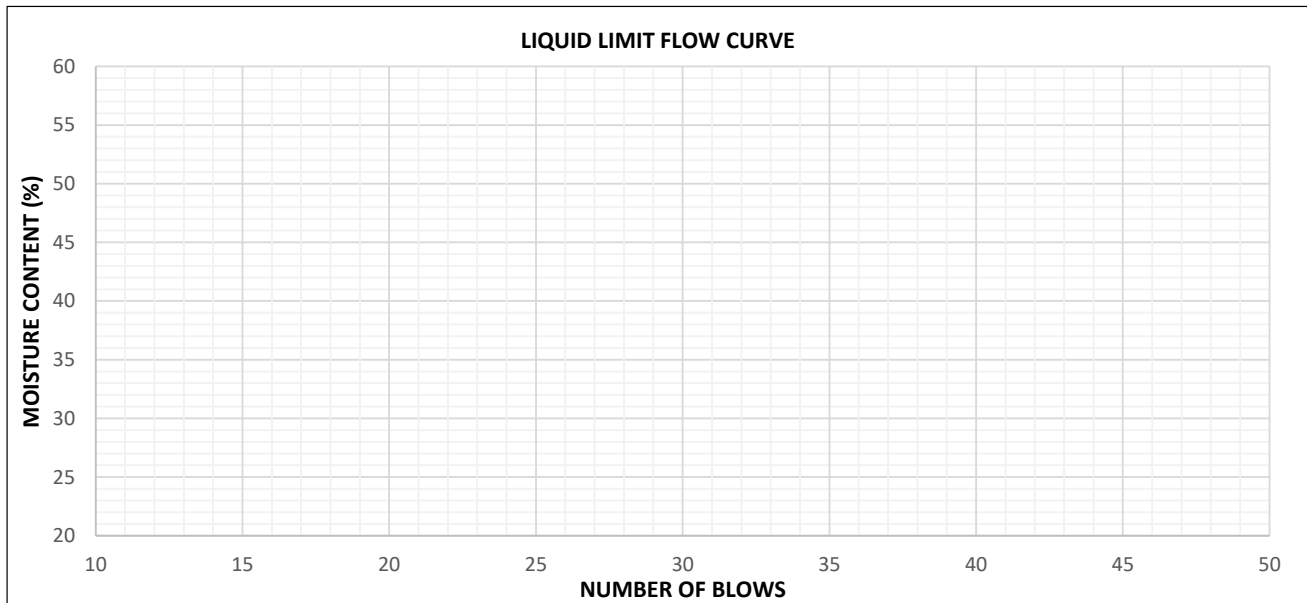
sabelli@geoconsult.cc

LAB REF: GC499 / 04MAY19 / 15:00		SAMPLE No. GSPV / TP20 / AL058 / 03MAY19	
SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 03 - 05 - 2019	TIME: 16:56
LOCATION: 36 L UTM	EASTING	NORTHING	ELEVATION
GOLOMOTI - SOLAR PV	0 671 990	8 402 438	(m)
DEPTH (m) 1.000 -2.000			
TYPE OF MATERIAL: MOIST BROWN REDDISH GRAVELLY SANDY SILTY CLAY			
TESTED BY: M. MILANZI		DATE: 28 - 05 - 2019	TIME: 09:30
CHECKED BY: G. KACHIWALA		DATE: 29 - 05 - 2019	TIME: 10:40
APPROVED BY: M. SABELLI		DATE: 29 - 05 - 2019	TIME: 14:28
PROJECT: GOLOMOTI SOLAR PV		CLIENT: JCM	

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
	1	2	3	4	1	2	3
TEST No.							
CONTAINER No.	R20		R29		R22	C321	R27
MASS OF WET SOIL + CONTAINER(g)	47.0		46.0		44.0	45.6	43.0
MASS OF DRY SOIL + CONTAINER(g)	42.0		41.5		41.5	42.8	41.0
MASS OF CONTAINER (g)	28		30		30.5	30.5	32
MASS OF DRY SOIL (g)	14.0		11.5		11.0	12.3	9.0
MASS OF WATER (g)	5.00		4.50		2.50	2.80	2.00
MOISTURE CONTENT %	35.7	36.1	39.1	37.6	22.7	22.8	22.2
No. BLOWS	28		16			22.6	

LINEAR SHRINKAGE	16
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	13.0
LINEAR SHRINKAGE %	7.7
LIQUID LIMIT (LL) %	36.8
PLASTIC LIMIT (PL) %	22.6
PLASTICITY INDEX (PI)	14
NATURAL MOISTURE CONTENT %	10.3
FINENESS INDEX	532



REMARKS: SAMPLED FROM TRIAL PIT 20 @ 1.000-2.000M. SOLAR PV SITE INVESTIGATION

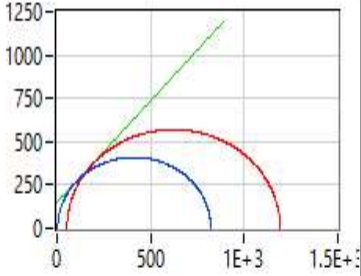
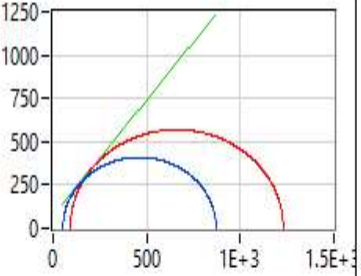
Triaxial test - UU BS 1377 part 7, 1377 part 8				
	Site :	GOLOMOTI SOLAR PV	Levy date :	17-Jun-19
	Technicien's name :		Date of test :	17-Jun-19
GEOCONSULT LIMITED P.O. BOX 40 LILONGWE	File N° :	17	Survey depth (m) :	1.000
	Survey N° :	20	Level of water (m) :	
	Kind of soil :	MOIST BROWN REDDISH SANDY SILTY CLAYEY LATERITE GRAVEL		

Identification of samples :

Ovo, Total stress of the soil in situ (kPa) : 0.000	Uo, Pore pressure of the soil in situ (kPa) : 0.000
Category of soil : Steep/Strongly overconsolidated	Kind of drainage : Without lateral drain
ρ_s , Grain density (kg/m ³) : 0.000	
S_m : <input type="checkbox"/>	S_d : <input type="checkbox"/>

Samples before test :									Samples after saturation :		
N°	Hi (mm)	Di (mm)	mi (g)	ρ_i (kg/m ³)	ρ_{di} (kg/m ³)	wi (%)	ei	Si (%)	Ucp (kPa)	ΔV_{sat} (mm ³)	B (%)
1	75.00	38	164.0	1928	1640	17.56	-1.000	-0.000		0.000	0.000
2	75.00	38	170.0	1999	1728	15.65	-1.000	-0.000		0.000	0.000

Samples after consolidation :							Samples after shearing							
N°	Hs (mm)	Ds (mm)	ΔV_s (mm ³)	T100 (min)	Vmax (μm/min)	σ'_c (kPa)	Hf (mm)	Df (mm)	mf (g)	md (g)	wf (%)	ρ_{df} (kg/m ³)	ef	Srf (%)
1	75.00	38.00	0.000	0.000	0.000	0.000	75.00	38.00	163.0	139.5	16.85	1640	-1.000	-0.000
2	75.00	38.00	0.000	0.000	0.000	0.000	75.00	38.00	170.0	147.0	15.65	1728	-1.000	-0.000

Total stress :	Effective stress :	Comments :														
 <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><th colspan="2">Mohr</th></tr> <tr><td>C (kPa)</td><td>147.1</td></tr> <tr><td>ϕ (°)</td><td>49.64</td></tr> </table>	Mohr		C (kPa)	147.1	ϕ (°)	49.64	 <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><th>Mohr</th><th>Lambe</th></tr> <tr><td>C' (kPa)</td><td>64.59</td><td>38.40</td></tr> <tr><td>ϕ' (°)</td><td>53.52</td><td>38.80</td></tr> </table>	Mohr	Lambe	C' (kPa)	64.59	38.40	ϕ' (°)	53.52	38.80	<div style="border: 1px solid black; height: 100px; width: 100%;"></div>
Mohr																
C (kPa)	147.1															
ϕ (°)	49.64															
Mohr	Lambe															
C' (kPa)	64.59	38.40														
ϕ' (°)	53.52	38.80														
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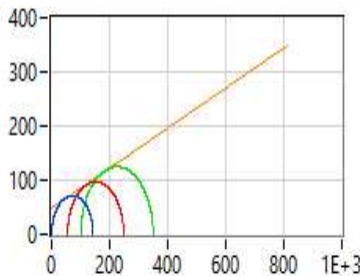
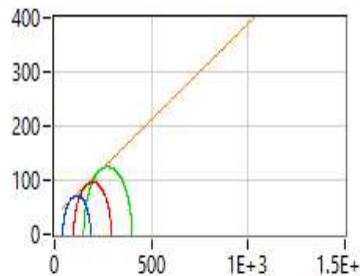
Triaxial test - UU BS 1377 part 7, 1377 part 8				
	Site :	GOLOMOTI SOLAR PV	Levy date :	10-Jun-19
	Technician's name :		Date of test :	10-Jun-19
GEOCONSULT LIMITED P.O. BOX 40 LILONGWE	File N° :	1	Survey depth (m) :	2.000
	Survey N° :	TRIAL PIT No. 20	Level of water (m) :	
	Kind of soil :	Moist Brown Reddish Gravelley Sandy Silty CLAY		

Identification of samples :

Ovo, Total stress of the soil in situ (kPa) : 0.000	Uo, Pore pressure of the soil in situ (kPa) : 0.000
Category of soil : Steep/Strongly overconsolidated	Kind of drainage : Without lateral drain
ρ_s , Grain density (kg/m ³) : 0.000	
S_m : <input type="checkbox"/>	S_d : <input type="checkbox"/>

Samples before test :									Samples after saturation :		
N°	Hi (mm)	Di (mm)	mi (g)	ρ_i (kg/m ³)	ρ_{di} (kg/m ³)	wi (%)	ei	Si (%)	Ucp (kPa)	ΔV_{sat} (mm ³)	B (%)
1	76.00	38	158.0	1833	1514	21.07	-1.000	-0.000		0.000	0.000
2	76.00	38	160.5	1862	1549	20.22	-1.000	-0.000		0.000	0.000
3	76.00	38	162.5	1885	1560	20.82	-1.000	-0.000		0.000	0.000

Samples after consolidation :							Samples after shearing							
N°	Hs (mm)	Ds (mm)	ΔV_s (mm ³)	T100 (min)	Vmax (μm/min)	σ'_c (kPa)	Hf (mm)	Df (mm)	mf (g)	md (g)	wf (%)	ρ_{df} (kg/m ³)	ef	Srf (%)
1	76.00	38.00	0.000	0.000	0.000	0.000	76.00	38.00	158.0	130.5	21.07	1514	-1.000	-0.000
2	76.00	38.00	0.000	0.000	0.000	0.000	76.00	38.00	160.5	133.5	20.22	1549	-1.000	-0.000
3	76.00	38.00	0.000	0.000	0.000	0.000	76.00	38.00	163.0	134.5	21.19	1560	-1.000	-0.000

Total stress :	Effective stress :	Comments :												
 <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><th colspan="2">Mohr</th></tr> <tr><td>C (kPa)</td><td>47.69</td></tr> <tr><td>ϕ (°)</td><td>20.38</td></tr> </table>	Mohr		C (kPa)	47.69	ϕ (°)	20.38	 <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><th>Mohr</th><th>Lambe</th></tr> <tr><td>C' (kPa)</td><td>34.15 / 32.92</td></tr> <tr><td>ϕ' (°)</td><td>19.44 / 18.38</td></tr> </table>	Mohr	Lambe	C' (kPa)	34.15 / 32.92	ϕ' (°)	19.44 / 18.38	<p>Visa :</p>
Mohr														
C (kPa)	47.69													
ϕ (°)	20.38													
Mohr	Lambe													
C' (kPa)	34.15 / 32.92													
ϕ' (°)	19.44 / 18.38													
		p.1/3												