GEOCONSULT

Yachiyo Engineering Co., Ltd.

UPGRADING OF KANENGO SUBSTATION

BOREHOLE TEST RESULT SUMMARY

YACHIEYO ENGINEERING CO.,LTD.
Consulting Engineers & Architects

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List of Abbreviations

BH	Borehole
PI	Plasticity Index
SP	Slightly Plastic
MDD	Maximum Dry Density

1. Site Investigations

1.1 Scope

The scope of the project is to investigate the subsoil conditions to establish suitable bearing layer for a proposed upgrade of Kanengo Substation in Lilongwe.

1.2 Site and Testing Overview

Site testing was limited to borehole investigations. Boreholes were to be drilled to a maximum depth of 10m unless rock was discovered, where a further 5.0m would be cored. The aim of the borehole investigations was to find a bearing strata of 5.0m.

The substation is located in the northern section of the industrial estate of Lilongwe, the typical ground makeup around the area has high presence of decomposed rock and gravel.

Figure 1 shows the location of the structures and the location of the borehole investigations.

Figure 1: Boreholes Indicated in White

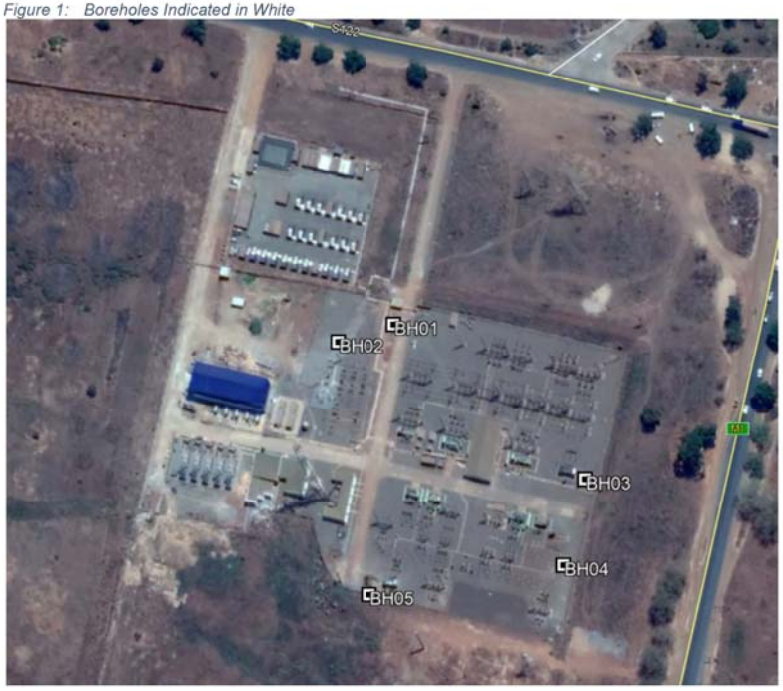


Table 1: Borehole Coordinates

BH No.	Easting	Northing
01	0 585 460	8 463 646
02	0 585 434	8 463 638
03	0 585 549	8 463 574
04	0 585 539	8 463 534
05	0 585 448	8 463 520

2. Test Remarks

2.1 Atterburg Limits

Table 2: Atterburg Limits

Depth (m)	BH01 Plasticity Index	Depth (m)	BH02 Plasticity Index
0.0-0.1	SP	0.0-0.3	9
0.1-1.0	10	0.3-3.0	19
1.0-1.2	SP		
1.2-1.7	16		

Depth (m)	BH03 Plasticity Index	Depth (m)	BH04 Plasticity Index	Depth (m)	BH05 Plasticity Index
0.0-0.5	24	0.0-0.02	SP	0.0-0.02	SP
0.5-2.0	NP	0.02-1.2	18	0.4-1.0	16
		1.2-2.2	NP	2.6-3.4	21
		2.2-4.0	NP	3.4-4.5	18
				4.5-4.8	19
				4.8-7.0	SP

Material recovered from the boreholes show medium to non/slightly plastic PI values.

2.2 Gradation

Material recovered from the boreholes show it to be show to be a well graded sand, with approximately 20-30% of the material falling into the silt/clay designation. Due to the non-plasticity of the material it can be assumed that the bulk of the remaining material passing the 0.075mm sieve falls under the silt category.

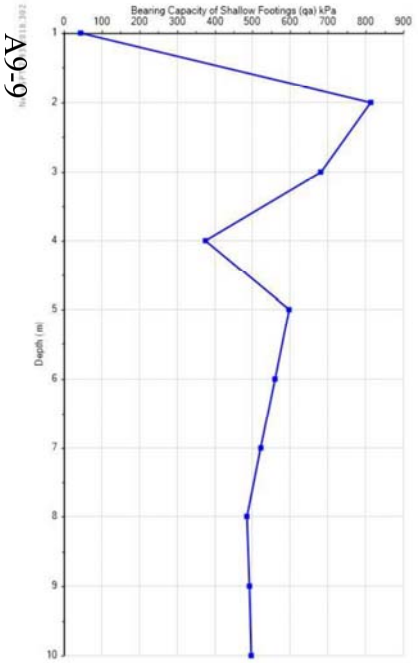
2.3 Bearing Capacity

Through SPT testing at 1 meter intervals, a bearing capacity against depth report was produced. Bearing capacity was calculated with Peck et al, 1974, and Peck, Hanson and Thornburg 1974 for friction angle calculations.

Table 3: BH01 Bearing Capacity and Friction Angle Against Depth

BH01		
Depth (m)	**Bearing Capacity (kPa)**	**Friction angle (φ)**
1.0	45	27
2.0	813	41
3.0	681	41
4.0	374	37
5.0	597	42
6.0	559	43
7.0	521	43
8.0	485	43
9.0	452	43
10.0	422	43

BH01 – Bearing Capacity



BH01 – Friction Angle

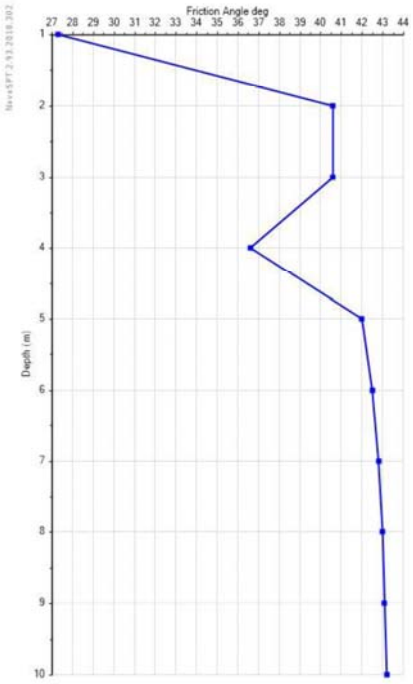
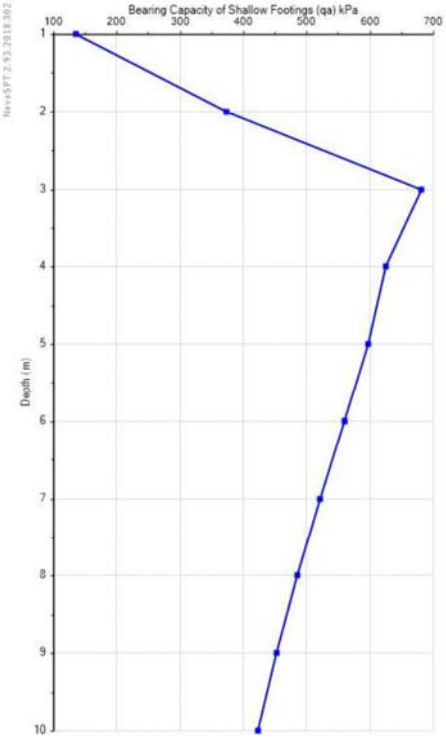


Table 4: BH02 Bearing Capacity and Friction Angle Against Depth

BH02		
Depth (m)	**Bearing Capacity (kPa)**	**Friction angle (φ)**
1.0	135	29
2.0	374	34
3.0	681	41
4.0	624	41
5.0	597	42
6.0	559	43
7.0	521	43
8.0	485	43
9.0	452	43
10.0	422	43

BH02 – Bearing Capacity



BH02 – Friction Angle

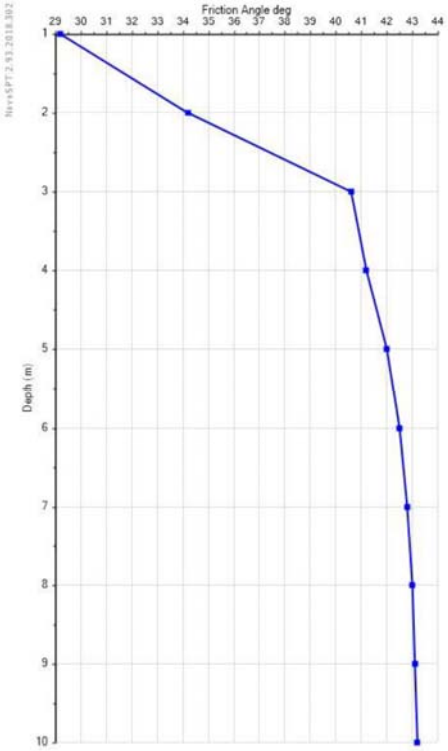
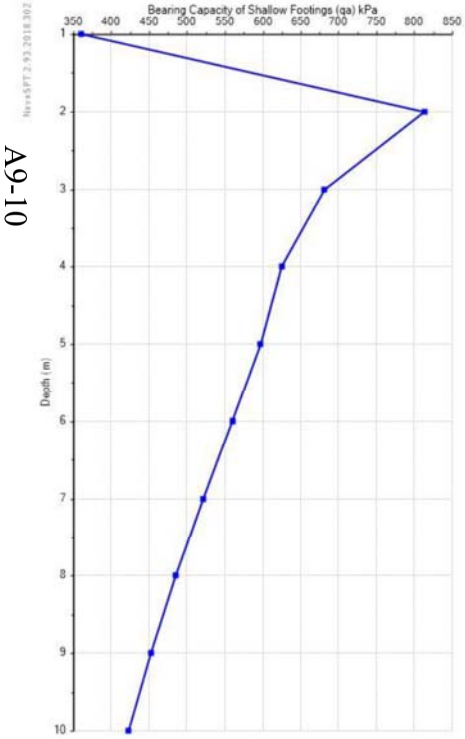


Table 5: BH03 Bearing Capacity and Friction Angle Against Depth

BH03		
Depth (m)	**Bearing Capacity (kPa)**	**Friction angle (φ)**
1.0	360	33
2.0	813	41
3.0	681	41
4.0	624	41
5.0	597	42
6.0	559	43
7.0	521	43
8.0	485	43
9.0	452	43
10.0	422	43

BH03 – Bearing Capacity



BH03 – Friction Angle

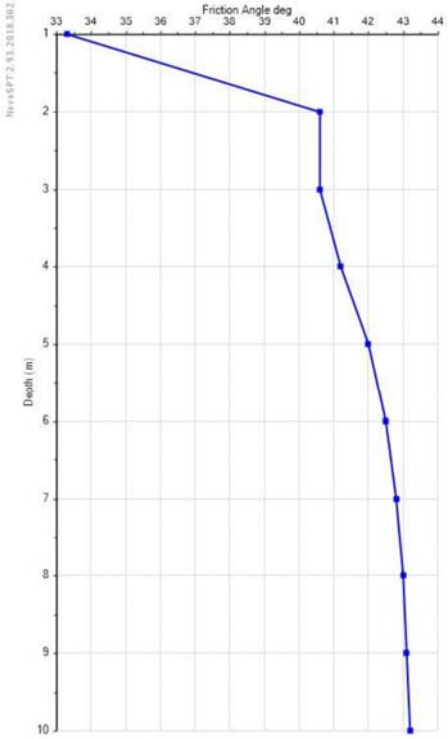
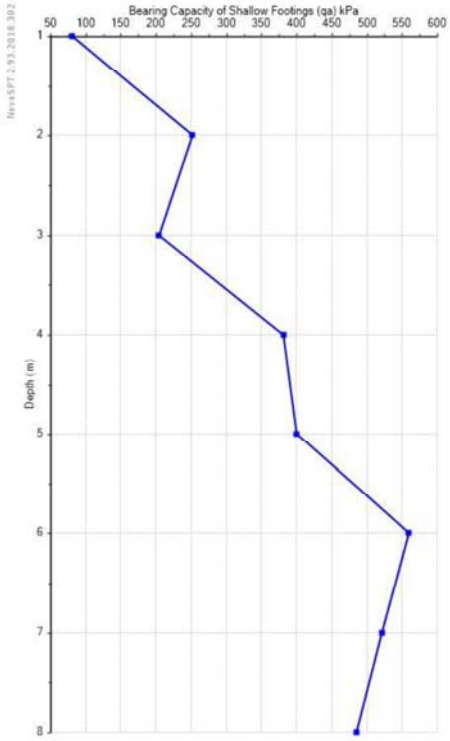


Table 6: BH04 Bearing Capacity and Friction Angle Against Depth

BH04		
Depth (m)	**Bearing Capacity (kPa)**	**Friction angle (φ)**
1.0	81	28
2.0	252	32
3.0	204	32
4.0	381	37
5.0	400	38
6.0	560	43
7.0	521	43
8.0	485	43

BH04 – Bearing Capacity



BH04 – Friction Angle

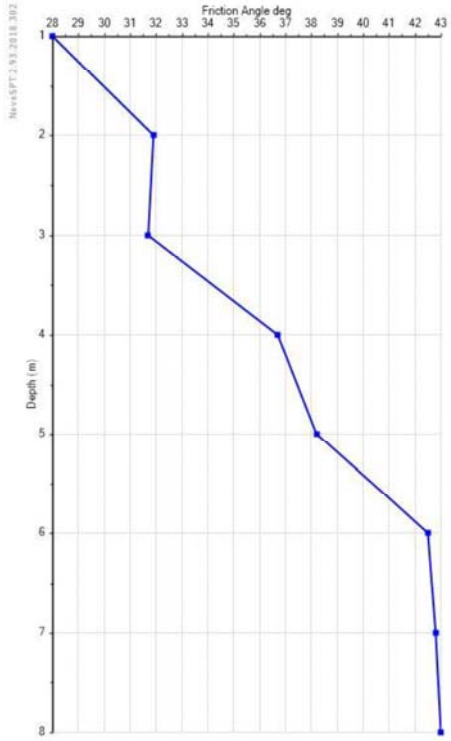
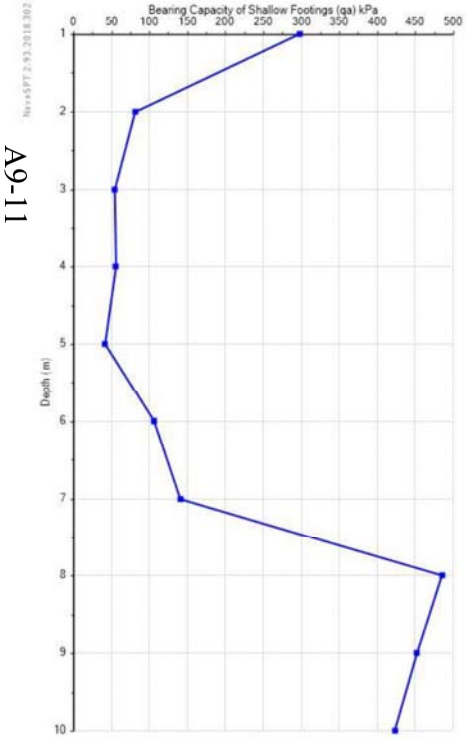


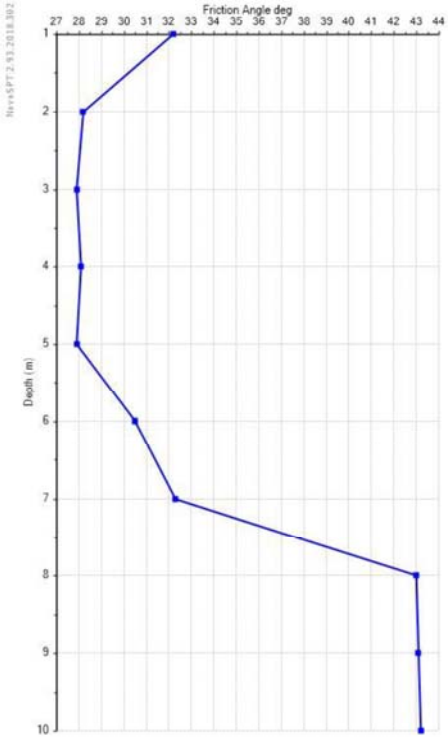
Table 7: BH05 Bearing Capacity and Friction Angle Against Depth

BH05		
Depth (m)	**Bearing Capacity (kPa)**	**Friction angle (φ)**
1.0	297	32
2.0	81	28
3.0	54	28
4.0	56	28
5.0	52	28
6.0	106	31
7.0	141	32
8.0	485	43
9.0	452	43
10.0	423	43

BH05 – Bearing Capacity



BH05 – Friction Angle



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2.4 UCS Rock Core

Due to no bedrock present before confirming the bearing layer, no coring was conducted.

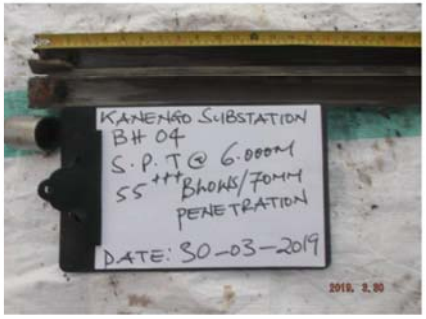
3. Summary

Borehole logs show high SPT values throughout the site for BH1-4 after the initial 1.0m. Bearing capacity results are well above 250kPa past 2.0m on all locations with the exception of BH05 that is found close to the southern boundary of the site. BH05 shows lower SPT and bearing capacity values until decomposed rock is found at 6.0m.

Current soil properties are suitable for construction as the material is medium to non-plastic and has a competent bearing capacity.

Figure 2: Drilling Location of BH02

Figure 3: Samples Recovered & SPT Sampler



4. Appendix

4.1 Borehole Logs

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BOREHOLE LOG KAN BH01

PROJECT NUMBER BH01	**DRILLING DATE** 27/03/18	**COORDINATES** 36L 585460, 8463646
PROJECT NAME	**COMPLETION** 27/03/18	**COORD SYS** UTM
CLIENT YEC	**DIAMETER** 150	**TOTAL DEPTH** 7.5M
ADDRESS MALAWI	**CASING** Steel	**SURFACE ELEVATION** 1096m

Comments: Water level measured after 24h

LOGGED BY G.K.
CHECKED BY M. Sabelli

Drilling Method	RQD %	% Recovered	SPT	Water Level	Depth (m)	Graphic Log	Elevation (m)	Moisture	Material Description
PERCUSSIVE			3,2,3		0.5		1095.5	MST	Dark reddish sandy silty CLAY
					1		1095		Yellow reddish silty sandy CLAY
					1.5		1094.5		Dark reddish silty sandy CLAY
			8,20,55++		2		1094		DECOMPOSED ROCK
WASH AND BORE			55++ PEN: 120		2.5		1093.5		
					3		1093		
			6,14,46 PEN 150		3.5		1092.5		
					4		1092		
			18,30,55+ PEN 410		4.5		1091.5		
					5		1091		
			55++ PEN 100		5.5		1090.5		
					6		1090		
			46, 55++ PEN 300		6.5		1089.5		
					7		1089		
			55++ PEN 75		7.5		1088.5		
					8		1088		
			55++ PEN 100		8.5		1087.5		
					9		1087		
			32, 55++ PEN 270		9.5		1086.5		
					10		1086		Termination Depth at: 10 m

Remarks: Water not encountered

produced by ESlog.ESdat.net on 28 Mar 2019

BOREHOLE LOG KAN BH02

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PROJECT NUMBER BH02	**DRILLING DATE** 29/03/18	**COORDINATES** 36L 585434, 8463638
PROJECT NAME	**COMPLETION** 29/03/18	**COORD SYS** UTM
CLIENT YEC	**DIAMETER** 150	**TOTAL DEPTH** 7.0M
ADDRESS MALAWI	**CASING** Steel	**SURFACE ELEVATION** 1096m

Comments: Water level measured after 24h

LOGGED BY G.K.
CHECKED BY M. Sabelli

Drilling Method	RQD %	% Recovered	SPT	Water Level	Depth (m)	Graphic Log	Elevation (m)	Moisture	Material Description
PERCUSSIVE			5,7,8		0.5		1095.5	MST	Slightly dark red sandy silty CLAY
					1		1095		Orange reddish clayey silty sand with traces of DECOMPOSED ROCK
			13,19,27		1.5		1094.5		
					2		1094		
					2.5		1093.5		
			32,55++ PEN 290		3		1093		
WASH AND BORE					3.5		1092.5		Hard DECOMPOSED ROCK
			55++ PEN 50		4		1092		
					4.5		1091.5		
			55++ PEN 50		5		1091		
					5.5		1090.5		
			55++ PEN 30		6		1090		
					6.5		1089.5		
			55++ PEN 50		7		1089		Termination Depth at: 7.0 m

Remarks: Water not encountered

produced by ESlog.ESdat.net on 30 Mar 2019

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BOREHOLE LOG KAN BH03

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PROJECT NUMBER BH03	**DRILLING DATE** 26/03/18	**COORDINATES** 36L 585549, 8463574
PROJECT NAME	**COMPLETION** 26/03/18	**COORD SYS** UTM
CLIENT YEC	**DIAMETER** 150	**TOTAL DEPTH** 7.0M
ADDRESS MALAWI	**CASING** Steel	**SURFACE ELEVATION** 1096m

Comments: Water level measured after 24h

LOGGED BY G.K.
CHECKED BY M. Sabelli

Drilling Method	RQD %	% Recovered	SPT	Water Level	Depth (m)	Graphic Log	Elevation (m)	Moisture	Material Description
PERCUSSIVE			10,15,25		0.5		1095.5	MST	Imported red sandy silty CLAY
					1		1095		Soft DECOMPOSED ROCK
			55++ PEN 110		1.5		1094.5		
WASH AND BORE					2		1094		Hard DECOMPOSED ROCK
			55++ PEN: 100		2.5		1093.5		
					3		1093		
			55++ PEN 80		3.5		1092.5		
					4		1092		
			55++ PEN 150		4.5		1091.5		
					5		1091		
			55++ PEN 120		5.5		1090.5		
					6		1090		
			55++ PEN 100		6.5		1089.5		
					7		1089		Termination Depth at: 7.0 m

Remarks: Water not encountered

produced by ESlog.ESdat.net on 29 Mar 2019

BOREHOLE LOG KAN BH04

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PROJECT NUMBER BH04	**DRILLING DATE** 30/03/18	**COORDINATES** 36L 585539, 8463534
PROJECT NAME	**COMPLETION** 30/03/18	**COORD SYS** UTM
CLIENT YEC	**DIAMETER** 150	**TOTAL DEPTH** 8.0M
ADDRESS MALAWI	**CASING** Steel	**SURFACE ELEVATION** 1096m

Comments: Water level measured after 24h

LOGGED BY G.K.
CHECKED BY M. Sabelli

Drilling Method	RQD %	% Recovered	SPT	Water Level	Depth (m)	Graphic Log	Elevation (m)	Moisture	Material Description
PERCUSSIVE					0			MST	Imported coarse mineral aggregate
					0.5		1095.5		Reddish brown sandy silty CLAY with spots of hard rock
			3,5,4		1		1095		
					1.5		1094.5		Mottled micacious DECOMPOSED ROCK
			9,16,15		2		1094		
					2.5		1093.5		Greenish grey micacious DECOMPOSED ROCK
			16,12,18		3		1093		
					3.5		1092.5		
			14,23,38		4		1092		
WASH AND BORE					4.5		1091.5		Hard DECOMPOSED ROCK
			36,37,30		5		1091		
					5.5		1090.5		
			55++ PEN 70		6		1090		
					6.5		1089.5		
			55++ PEN 60		7		1089		
					7.5		1088.5		
			55++ PEN 40		8		1088		Termination Depth at: 8.0 m

Remarks: Water not encountered

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BOREHOLE LOG KAN BH05

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PROJECT NUMBER BH05	**DRILLING DATE** 26/03/18	**COORDINATES** 36L 585448, 8463520
PROJECT NAME	**COMPLETION** 26/03/18	**COORD SYS** UTM
CLIENT YEC	**DIAMETER** 150	**TOTAL DEPTH** 10M
ADDRESS MALAWI	**CASING** Steel	**SURFACE ELEVATION** 1096m

Comments: Water level measured after 24h

LOGGED BY G.K.
CHECKED BY M. Sabelli

Drilling Method	RQD %	% Recovered	SPT	Water Level	Depth (m)	Graphic Log	Elevation (m)	Moisture	Material Description
PERCUSSIVE					0			MST	Imported top soil
					0.5		1095.5		Dark red clayey silty sand
			10,18,15		1		1095		
					1.5		1094.5		Dark redish sandy silty CLAY
			3,5,5		2		1094		
					2.5		1093.5		
			3,3,5		3		1093		
					3.5		1092.5		Soft black sandy silty CLAY
			3,4,5		4		1092		
					4.5		1091.5		Soft dark red micacious sandy silty CLAY
			3,3,4		5		1091		Soft DECOMPOSED ROCK with mica
					5.5		1090.5		
			9,9,10		6		1090		
					6.5		1089.5		
WASH AND BORE			12,13,14		7		1089		
					7.5		1088.5		
			16,38,55+ PEN 360		8		1088		Hard DECOMPOSED ROCK
					8.5		1087.5		
			25,55++ PEN 200		9		1087		
					9.5		1086.5		
			34,55++ PEN 210		10		1086		Termination Depth at: 10.0 m

Remarks: Water not encountered

produced by ESlog.ESdat.net on 01 Apr 2019

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LAB. REF. No. GC479 / 26MAR19 / 09:14			**SAMPLE No.** KAN SUBSTATION / BH01 / G, AL, NMC	
SAMPLED BY: GEOCONSULT LABORATORY TEAM			DATE: 11 / 04 / 2019	TIME: 09:14
LOCATION:	EASTING	NORTHING	ELEVATION (m)	DEPTH (m)
LILONGWE KANENGO SUBSTATION	0 585 460	8 463 646	1 093	
TYPE OF MATERIAL:				
TEST STANDARD: BS 1377				
TESTED BY: GEOCONSULT LABORATORY TEAM			DATE: 11 / 04 / 2019	TIME: 09:14
CHECKED BY: G. L. KACHIWALA			DATE: 12 / 04 / 2019	TIME: 08:06
APPROVED: M. SABELLI			DATE: 12 / 04 / 2019	TIME: 14:00

PROJECT: OLD TOWN SUBSTATION

CLIENT: YEC

SUMMARY OF TEST RESULTS

LAB. REFERENCE No.	DEPTH (m)	BH No.	SIEVE ANALYSIS 2.36 pass	0.425 pass	0.075 pass	LL %	PI	LS %	LS / P	Classification	MDD Kg/m³	OMC %	NMC	FI	CBR @ 95	@ 98	Swell %	REMARKS
GC466 / BH 01	0.00 - 0.10	1	87	62	39	0	SP	2.2	136				20.0	0				**G, AL, NMC**
GC466 / BH 01	0.10-1.00	1	94	75	46	30.7	10	5.3	398				24.5	460				**G, AL, NMC**
GC466 / BH 01	1.00-1.20	1	86	52	32	SP	SP	1.4	73				27.8	0				**G, AL, NMC**
GC466 / BH 01	1.20-1.70	1	87	62	39	42.4	16	8.5	527				28.9	624				**G, AL, NMC**

REMARKS: SAMPLED FROM KANENGO SUBSTATION @ BOREHORE NUMBER 01

4.2 Summary of Test Results

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LAB. REF. No. GC479 / 26MAR19 / 09:14		**SAMPLE No.** KAN SUBSTATION / BH03 / G, AL, NMC	
SAMPLED BY: GEOCONSULT LABORATORY TEAM		DATE: 11 / 04 / 2019	TIME: 09:14
LOCATION:	EASTING	NORTHING	ELEVATION (m)	DEPTH (m)
LILONGWE KANENGO SUBSTATION	0 585549	8 463574	1 093	
TYPE OF MATERIAL:				
TEST STANDARD: BS 1377				
TESTED BY: GEOCONSULT LABORATORY TEAM		DATE: 11 / 04 / 2019	TIME: 09:14
CHECKED BY: G. L. KACHIWALA		DATE: 12 / 04 / 2019	TIME: 08:06
APPROVED: M. SABELLI		DATE: 12 / 04 / 2019	TIME: 14:00

PROJECT: OLD TOWN SUBSTATION

CLIENT: YEC

SUMMARY OF TEST RESULTS

LAB. REFERENCE No.	DEPTH (m)	BH No.	SIEVE ANALYSIS 2.36 pass	SIEVE ANALYSIS 0.425 pass	SIEVE ANALYSIS 0.075 pass	LL %	PI	LS %	LS / P	Classification	MDD Kg/m³	OMC %	NMC	FI	CBR @ 95	CBR @ 98	Swell %	REMARKS
GC465 / BH 03	0.000 - 0.500	3	90	67	36	37.1	24	5.3	355				28.9	864				**G, AL, NMC**
GC465 / BH 03	0.500 - 2.00	3	96	47	12	NP	NP	0.0	0				30.1	0				**G, AL, NMC**

REMARKS: SAMPLED FROM KANENGO SUBSTATION @ BOREHORE NUMBER 03

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LAB. REF. No. GC468 / 29MAR19 / 09:14		**SAMPLE No.** KAN SUBSTATION / BH02 / G, AL, NMC	
SAMPLED BY: GEOCONSULT LABORATORY TEAM		DATE: 11 / 04 / 2019	TIME: 09:14
LOCATION:	EASTING	NORTHING	ELEVATION (m)	DEPTH (m)
LILONGWE KANENGO SUBSTATION	0 585434	8 463638	1 093	
TYPE OF MATERIAL:				
TEST STANDARD: BS 1377				
TESTED BY: GEOCONSULT LABORATORY TEAM		DATE: 11 / 04 / 2019	TIME: 09:14
CHECKED BY: G. L. KACHIWALA		DATE: 12 / 04 / 2019	TIME: 08:06
APPROVED: M. SABELLI		DATE: 12 / 04 / 2019	TIME: 14:00

PROJECT: OLD TOWN SUBSTATION

CLIENT: YEC

SUMMARY OF TEST RESULTS

LAB. REFERENCE No.	DEPTH (m)	BH No.	SIEVE ANALYSIS 2.36 pass	SIEVE ANALYSIS 0.425 pass	SIEVE ANALYSIS 0.075 pass	LL %	PI	LS %	LS / P	Classification	MDD Kg/m³	OMC %	NMC	FI	CBR @ 95	CBR @ 98	Swell %	REMARKS
GC468 / BH 02	0.00-0.30	2	98	89	35	26.1	9	6.1	543				15.8	315				**G, AL, NMC**
GC468 / BH 02	0.30-3.00	2	92	72	42	37.1	19	9.4	677				20.0	798				**G, AL, NMC**

REMARKS: SAMPLED FROM KANENGO SUBSTATION @ BOREHORE NUMBER 02

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LAB. REF. No. GC465 / 26MAR19 / 09:14		**SAMPLE No.** KAN SUBSTATION / BH05 / G, AL, NMC	
SAMPLED BY: GEOCONSULT LABORATORY TEAM		DATE: 12 / 04 / 2019	TIME: 10:00
LOCATION:	EASTING	NORTHING	ELEVATION (m)	DEPTH (m)
LILONGWE KANENGO SUBSTATION	0 585 448	8 463 528	1 093	
TYPE OF MATERIAL:				
TEST STANDARD: BS 1377				
TESTED BY: GEOCONSULT LABORATORY TEAM		DATE: 12 / 04 / 2019	TIME: 10:00
CHECKED BY: G. L. KACHIWALA		DATE: 12 / 04 / 2019	TIME: 10:15
APPROVED: M. SABELLI		DATE: 12 / 04 / 2019	TIME: 10:30

PROJECT: OLD TOWN SUBSTATION

CLIENT: YEC

SUMMARY OF TEST RESULTS

LAB. REFERENCE No.	DEPTH (m)	BH No.	SIEVE ANALYSIS 2.36 pass	SIEVE ANALYSIS 0.425 pass	SIEVE ANALYSIS 0.075 pass	LL %	PI	LS %	LS / P	Classification	MDD Kg/m³	OMC %	NMC	FI	CBR @ 95	CBR @ 98	Swell %	REMARKS
GC465 / BH 05	0.00-0.02	5	37	24	13	SP	SP	2.2	53				15.8	0				G, AL, NMC
GC465 / BH 05	0.4-1.0	5	88	68	48	19	16	7.7	524				20.4	768				G, AL, NMC
GC465 / BH 05	2.6-3.4	5	96	70	43	48.8	21	7.7	539				28.9	903				G, AL, NMC
GC465 / BH 05	3.4-4.5	5	94	68	35	40.3	18	8.5	578				32.6	630				G, AL, NMC
GC465 / BH 05	4.5-4.8	5	95	77	51	45.9	19	9.4	724				30.3	969				G, AL, NMC
GC465 / BH 05	4.8-7.0	5	94	66	31	0.0	SP	1.4	92				34.6	0				G, AL, NMC

REMARKS: SAMPLED FROM KANENGO SUBSTATION @ BOREHORE NUMBER 05

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LAB. REF. No. GC469 / 30MAR19 / 09:14		**SAMPLE No.** KAN SUBSTATION / BH04 / G, AL, NMC	
SAMPLED BY: GEOCONSULT LABORATORY TEAM		DATE: 11 / 04 / 2019	TIME: 10:00
LOCATION:	EASTING	NORTHING	ELEVATION (m)	DEPTH (m)
LILONGWE KANENGO SUBSTATION	0 585 539	8 463534	1 093	
TYPE OF MATERIAL:				
TEST STANDARD: BS 1377				
TESTED BY: GEOCONSULT LABORATORY TEAM		DATE: 11 / 04 / 2019	TIME: 10:00
CHECKED BY: G. L. KACHIWALA		DATE: 12 / 04 / 2019	TIME: 10:15
APPROVED: M. SABELLI		DATE: 12 / 04 / 2019	TIME: 10:30

PROJECT: OLD TOWN SUBSTATION

CLIENT: YEC

SUMMARY OF TEST RESULTS

LAB. REFERENCE No.	DEPTH (m)	BH No.	SIEVE ANALYSIS 2.36 pass	SIEVE ANALYSIS 0.425 pass	SIEVE ANALYSIS 0.075 pass	LL %	PI	LS %	LS / P	Classification	MDD Kg/m³	OMC %	NMC	FI	CBR @ 95	CBR @ 98	Swell %	REMARKS
GC469 / BH 04	0.00-0.02	4	97	65	24	SP	SP	2.9	189				15.8	0				G, AL, NMC
GC469 / BH 04	0.200-1.200	4	90	73	51	37.1	24	3.7	270				20.4	1224				G, AL, NMC
GC469 / BH 04	1.200-2.200	4	98	65	16	NP	NP	0.0	SP				24.5	0				G, AL, NMC
GC469 / BH 04	2.20-4.00	4	99	62	19	NP	NP	0.0	SP				28.7	0				G, AL, NMC

REMARKS: SAMPLED FROM KANENGO SUBSTATION @ BOREHORE NUMBER 04

4.3 Atterburg Limits

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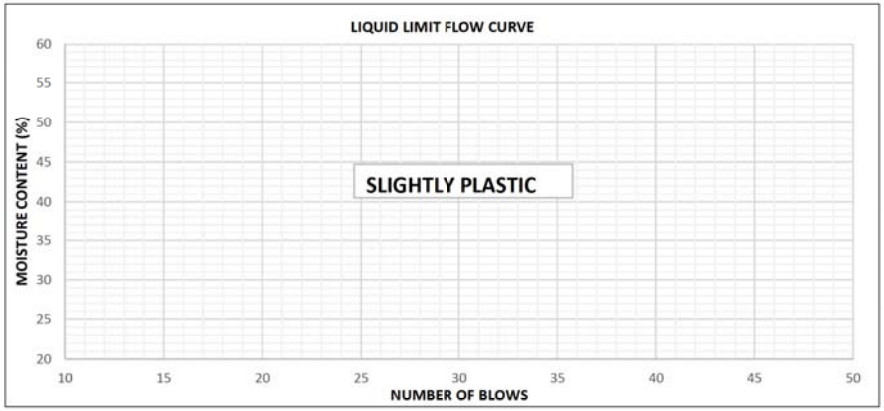
LAB REF: GC466 / 27MAR19 / 17:00		SAMPLE No. KANE-SUB / BH01 / AL01 / 27MAR19		
SAMPLED BY: GEOCONSULT		DATE: 27 - 03 - 2019	TIME:	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 585 460	8 463 646	1 096 (m)	0.000-0.100
TYPE OF MATERIAL: MOIST DARK SANDY SILTY CLAY WITH CRUSHED AGGREGATES				
TESTED BY: S. THANGATO		DATE: 06 - 04- 2019	TIME: 08:35	
CHECKED BY: G. KACHIWALA		DATE: 10 - 04 - 2019	TIME: 13:36	
APPROVED BY: M. SABELLI		DATE: 10 - 04 - 2019	TIME: 14:18	

PROJECT: KANENGO SUBSTATION **CLIENT:** YEC

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
TEST No.	1	2	3	4	1	2	3
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	5
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 %	20.0
FINENESS INDEX	0.0



REMARKS: SAMPLED FROM KANENGO SUBSTATION / BOREHOLE 01 / DEPTH 0.000 - 0.100 (m)

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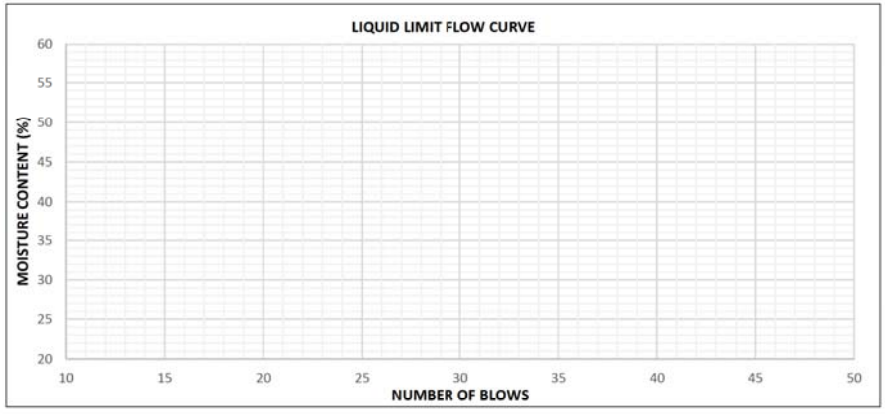
LAB REF: GC466 / 27MAR19 / 17:00		SAMPLE No. KAN-SUB / BH01 / AL02 / 27MAR19		
SAMPLED BY: GEOCONSULT		DATE: 27 - 03 - 2019	TIME:	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
KANENGO SUBSTATION	0 585 460	8 463 646	1 096 (m)	0.100-1.000
TYPE OF MATERIAL: MOIST DARK REDDISH SANDY SILTY CLAY				
TESTED BY: S. MATCHADO		DATE: 06 - 04 - 2019	TIME: 15:23	
CHECKED BY: G. KACHIWALA		DATE: 10 - 04 - 2019	TIME: 13:36	
APPROVED BY: M. SABELLI		DATE: 10 - 04 - 2019	TIME: 14:18	

PROJECT: KANENGO SUBSTATION **CLIENT:** YEC

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
TEST No.	1	2	3	4	1	2	3
CONTAINER No.	C11		R16		R22	K2	C16
MASS OF WET SOIL + CONTAINER(g)	62.5		60.5		41.0	42.0	43.0
MASS OF DRY SOIL + CONTAINER(g)	55.0		52.5		39.0	39.5	40.5
MASS OF CONTAINER (g)	30		28		29	27.5	28.5
MASS OF DRY SOIL (g)	25.0		24.5		10.0	12.0	12.0
MASS OF WATER (g)	7.50		8.00		2.00	2.50	2.50
MOISTURE CONTENT %	30.0	30.0	32.7	31.3	20.0	20.8	20.8
No. BLOWS	26		17			20.6	

LINEAR SHRINKAGE	10
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	13.3
LINEAR SHRINKAGE %	5.3
LIQUID LIMIT (LL) %	30.7
PLASTIC LIMIT (PL) %	20.6
PLASTICITY INDEX (PI)	**10**
NATURAL MOISTURE CONTENT %	24.5
FINENESS INDEX	460.0



REMARKS: SAMPLED FROM KANENGO SUBSTATION / BOREHOLE 01 / DEPTH 0.100 - 1.000 (m)

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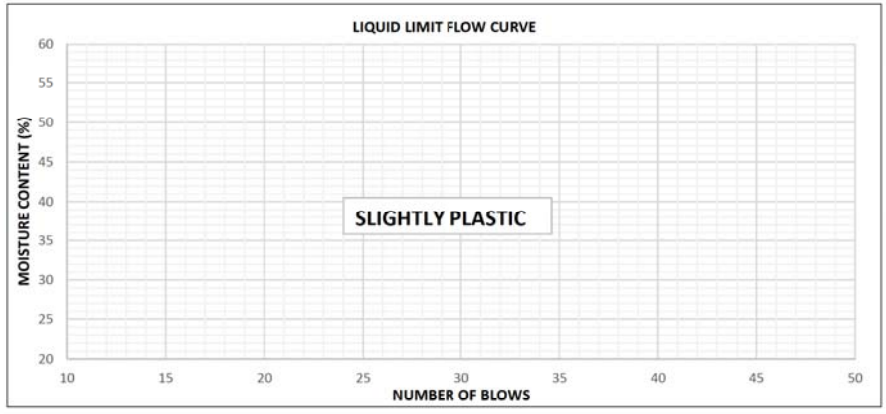
LAB REF: GC466 / 27MAR19 / 17:00		SAMPLE No. KANE-SUB / BH01 / AL03 / 27MAR19		
SAMPLED BY: GEOCONSULT		DATE: 27 - 03 - 2019	TIME:	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 585 460	8 463 646	1 096 (m)	1.000-1.200
TYPE OF MATERIAL: MOIST YELLOW REDDISH SILTY SANDY CLAY				
TESTED BY: S. THANGATO		DATE: 06 - 04- 2019	TIME: 08:35	
CHECKED BY: G. KACHIWALA		DATE: 10 - 04 - 2019	TIME: 13:36	
APPROVED BY: M. SABELLI		DATE: 10 - 04 - 2019	TIME: 14:18	

PROJECT: KANENGO SUBSTATION **CLIENT:** YEC

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
TEST No.	1	2	3	4	1	2	3
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	7
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 %	27.8
FINENESS INDEX	0.0



REMARKS: SAMPLED FROM KANENGO SUBSTATION / BOREHOLE 01 / DEPTH 1.000 - 1.200 (m)

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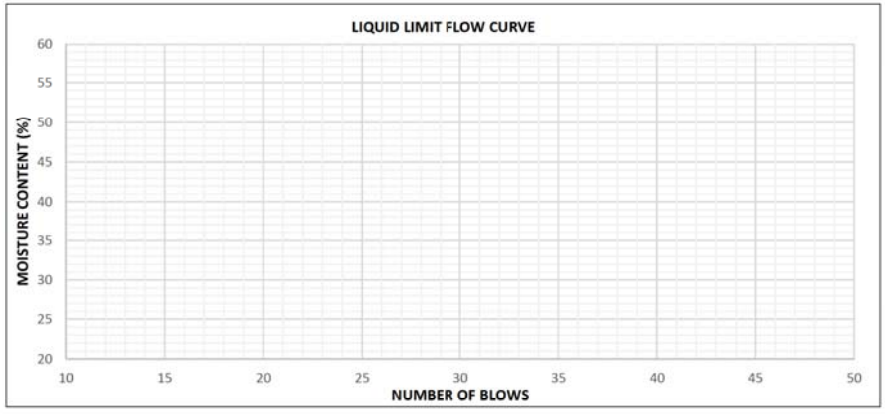
LAB REF: GC466 / 27MAR19 / 17:00		SAMPLE No. KAN-SUB / BH01 / AL04 / 27MAR19		
SAMPLED BY: GEOCONSULT		DATE: 27 - 03 - 2019	TIME:	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
KANENGO SUBSTATION	0 585 460	8 463 646	1 096 (m)	1.200-1.700
TYPE OF MATERIAL: MOIST DARK REDDISH SANDY SILTY CLAY				
TESTED BY: S. MATCHADO		DATE: 06 - 04 - 2019	TIME: 15:00	
CHECKED BY: G. KACHIWALA		DATE: 10 - 04 - 2019	TIME: 13:66	
APPROVED BY: M. SABELLI		DATE: 10 - 04 - 2019	TIME: 1518	

PROJECT: KANENGO SUBSTATION **CLIENT:** YEC

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
TEST No.	1	2	3	4	1	2	3
CONTAINER No.	R19		C17		C18	R21	K1
MASS OF WET SOIL + CONTAINER(g)	57.5		53.5		39.5	43.5	45.5
MASS OF DRY SOIL + CONTAINER(g)	50.5		44.5		37.0	40.5	43.0
MASS OF CONTAINER (g)	33		25		27.5	29	33.5
MASS OF DRY SOIL (g)	17.5		19.5		9.5	11.5	9.5
MASS OF WATER (g)	7.00		9.00		2.50	3.00	2.50
MOISTURE CONTENT %	40.0	40.4	46.2	44.3	26.3	26.1	26.3
No. BLOWS	29		17			26.2	

LINEAR SHRINKAGE	1
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	12.9
LINEAR SHRINKAGE %	8.5
LIQUID LIMIT (LL) %	42.4
PLASTIC LIMIT (PL) %	26.2
PLASTICITY INDEX (PI)	**16**
NATURAL MOISTURE CONTENT %	28.9
FINENESS INDEX	624.0



REMARKS: SAMPLED FROM KANENGO SUBSTATION / BOREHOLE 01 / DEPTH 1.200 - 1.700 (m)

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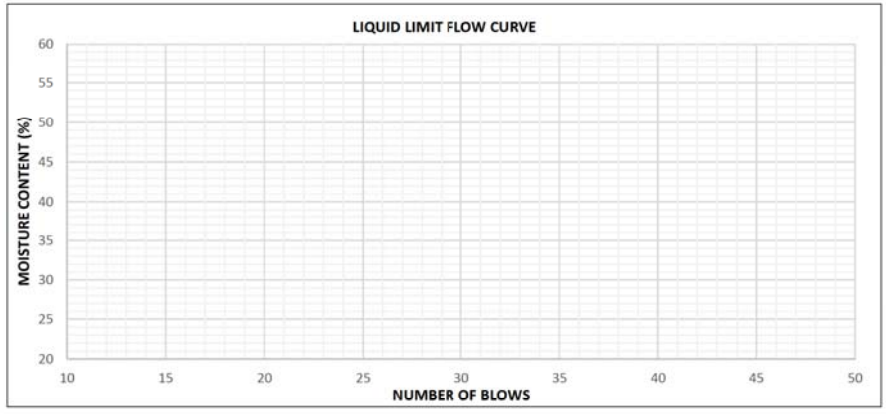
LAB REF: GC468 / 29MAR19 / 17:00		SAMPLE No. KAN-SUB / BH02 / AL01/ 29MAR19		
SAMPLED BY: GEOCONSULT		DATE: 29 - 03 - 2019	TIME: 15:00	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
KANENGO SUBSTATION	0 585434	8 463638	1 120 (m)	0.000-0.300
TYPE OF MATERIAL: MOIST SLIGHTLY DARK REDDISH SANDY SILTY CLAY				
TESTED BY: S. MATCHADO		DATE: 02 - 04 - 2019	TIME: 15:23	
CHECKED BY: G. KACHIWALA		DATE: 03 - 04 - 2019	TIME: 13:36	
APPROVED BY: M. SABELLI		DATE: 03 - 04 - 2019	TIME: 14:18	

PROJECT: KANENGO SUBSTATION **CLIENT:** YEC

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
TEST No.	1	2	3	4	1	2	3
CONTAINER No.	R18		R24		R19	C26	C4
MASS OF WET SOIL + CONTAINER(g)	53.0		55.0		46.0	42.5	37.0
MASS OF DRY SOIL + CONTAINER(g)	48.0		50.0		44.0	40.5	35.5
MASS OF CONTAINER (g)	29		31.5		33.5	29	25
MASS OF DRY SOIL (g)	19.0		18.5		10.5	11.5	10.5
MASS OF WATER (g)	5.00		5.00		2.00	2.00	1.50
MOISTURE CONTENT %	26.3	26.3	27.0	25.9	19.0	17.4	14.3
No. BLOWS	25		16			16.9	

LINEAR SHRINKAGE	1
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	13.2
LINEAR SHRINKAGE %	6.1
LIQUID LIMIT (LL) %	26.1
PLASTIC LIMIT (PL) %	16.9
PLASTICITY INDEX (PI)	**9**
NATURAL MOISTURE CONTENT %	15.8
FINENESS INDEX	315.0



REMARKS: SAMPLED FROM KANENGO SUBSTATION / BOREHOLE 02 / DEPTH0. 000 - 0.300 (m)

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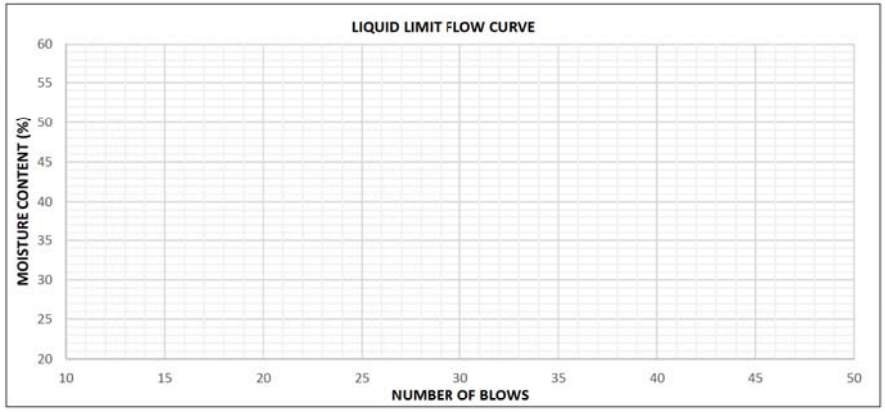
LAB REF: GC468 / 29MAR19 / 17:00		SAMPLE No. KAN-SUB / BH02 / AL02 / 29MAR19		
SAMPLED BY: GEOCONSULT		DATE: 29 - 03 - 2019	TIME: 15:00	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
KANENGO SUBSTATION	0 585434	8 463638	1 120 (m)	0.300-3.000
TYPE OF MATERIAL: MOIST ORANGE REDDISH CLAYEY SILTY SANDY WITH TRACES OF DECOMPOS				
TESTED BY: G.KONDE		DATE: 02 - 04 - 2019	TIME: 15:00	
CHECKED BY: G. KACHIWALA		DATE: 03 - 04 - 2019	TIME: 13:36	
APPROVED BY: M. SABELLI		DATE: 03 - 04 - 2019	TIME: 14:18	

PROJECT: KANENGO SUBSTATION **CLIENT:** YEC

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
TEST No.	1	2	3	4	1	2	3
CONTAINER No.	C11		C25		N	G	E
MASS OF WET SOIL + CONTAINER(g)	51.5		42.5		41.0	40.0	40.5
MASS OF DRY SOIL + CONTAINER(g)	45.5		37.0		38.5	38.5	38.0
MASS OF CONTAINER (g)	30		22		26	26.5	26
MASS OF DRY SOIL (g)	15.5		15.0		12.5	12.0	12.0
MASS OF WATER (g)	6.00		5.50		2.50	1.50	2.50
MOISTURE CONTENT %	38.7	39.1	36.7	35.2	20.0	12.5	20.8
No. BLOWS	27		17			17.8	

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) %	37.1
PLASTIC LIMIT (PL) %	17.8
PLASTICITY INDEX (PI)	**19**
NATURAL MOISTURE CONTENT %	20.0
FINENESS INDEX	789.0



REMARKS: SAMPLED FROM KANENGO SUBSTATION / BOREHOLE 02 / DEPTH 0. 300 - 3.000 (m)

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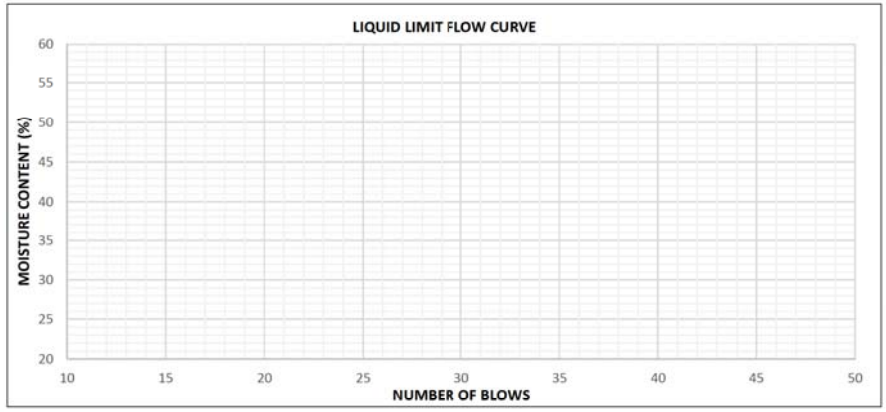
LAB REF: GC465 / 26MAR19 / 17:00		SAMPLE No. KAN-SUB / BH03 / AL01 / 26MAR19		
SAMPLED BY: GEOCONSULT		DATE: 26 - 03 - 2019		
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
KANENGO SUBSTATION	0 585549	8 463574	1093(m)	0.000-0.500
TYPE OF MATERIAL: MOIST IMPORTED RED SANDY SILTY CLAY				
TESTED BY: S. MATCHADO		DATE: 06 - 04 - 2019	TIME: 13:55	
CHECKED BY: G. KACHIWALA		DATE: 10 - 04 - 2019	TIME: 13:36	
APPROVED BY: M. SABELLI		DATE: 10 - 04 - 2019	TIME: 14:18	

PROJECT: KANENGO SUBSTATION **CLIENT:** YEC

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
TEST No.	1	2	3	4	1		3
CONTAINER No.	C8		R20		C4		R8
MASS OF WET SOIL + CONTAINER(g)	51.0		54.0		42.5		42.5
MASS OF DRY SOIL + CONTAINER(g)	45.0		46.5		40.5		41.0
MASS OF CONTAINER (g)	28.5		27.5		25		30
MASS OF DRY SOIL (g)	16.5		19.0		15.5		11.0
MASS OF WATER (g)	6.00		7.50		2.00		1.50
MOISTURE CONTENT %	36.4	36.4	39.5	37.9	12.9		13.6
No. BLOWS	25		16			13.3	

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) %	37.1
PLASTIC LIMIT (PL) %	13.3
PLASTICITY INDEX (PI)	**24**
NATURAL MOISTURE CONTENT %	28.9
FINENESS INDEX	864.0



REMARKS: SAMPLED FROM KANENGO SUBSTATION / BOREHOLE 02 / DEPTH 0.000 - 0.500 (m)

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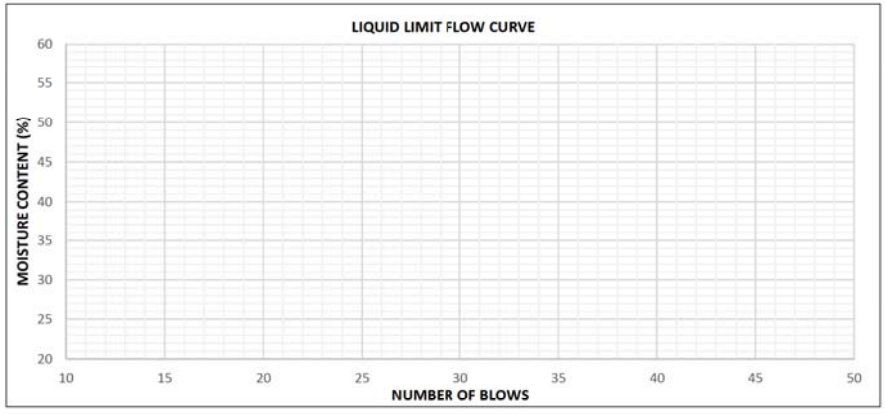
LAB REF: GC465 / 26MAR19 / 17:00		SAMPLE No. KAN-SUB / BH03 / AL02 / 26MAR19		
SAMPLED BY: GEOCONSULT		DATE: 26 - 03 - 2019		
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
KANENGO SUBSTATION	0 585549	8 463574	1093(m)	0.500-2.000
TYPE OF MATERIAL: SOFT DECOMPOSED ROCK				
TESTED BY: S. MATCHADO		DATE: 06 - 04 - 2019	TIME: 13:55	
CHECKED BY: G. KACHIWALA		DATE: 10 - 04 - 2019	TIME: 13:36	
APPROVED BY: M. SABELLI		DATE: 10 - 04 - 2019	TIME: 14:18	

PROJECT: KANENGO SUBSTATION **CLIENT:** YEC

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
TEST No.	1	2	3	4	1		3
CONTAINER No.	NP	NP	NP	NP	NP	NP	NP
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	14
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	14.0
LINEAR SHRINKAGE %	0.0
LIQUID LIMIT (LL) %	0.0
PLASTIC LIMIT (PL) %	0.0
PLASTICITY INDEX (PI)	**NP**
NATURAL MOISTURE CONTENT %	30.1
FINENESS INDEX	0.0



REMARKS: SAMPLED FROM KANENGO SUBSTATION / BOREHOLE 02 / DEPTH 0.500 - 2.000 (m)

A9-22

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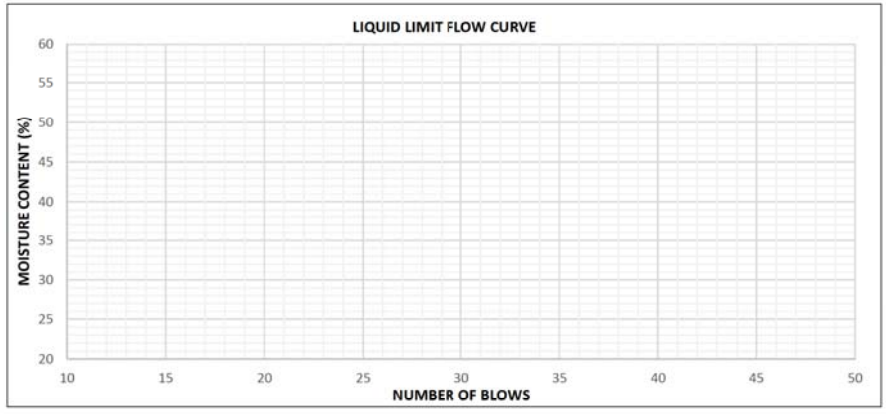
LAB REF: GC469 / 30MAR19 / 17:00		SAMPLE No. KAN-SUB / BH04 / AL01 / 30MAR19		
SAMPLED BY: GEOCONSULT		DATE: 27 - 03 - 2019	TIME:	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
KANENGO SUBSTATION	0 585 539	8 463534	1 103 (m)	0.000-0.200
TYPE OF MATERIAL: MOIST IMPORTED COARSE MINERAL AGGREGATES				
TESTED BY: S.MATCHADO		DATE: 02 - 04 - 2019	TIME: 11:55	
CHECKED BY: G. KACHIWALA		DATE: 03 - 04 - 2019	TIME: 13:36	
APPROVED BY: M. SABELLI		DATE: 03 - 04 - 2019	TIME: 14:18	

PROJECT: KANENGO SUBSTATION **CLIENT:** YEC

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
TEST No.	1	2	3	4	1	2	3
CONTAINER No.	NP	NP	NP	NP	NP	NP	NP
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	7
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	13.6
LINEAR SHRINKAGE %	2.9
LIQUID LIMIT (LL) %	0.0
PLASTIC LIMIT (PL) %	0.0
PLASTICITY INDEX (PI)	**NP**
NATURAL MOISTURE CONTENT %	15.8
FINENESS INDEX	0.0



REMARKS: SAMPLED FROM KANENGO SUBSTATION / BOREHOLE 02 / DEPTH 0.000 -0.200 (m)

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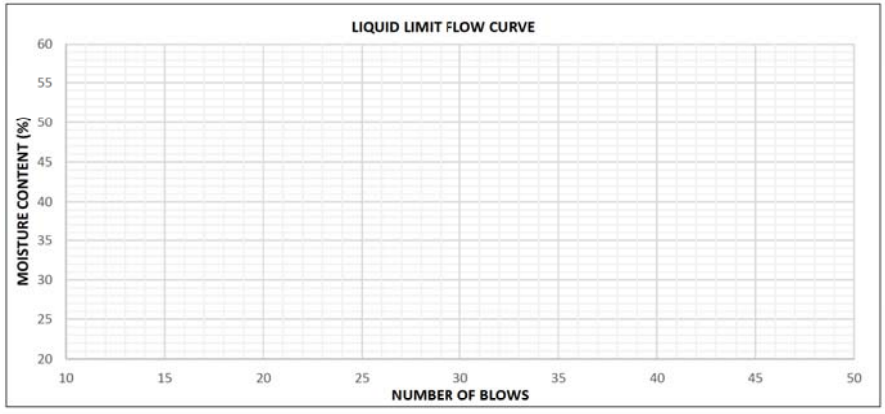
LAB REF: GC469 / 30MAR19 / 17:00		SAMPLE No. KAN-SUB / BH04 / AL02 / 30MAR19		
SAMPLED BY: GEOCONSULT		DATE: 26 - 03 - 2019	TIME:	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
KANENGO SUBSTATION	0 585 539	8 463534	1 103 (m)	0.200-1.200
TYPE OF MATERIAL: MOIST REDDISH BROWN SANDY SILTY CLAY WITH SPOTS OF HARD ROCK				
TESTED BY: G.KONDE		DATE: 10 - 04 - 2019	TIME: 11:55	
CHECKED BY: G. KACHIWALA		DATE: 10 - 04 - 2019	TIME: 13:36	
APPROVED BY: M. SABELLI		DATE: 10 - 04 - 2019	TIME: 14:18	

PROJECT: KANENGO SUBSTATION **CLIENT:** YEC

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
TEST No.	1	2	3	4	1	2	3
CONTAINER No.	R30		C29		I	O	A
MASS OF WET SOIL + CONTAINER(g)	45.5		48.5		36.5	37.0	37.5
MASS OF DRY SOIL + CONTAINER(g)	40.5		41.5		34.0	34.5	35.5
MASS OF CONTAINER (g)	28.5		28		25.5	26.5	27.5
MASS OF DRY SOIL (g)	12.0		13.5		8.5	8.0	8.0
MASS OF WATER (g)	5.00		7.00		2.50	2.50	2.00
MOISTURE CONTENT %	41.7	42.5	51.9	50.3	29.4	31.3	25.0
No. BLOWS	33		19			28.6	

LINEAR SHRINKAGE	6
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	12.3
LINEAR SHRINKAGE %	13.8
LIQUID LIMIT (LL) %	46.4
PLASTIC LIMIT (PL) %	28.6
PLASTICITY INDEX (PI)	**18**
NATURAL MOISTURE CONTENT %	20.4
FINENESS INDEX	1124.0



REMARKS: SAMPLED FROM KANENGO SUBSTATION / BOREHOLE 02 / DEPTH 0.200 - 1.200 (m)

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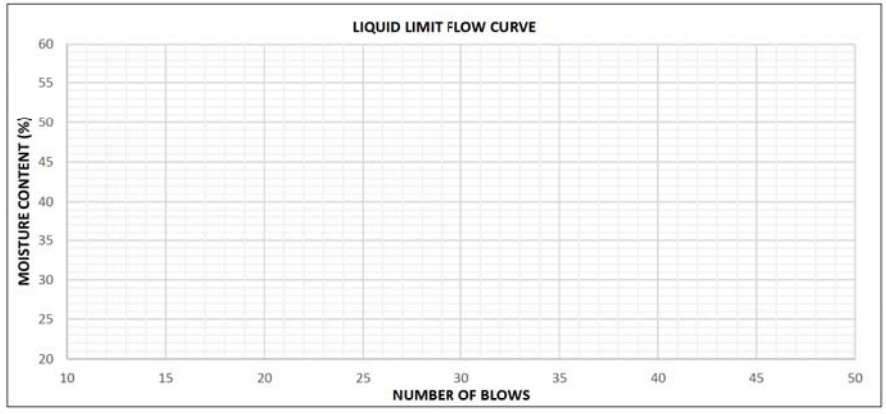
LAB REF: GC469 / 30MAR19 / 17:00		SAMPLE No. KAN-SUB / BH04 / AL03 / 30MAR19		
SAMPLED BY: GEOCONSULT		DATE: 27 - 03 - 2019	TIME:	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
KANENGO SUBSTATION	0 585 539	8 463534	1 103 (m)	1.200-2.200
TYPE OF MATERIAL: MOIST MOLTLED MICACIOUS DECOMPOSED ROCK				
TESTED BY: S.MATCHADO		DATE: 02 - 04 - 2019	TIME: 11:55	
CHECKED BY: G. KACHIWALA		DATE: 03 - 04 - 2019	TIME: 13:36	
APPROVED BY: M. SABELLI		DATE: 03 - 04 - 2019	TIME: 14:18	

PROJECT: KANENGO SUBSTATION **CLIENT:** YEC

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
TEST No.	1	2	3	4	1	2	3
CONTAINER No.	NP	NP	NP	NP	NP	NP	NP
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	8
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	14.0
LINEAR SHRINKAGE %	0.0
LIQUID LIMIT (LL) %	0.0
PLASTIC LIMIT (PL) %	0.0
PLASTICITY INDEX (PI)	**NP**
NATURAL MOISTURE CONTENT %	24.5
FINENESS INDEX	0.0



REMARKS: SAMPLED FROM KANENGO SUBSTATION / BOREHOLE 02 / DEPTH 1.200 -2 .200 (m)

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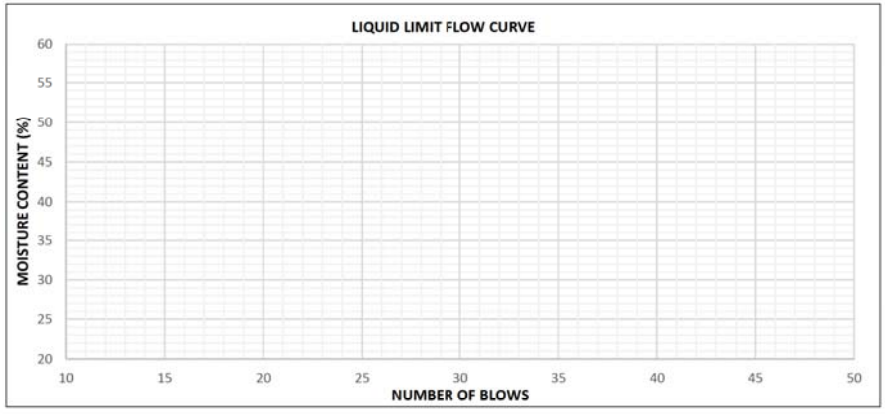
LAB REF: GC469 / 30MAR19 / 17:00		SAMPLE No. KAN-SUB / BH04 / AL04 / 30MAR19		
SAMPLED BY: GEOCONSULT		DATE: 27 - 03 - 2019	TIME:	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
KANENGO SUBSTATION	0 585 539	8 463534	1 103 (m)	2.200-4.000
TYPE OF MATERIAL: MOIST GREENISH GREY MICACIOUS DECOMPOSED ROCK				
TESTED BY: S.MATCHADO		DATE: 02 - 04 - 2019	TIME: 11:55	
CHECKED BY: G. KACHIWALA		DATE: 03 - 04 - 2019	TIME: 13:36	
APPROVED BY: M. SABELLI		DATE: 03 - 04 - 2019	TIME: 14:18	

PROJECT: KANENGO SUBSTATION **CLIENT:** YEC

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
TEST No.	1	2	3	4	1	2	3
CONTAINER No.	NP	NP	NP	NP	NP	NP	NP
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)	14.0
LINEAR SHRINKAGE %	0.0
LIQUID LIMIT (LL) %	0.0
PLASTIC LIMIT (PL) %	0.0
PLASTICITY INDEX (PI)	**NP**
NATURAL MOISTURE CONTENT %	28.7
FINENESS INDEX	0.0



REMARKS: SAMPLED FROM KANENGO SUBSTATION / BOREHOLE 02 / DEPTH 2.200 -4 .400 (m)

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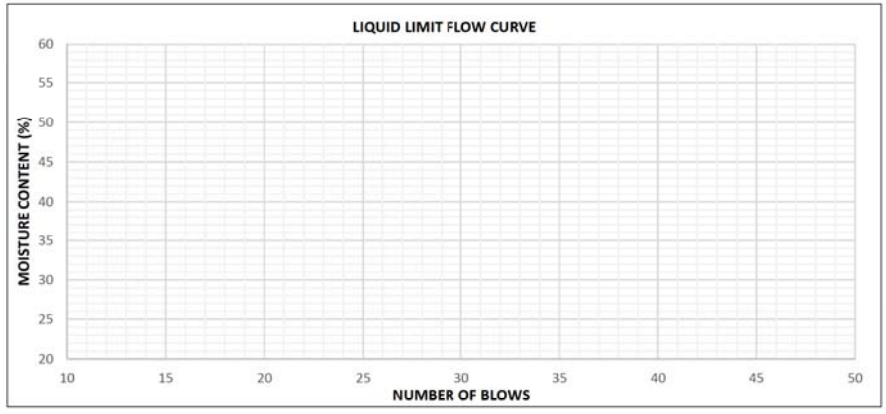
LAB REF: GC465 / 26MAR19 / 17:00		SAMPLE No. KAN-SUB / BH05 / AL01 / 26MAR19		
SAMPLED BY: GEOCONSULT		DATE: 26 - 03 - 2019	TIME:	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
KANENGO SUBSTATION	0 585 448	8 463 528	1 100 (m)	0.200-0.400
TYPE OF MATERIAL: MOIST IMPORTED RED SANDY SILTY CLAY				
TESTED BY: S. MATCHADO		DATE: 10 - 04 - 2019	TIME: 11:23	
CHECKED BY: G. KACHIWALA		DATE: 10 - 04 - 2019	TIME: 13:36	
APPROVED BY: M. SABELLI		DATE: 10 - 04 - 2019	TIME: 14:18	

PROJECT: KANENGO SUBSTATION **CLIENT:** YEC

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
TEST No.	1	2	3	4	1	2	3
CONTAINER No.	C27		C5		C15	R13	C3
MASS OF WET SOIL + CONTAINER(g)	54.0		55.5		46.5	42.5	36.5
MASS OF DRY SOIL + CONTAINER(g)	47.0		47.0		44.0	40.5	34.5
MASS OF CONTAINER (g)	29.5		28.5		30	29	23
MASS OF DRY SOIL (g)	17.5		18.5		14.0	11.5	11.5
MASS OF WATER (g)	7.00		8.50		2.50	2.00	2.00
MOISTURE CONTENT %	40.0	40.0	45.9	44.6	17.9	17.4	17.4
No. BLOWS	26		19			17.5	

LINEAR SHRINKAGE	11
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	12.4
LINEAR SHRINKAGE %	12.9
LIQUID LIMIT (LL) %	42.3
PLASTIC LIMIT (PL) %	17.5
PLASTICITY INDEX (PI)	**25**
NATURAL MOISTURE CONTENT %	18.9
FINENESS INDEX	1200.0



REMARKS: SAMPLED FROM KANENGO SUBSTATION / BOREHOLE 05 / DEPTH 0.200 - 0.400 (m)

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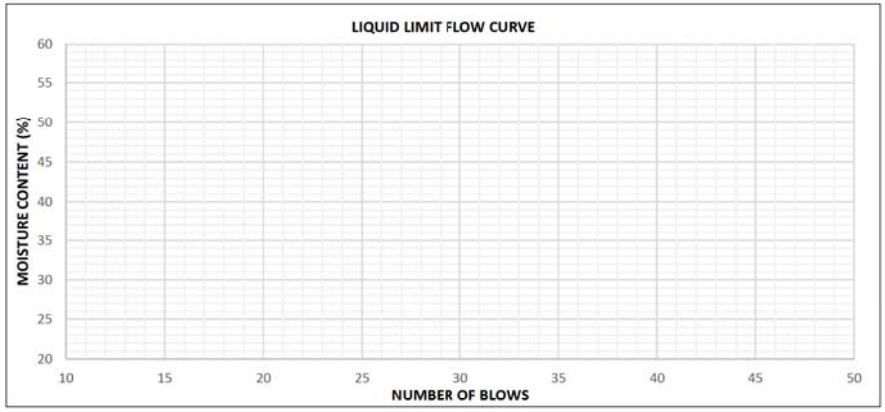
LAB REF: GC465 / 26MAR19 / 17:00		SAMPLE No. KAN-SUB / BH05 / AL02 / 26MAR19		
SAMPLED BY: GEOCONSULT		DATE: 26 - 03 - 2019	TIME:	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
KANENGO SUBSTATION	0 585 448	8 463 528	1 100 (m)	0.400-1.000
TYPE OF MATERIAL: MOIST DARK REDDISH SILTY SANDY CLAY				
TESTED BY: S. MATCHADO		DATE: 10 - 04 - 2019	TIME: 11:20	
CHECKED BY: G. KACHIWALA		DATE: 10 - 04 - 2019	TIME: 13:36	
APPROVED BY: M. SABELLI		DATE: 10 - 04 - 2019	TIME: 14:18	

PROJECT: KANENGO SUBSTATION **CLIENT:** YEC

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
TEST No.	1	2	3	4	1	2	3
CONTAINER No.	C10		R24		C29	C12	C31
MASS OF WET SOIL + CONTAINER(g)	60.5		60.5		42.5	40.5	43.0
MASS OF DRY SOIL + CONTAINER(g)	52.5		52.0		40.0	38.0	40.5
MASS OF CONTAINER (g)	31.5		31.5		29.5	27.5	30
MASS OF DRY SOIL (g)	21.0		20.5		10.5	10.5	10.5
MASS OF WATER (g)	8.00		8.50		2.50	2.50	2.50
MOISTURE CONTENT %	38.1	38.5	41.5	41.0	23.8	23.8	23.8
No. BLOWS	29		24			23.8	

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) %	39.8
PLASTIC LIMIT (PL) %	23.8
PLASTICITY INDEX (PI)	**16**
NATURAL MOISTURE CONTENT %	20.4
FINENESS INDEX	768.0



REMARKS: SAMPLED FROM KANENGO SUBSTATION / BOREHOLE 02 / DEPTH 0.400 - 1.000 (m)

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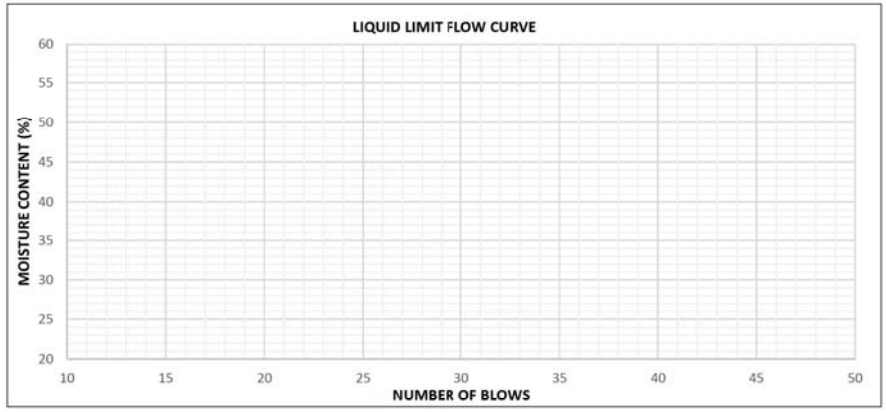
LAB REF: GC465 / 26MAR19 / 17:00		SAMPLE No. KAN-SUB / BH05 / AL03 / 26MAR19		
SAMPLED BY: GEOCONSULT		DATE: 26 - 03 - 2019	TIME:	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
KANENGO SUBSTATION	0 585 448	8 463 528	1 100 (m)	2.600-3.400
TYPE OF MATERIAL: VERY MOIST SOFT RED BLACKISH SANDY SILTY CLAY				
TESTED BY: S. MATCHADO		DATE: 10 - 04 - 2019	TIME: 13:55	
CHECKED BY: G. KACHIWALA		DATE: 10 - 04 - 2019	TIME: 13:36	
APPROVED BY: M. SABELLI		DATE: 10 - 04 - 2019	TIME: 14:18	

PROJECT: KANENGO SUBSTATION **CLIENT:** YEC

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
TEST No.	1	2	3	4	1	2	3
CONTAINER No.	C25		R		R20	C10	C25
MASS OF WET SOIL + CONTAINER(g)	54.0		52.0		50.5	56.5	43.0
MASS OF DRY SOIL + CONTAINER(g)	47.0		42.0		45.5	51.0	39.5
MASS OF CONTAINER (g)	32		22		28	31.5	27
MASS OF DRY SOIL (g)	15.0		20.0		17.5	19.5	12.5
MASS OF WATER (g)	7.00		10.00		5.00	5.50	3.50
MOISTURE CONTENT %	46.7	47.6	50.0	50.0	28.6	28.2	28.0
No. BLOWS	30		26			28.3	

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) %	48.8
PLASTIC LIMIT (PL) %	28.3
PLASTICITY INDEX (PI)	**21**
NATURAL MOISTURE CONTENT %	28.9
FINENESS INDEX	903.0



REMARKS: SAMPLED FROM KANENGO SUBSTATION / BOREHOLE 02 / DEPTH 2.600 - 3.400 (m)

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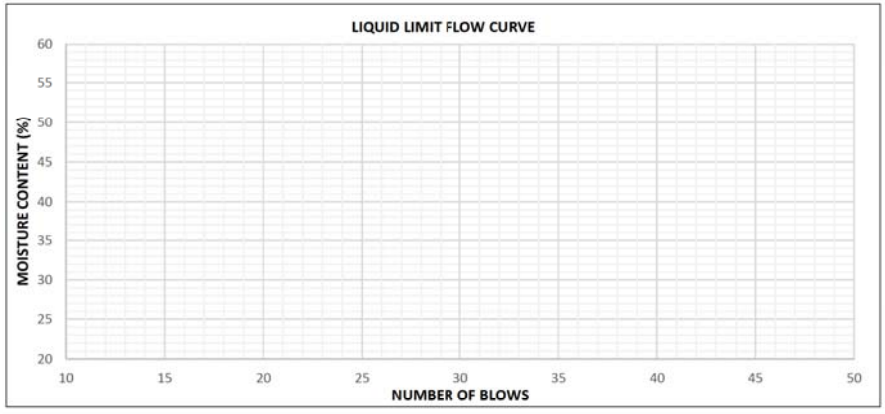
LAB REF: GC465 / 26MAR19 / 17:00		SAMPLE No. KAN-SUB / BH05 / AL04 / 26MAR19		
SAMPLED BY: GEOCONSULT		DATE: 26 - 03 - 2019	TIME:	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
KANENGO SUBSTATION	0 585 448	8 463 528	1 100 (m)	3.400-4.500
TYPE OF MATERIAL: MOIST SOFT BLACK SANDY SILTY CLAY				
TESTED BY: S. MATCHADO		DATE: 10 - 04 - 2019	TIME: 13:55	
CHECKED BY: G. KACHIWALA		DATE: 10 - 04 - 2019	TIME: 13:36	
APPROVED BY: M. SABELLI		DATE: 10 - 04 - 2019	TIME: 14:18	

PROJECT: KANENGO SUBSTATION **CLIENT:** YEC

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
TEST No.	1	2	3	4	1	2	3
CONTAINER No.	C27		R8		R19	R28	C20
MASS OF WET SOIL + CONTAINER(g)	54.5		57.0		58.0	51.0	43.0
MASS OF DRY SOIL + CONTAINER(g)	47.5		49.5		53.5	47.0	40.0
MASS OF CONTAINER (g)	29.5		31.5		33	29	26.5
MASS OF DRY SOIL (g)	18.0		18.0		20.5	18.0	13.5
MASS OF WATER (g)	7.00		7.50		4.50	4.00	3.00
MOISTURE CONTENT %	38.9	38.9	41.7	41.7	22.0	22.2	22.2
No. BLOWS	25		26			22.1	

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) %	40.3
PLASTIC LIMIT (PL) %	22.1
PLASTICITY INDEX (PI)	**18**
NATURAL MOISTURE CONTENT %	32.6
FINENESS INDEX	630.0



REMARKS: SAMPLED FROM KANENGO SUBSTATION / BOREHOLE 02 / DEPTH 3.400 - 4.500 (m)

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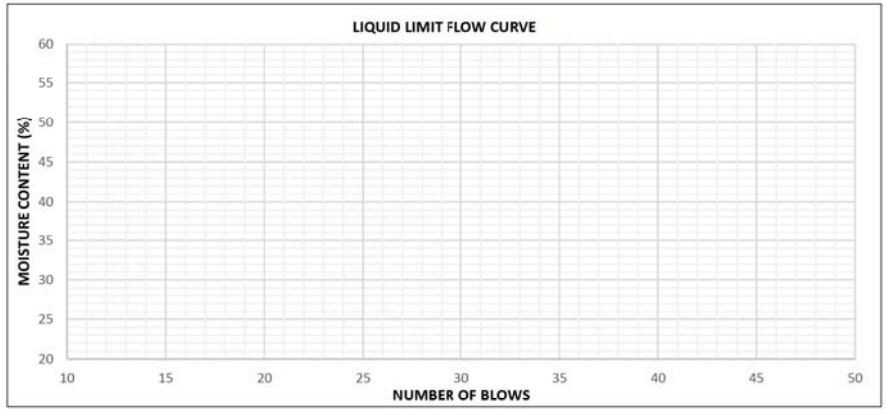
LAB REF: GC465 / 26MAR19 / 17:00		SAMPLE No. KAN-SUB / BH05 / AL05 / 26MAR19		
SAMPLED BY: GEOCONSULT		DATE: 26 - 03 - 2019	TIME:	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
KANENGO SUBSTATION	0 585 448	8 463 528	1 100 (m)	4.500-4.800
TYPE OF MATERIAL: MOIST SOFT DARK REDDISH MICACIOUS SANDY SILTY CLAY				
TESTED BY: S. MATCHADO		DATE: 10 - 04 - 2019	TIME: 13:55	
CHECKED BY: G. KACHIWALA		DATE: 10 - 04 - 2019	TIME: 13:36	
APPROVED BY: M. SABELLI		DATE: 10 - 04 - 2019	TIME: 14:18	

PROJECT: KANENGO SUBSTATION **CLIENT:** YEC

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
TEST No.	1	2	3	4	1	2	3
CONTAINER No.	C5		R24		C11	C8	C22
MASS OF WET SOIL + CONTAINER(g)	50.0		55.0		56.0	54.5	43.0
MASS OF DRY SOIL + CONTAINER(g)	43.5		47.0		50.5	49.0	40.0
MASS OF CONTAINER (g)	28.5		30.5		30	28.5	28.5
MASS OF DRY SOIL (g)	15.0		16.5		20.5	20.5	11.5
MASS OF WATER (g)	6.50		8.00		5.50	5.50	3.00
MOISTURE CONTENT %	43.3	43.8	48.5	48.0	26.8	26.8	26.1
No. BLOWS	29		22			26.6	

LINEAR SHRINKAGE	11
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	12.8
LINEAR SHRINKAGE %	9.4
LIQUID LIMIT (LL) %	45.9
PLASTIC LIMIT (PL) %	26.6
PLASTICITY INDEX (PI)	**19**
NATURAL MOISTURE CONTENT %	30.3
FINENESS INDEX	969.0



REMARKS: SAMPLED FROM KANENGO SUBSTATION / BOREHOLE 02 / DEPTH 4.500 - 4.800 (m)

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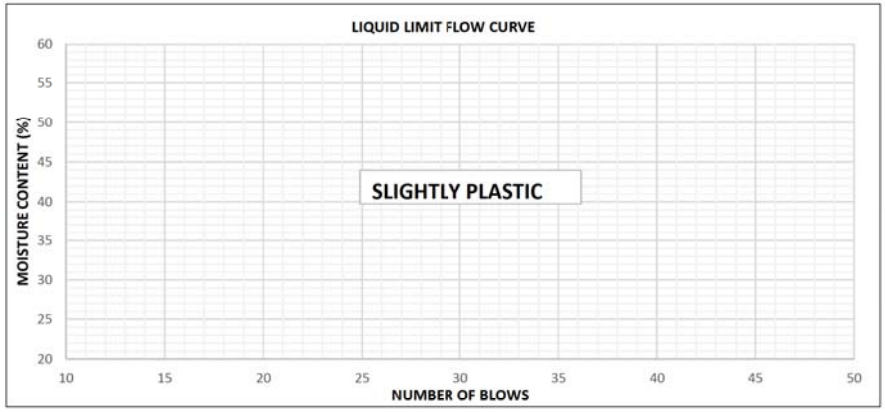
LAB REF: GC465 / 26MAR19 / 17:00		SAMPLE No. KAN-SUB / BH05 / AL06/ 26MAR19		
SAMPLED BY: GEOCONSULT		DATE: 26 - 03 - 2019	TIME:	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
KANENGO SUBSTATION	0 585 448	8 463 528	1 100 (m)	4.800-7.000
TYPE OF MATERIAL: MOIST SOFT DECOMPOSED ROCK WITH MICCA				
TESTED BY: S. MATCHADO		DATE: 10 - 04 - 2019	TIME: 14:55	
CHECKED BY: G. KACHIWALA		DATE: 10 - 04 - 2019	TIME: 13:36	
APPROVED BY: M. SABELLI		DATE: 10 - 04 - 2019	TIME: 14:18	

PROJECT: KANENGO SUBSTATION **CLIENT:** YEC

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
TEST No.	1	2	3	4	1	2	3
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	11
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 %	34.6
FINENESS INDEX	0.0



REMARKS: SAMPLED FROM KANENGO SUBSTATION / BOREHOLE 02 / DEPTH 4.800 - 7.000 (m)

4.4 Gradation

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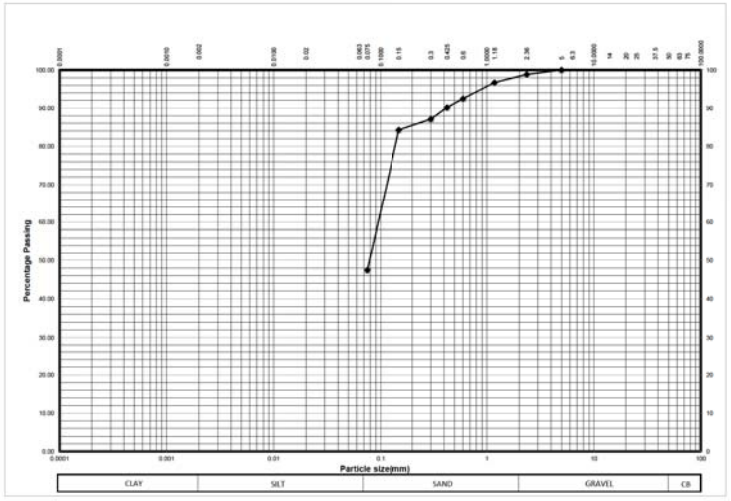
LAB REF: GC466 / 27MAR19 / 17:00		SAMPLE No. KANE-SUB / BH01 / G001 / 27MAR19		
SAMPLED BY: GEOCONSULT		DATE: 27 - 03 - 2019	TIME:	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
KANENGO SUBSTATION	0 585 460	8 463 646	1 096(m)	0.000-0.100
TYPE OF MATERIAL: MOIST DARK SANDY SILTY CLAY WITH CRUSHED AGGREGATES				
TESTED BY: G. KONDE		DATE: 02 - 04 - 2019	TIME: 09:47	
CHECKED BY: G. KACHIWALA		DATE: 04 - 04- 2019	TIME: 14:00	
APPROVED BY: M. SABELLI		DATE: 04 - 04- 2019	TIME: 15:00	
PROJECT: KANENGO SUBSTATION		**CLIENT:** YEC		

SIEVE ANALYSIS (GRADATION) STANDARD: BS 1377

SIEVE	MASS	PERCENTAGE			GRADATION SPECIFICATION			ZONE
(mm)	RETAINED	RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.000								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300								
5.000	0.0	0.00	100.00	100				
2.360	5.0	1.17	98.83	99				
1.180	14.0	3.27	96.73	97				
0.600	32.0	7.48	92.52	93				
0.425	42.0	9.81	90.19	90				
0.300	55.0	12.85	87.15	87				
0.150	67.0	15.65	84.35	84				
0.075	225.0	52.57	47.43	47				
0 pan	203.0	47.43						
TOTAL (g)	428.0							



REMARKS: SAMPLED FROM KANENGO SUBSTATION / BOREHOLE 01 / DEPTH 0.000 - 0.100 (m)

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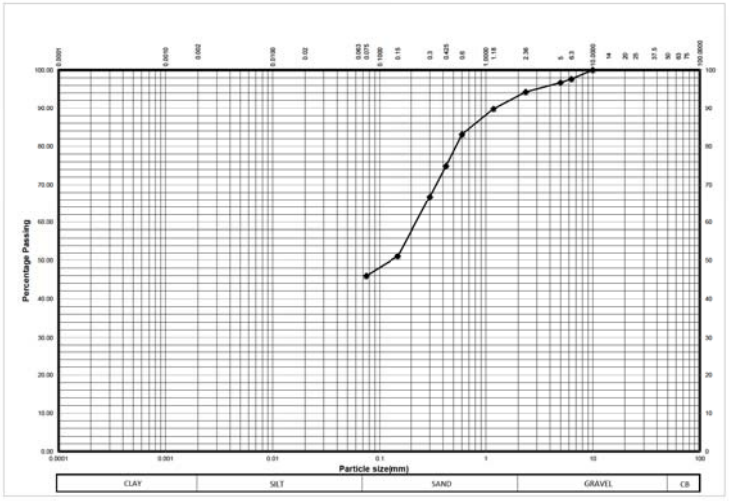
LAB REF: GC466 / 27MAR19 / 17:00		SAMPLE No. KANE-SUB / BH01 / G002 / 27MAR19		
SAMPLED BY: GEOCONSULT		DATE: 27 - 03 - 2019	TIME:	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
KANENGO SUBSTATION	0 585 460	8 463 646	1 096(m)	0.1-1.0
TYPE OF MATERIAL: MOIST DARK REDDISH SANDY SILT				
TESTED BY: G. KONDE		DATE: 06 - 04 - 2019	TIME: 09:47	
CHECKED BY: G. KACHIWALA		DATE: 10 - 04- 2019	TIME: 14:00	
APPROVED BY: M. SABELLI		DATE: 10 - 04- 2019	TIME: 15:00	
PROJECT: KANENGO SUBSTATION		**CLIENT:** YEC		

SIEVE ANALYSIS (GRADATION) STANDARD: BS 1377

SIEVE	MASS	PERCENTAGE			GRADATION SPECIFICATION			ZONE
(mm)	RETAINED	RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.000								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000	0.0	0.00	100.00	100				
6.300	10.0	2.34	97.66	98				
5.000	14.0	3.27	96.73	97				
2.360	24.5	5.72	94.28	94				
1.180	43.5	10.16	89.84	90				
0.600	72.0	16.82	83.18	83				
0.425	107.5	25.12	74.88	75				
0.300	142.0	33.18	66.82	67				
0.150	209.5	48.95	51.05	51				
0.075	231.5	54.09	45.91	46				
0 pan	196.5	45.91						
TOTAL (g)	428.0							



REMARKS: SAMPLED FROM KANENGO SUBSTATION / BOREHOLE 01 / DEPTH 0.100 - 1.000 (m)

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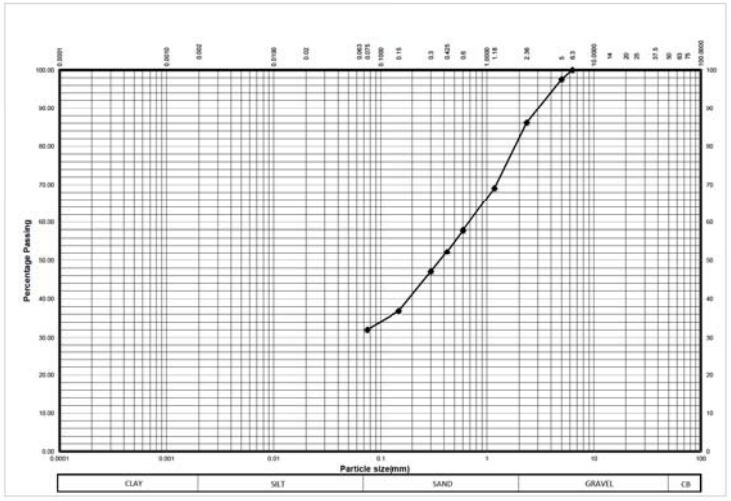
LAB REF: GC466 / 27MAR19 / 17:00		SAMPLE No. KANE-SUB / BH01 / G003 / 27MAR19		
SAMPLED BY: GEOCONSULT		DATE: 27 - 03 - 2019	TIME:	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
KANENGO SUBSTATION	0 585 460	8 463 646	1 096(m)	1.0-1.2
TYPE OF MATERIAL: MOIST YELLOW REDDISH SILTY SANDY CLAY				
TESTED BY: G. KONDE		DATE: 06 - 04 - 2019	TIME: 09:47	
CHECKED BY: G. KACHIWALA		DATE: 10 - 04- 2019	TIME: 14:00	
APPROVED BY: M. SABELLI		DATE: 10 - 04- 2019	TIME: 15:00	

PROJECT: KANENGO SUBSTATION **CLIENT:** YEC

SIEVE ANALYSIS (GRADATION) STANDARD: BS 1377

SIEVE	MASS	PERCENTAGE			GRADATION SPECIFICATION			ZONE
(mm)	RETAINED	RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.000								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300	0.0	0.00	100.00	100				
5.000	7.5	2.43	97.57	98				
2.360	42.5	13.75	86.25	86				
1.180	95.5	30.91	69.09	69				
0.600	130.0	42.07	57.93	58				
0.425	147.5	47.73	52.27	52				
0.300	163.5	52.91	47.09	47				
0.150	195.0	63.11	36.89	37				
0.075	210.0	67.96	32.04	32				
0 pan	99.0	32.04						
TOTAL (g)	309.0							



REMARKS: SAMPLED FROM KANENGO SUBSTATION / BOREHOLE 01 / DEPTH 1.000 - 1.200 (m)

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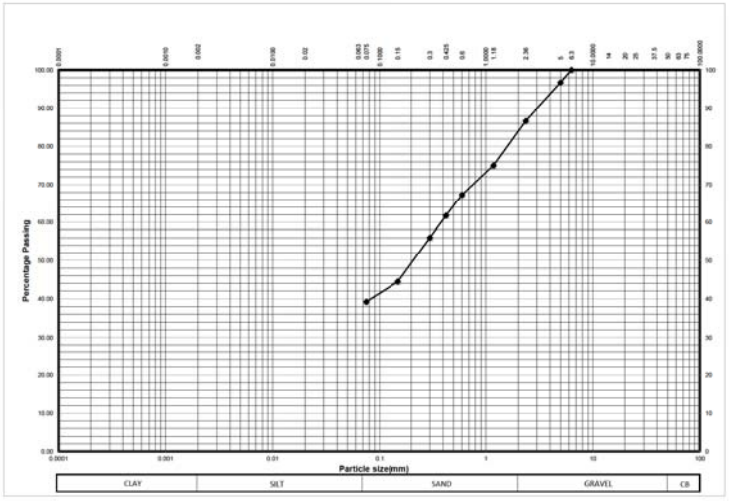
LAB REF: GC466 / 27MAR19 / 17:00		SAMPLE No. KANE-SUB / BH01 / G004 / 27MAR19		
SAMPLED BY: GEOCONSULT		DATE: 27 - 03 - 2019	TIME:	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
KANENGO SUBSTATION	0 585 460	8 463 646	1 096(m)	1.20-1.70
TYPE OF MATERIAL: MOIST DARK REDDISH SILTY SANDY CLAY				
TESTED BY: G. KONDE		DATE: 06 - 04 - 2019	TIME: 09:47	
CHECKED BY: G. KACHIWALA		DATE: 10 - 04- 2019	TIME: 14:00	
APPROVED BY: M. SABELLI		DATE: 10 - 04- 2019	TIME: 15:00	

PROJECT: KANENGO SUBSTATION **CLIENT:** YEC

SIEVE ANALYSIS (GRADATION) STANDARD: BS 1377

SIEVE	MASS	PERCENTAGE			GRADATION SPECIFICATION			ZONE
(mm)	RETAINED	RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.000								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300	0.0	0.00	100.00	100				
5.000	10.0	3.28	96.72	97				
2.360	40.5	13.30	86.70	87				
1.180	76.0	24.96	75.04	75				
0.600	99.5	32.68	67.32	67				
0.425	116.5	38.26	61.74	62				
0.300	134.0	44.01	55.99	56				
0.150	169.0	55.50	44.50	44				
0.075	185.0	60.76	39.24	39				
0 pan	119.5	39.24						
TOTAL (g)	304.5							



REMARKS: SAMPLED FROM KANENGO SUBSTATION / BOREHOLE 01 / DEPTH 1.200 - 1.700 (m)

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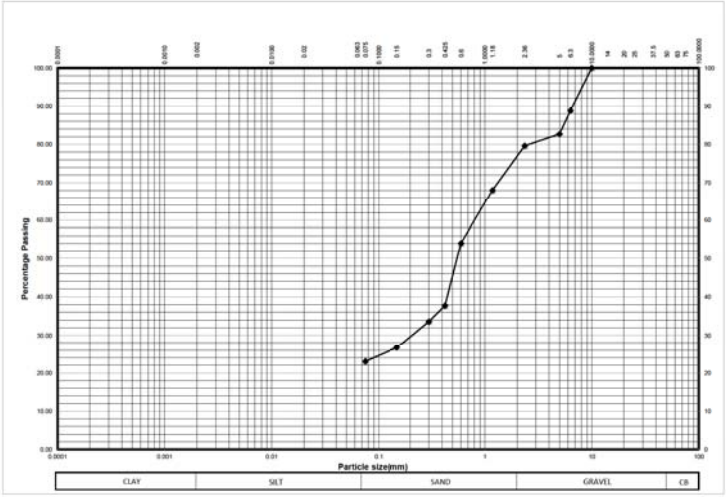
LAB REF: GC466 / 27MAR19 / 17:00			SAMPLE No. KANE-SUB / BH01 / G005 / 27MAR19		
SAMPLED BY: GEOCONSULT			DATE: 27 - 03 - 2019	TIME:	
LOCATION: 36L UTM	EASTING		NORTHING	ELEVATION	DEPTH (m)
KANENGO SUBSTATION	0 585 460		8 463 646	1 096(m)	1.700-2.400
TYPE OF MATERIAL: MOIST DECOMPOSED ROCK					
TESTED BY: G. KONDE			DATE: 06 - 04 - 2019	TIME: 10:47	
CHECKED BY: G. KACHIWALA			DATE: 10 - 04- 2019	TIME: 14:00	
APPROVED BY: M. SABELLI			DATE: 10 - 04- 2019	TIME: 15:00	

PROJECT: KANENGO SUBSTATION **CLIENT:** YEC

SIEVE ANALYSIS (GRADATION) STANDARD: BS 1377

SIEVE	MASS	PERCENTAGE			GRADATION SPECIFICATION			ZONE
(mm)	RETAINED	RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.000								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000	0.0	0.00	100.00	100				
6.300	45.5	11.15	88.85	89				
5.000	70.5	17.28	82.72	83				
2.360	83.0	20.34	79.66	80				
1.180	130.5	31.99	68.01	68				
0.600	187.5	45.96	54.04	54				
0.425	254.0	62.25	37.75	38				
0.300	271.0	66.42	33.58	34				
0.150	299.0	73.28	26.72	27				
0.075	314.0	76.96	23.04	23				
0 pan	94.0	23.04						
TOTAL (g)	408.0							



REMARKS: SAMPLED FROM KANENGO SUBSTATION / BOREHOLE 01 / DEPTH 1.700 - 2.400 (m)

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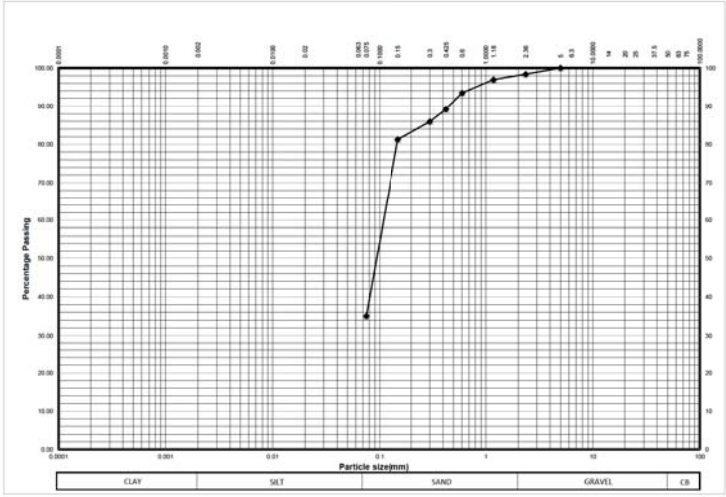
LAB REF: GC468/ 29MAR19 / 17:00			SAMPLE No. KAN-SUB / BH02 / G001 / 27MAR19		
SAMPLED BY: GEOCONSULT			DATE: 29 - 03 - 2019	TIME:	
LOCATION: 36L UTM	EASTING		NORTHING	ELEVATION	DEPTH (m)
KANENGO SUBSTATION	0 585434		8 463638	1 120 (m)	0.000-0.300
TYPE OF MATERIAL: MOIST SLIGHTLY DARK REDDISH SANDY SILTY CLAY					
TESTED BY: S. MATCHADO			DATE: 02 - 04 - 2019	TIME: 15:23	
CHECKED BY: G. KACHIWALA			DATE: 03 - 04 - 2019	TIME: 13:36	
APPROVED BY: M. SABELLI			DATE: 03 - 04 - 2019	TIME: 14:18	

PROJECT: KANENGO SUBSTATION **CLIENT:** YEC

SIEVE ANALYSIS (GRADATION) STANDARD: BS 1377

SIEVE	MASS	PERCENTAGE			GRADATION SPECIFICATION			ZONE
(mm)	RETAINED	RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.000								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300								
5.000	0.0	0.00	100.00	100				
2.360	7.0	1.64	98.36	98				
1.180	13.0	3.04	96.96	97				
0.600	28.0	6.54	93.46	93				
0.425	46.0	10.75	89.25	89				
0.300	60.0	14.02	85.98	86				
0.150	80.0	18.69	81.31	81				
0.075	278.0	64.95	35.05	35				
0 pan	130.0	30.37						
TOTAL (g)	428.0							



REMARKS: SAMPLED FROM KANENGO SUBSTATION / BOREHOLE 02 / DEPTH0. 000 - 0.300 (m)

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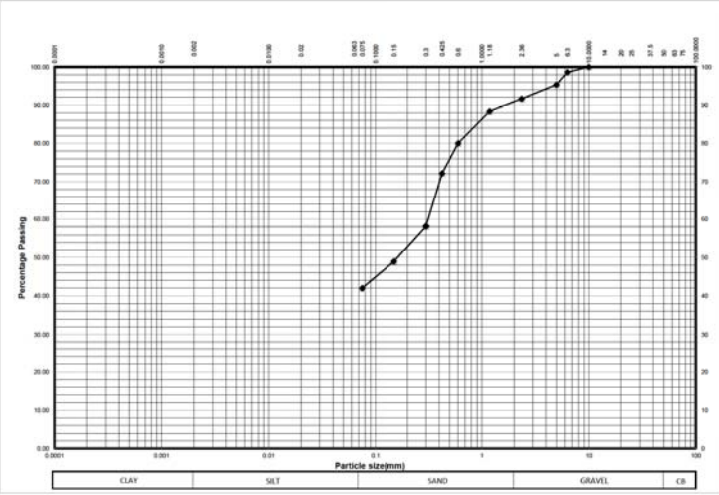
LAB REF: GC468 / 29MAR19 / 17:00			SAMPLE No. KAN-SUB / BH02 / GR02 / 29MAR19		
SAMPLED BY: GEOCONSULT			DATE: 29 - 03 - 2019	TIME: 15:00	
LOCATION: 36L UTM	EASTING		NORTHING	ELEVATION	DEPTH (m)
KANENGO SUBSTATION	0 585434		8 463638	1 120 (m)	0.300-3.000
TYPE OF MATERIAL: MOIST ORANGE REDDISH CLAYEY SILTY SANDY WITH TRACES OF DECOMPOSED ROCKS					
TESTED BY: G.KONDE			DATE: 02 - 04 - 2019	TIME: 15:00	
CHECKED BY: G. KACHIWALA			DATE: 03 - 04 - 2019	TIME: 13:36	
APPROVED BY: M. SABELLI			DATE: 03 - 04 - 2019	TIME: 14:18	
PROJECT: KANENGO SUBSTATION		**CLIENT:** YEC			

SIEVE ANALYSIS (GRADATION) STANDARD: BS 1377

SIEVE	MASS	PERCENTAGE			GRADATION SPECIFICATION			ZONE
(mm)	RETAINED	RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.000								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000	0.0	0.00	100.00	100				
6.300	6.0	1.39	98.61	99				
5.000	20.0	4.64	95.36	95				
2.360	36.0	8.35	91.65	92				
1.180	50.0	11.60	88.40	88				
0.600	86.0	19.95	80.05	80				
0.425	120.0	27.84	72.16	72				
0.300	180.0	41.76	58.24	58				
0.150	220.0	51.04	48.96	49				
0.075	250.0	58.00	42.00	42				
0 pan	181.0	42.00						
TOTAL (g)	431.0							



REMARKS: SAMPLED FROM KANENGO SUBSTATION / BOREHOLE 02 / DEPTH 0. 300 - 3.000 (m)

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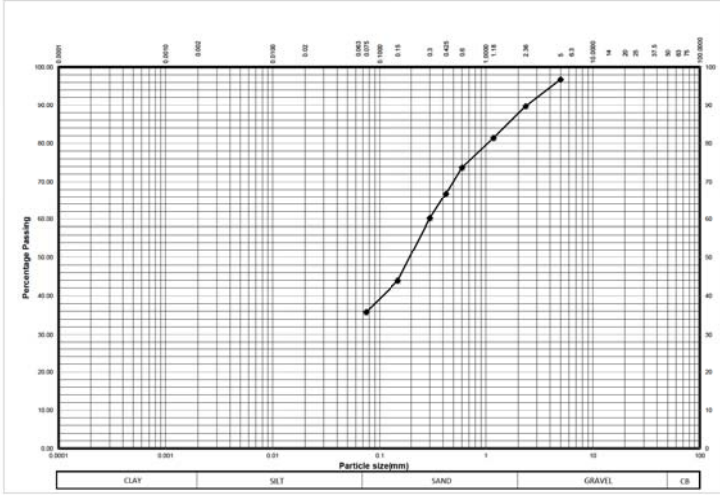
LAB REF: GC465 / 26MAR19 / 17:00			SAMPLE No. KANE-SUB / BH03 / G001 / 26MAR19		
SAMPLED BY: GEOCONSULT			DATE: 29 - 03 - 2019	14:01	
LOCATION: 36L UTM	EASTING		NORTHING	ELEVATION	DEPTH (m)
KANENGO SUBSTATION	0 585549		8 463574	1093 (m)	0.000-0.500
TYPE OF MATERIAL:MOIST IMPORTED RED SANDY SILTY CLAY					
TESTED BY: Y.NANG'OMBA			DATE: 03 - 04 - 2019	TIME: 09:47	
CHECKED BY: G. KACHIWALA			DATE: 04 - 04- 2019	TIME: 14:00	
APPROVED BY: M. SABELLI			DATE: 04 - 04- 2019	TIME: 15:00	
PROJECT: KANENGO SUBSTATION		**CLIENT:** YEC			

SIEVE ANALYSIS (GRADATION) STANDARD: BS 1377

SIEVE	MASS	PERCENTAGE			GRADATION SPECIFICATION			ZONE
(mm)	RETAINED	RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.000								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300	7.5							
5.000	11.5	3.23	96.77	97				
2.360	36.5	10.25	89.75	90				
1.180	66.0	18.54	81.46	81				
0.600	93.5	26.26	73.74	74				
0.425	118.0	33.15	66.85	67				
0.300	141.5	39.75	60.25	60				
0.150	199.5	56.04	43.96	44				
0.075	228.5	64.19	35.81	36				
0 pan	127.5	35.81						
TOTAL (g)	356.0							



REMARKS: SAMPLED FROM KANENGO SUBSTATION / BOREHOLE 03 / DEPTH 0.000 - 0.500 (m)

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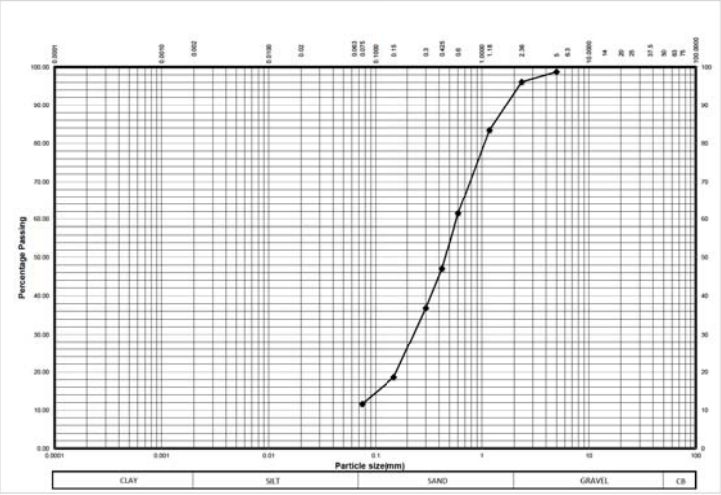
LAB REF: GC465 / 26MAR19 / 17:00			SAMPLE No. KANE-SUB / BH03 / G002 / 26MAR19		
SAMPLED BY: GEOCONSULT			DATE: 29 - 03 - 2019	14:01	
LOCATION: 36L UTM	EASTING		NORTHING	ELEVATION	DEPTH (m)
KANENGO SUBSTATION	0 585549		8 463574	1093 (m)	0.500-2.000
TYPE OF MATERIAL:MOIST SOFT DECOMPOSED ROCK					
TESTED BY: Y.NANG'OMBA			DATE: 03 - 04 - 2019	TIME: 07:47	
CHECKED BY: G. KACHIWALA			DATE: 04 - 04- 2019	TIME: 14:10	
APPROVED BY: M. SABELLI			DATE: 04 - 04- 2019	TIME: 15:00	
PROJECT: KANENGO SUBSTATION		**CLIENT:** YEC			

SIEVE ANALYSIS (GRADATION) STANDARD: BS 1377

SIEVE	MASS	PERCENTAGE			GRADATION SPECIFICATION			ZONE
(mm)	RETAINED	RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.000								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300	3.5							
5.000	4.5	1.26	98.74	99				
2.360	14.0	3.92	96.08	96				
1.180	59.0	16.53	83.47	83				
0.600	137.5	38.52	61.48	61				
0.425	189.0	52.94	47.06	47				
0.300	225.5	63.17	36.83	37				
0.150	290.5	81.37	18.63	19				
0.075	315.5	88.38	11.62	12				
0 pan	41.5	11.62						
TOTAL (g)	357.0							



REMARKS: SAMPLED FROM KANENGO SUBSTATION / BOREHOLE 03 / DEPTH 0.500 - 2.000 (m)

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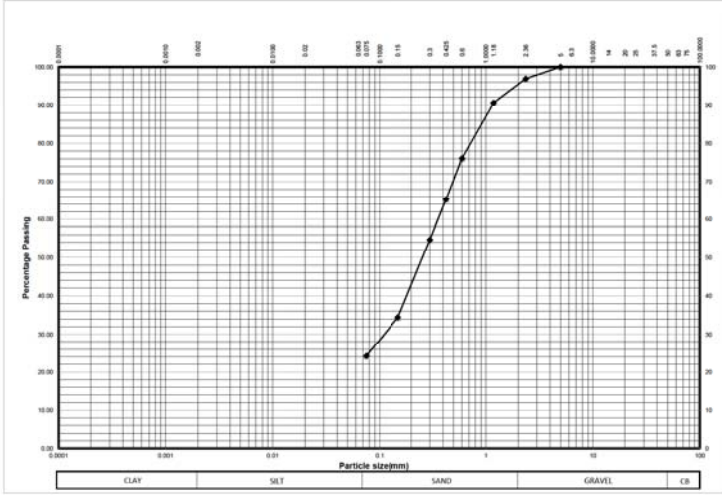
LAB REF: GC469 / 30MAR19 / 17:00			SAMPLE No. KANE-SUB / BH04 / G001 / 30MAR19		
SAMPLED BY: GEOCONSULT			DATE: 29 - 03 - 2019	16:06	
LOCATION: 36L UTM	EASTING		NORTHING	ELEVATION	DEPTH (m)
KANENGO SUBSTATION	0 585539		8 463534	1103 (m)	0.000-0.200
TYPE OF MATERIAL:MOIST IMPORTED COARSE MINERAL AGGREGATES					
TESTED BY: Y.NANG'OMBA			DATE: 03 - 04 - 2019	TIME: 09:47	
CHECKED BY: G. KACHIWALA			DATE: 04 - 04- 2019	TIME: 14:00	
APPROVED BY: M. SABELLI			DATE: 04 - 04- 2019	TIME: 15:00	
PROJECT: KANENGO SUBSTATION		**CLIENT:** YEC			

SIEVE ANALYSIS (GRADATION) STANDARD: BS 1377

SIEVE	MASS	PERCENTAGE			GRADATION SPECIFICATION			ZONE
(mm)	RETAINED	RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.000								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300								
5.000		0.00	100.00	100				
2.360	13.5	3.10	96.90	97				
1.180	41.0	9.41	90.59	91				
0.600	104.0	23.88	76.12	76				
0.425	151.5	34.79	65.21	65				
0.300	197.5	45.35	54.65	55				
0.150	285.5	65.56	34.44	34				
0.075	330.0	75.77	24.23	24				
0 pan	105.5	24.23						
TOTAL (g)	435.5							



REMARKS: SAMPLED FROM KANENGO SUBSTATION / BOREHOLE 04 / DEPTH 0.000 - 0.200 (m)

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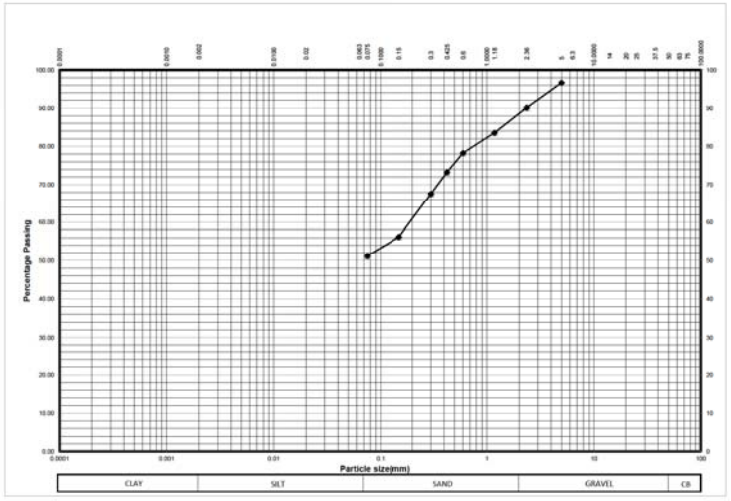
LAB REF: GC469 / 30MAR19 / 17:00			SAMPLE No. KANE-SUB / BH04 / G002 / 30MAR19		
SAMPLED BY: GEOCONSULT			DATE: 29 - 03 - 2019	16:06	
LOCATION: 36L UTM	EASTING		NORTHING	ELEVATION	DEPTH (m)
KANENGO SUBSTATION	0 585539		8 463534	1103 (m)	0.200-1.200
TYPE OF MATERIAL:MOIST REDDISH BROWN SANDY SILTY CLAY WITH SPOTS OF HARD ROCK					
TESTED BY: Y.NANG'OMBA			DATE: 03 - 04 - 2019	TIME: 09:47	
CHECKED BY: G. KACHIWALA			DATE: 04 - 04- 2019	TIME: 14:00	
APPROVED BY: M. SABELLI			DATE: 04 - 04- 2019	TIME: 15:00	
PROJECT: KANENGO SUBSTATION		**CLIENT:** YEC			

SIEVE ANALYSIS (GRADATION) STANDARD: BS 1377

SIEVE	MASS	PERCENTAGE			GRADATION SPECIFICATION			ZONE
(mm)	RETAINED	RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.000								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300	6.5							
5.000	14.5	3.33	96.67	97				
2.360	43.0	9.86	90.14	90				
1.180	71.5	16.40	83.60	84				
0.600	94.5	21.67	78.33	78				
0.425	116.5	26.72	73.28	73				
0.300	141.5	32.45	67.55	68				
0.150	191.0	43.81	56.19	56				
0.075	213.0	48.85	51.15	51				
0 pan	223.0	51.15						
TOTAL (g)	436.0							



REMARKS: SAMPLED FROM KANENGO SUBSTATION / BOREHOLE 04 / DEPTH 0.200 - 1.200 (m)

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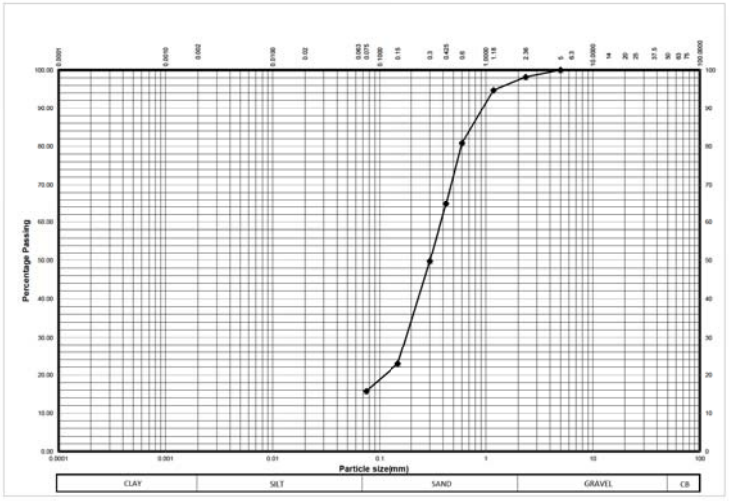
LAB REF: GC469 / 30MAR19 / 17:00			SAMPLE No. KANE-SUB / BH04 / G003 / 30MAR19		
SAMPLED BY: GEOCONSULT			DATE: 29 - 03 - 2019	16:06	
LOCATION: 36L UTM	EASTING		NORTHING	ELEVATION	DEPTH (m)
KANENGO SUBSTATION	0 585539		8 463534	1103 (m)	1.200-2.200
TYPE OF MATERIAL:MOIST MOLTLED MICACIOUS DECOMPOSED ROCK					
TESTED BY: Y.NANG'OMBA			DATE: 03 - 04 - 2019	TIME: 09:47	
CHECKED BY: G. KACHIWALA			DATE: 04 - 04- 2019	TIME: 14:00	
APPROVED BY: M. SABELLI			DATE: 04 - 04- 2019	TIME: 15:00	
PROJECT: KANENGO SUBSTATION		**CLIENT:** YEC			

SIEVE ANALYSIS (GRADATION) STANDARD: BS 1377

SIEVE	MASS	PERCENTAGE			GRADATION SPECIFICATION			ZONE
(mm)	RETAINED	RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.000								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300								
5.000		0.00	100.00	100				
2.360	8.5	1.82	98.18	98				
1.180	24.5	5.26	94.74	95				
0.600	89.0	19.10	80.90	81				
0.425	164.0	35.19	64.81	65				
0.300	234.0	50.21	49.79	50				
0.150	359.0	77.04	22.96	23				
0.075	392.5	84.23	15.77	16				
0 pan	73.5	15.77						
TOTAL (g)	466.0							



REMARKS: SAMPLED FROM KANENGO SUBSTATION / BOREHOLE 04 / DEPTH 1.200 - 2.200 (m)

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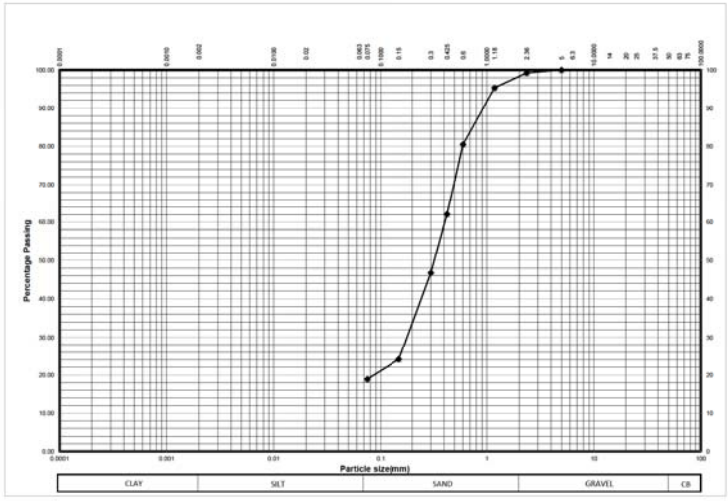
LAB REF: GC469 / 30MAR19 / 17:00		SAMPLE No. KANE-SUB / BH04 / G004 / 30MAR19		
SAMPLED BY: GEOCONSULT		DATE: 29 - 03 - 2019	16:06	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
KANENGO SUBSTATION	0 585539	8 463534	1103 (m)	2.200-4.000
TYPE OF MATERIAL:MOIST GREENISH GREY MICACIOUS DECOMPOSED ROCK				
TESTED BY: Y.NANG'OMBA		DATE: 03 - 04 - 2019	TIME: 10:47	
CHECKED BY: G. KACHIWALA		DATE: 04 - 04- 2019	TIME: 14:00	
APPROVED BY: M. SABELLI		DATE: 04 - 04- 2019	TIME: 15:00	
PROJECT: KANENGO SUBSTATION		**CLIENT:** YEC		

SIEVE ANALYSIS (GRADATION) STANDARD: BS 1377

SIEVE	MASS	PERCENTAGE			GRADATION SPECIFICATION			ZONE
(mm)	RETAINED	RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.000								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300								
5.000		0.00	100.00	100				
2.360	3.5	0.74	99.26	99				
1.180	22.0	4.68	95.32	95				
0.600	91.5	19.45	80.55	81				
0.425	178.5	37.94	62.06	62				
0.300	250.5	53.24	46.76	47				
0.150	357.0	75.88	24.12	24				
0.075	381.5	81.08	18.92	19				
0 pan	89.0	18.92						
TOTAL (g)	470.5							



REMARKS: SAMPLED FROM KANENGO SUBSTATION / BOREHOLE 04 / DEPTH 2.200 - 4.000 (m)

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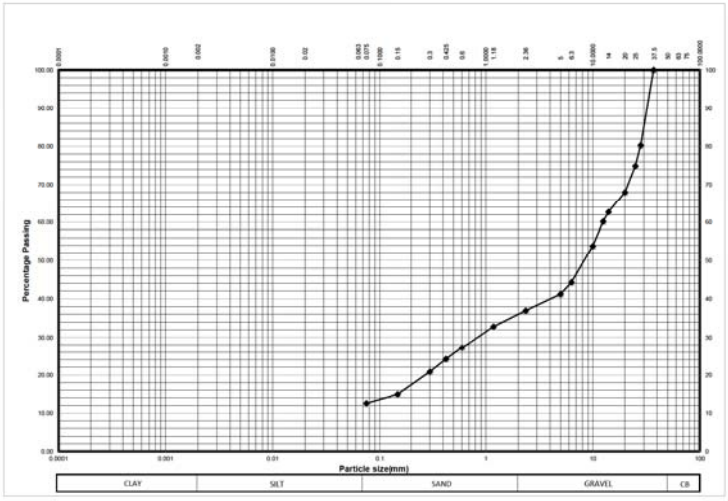
LAB REF: GC465 / 26MAR19 / 17:00		SAMPLE No. KAN-SUB / BH05 / G001 / 26MAR19		
SAMPLED BY: GEOCONSULT		DATE: 26 - 03 - 2019	TIME:	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
KANENGO SUBSTATION	0 585 448	8 463 528	1 100(m)	0.000-0.200
TYPE OF MATERIAL: MOIST IMPORTED TOP SOIL				
TESTED BY: G. KONDE		DATE: 14 - 04 - 2019	TIME: 09:47	
CHECKED BY: G. KACHIWALA		DATE: 15 - 04- 2019	TIME: 14:00	
APPROVED BY: M. SABELLI		DATE: 15 - 04- 2019	TIME: 15:00	
PROJECT: KANENGO SUBSTATION		**CLIENT:** YEC		

SIEVE ANALYSIS (GRADATION) STANDARD: BS 1377

SIEVE	MASS	PERCENTAGE			GRADATION SPECIFICATION			ZONE
(mm)	RETAINED	RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.000	0.0	0.00	100.00	100				
28.000	83.0	19.67	80.33	80				
25.000	106.0	25.12	74.88	75				
20.000	135.0	31.99	68.01	68				
14.000	157.5	37.32	62.68	63				
12.500	168.0	39.81	60.19	60				
10.000	195.0	46.21	53.79	54				
6.300	235.0	55.69	44.31	44				
5.000	248.0	58.77	41.23	41				
2.360	266.0	63.03	36.97	37				
1.180	283.5	67.18	32.82	33				
0.600	307.0	72.75	27.25	27				
0.425	320.0	75.83	24.17	24				
0.300	334.0	79.15	20.85	21				
0.150	359.0	85.07	14.93	15				
0.075	369.0	87.44	12.56	13				
0 pan	53.0	12.56						
TOTAL (g)	422.0							



REMARKS: SAMPLED FROM KANENGO SUBSTATION / BOREHOLE 05 / DEPTH 0.000 - 0.200 (m)

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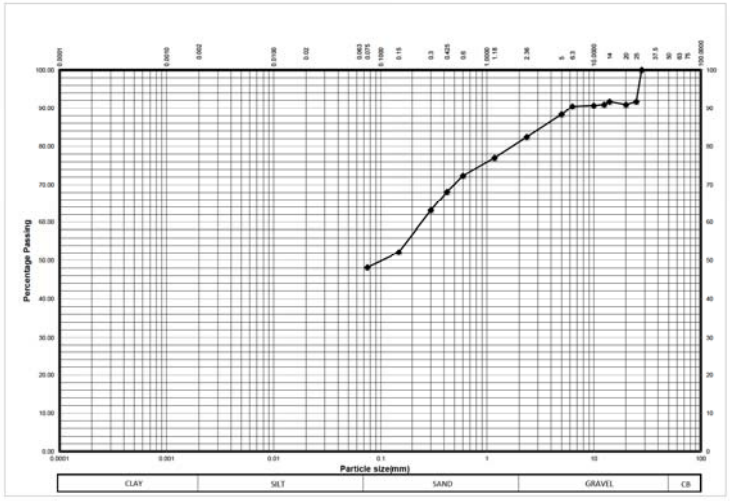
LAB REF: GC465 / 26MAR19 / 17:00		SAMPLE No. KAN-SUB / BH05 / G002 / 26MAR19		
SAMPLED BY: GEOCONSULT		DATE: 26 - 03 - 2019	TIME:	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
KANENGO SUBSTATION	0 585 448	8 463 528	1 100(m)	0.400-1.000
TYPE OF MATERIAL: MOIST DARK REDDISH SILTY SANDY CLAY				
TESTED BY: G. KONDE		DATE: 14 - 04 - 2019	TIME: 13:54	
CHECKED BY: G. KACHIWALA		DATE: 15 - 04- 2019	TIME: 14:00	
APPROVED BY: M. SABELLI		DATE: 15 - 04- 2019	TIME: 15:00	
PROJECT: KANENGO SUBSTATION		**CLIENT:** YEC		

SIEVE ANALYSIS (GRADATION) STANDARD: BS 1377

SIEVE	MASS	PERCENTAGE			GRADATION SPECIFICATION			ZONE
(mm)	RETAINED	RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.000								
28.000	0.0	0.00	100.00	100				
25.000	32.0	8.26	91.74	92				
20.000	35.0	9.03	90.97	91				
14.000	32.0	8.26	91.74	92				
12.500	35.0	9.03	90.97	91				
10.000	36.0	9.29	90.71	91				
6.300	37.0	9.55	90.45	90				
5.000	45.0	11.61	88.39	88				
2.360	68.0	17.55	82.45	82				
1.180	89.0	22.97	77.03	77				
0.600	107.0	27.61	72.39	72				
0.425	123.5	31.87	68.13	68				
0.300	143.0	36.90	63.10	63				
0.150	185.5	47.87	52.13	52				
0.075	201.0	51.87	48.13	48				
0 pan	186.5	48.13						
TOTAL (g)	387.5							



REMARKS: SAMPLED FROM KANENGO SUBSTATION / BOREHOLE 05 / DEPTH 0.400 - 1.000 (m)

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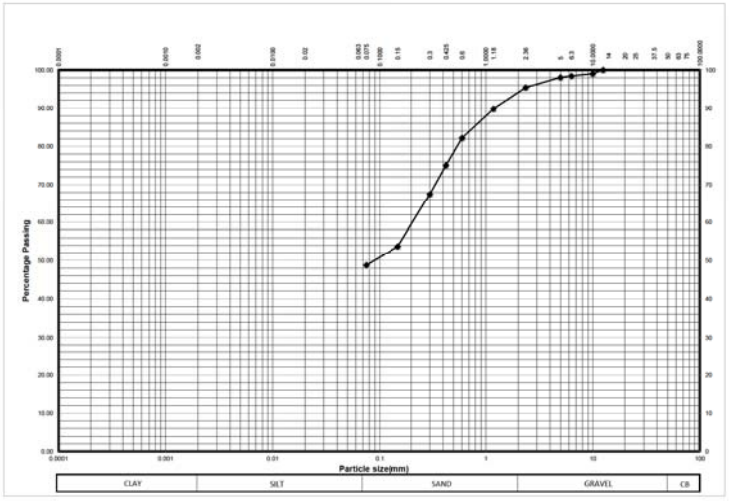
LAB REF: GC465 / 26MAR19 / 17:00		SAMPLE No. KAN-SUB / BH05 / G003 / 26MAR19		
SAMPLED BY: GEOCONSULT		DATE: 26 - 03 - 2019	TIME:	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
KANENGO SUBSTATION	0 585 448	8 463 528	1 100(m)	1.000-2.600
TYPE OF MATERIAL: VERY MOIST DARK REDDISH SILTY SANDY CLAY				
TESTED BY: G. KONDE		DATE: 14 - 04 - 2019	TIME: 13:54	
CHECKED BY: G. KACHIWALA		DATE: 15 - 04- 2019	TIME: 14:00	
APPROVED BY: M. SABELLI		DATE: 15 - 04- 2019	TIME: 15:00	
PROJECT: KANENGO SUBSTATION		**CLIENT:** YEC		

SIEVE ANALYSIS (GRADATION) STANDARD: BS 1377

SIEVE	MASS	PERCENTAGE			GRADATION SPECIFICATION			ZONE
(mm)	RETAINED	RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.000								
28.000								
25.000								
20.000								
14.000								
12.500	0.0	0.00	100.00	100				
10.000	4.0	0.97	99.03	99				
6.300	6.5	1.57	98.43	98				
5.000	8.0	1.93	98.07	98				
2.360	19.0	4.59	95.41	95				
1.180	42.0	10.16	89.84	90				
0.600	73.5	17.78	82.22	82				
0.425	103.0	24.91	75.09	75				
0.300	134.5	32.53	67.47	67				
0.150	191.5	46.31	53.69	54				
0.075	212.0	51.27	48.73	49				
0 pan	201.5	48.73						
TOTAL (g)	413.5							



REMARKS: SAMPLED FROM KANENGO SUBSTATION / BOREHOLE 05 / DEPTH 1.600 - 2.600 (m)

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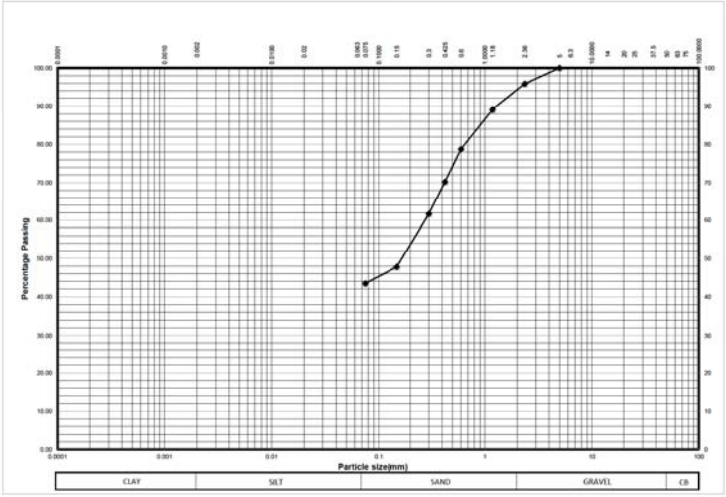
LAB REF: GC465 / 26MAR19 / 17:00		SAMPLE No. KAN-SUB / BH05 / G004 / 26MAR19		
SAMPLED BY: GEOCONSULT		DATE: 26 - 03 - 2019	TIME:	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
KANENGO SUBSTATION	0 585 448	8 463 528	1 100(m)	2.600-3.400
TYPE OF MATERIAL: VERY MOIST SOFT RED BLACKISH SANDY SILTY CLAY				
TESTED BY: G. KONDE		DATE: 14 - 04 - 2019	TIME: 13:54	
CHECKED BY: G. KACHIWALA		DATE: 15 - 04- 2019	TIME: 14:00	
APPROVED BY: M. SABELLI		DATE: 15 - 04- 2019	TIME: 15:00	
PROJECT: KANENGO SUBSTATION		**CLIENT:** YEC		

SIEVE ANALYSIS (GRADATION) STANDARD: BS 1377

SIEVE	MASS	PERCENTAGE			GRADATION SPECIFICATION			ZONE
(mm)	RETAINED	RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.000								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300								
5.000	0.0	0.00	100.00	100				
2.360	14.5	4.15	95.85	96				
1.180	38.0	10.87	89.13	89				
0.600	74.0	21.17	78.83	15				
0.425	104.0	29.76	70.24	70				
0.300	134.0	38.34	61.66	62				
0.150	182.5	52.22	47.78	48				
0.075	197.5	56.51	43.49	43				
0 pan	152.0	43.49						
TOTAL (g)	349.5							



REMARKS: SAMPLED FROM KANENGO SUBSTATION / BOREHOLE 05 / DEPTH 2.600 - 3.400 (m)

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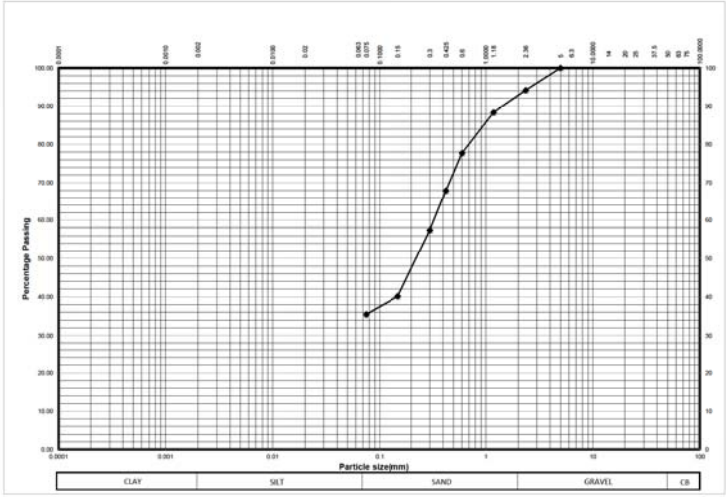
LAB REF: GC465 / 26MAR19 / 17:00		SAMPLE No. KAN-SUB / BH05 / G005 / 26MAR19		
SAMPLED BY: GEOCONSULT		DATE: 26 - 03 - 2019	TIME:	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
KANENGO SUBSTATION	0 585 448	8 463 528	1 100(m)	3.400-4.500
TYPE OF MATERIAL: MOIST SOFT BLACK SANDY SILTY CLAY				
TESTED BY: G. KONDE		DATE: 14 - 04 - 2019	TIME: 13:54	
CHECKED BY: G. KACHIWALA		DATE: 15 - 04- 2019	TIME: 14:00	
APPROVED BY: M. SABELLI		DATE: 15 - 04- 2019	TIME: 15:00	
PROJECT: KANENGO SUBSTATION		**CLIENT:** YEC		

SIEVE ANALYSIS (GRADATION) STANDARD: BS 1377

SIEVE	MASS	PERCENTAGE			GRADATION SPECIFICATION			ZONE
(mm)	RETAINED	RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.000								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300								
5.000	0.0	0.00	100.00	100				
2.360	21.0	5.80	94.20	94				
1.180	42.0	11.60	88.40	88				
0.600	80.5	22.24	77.76	15				
0.425	116.0	32.04	67.96	68				
0.300	154.0	42.54	57.46	57				
0.150	216.5	59.81	40.19	40				
0.075	233.5	64.50	35.50	35				
0 pan	128.5	35.50						
TOTAL (g)	362.0							



REMARKS: SAMPLED FROM KANENGO SUBSTATION / BOREHOLE 05 / DEPTH 3.400 - 4.500 (m)

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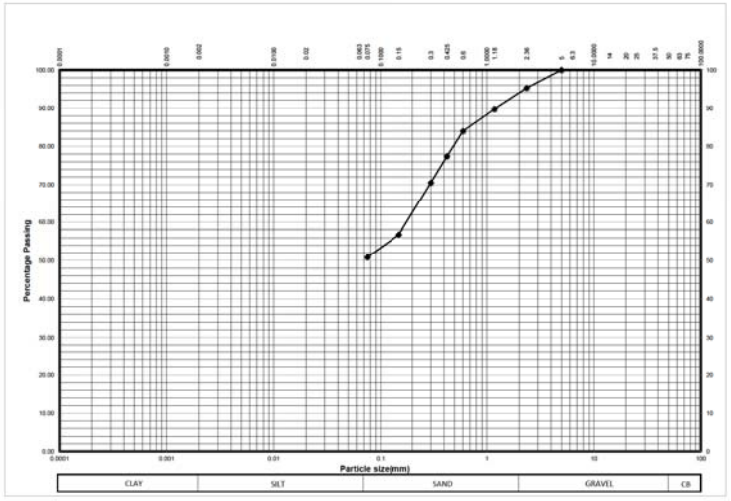
LAB REF: GC465 / 26MAR19 / 17:00			SAMPLE No. KAN-SUB / BH05 / G006 / 26MAR19		
SAMPLED BY: GEOCONSULT			DATE: 26 - 03 - 2019	TIME:	
LOCATION: 36L UTM	EASTING		NORTHING	ELEVATION	DEPTH (m)
KANENGO SUBSTATION	0 585 448		8 463 528	1 100(m)	4.500-4.800
TYPE OF MATERIAL: MOIST SOFT DARK REDDISH MICACIOUS SANDY SILTY CLAY					
TESTED BY: G. KONDE			DATE: 14 - 04 - 2019	TIME: 13:54	
CHECKED BY: G. KACHIWALA			DATE: 15 - 04- 2019	TIME: 14:00	
APPROVED BY: M. SABELLI			DATE: 15 - 04- 2019	TIME: 15:00	
PROJECT: KANENGO SUBSTATION		**CLIENT:** YEC			

SIEVE ANALYSIS (GRADATION) STANDARD: BS 1377

SIEVE	MASS	PERCENTAGE			GRADATION SPECIFICATION			ZONE
(mm)	RETAINED	RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.000								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300								
5.000	0.0	0.00	100.00	100				
2.360	19.0	4.73	95.27	95				
1.180	41.0	10.21	89.79	90				
0.600	64.0	15.94	84.06	15				
0.425	90.5	22.54	77.46	77				
0.300	118.5	29.51	70.49	70				
0.150	173.5	43.21	56.79	57				
0.075	197.5	49.19	50.81	51				
0 pan	204.0	50.81						
TOTAL (g)	401.5							



REMARKS: SAMPLED FROM KANENGO SUBSTATION / BOREHOLE 05 / DEPTH 4.500 - 4.800 (m)

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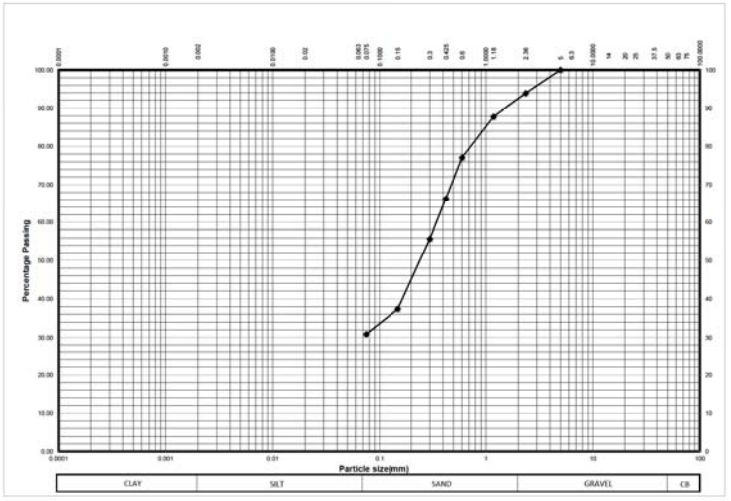
LAB REF: GC465 / 26MAR19 / 17:00			SAMPLE No. KAN-SUB / BH05 / G007 / 26MAR19		
SAMPLED BY: GEOCONSULT			DATE: 26 - 03 - 2019	TIME:	
LOCATION: 36L UTM	EASTING		NORTHING	ELEVATION	DEPTH (m)
KANENGO SUBSTATION	0 585 448		8 463 528	1 100(m)	4.800-7.000
TYPE OF MATERIAL: MOIST SOFT DECOMPOSED WITH MICCA					
TESTED BY: G. KONDE			DATE: 14 - 04 - 2019	TIME: 13:54	
CHECKED BY: G. KACHIWALA			DATE: 15 - 04- 2019	TIME: 14:00	
APPROVED BY: M. SABELLI			DATE: 15 - 04- 2019	TIME: 15:00	
PROJECT: KANENGO SUBSTATION		**CLIENT:** YEC			

SIEVE ANALYSIS (GRADATION) STANDARD: BS 1377

SIEVE	MASS	PERCENTAGE			GRADATION SPECIFICATION			ZONE
(mm)	RETAINED	RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.000								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300								
5.000	0.0	0.00	100.00	100				
2.360	24.5	6.09	93.91	94				
1.180	49.0	12.19	87.81	88				
0.600	92.0	22.89	77.11	15				
0.425	135.5	33.71	66.29	66				
0.300	178.0	44.28	55.72	56				
0.150	251.5	62.56	37.44	37				
0.075	278.0	69.15	30.85	31				
0 pan	124.0	30.85						
TOTAL (g)	402.0							



REMARKS: SAMPLED FROM KANENGO SUBSTATION / BOREHOLE 05 / DEPTH 4.800 - 7.000 (m)

4.5 Natural Moisture Content

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LAB REF: GC466 / 27MAR19 / 17:00		SAMPLE No: KAN-SUB / BH01 / NMC01 / 27MAR19		
SAMPLED BY: GEOCONSULT		DATE: 26 - 03 - 2019	TIME: 12:42	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
KANENGO SUBSTATION	0 585460	8 463646	1096 (m)	0.000-0.100
TYPE OF MATERIAL: MOIST DARK BLACK SANDY SILTY CLAY WITH CRUSHED AGGREGATES				
TESTED BY: G.KONDE		DATE: 27 - 03 - 2019	TIME: 08:30	
CHECKED BY: G. KACHIWALA		DATE: 28 - 03 - 2019	TIME: 09:00	
APPROVED BY: M. SABELLI		DATE: 28 - 03 - 2019	TIME: 10:00	

PROJECT:KANENGO SUBSTATION — **CLIENT:** YEC

NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: BS1377

MASS OF WET SOIL + CONTAINER (g)	320.0
MASS OF DRY SOIL AND CONTAINER (g)	275.0
CONTAINER No.	GC11
MASS OF CONTAINER (g)	52.0
MASS OF DRY SOIL (g)	223.0
MASS OF WATER (g)	45.0
MOISTURE CONTENT %	20.0

NATURAL MOISTURE CONTENT :	**20.0**

REMARKS: SAMPLED FROM KANENGO SUBSTATION / BOREHOLE 04 / DEPTH 0.000 - 0.100m)

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LAB REF: GC466 / 27MAR19 / 17:00		SAMPLE No: KAN-SUB / BH01 / NMC02 / 27MAR19		
SAMPLED BY: GEOCONSULT		DATE: 26 - 03 - 2019	TIME: 12:42	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
KANENGO SUBSTATION	0 585460	8 463646	1096 (m)	0.100-1.000
TYPE OF MATERIAL: MOIST DARK REDDISH SANDY SILTY CLAY				
TESTED BY: G.KONDE		DATE: 27 - 03 - 2019	TIME: 08:30	
CHECKED BY: G. KACHIWALA		DATE: 28 - 03 - 2019	TIME: 09:00	
APPROVED BY: M. SABELLI		DATE: 28 - 03 - 2019	TIME: 10:00	

PROJECT:KANENGO SUBSTATION **CLIENT:** YEC

NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: BS1377

MASS OF WET SOIL + CONTAINER (g)	488.5
MASS OF DRY SOIL AND CONTAINER (g)	402.0
CONTAINER No.	GC111
MASS OF CONTAINER (g)	50.0
MASS OF DRY SOIL (g)	352.0
MASS OF WATER (g)	86.5
MOISTURE CONTENT %	24.5
NATURAL MOISTURE CONTENT :	**24.5**

REMARKS: SAMPLED FROM KANENGO SUBSTATION / BOREHOLE 01 / DEPTH 0.100-1.000

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LAB REF: GC466 / 27MAR19 / 17:00		SAMPLE No: KAN-SUB / BH01 / NMC03 / 27MAR19		
SAMPLED BY: GEOCONSULT		DATE: 26 - 03 - 2019	TIME: 12:42	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
KANENGO SUBSTATION	0 585460	8 463646	1096 (m)	1.000-1.200
TYPE OF MATERIAL: MOIST YELLOW REDDISH SILTY SANDY CLAY				
TESTED BY: G.KONDE		DATE: 27 - 03 - 2019	TIME: 08:30	
CHECKED BY: G. KACHIWALA		DATE: 28 - 03 - 2019	TIME: 09:00	
APPROVED BY: M. SABELLI		DATE: 28 - 03 - 2019	TIME: 10:00	

PROJECT:KANENGO SUBSTATION **CLIENT:** YEC

NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: BS1377

MASS OF WET SOIL + CONTAINER (g)	308.0
MASS OF DRY SOIL AND CONTAINER (g)	255.5
CONTAINER No.	GC2
MASS OF CONTAINER (g)	66.0
MASS OF DRY SOIL (g)	189.5
MASS OF WATER (g)	52.5
MOISTURE CONTENT %	27.8
NATURAL MOISTURE CONTENT :	**27.8**

REMARKS: SAMPLED FROM KANENGO SUBSTATION / BOREHOLE 01 / DEPTH1.000-1.200

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LAB REF: GC466 / 27MAR19 / 17:00		SAMPLE No: KAN-SUB / BH01 / NMC04 / 27MAR19		
SAMPLED BY: GEOCONSULT		DATE: 26 - 03 - 2019	TIME: 12:42	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
KANENGO SUBSTATION	0 585460	8 463646	1096 (m)	1.200-1.700
TYPE OF MATERIAL: MOIST DARK REDDISH SILTY SANDY CLAY				
TESTED BY: G.KONDE		DATE: 27 - 03 - 2019	TIME: 08:30	
CHECKED BY: G. KACHIWALA		DATE: 28 - 03 - 2019	TIME: 09:00	
APPROVED BY: M. SABELLI		DATE: 28 - 03 - 2019	TIME: 10:00	

PROJECT:KANENGO SUBSTATION **CLIENT:** YEC

NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: BS1377

MASS OF WET SOIL + CONTAINER (g)	288.5
MASS OF DRY SOIL AND CONTAINER (g)	240.0
CONTAINER No.	GC11
MASS OF CONTAINER (g)	72.0
MASS OF DRY SOIL (g)	168.0
MASS OF WATER (g)	48.5
MOISTURE CONTENT %	28.9
NATURAL MOISTURE CONTENT :	**28.9**

REMARKS: SAMPLED FROM KANENGO SUBSTATION / BOREHOLE 01 / DEPTH1.200-1.700

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LAB REF: GC466 / 27MAR19 / 17:00		SAMPLE No: KAN-SUB / BH01 / NMC05 / 27MAR19		
SAMPLED BY: GEOCONSULT		DATE: 26 - 03 - 2019	TIME: 12:42	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
KANENGO SUBSTATION	0 585460	8 463646	1096 (m)	1.700-2.400
TYPE OF MATERIAL: MOIST DECOMPOSED ROCK				
TESTED BY: G.KONDE		DATE: 27 - 03 - 2019	TIME: 08:30	
CHECKED BY: G. KACHIWALA		DATE: 28 - 03 - 2019	TIME: 09:00	
APPROVED BY: M. SABELLI		DATE: 28 - 03 - 2019	TIME: 10:00	

PROJECT:KANENGO SUBSTATION **CLIENT:** YEC

NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: BS1377

MASS OF WET SOIL + CONTAINER (g)	301.5
MASS OF DRY SOIL AND CONTAINER (g)	242.5
CONTAINER No.	GC12
MASS OF CONTAINER (g)	73.5
MASS OF DRY SOIL (g)	169.0
MASS OF WATER (g)	59.0
MOISTURE CONTENT %	30.1
NATURAL MOISTURE CONTENT :	**30.1**

REMARKS: SAMPLED FROM KANENGO SUBSTATION / BOREHOLE 01 / DEPTH1.700-2.400

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LAB REF: GC468 / 29MAR19 / 17:00		SAMPLE No: KAN-SUB / BH02 / NMC01 / 29MAR19		
SAMPLED BY: GEOCONSULT		DATE: 27 - 03 - 2019	TIME: 12:42	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
KANENGO SUBSTATION	0 585434	8 463638	1 120 (m)	0.000-0.300
TYPE OF MATERIAL: MOIST SLIGHTLY DARK REDDISH SANDY SILTY CLAY				
TESTED BY: G.KONDE		DATE: 27 - 03 - 2019	TIME: 08:05	
CHECKED BY: G. KACHIWALA		DATE: 28 - 03 - 2019	TIME: 09:00	
APPROVED BY: M. SABELLI		DATE: 28 - 03 - 2019	TIME: 10:00	

PROJECT:KANENGO SUBSTATION **CLIENT:** YEC

NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: BS1377

MASS OF WET SOIL + CONTAINER (g)	366.0
MASS OF DRY SOIL AND CONTAINER (g)	322.0
CONTAINER No.	GC8A
MASS OF CONTAINER (g)	49.5
MASS OF DRY SOIL (g)	272.5
MASS OF WATER (g)	44.0
MOISTURE CONTENT %	15.8
NATURAL MOISTURE CONTENT :	**15.8**

REMARKS: SAMPLED FROM KANENGO SUBSTATION / BOREHOLE 03 / DEPTH 0.000 - 0.300(m)

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LAB REF: GC468 / 29MAR19 / 17:00		SAMPLE No: KAN-SUB / BH02 / NMC02 / 29MAR19		
SAMPLED BY: GEOCONSULT		DATE: 27 - 03 - 2019	TIME: 12:42	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
KANENGO SUBSTATION	0 585434	8 463638	1 120 (m)	0.300-3.000
TYPE OF MATERIAL: MOIST ORANGE REDDISH CLAYEY SILTY SANDY WITH TRACES OF DECOMPOSED ROCK				
TESTED BY: G.KONDE		DATE: 27 - 03 - 2019	TIME: 08:05	
CHECKED BY: G. KACHIWALA		DATE: 28 - 03 - 2019	TIME: 09:00	
APPROVED BY: M. SABELLI		DATE: 28 - 03 - 2019	TIME: 10:00	

PROJECT:KANENGO SUBSTATION **CLIENT:** YEC

NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: BS1377

MASS OF WET SOIL + CONTAINER (g)	320.5
MASS OF DRY SOIL AND CONTAINER (g)	275.0
CONTAINER No.	GC11
MASS OF CONTAINER (g)	52.0
MASS OF DRY SOIL (g)	223.0
MASS OF WATER (g)	45.5
MOISTURE CONTENT %	20.0
NATURAL MOISTURE CONTENT :	**20.0**

REMARKS: SAMPLED FROM KANENGO SUBSTATION / BOREHOLE 02 / DEPTH 0.300 - 3.000(m)

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LAB REF: GC465 / 26MAR19 / 17:00		SAMPLE No: KAN-SUB / BH03 / NMC01 / 26MAR19		
SAMPLED BY: GEOCONSULT		DATE: 26 - 03 - 2019	TIME: 12:42	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
KANENGO SUBSTATION	0 585549	8 463574	1 093 (m)	0.000-0.500
TYPE OF MATERIAL: MOIST IMPORTED RED SANDY SILTY CLAY				
TESTED BY: Y. NANG'OMBA		DATE: 27 - 03 - 2019	TIME: 08:30	
CHECKED BY: G. KACHIWALA		DATE: 28 - 03 - 2019	TIME: 09:00	
APPROVED BY: M. SABELLI		DATE: 28 - 03 - 2019	TIME: 10:00	

PROJECT:KANENGO SUBSTATION **CLIENT:** YEC

NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: BS1377

MASS OF WET SOIL + CONTAINER (g)	288.5
MASS OF DRY SOIL AND CONTAINER (g)	240.0
CONTAINER No.	GC8
MASS OF CONTAINER (g)	72.0
MASS OF DRY SOIL (g)	168.0
MASS OF WATER (g)	48.5
MOISTURE CONTENT %	28.9
NATURAL MOISTURE CONTENT :	**28.9**

REMARKS: SAMPLED FROM KANENGO SUBSTATION / BOREHOLE 03 / DEPTH 0.000 - 0.500(m)

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LAB REF: GC465 / 26MAR19 / 17:00		SAMPLE No: KAN-SUB / BH03 / NMC01 / 26MAR19		
SAMPLED BY: GEOCONSULT		DATE: 26 - 03 - 2019	TIME: 12:42	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
KANENGO SUBSTATION	0 585549	8 463574	1 093 (m)	0.500-2.000
TYPE OF MATERIAL: MOIST SOFT DECOMPOSED ROCK				
TESTED BY: Y. NANG'OMBA		DATE: 27 - 03 - 2019	TIME: 08:30	
CHECKED BY: G. KACHIWALA		DATE: 28 - 03 - 2019	TIME: 09:00	
APPROVED BY: M. SABELLI		DATE: 28 - 03 - 2019	TIME: 10:00	

PROJECT:KANENGO SUBSTATION **CLIENT:** YEC

NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: BS1377

MASS OF WET SOIL + CONTAINER (g)	301.0
MASS OF DRY SOIL AND CONTAINER (g)	242.0
CONTAINER No.	GC 3
MASS OF CONTAINER (g)	50.0
MASS OF DRY SOIL (g)	192.0
MASS OF WATER (g)	59.0
MOISTURE CONTENT %	30.1
NATURAL MOISTURE CONTENT :	**30.1**

REMARKS: SAMPLED FROM KANENGO SUBSTATION / BOREHOLE 03 / DEPTH 0.500- 2.000(m)

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LAB REF: GC469 / 30MAR19 / 17:00		SAMPLE No: KAN-SUB / BH04 / NMC01 / 30MAR19		
SAMPLED BY: GEOCONSULT		DATE: 26 - 03 - 2019	TIME: 12:42	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
KANENGO SUBSTATION	0 585539	8 463534	1 103 (m)	0.000-0.200
TYPE OF MATERIAL: MOIST IMPORTED COARSE MINERAL AGGREGATES				
TESTED BY: Y. NANG'OMBA		DATE: 27 - 03 - 2019	TIME: 08:30	
CHECKED BY: G. KACHIWALA		DATE: 28 - 03 - 2019	TIME: 09:00	
APPROVED BY: M. SABELLI		DATE: 28 - 03 - 2019	TIME: 10:00	

PROJECT:KANENGO SUBSTATION **CLIENT:** YEC

NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: BS1377

MASS OF WET SOIL + CONTAINER (g)	366.0
MASS OF DRY SOIL AND CONTAINER (g)	322.5
CONTAINER No.	GC8A
MASS OF CONTAINER (g)	49.5
MASS OF DRY SOIL (g)	273.0
MASS OF WATER (g)	43.5
MOISTURE CONTENT %	15.8
NATURAL MOISTURE CONTENT :	**15.8**

REMARKS: SAMPLED FROM KANENGO SUBSTATION / BOREHOLE 04 / DEPTH 0.000 - 0.200m)

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LAB REF: GC469 / 30MAR19 / 17:00		SAMPLE No: KAN-SUB / BH04 / NMC01 / 30MAR19		
SAMPLED BY: GEOCONSULT		DATE: 26 - 03 - 2019	TIME: 12:42	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
KANENGO SUBSTATION	0 585539	8 463534	1 103 (m)	0.200-1.200
TYPE OF MATERIAL: MOIST REDDISH BROWN SANDY SILTY CLAY WITH SPOTS OF HARD ROCK				
TESTED BY: Y. NANG'OMBA		DATE: 27 - 03 - 2019	TIME: 08:30	
CHECKED BY: G. KACHIWALA		DATE: 28 - 03 - 2019	TIME: 09:00	
APPROVED BY: M. SABELLI		DATE: 28 - 03 - 2019	TIME: 10:00	

PROJECT:KANENGO SUBSTATION **CLIENT:** YEC

NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: BS1377

MASS OF WET SOIL + CONTAINER (g)	320.5
MASS OF DRY SOIL AND CONTAINER (g)	275.0
CONTAINER No.	GC11
MASS OF CONTAINER (g)	52.0
MASS OF DRY SOIL (g)	223.0
MASS OF WATER (g)	45.5
MOISTURE CONTENT %	20.4
NATURAL MOISTURE CONTENT :	**20.4**

REMARKS: SAMPLED FROM KANENGO SUBSTATION / BOREHOLE 04 / DEPTH 0.200 - 1.200m)

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LAB REF: GC469 / 30MAR19 / 17:00		SAMPLE No: KAN-SUB / BH04 / NMC03 / 30MAR19		
SAMPLED BY: GEOCONSULT		DATE: 26 - 03 - 2019	TIME: 12:42	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
KANENGO SUBSTATION	0 585539	8 463534	1 103 (m)	1.200-2.200
TYPE OF MATERIAL: MOIST MOLTLED MICACIOUS DECOMPOSED ROCK				
TESTED BY: Y. NANG'OMBA		DATE: 27 - 03 - 2019	TIME: 08:30	
CHECKED BY: G. KACHIWALA		DATE: 28 - 03 - 2019	TIME: 09:00	
APPROVED BY: M. SABELLI		DATE: 28 - 03 - 2019	TIME: 10:00	

PROJECT:KANENGO SUBSTATION **CLIENT:** YEC

NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: BS1377

MASS OF WET SOIL + CONTAINER (g)	488.5
MASS OF DRY SOIL AND CONTAINER (g)	402.5
CONTAINER No.	GC111
MASS OF CONTAINER (g)	50.0
MASS OF DRY SOIL (g)	352.5
MASS OF WATER (g)	86.0
MOISTURE CONTENT %	24.5
NATURAL MOISTURE CONTENT :	**24.5**

REMARKS: SAMPLED FROM KANENGO SUBSTATION / BOREHOLE 04 / DEPTH 1.200 - 2.200m)

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LAB REF: GC469 / 30MAR19 / 17:00		SAMPLE No: KAN-SUB / BH04 / NMC04 / 30MAR19		
SAMPLED BY: GEOCONSULT		DATE: 26 - 03 - 2019	TIME: 12:42	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
KANENGO SUBSTATION	0 585539	8 463534	1 103 (m)	2.200-4.000
TYPE OF MATERIAL: MOIST GREENISH GREY MICACIOUS DECOMPOSED ROCK				
TESTED BY: Y. NANG'OMBA		DATE: 27 - 03 - 2019	TIME: 08:30	
CHECKED BY: G. KACHIWALA		DATE: 28 - 03 - 2019	TIME: 09:00	
APPROVED BY: M. SABELLI		DATE: 28 - 03 - 2019	TIME: 10:00	

PROJECT:KANENGO SUBSTATION **CLIENT:** YEC

NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: BS1377

MASS OF WET SOIL + CONTAINER (g)	488.5
MASS OF DRY SOIL AND CONTAINER (g)	434.5
CONTAINER No.	GC1
MASS OF CONTAINER (g)	70.5
MASS OF DRY SOIL (g)	364.0
MASS OF WATER (g)	54.0
MOISTURE CONTENT %	28.7
NATURAL MOISTURE CONTENT :	**28.7**

REMARKS: SAMPLED FROM KANENGO SUBSTATION / BOREHOLE 04 / DEPTH 2.200 - 4.000m)

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LAB REF: GC465 / 26MAR19 / 17:00		SAMPLE No: KAN-SUB / BH05 / NMC01 / 26MAR19		
SAMPLED BY: GEOCONSULT		DATE: 26 - 03 - 2019	TIME: 12:42	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
KANENGO SUBSTATION	0 585448	8 463528	1 100 (m)	0.000-0.200
TYPE OF MATERIAL: MOIST IMPORTED TOP SOIL				
TESTED BY: Y. NANG'OMBA		DATE: 27 - 03 - 2019	TIME: 08:30	
CHECKED BY: G. KACHIWALA		DATE: 28 - 03 - 2019	TIME: 09:00	
APPROVED BY: M. SABELLI		DATE: 28 - 03 - 2019	TIME: 10:00	

PROJECT:KANENGO SUBSTATION **CLIENT:** YEC

NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: BS1377

MASS OF WET SOIL + CONTAINER (g)	366.0
MASS OF DRY SOIL AND CONTAINER (g)	322.0
CONTAINER No.	GC 3
MASS OF CONTAINER (g)	49.5
MASS OF DRY SOIL (g)	272.5
MASS OF WATER (g)	44.0
MOISTURE CONTENT %	15.8
NATURAL MOISTURE CONTENT :	**15.8**

REMARKS: SAMPLED FROM KANENGO SUBSTATION / BOREHOLE 05 / DEPTH:0.000-0.200

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LAB REF: GC465 / 26MAR19 / 17:00		SAMPLE No: KAN-SUB / BH05 / NMC02 / 26MAR19		
SAMPLED BY: GEOCONSULT		DATE: 26 - 03 - 2019	TIME: 12:42	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
KANENGO SUBSTATION	0 585448	8 463528	1 100 (m)	0.200-0.400
TYPE OF MATERIAL: MOIST IMPORTED RED SANDY SILTY CLAY				
TESTED BY: Y. NANG'OMBA		DATE: 27 - 03 - 2019	TIME: 08:30	
CHECKED BY: G. KACHIWALA		DATE: 28 - 03 - 2019	TIME: 09:00	
APPROVED BY: M. SABELLI		DATE: 28 - 03 - 2019	TIME: 10:00	

PROJECT:KANENGO SUBSTATION **CLIENT:** YEC

NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: BS1377

MASS OF WET SOIL + CONTAINER (g)	301.0
MASS OF DRY SOIL AND CONTAINER (g)	264.5
CONTAINER No.	GC9
MASS OF CONTAINER (g)	72.5
MASS OF DRY SOIL (g)	192.0
MASS OF WATER (g)	36.5
MOISTURE CONTENT %	18.9
NATURAL MOISTURE CONTENT :	**18.9**

REMARKS: SAMPLED FROM KANENGO SUBSTATION / BOREHOLE 05 / DEPTH:0.200-0.400

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LAB REF: GC465 / 26MAR19 / 17:00		SAMPLE No: KAN-SUB / BH05 / NMC03 / 26MAR19		
SAMPLED BY: GEOCONSULT		DATE: 26 - 03 - 2019	TIME: 12:42	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
KANENGO SUBSTATION	0 585448	8 463528	1 100 (m)	0.400-1.000
TYPE OF MATERIAL: MOIST DARK REDDISH SILTY SANDY CLAY				
TESTED BY: Y. NANG'OMBA		DATE: 27 - 03 - 2019	TIME: 08:30	
CHECKED BY: G. KACHIWALA		DATE: 28 - 03 - 2019	TIME: 09:00	
APPROVED BY: M. SABELLI		DATE: 28 - 03 - 2019	TIME: 10:00	

PROJECT:KANENGO SUBSTATION **CLIENT:** YEC

NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: BS1377

MASS OF WET SOIL + CONTAINER (g)	320.5
MASS OF DRY SOIL AND CONTAINER (g)	275.0
CONTAINER No.	GC9
MASS OF CONTAINER (g)	52.0
MASS OF DRY SOIL (g)	223.0
MASS OF WATER (g)	45.5
MOISTURE CONTENT %	20.4
NATURAL MOISTURE CONTENT :	**20.4**

REMARKS: SAMPLED FROM KANENGO SUBSTATION / BOREHOLE 05 / DEPTH:0.400-1.000

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LAB REF: GC465 / 26MAR19 / 17:00		SAMPLE No: KAN-SUB / BH05 / NMC04 / 26MAR19		
SAMPLED BY: GEOCONSULT		DATE: 26 - 03 - 2019	TIME: 12:42	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
KANENGO SUBSTATION	0 585448	8 463528	1 100 (m)	1.00-2.600
TYPE OF MATERIAL:VERY MOIST DARK REDDISH SANDY SILTY CLAY				
TESTED BY: Y. NANG'OMBA		DATE: 27 - 03 - 2019	TIME: 08:30	
CHECKED BY: G. KACHIWALA		DATE: 28 - 03 - 2019	TIME: 09:00	
APPROVED BY: M. SABELLI		DATE: 28 - 03 - 2019	TIME: 10:00	

PROJECT:KANENGO SUBSTATION **CLIENT:** YEC

NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: BS1377

MASS OF WET SOIL + CONTAINER (g)	488.5
MASS OF DRY SOIL AND CONTAINER (g)	402.0
CONTAINER No.	GC15
MASS OF CONTAINER (g)	50.0
MASS OF DRY SOIL (g)	352.0
MASS OF WATER (g)	86.5
MOISTURE CONTENT %	24.5
NATURAL MOISTURE CONTENT :	**24.5**

REMARKS: SAMPLED FROM KANENGO SUBSTATION / BOREHOLE 05 / DEPTH:1.000-2.600

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LAB REF: GC465 / 26MAR19 / 17:00		SAMPLE No: KAN-SUB / BH05 / NMC05 / 26MAR19		
SAMPLED BY: GEOCONSULT		DATE: 26 - 03 - 2019	TIME: 12:42	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
KANENGO SUBSTATION	0 585448	8 463528	1 100 (m)	2.600-3.400
TYPE OF MATERIAL:VERY MOIST SOFT RED BLACKISH SANDY SILTY CLAY				
TESTED BY: Y. NANG'OMBA		DATE: 27 - 03 - 2019	TIME: 09:30	
CHECKED BY: G. KACHIWALA		DATE: 28 - 03 - 2019	TIME: 10:00	
APPROVED BY: M. SABELLI		DATE: 28 - 03 - 2019	TIME: 10:01	

PROJECT:KANENGO SUBSTATION **CLIENT:** YEC

NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: BS1377

MASS OF WET SOIL + CONTAINER (g)	288.5
MASS OF DRY SOIL AND CONTAINER (g)	240.0
CONTAINER No.	GC2
MASS OF CONTAINER (g)	72.0
MASS OF DRY SOIL (g)	168.0
MASS OF WATER (g)	48.5
MOISTURE CONTENT %	28.9
NATURAL MOISTURE CONTENT :	**28.9**

REMARKS: SAMPLED FROM KANENGO SUBSTATION / BOREHOLE 05 / DEPTH:2.600-3.400

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LAB REF: GC465 / 26MAR19 / 17:00		SAMPLE No: KAN-SUB / BH05 / NMC06 / 26MAR19		
SAMPLED BY: GEOCONSULT		DATE: 26 - 03 - 2019	TIME: 12:42	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
KANENGO SUBSTATION	0 585448	8 463528	1 100 (m)	3.400-4.500
TYPE OF MATERIAL:MOIST SOFT BLACK SANDY SILTY CLAY				
TESTED BY: Y. NANG'OMBA		DATE: 27 - 03 - 2019	TIME: 09:30	
CHECKED BY: G. KACHIWALA		DATE: 28 - 03 - 2019	TIME: 10:00	
APPROVED BY: M. SABELLI		DATE: 28 - 03 - 2019	TIME: 10:01	

PROJECT:KANENGO SUBSTATION **CLIENT:** YEC

NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: BS1377

MASS OF WET SOIL + CONTAINER (g)	385.5
MASS OF DRY SOIL AND CONTAINER (g)	308.5
CONTAINER No.	GC7
MASS OF CONTAINER (g)	72.0
MASS OF DRY SOIL (g)	236.5
MASS OF WATER (g)	77.0
MOISTURE CONTENT %	32.6
NATURAL MOISTURE CONTENT :	**32.6**

REMARKS: SAMPLED FROM KANENGO SUBSTATION / BOREHOLE 05 / DEPTH:3.400-4.500

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LAB REF: GC465 / 26MAR19 / 17:00		SAMPLE No: KAN-SUB / BH05 / NMC07 / 26MAR19		
SAMPLED BY: GEOCONSULT		DATE: 26 - 03 - 2019	TIME: 12:42	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
KANENGO SUBSTATION	0 585448	8 463528	1 100 (m)	4.500-4.800
TYPE OF MATERIAL:MOIST SOFT DARK REDDISH MICACIOUS SANDY SILTY CLAY				
TESTED BY: Y. NANG'OMBA		DATE: 27 - 03 - 2019	TIME: 09:30	
CHECKED BY: G. KACHIWALA		DATE: 28 - 03 - 2019	TIME: 10:00	
APPROVED BY: M. SABELLI		DATE: 28 - 03 - 2019	TIME: 10:01	

PROJECT:KANENGO SUBSTATION **CLIENT:** YEC

NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: BS1377

MASS OF WET SOIL + CONTAINER (g)	385.5
MASS OF DRY SOIL AND CONTAINER (g)	325.5
CONTAINER No.	GC15
MASS OF CONTAINER (g)	70.5
MASS OF DRY SOIL (g)	255.0
MASS OF WATER (g)	60.0
MOISTURE CONTENT %	30.3
NATURAL MOISTURE CONTENT :	**30.3**

REMARKS: SAMPLED FROM KANENGO SUBSTATION / BOREHOLE 05 / DEPTH:4.500-4.800

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+265 0888 846 543

sabelli@geoconsult.cc

LAB REF: GC465 / 26MAR19 / 17:00		SAMPLE No: KAN-SUB / BH05 / NMC08 / 26MAR19		
SAMPLED BY: GEOCONSULT		DATE: 26 - 03 - 2019	TIME: 12:42	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
KANENGO SUBSTATION	0 585448	8 463528	1 100 (m)	4.800-7.000
TYPE OF MATERIAL:MOIST SOFT DECOMPOSED ROCK WITH MICA				
TESTED BY: Y. NANG'OMBA		DATE: 27 - 03 - 2019	TIME: 09:30	
CHECKED BY: G. KACHIWALA		DATE: 28 - 03 - 2019	TIME: 10:00	
APPROVED BY: M. SABELLI		DATE: 28 - 03 - 2019	TIME: 10:01	

PROJECT:KANENGO SUBSTATION **CLIENT:** YEC

NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: BS1377

MASS OF WET SOIL + CONTAINER (g)	456.0
MASS OF DRY SOIL AND CONTAINER (g)	385.0
CONTAINER No.	GC6
MASS OF CONTAINER (g)	73.0
MASS OF DRY SOIL (g)	312.0
MASS OF WATER (g)	71.0
MOISTURE CONTENT %	34.6
NATURAL MOISTURE CONTENT :	**34.6**

REMARKS: SAMPLED FROM KANENGO SUBSTATION / BOREHOLE 05 / DEPTH4.800-7.000

GEOCONSULT

Yachiyo Engineering Co., Ltd.

UPGRADING OF OLD TOWN SUBSTATION

BOREHOLE TEST RESULT SUMMARY

YACHIEYO ENGINEERING CO.,LTD.
Consulting Engineers & Architects

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List of Abbreviations

BH	Borehole
PI	Plasticity Index
SP	Slightly Plastic
MDD	Maximum Dry Density

1. Site Investigations

1.1 Scope

The scope of the project is to investigate the subsoil conditions to establish suitable bearing layer for a proposed upgrade of Old Town Substation in Lilongwe.

1.2 Site and Testing Overview

Site testing was limited to borehole investigations. Boreholes were to be drilled to a maximum depth of 10m unless rock was discovered, where a further 5.0m would be cored. The aim of the borehole investigations was to find a bearing strata of 5.0m.

The substation is located next to Lilongwe River in Area 3 of Lilongwe, the soil make up is that characteristically found around the river. Typically soil conditions within this area are comprised of alluvial soils and clay.

Figure 1 shows the location of the structures and the location of the borehole investigations.

Figure 1: Boreholes Indicated in White

Table 1: Borehole Coordinates

BH No.	Easting	Northing
01	0 583 278	8 453 100
02	0 583 282	8 453 078
03	0 583 306	8 453 072
04	0 583 295	8 453 081

2. Test Remarks

2.1 Atterburg Limits

Table 2: Atterburg Limits

Depth (m)	BH01 Plasticity Index	Depth (m)	BH02 Plasticity Index
0.0-0.18	22	0.0-0.5	25
0.18-0.54	31	0.5-2.0	32
0.54-2.0	34	2.0-5.0	31
2.0-3.1	29	5.0-6.0	33
3.1-6.0	23	6.0-7.0	20
		7.0-7.3	14
		7.3-7.9	28

Depth (m)	BH03 Plasticity Index	Depth (m)	BH04 Plasticity Index
0.0-0.5	16	0.0-0.13	21
0.5-2.0	27	0.13-0.9	37
2.0-5.0	36	0.9-2.0	38
		2.0-3.7	38
		3.7-6.0	21

Material recovered from the boreholes and trial pits showed high levels of plasticity up to a depth of 8.0m.

2.2 Gradation

Material recovered from BH3 and BH4 show to be a well graded sand, with approximately 30-40% of the material falling into the silt/clay designation. BH1 and BH2 however are primarily silt and clay based, with over 75% of the material passing the 0.075mm sieve. With the high PI values it can be assumed that a large portion is falling within the clay boundary.

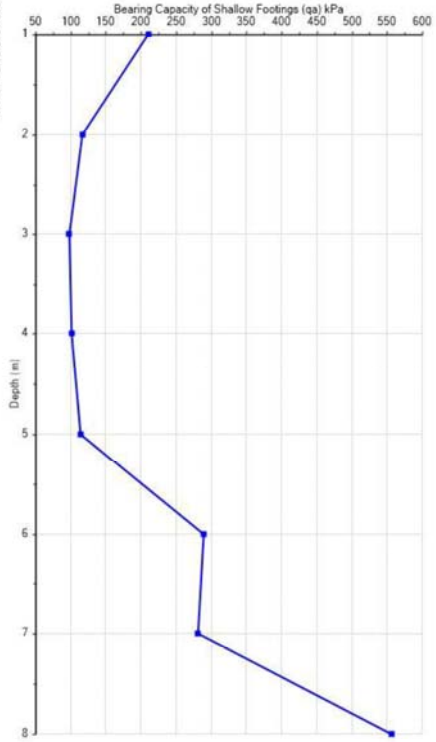
2.3 Bearing Capacity

Through SPT testing at 1 meter intervals, a bearing capacity against depth report was produced. Bearing capacity was calculated with Peck et al, 1974, and Peck, Hanson and Thornburg 1974 for friction angle calculations.

Table 3: BH01 Bearing Capacity and Friction Angle Against Depth

BH01		
Depth (m)	**Bearing Capacity (kPa)**	**Friction angle (φ)**
1.0	210	31
2.0	116	29
3.0	98	29
4.0	101	30
5.0	114	30
6.0	289	36
7.0	281	36
8.0	556	43

BH01 – Bearing Capacity



BH01 – Friction Angle

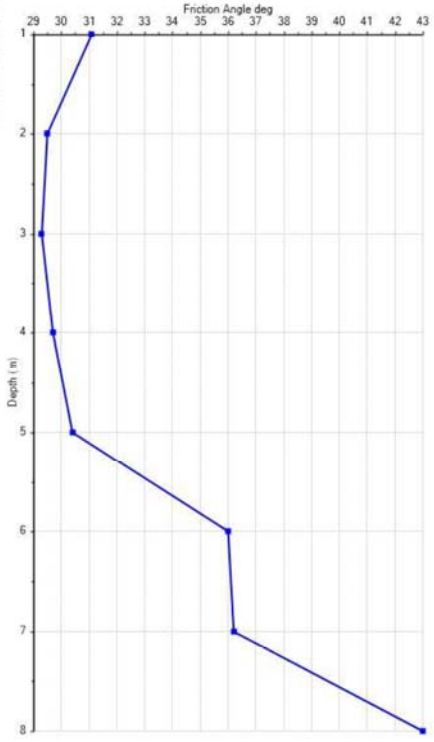
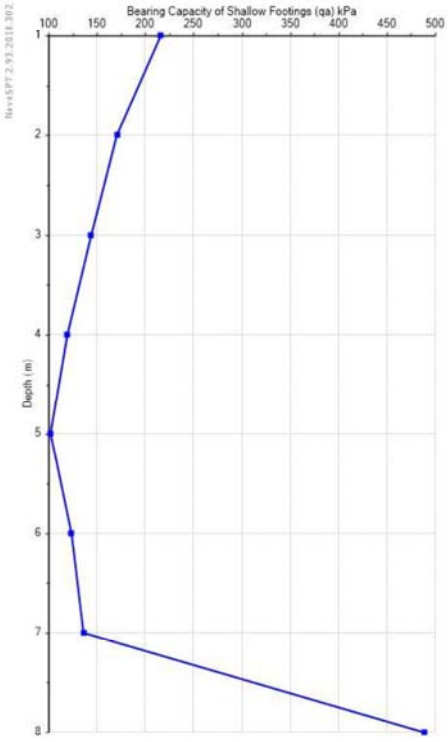


Table 4: BH02 Bearing Capacity and Friction Angle Against Depth

BH02		
Depth (m)	**Bearing Capacity (kPa)**	**Friction angle (φ)**
1.0	216	31
2.0	170	30
3.0	144	30
4.0	119	30
5.0	102	30
6.0	123	31
7.0	136	32
8.0	448	43

BH02 – Bearing Capacity



BH02 – Friction Angle

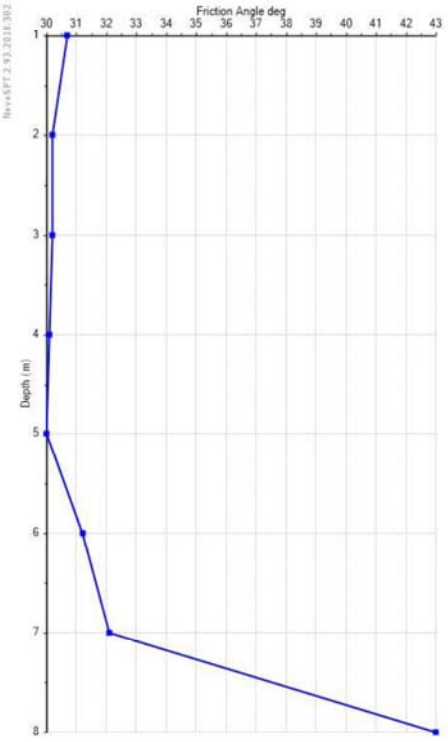
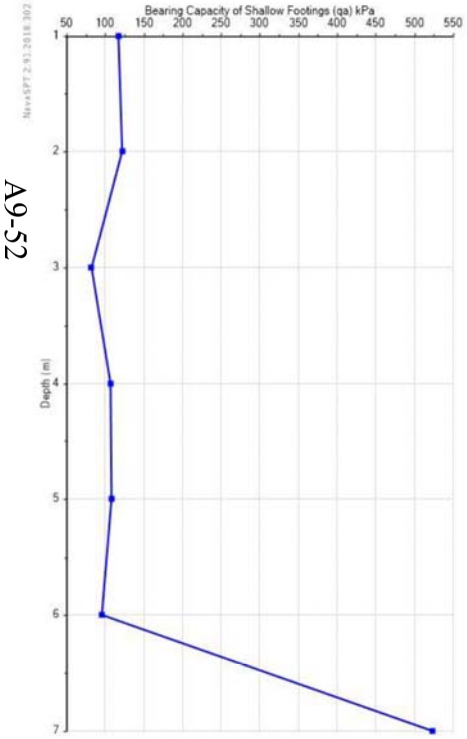


Table 5: BH03 Bearing Capacity and Friction Angle Against Depth

BH03		
Depth (m)	**Bearing Capacity (kPa)**	**Friction angle (φ)**
1.0	117	29
2.0	121	29
3.0	82	28
4.0	106	30
5.0	108	30
6.0	95	30
7.0	523	43

BH03 – Bearing Capacity



BH03 – Friction Angle

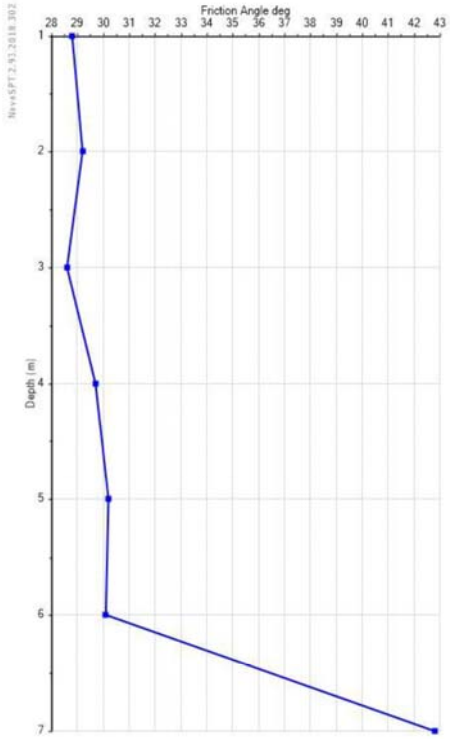
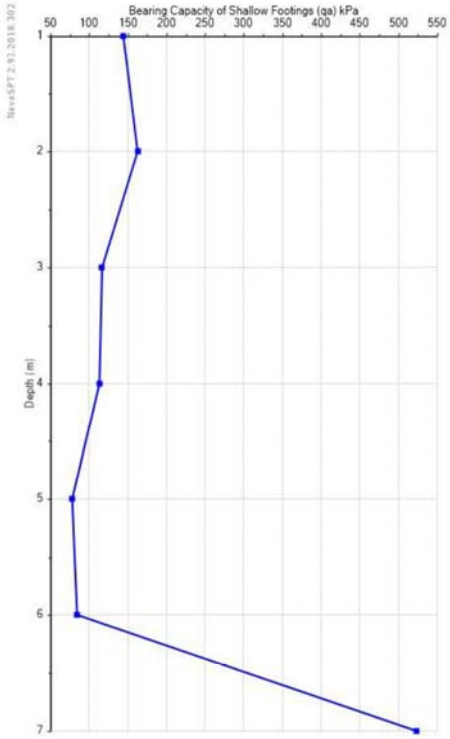


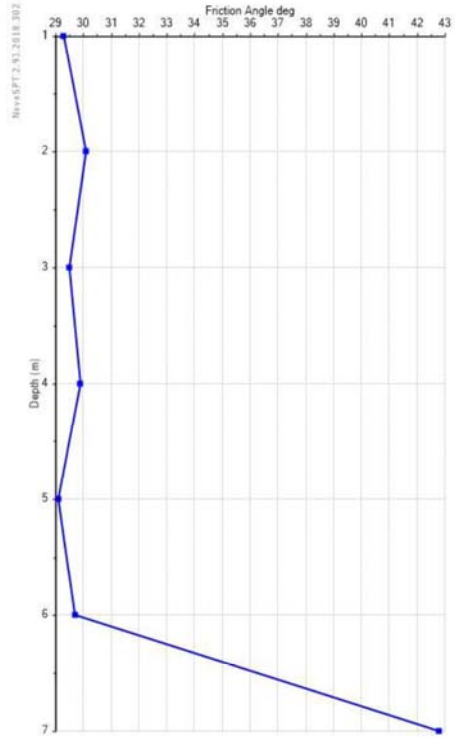
Table 6: BH04 Bearing Capacity and Friction Angle Against Depth

BH04		
Depth (m)	**Bearing Capacity (kPa)**	**Friction angle (φ)**
1.0	144	29
2.0	162	30
3.0	116	29
4.0	113	30
5.0	78	29
6.0	84	30
7.0	523	43

BH04 – Bearing Capacity



BH04 – Friction Angle



2.4 UCS Rock Core

Due to non-recovery of core sample at BH 02 and small fractures found on samples recovered from BH03, only BH01 and BH04 were tested.

Results from the tests are as follows:

Table 7: UCS Results

	BH01 - 8.0M	BH04 - 9.0M
Compressive Strength (Mpa)	**48.7**	**34.4**

3. Summary

Borehole logs show moderate to low SPT values for the initial 5.0m, after which the insitu strength improves slightly to N numbers of 20+. Bearing capacity ranges between 120-220 kPa for the first 2.0m with a weaker layer found at 3.0m at BH01 and BH03.

Granite bedrock is found at depths of 7-8.0m and has a layer thickness of greater than 5.0m, the UCS results from the core samples show core strengths between 48.7 to 34.4 Mpa.

Current soil properties are not suitable for construction as the material has high PI values and high clay content. Due to the average bearing capacity found at 1-2.0m it is recommended that the foundation be built on compacted imported gravel fill to mitigate the expansive properties of the insitu material as well as increase the bearing capacity.

Figure 2: Borehole Setup and Sampling

4. Appendix

4.1 Borehole Logs

BOREHOLE LOG O.T. BH01

GEOCONSULT

PROJECT NUMBER BH01	**DRILLING DATE** 18/03/18	**COORDINATES** 36L 583278, 8453100
PROJECT NAME	**COMPLETION** 19/03/18	**COORD SYS** UTM
CLIENT YEC	**DIAMETER** 150	**TOTAL DEPTH** 9.0M
ADDRESS MALAWI	**CASING** Steel	**SURFACE ELEVATION** 1025m

Comments: Water level measured after 24h

LOGGED BY G.K.
CHECKED BY M. Sabelli

Drilling Method	RQD %	% Recovered	SPT	Water Level	Depth (m)	Graphic Log	Elevation (m)	Moisture	Material Description
PERCUSSIVE			9,13,13		0.5		1024.5	MST	Blackish brown sandy silty CLAY
					1		1024		Dark brown sandy silty CLAY
					1.5		1023.5		Dark reddish sandy silty CLAY
			7,8,9		2		1023		
					2.5		1022.5		Red blackish sandy silty CLAY
			6,7,9		3		1022		
					3.5		1021.5		Mottled sandy silty CLAY
			5,7,10		4		1021		
					4.5		1020.5		
			7,9,10		5		1020		
					5.5		1019.5		
			10,18,31		6		1019		
					6.5		1018.5		
			11,21,28		7		1018		
					7.5		1017.5		
			17,55++ PEN90		8		1017		
CORING	54%	60%			8.5		1016.5		WEATHERED ROCK
					9		1016		ROCK: GRANITE
									Termination Depth at: 9.0 m

Remarks: No water encountered

A9-54

BOREHOLE LOG OLD TOWN BH2

GEOCONSULT

PROJECT NUMBER BH02	**DRILLING DATE** 17/10/16	**COORDINATES** 36L 583282 , 8453078
PROJECT NAME	**COMPLETION** 17/10/16	**COORD SYS** UTM
CLIENT YEC	**DIAMETER** 150	**TOTAL DEPTH** 8.5M
ADDRESS MALAWI	**CASING** Steel	**SURFACE ELEVATION** 1026M

Comments: Water level measured after 24h

LOGGED BY G.K.
CHECKED BY M. Sabelli

Drilling Method	RQD %	% Recovered	SPT	Water Level	Depth (m)	Graphic Log	Elevation (m)	Moisture	Material Description
PERCUSSIVE			7,9,15		0.5		1025.5	M	Dark brown sandy silty CLAY
					1		1025		Light brow sandy silty CLAY
					1.5		1024.5		
			7,9,12		2		1024		Stiff brown yellowish sandy silty CLAY
					2.5		1023.5		
			7,10,11		3		1023		
					3.5		1022.5		
			8,9,10		4		1022		
					4.5		1021.5		
			6,7,10		5		1021		Stiff mottled sandy silty CLAY
					5.5		1020.5		
			6,8,14		6		1020		Mottled silty sandy CLAY
					6.5		1019.5		
			8,12,14		7		1019		Mottled silty sandy CLAY with spots of mica
					7.5		1018.5		
			55++ PEN 130		8		1018		
ROTARY	0%	0%			8.5		1017.5		Rock - No Recovery
									Termination Depth at: 8.5m

Remarks: No water encountered

produced by ESlog.ESdat.net on 18 Mar 2019

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BOREHOLE LOG O.T. BH03

PROJECT NUMBER BH03
PROJECT NAME
CLIENT YEC
ADDRESS
MALAWI

DRILLING DATE 24/03/18
COMPLETION 25/03/18
DIAMETER 150
CASING Steel

COORDINATES 36L 583306, 8453072
COORD SYS UTM
TOTAL DEPTH 7.5M
SURFACE ELEVATION 1023m

Comments: Water level measured after 24h

LOGGED BY G.K.
CHECKED BY M. Sabelli

Drilling Method	RQD %	% Recovered	SPT	Water Level	Depth (m)	Graphic Log	Elevation (m)	Moisture	Material Description
PERCUSSIVE			5,5,8		0.5		1022.5	MST	Black sandy silty CLAY
					1		1022		Greyish brown sandy silty CLAY
			5,6,9		1.5		1021.5		
					2		1021		
					2.5		1020.5		
			5,5,7		3		1020		
					3.5		1019.5		
			6,8,9		4		1019		
					4.5		1018.5		Black sandy silty CLAY
			6,7,11		5		1018		
					5.5		1017.5		
			8,9,8		6		1017		
					6.5		1016.5		
			6,55++ PEN 260		7		1016		
CORING	90%	100%							ROCK: GRANITE
					7.5		1015.5		Termination Depth at: 7.5 m

GEOCONSULT

BOREHOLE LOG O.T. BH04

PROJECT NUMBER BH04
PROJECT NAME
CLIENT YEC
ADDRESS
MALAWI

DRILLING DATE 23/03/18
COMPLETION 24/03/18
DIAMETER 150
CASING Steel

COORDINATES 36L 583295 , 845301
COORD SYS UTM
TOTAL DEPTH 12.0M
SURFACE ELEVATION 1040m

Comments: Water level measured after 24h

LOGGED BY G.K.
CHECKED BY M. Sabelli

Drilling Method	RQD %	% Recovered	SPT	Water Level	Depth (m)	Graphic Log	Elevation (m)	Moisture	Material Description
PERCUSSIVE			5,6,10		0.5		1039.5	MST	Black sandy silty CLAY
					1		1039		Black greyish sandy silty CLAY
			8,9,11		1.5		1038.5		
					2		1038		Greyish brown sandy silty CLAY
			6,7,10		2.5		1037.5		
					3		1037		
			7,8,10		3.5		1036.5		
					4		1036		Brown sandy silty CLAY with sections of black cotton soil
			5,6,7		4.5		1035.5		
					5		1035		
			4,6,9		5.5		1034.5		
					6		1034	WET	
			55++ PEN 10		6.5		1033.5		
CORING					7		1033		ROCK: GRANITE
	77%	90%			7.5		1032.5		
					8		1032		
					8.5		1031.5		
					9		1031		
					9.5		1030.5		
					10		1030		
					10.5		1029.5		
					11		1029		
					11.5		1028.5		
					12		1028		Termination Depth at: 9.0 m
					12.5		1027.5		

Remarks: Water encountered at 6.0m

GEOCONSULT

LAB. REF. No. GC479 / 11APRIL19 / 09:14			**SAMPLE No.** OLD-TOWN SUBSTATION / BH01 / G, AL, NMC	
SAMPLED BY: GEOCONSULT LABORATORY TEAM			DATE: 11 / 04 / 2019	TIME: 09:14
LOCATION:	EASTING	NORTHING	ELEVATION (m)	DEPTH (m)
LILONGWE OLD TOWN SUBSTATION	0 583 278	8 453 100	1 025	
TYPE OF MATERIAL:				
TEST STANDARD: BS 1377				
TESTED BY: GEOCONSULT LABORATORY TEAM			DATE: 11 / 04 / 2019	TIME: 09:14
CHECKED BY: G. L. KACHIWALA			DATE: 12 / 04 / 2019	TIME: 08:06
APPROVED: M. SABELLI			DATE: 12 / 04 / 2019	TIME: 14:00

PROJECT: OLD TOWN SUBSTATION

CLIENT: YEC

SUMMARY OF TEST RESULTS

LAB. REFERENCE	DEPTH	BH	SIEVE ANALYSIS			LL	PI	LS	LS / P	Classification	MDD	OMC	NMC	FI	CBR		Swell	REMARKS
No.	(m)	No.	2.36 pass	0.425 pass	0.075 pass	%		%			Kg/m^3	%			@ 95	@ 98	%	
GC479 / BH 01	0.000 - 0.180	1	98	88	75	40.6	22	11.1	977	A - 7 - 6 (13)			28.9	1650				G, AL, NMC
GC479 / BH 01	0.180 - 0.540	1	99	95	84	55.3	31	12.9	1226	A - 7 - 6 (19)			30.4	2604				G, AL, NMC
GC479 / BH 01	0.540 - 2.000	1	100	92	52	55.2	34	12.9	1187	A - 7 - 6 (12)			29.5	1768				G, AL, NMC
GC479 / BH 01	2.000 - 3.100	1	100	99	94	53.3	29	12.9	1277	A - 7 - 6 (18)			29.0	2726				G, AL, NMC
GC479 / BH 01	3.100 - 6.000	1	100	99	94	44.4	23	12.9	1277	A - 7 - 6(14)			26.0	2162				G, AL, NMC
GC479 / BH 01	SPT @ 1.000	1											30.2					NMC
GC479 / BH 01	SPT @ 2.000	1											29.4					NMC
GC479 / BH 01	SPT @ 3.000	1											27.2					NMC
GC479 / BH 01	SPT @ 4.000	1											22.1					NMC
GC479 / BH 01	SPT @ 5.000	1											23.3					NMC
GC479 / BH 01	SPT @ 7.000	1											15.1					NMC

REMARKS: SAMPLED FROM OLD TOWN SUBSTATION @ BOREHORE NUMBER 01

GEOCONSULT

LAB. REF. No. GC479 / 11APRIL19 / 10:40		**SAMPLE No.** OLD-TOWN SUBSTATION / BH03 / G, AL, NMC	
SAMPLED BY: GEOCONSULT LABORATORY TEAM		DATE: 11 / 04 / 2019	TIME: 10:40
LOCATION:	EASTING	NORTHING	ELEVATION (m)	DEPTH (m)
LILONGWE OLD TOWN SUBSTATION	0 583 306	8 453 072	1 023	
TYPE OF MATERIAL:				
TEST STANDARD: BS 1377				
TESTED BY: GEOCONSULT LABORATORY TEAM		DATE: 11 / 04 / 2019	TIME: 10:40
CHECKED BY: G. L. KACHIWALA		DATE: 12 / 04 / 2019	TIME: 08:06
APPROVED: M. SABELLI		DATE: 12 / 04 / 2019	TIME: 14:00

PROJECT: OLD TOWN SUBSTATION **CLIENT**: YEC

SUMMARY OF TEST RESULTS

LAB. REFERENCE No.	DEPTH (m)	BH No.	SIEVE ANALYSIS 2.36 pass	SIEVE ANALYSIS 0.425 pass	SIEVE ANALYSIS 0.075 pass	LL %	PI	LS %	LS / P	Classification	MDD Kg/m³	OMC %	NMC	FI	CBR @ 95	CBR @ 98	Swell %	REMARKS
GC479 / BH 03	0.000 - 0.140	3	93	65	40	31.4	16	6.1	397	A - 6 (2)			15.9	640				G, AL, NMC
GC479 / BH 03	0.140-0.70	3	97	75	56	58.3	27	12.9	968	A - 7 - 6(12)			27.3	1512				G, AL, NMC
GC479 / BH 03	0.7-4.0	3	97	76	57	63.6	36	16.7	1269	A - 7 - 6 (15)			30.8	2052				G, AL, NMC
GC479 / BH 03	SPT @ 1.000	3											31.1					NMC
GC479 / BH 03	SPT @ 2.000	3											32.8					NMC
GC479 / BH 03	SPT @ 3.000	3											30.3					NMC
GC479 / BH 03	SPT @ 4.000	3											31.8					NMC
GC479 / BH 03	SPT @ 5.000	3											22.6					NMC
GC479 / BH 03	SPT @ 6.000	3											18.7					NMC
GC479 / BH 03	SPT @ 7.000	3											29.3					NMC

REMARKS: SAMPLED FROM OLD TOWN SUBSTATION @ BOREHORE NUMBER 03

GEOCONSULT

LAB. REF. No. GC479 / 11APRIL19 / 09:36		**SAMPLE No.** OLD-TOWN SUBSTATION / BH02 / G, AL, NMC	
SAMPLED BY: GEOCONSULT LABORATORY TEAM		DATE: 11 / 04 / 2019	TIME: 09:36
LOCATION:	EASTING	NORTHING	ELEVATION (m)	DEPTH (m)
LILONGWE OLD TOWN SUBSTATION	0 583 282	8 453 078	1 026	
TYPE OF MATERIAL:				
TEST STANDARD: BS 1377				
TESTED BY: GEOCONSULT LABORATORY TEAM		DATE: 11 / 04 / 2019	TIME: 09:36
CHECKED BY: G. L. KACHIWALA		DATE: 12 / 04 / 2019	TIME: 08:06
APPROVED: M. SABELLI		DATE: 12 / 04 / 2019	TIME: 14:00

PROJECT: OLD TOWN SUBSTATION **CLIENT**: YEC

SUMMARY OF TEST RESULTS

LAB. REFERENCE No.	DEPTH (m)	BH No.	SIEVE ANALYSIS 2.36 pass	SIEVE ANALYSIS 0.425 pass	SIEVE ANALYSIS 0.075 pass	LL %	PI	LS %	LS / P	Classification	MDD Kg/m³	OMC %	NMC	FI	CBR @ 95	CBR @ 98	Swell %	REMARKS
GC479 / BH 02	0.000 - 0.500	2	100	96	89	49.3	25	10.2	979	A - 7 - 6 (16)			25.3	2225				G, AL, NMC
GC479 / BH 02	0.500 - 2.000	2	99	87	75	56.5	32	12.9	1122	A - 7 - 6 (19)			23.1	2400				G, AL, NMC
GC479 / BH 02	2.000 - 5.000	2	100	92	64	53.6	31	10.2	938	A - 7 - 6 (16)			25.9	1984				G, AL, NMC
GC479 / BH 02	5.000 - 6.000	2	100	90	50	53.6	33	14.8	1332	A - 7 - 6 (11)			25.9	1650				G, AL, NMC
GC479 / BH 02	6.000 - 7.000	2	95	79	38	39.8	20	10.2	806	A - 6 (3)			18.2	760				G, AL, NMC
GC479 / BH 02	7.000 - 7.300	2	100	96	83	31.0	14	7.7	739	A - 6 (8)			23.8	1162				G, AL, NMC
GC479 / BH 02	7.300 - 7.900	2	98	69	39	55.2	28	11.1	766	A - 7 - 6 (5)			20.0	1052				G, AL, NMC
GC479 / BH 02	SPT @ 1.000	2											27.6					NMC
GC479 / BH 02	SPT @ 2.000	2											26.1					NMC
GC479 / BH 02	SPT @ 3.000	2											24.0					NMC
GC479 / BH 02	SPT @ 4.000	2											16.8					NMC
GC479 / BH 02	SPT @ 5.000	2											31.1					NMC
GC479 / BH 02	SPT @ 6.000	2											21.3					NMC
GC479 / BH 02	SPT @ 7.000	2											14.4					NMC
GC479 / BH 02	SPT @ 7.900	2											14.4					NMC

REMARKS: SAMPLED FROM OLD TOWN SUBSTATION @ BOREHORE NUMBER 02

4.3 Atterburg Limits

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LAB. REF. No. GC479 / 11APRIL19 / 10:49			**SAMPLE No.** OLD-TOWN SUBSTATION / BH04 / G, AL, NMC	
SAMPLED BY: GEOCONSULT LABORATORY TEAM			DATE: 11 / 04 / 2019	TIME: 10:49
LOCATION:	EASTING	NORTHING	ELEVATION (m)	DEPTH (m)
LILONGWE OLD TOWN SUBSTATION	0 583 295	8 453 081	1 040	
TYPE OF MATERIAL:				
TEST STANDARD: BS 1377				
TESTED BY: GEOCONSULT LABORATORY TEAM			DATE: 11 / 04 / 2019	TIME: 10:49
CHECKED BY: G. L. KACHIWALA			DATE: 12 / 04 / 2019	TIME: 08:06
APPROVED: M. SABELLI			DATE: 12 / 04 / 2019	TIME: 14:00

PROJECT: OLD TOWN SUBSTATION

CLIENT: YEC

SUMMARY OF TEST RESULTS

LAB. REFERENCE No.	DEPTH (m)	BH No.	SIEVE ANALYSIS 2.36 pass	0.425 pass	0.075 pass	LL %	PI	LS %	LS / P	Classification	MDD Kg/m³	OMC %	NMC	FI	CBR @ 95	CBR @ 98	Swell %	REMARKS
GC479 / BH 04	0.000 - 0.130	4	100	94	62	43.4	21	11.1	1043	A - 7 - 6 (10)			25.8	1302				G, AL, NMC
GC479 / BH 04	0.130 - 0.900	4	99	66	46	62.2	37	15.7	1036	A - 7 - 6 (10)			25.6	1702				G, AL, NMC
GC479 / BH 04	0.900 - 2.000	4	94	64	48	64.8	38	12.0	768	A - 7 - 6 (11)			32.2	1824				G, AL, NMC
GC479 / BH 04	2.000 - 3.700	4	99	81	62	64.4	38	20.7	1718	A - 7 - 6 (11)			32.9	1302				G, AL, NMC
GC479 / BH 04	3.700 - 6.000	4	97	83	36	47.3	21	12.0	992	A - 7 - 6 (5)			26.6	1368				G, AL, NMC
GC479 / BH 04	SPT @ 1.000	4											31.6					NMC
GC479 / BH 04	SPT @ 2.000	4											31.8					NMC
GC479 / BH 04	SPT @ 3.000	4											31.0					NMC
GC479 / BH 04	SPT @ 4.000	4											26.7					NMC
GC479 / BH 04	SPT @ 5.000	4											25.1					NMC

REMARKS: SAMPLED FROM OLD TOWN SUBSTATION @ BOREHORE NUMBER 04

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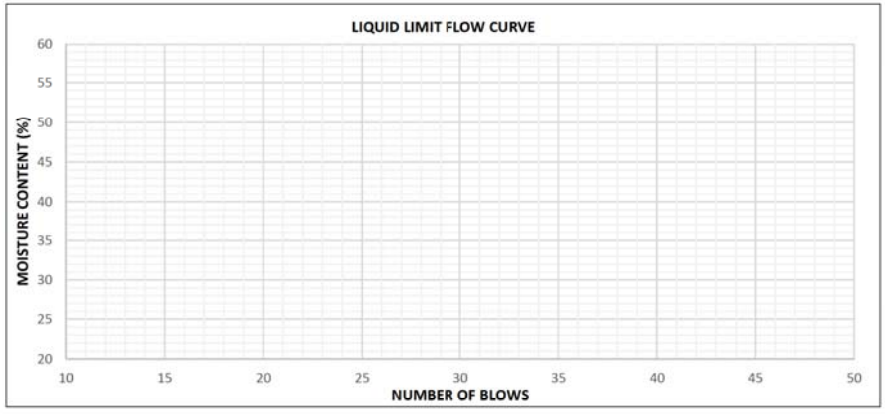
LAB REF: GC458 / 18MAR19 / 18:00		SAMPLE No. OT-SUB / BH01 / AL01 / 18MAR19		
SAMPLED BY: GEOCONSULT		DATE: 18 - 03 - 2019	TIME: 12:42	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 278	8 453 100	1 025 (m)	0.000-0.180
TYPE OF MATERIAL: MOIST BLACKISH BROWN SANDY SILTY CLAY				
TESTED BY: S. THANGATO		DATE: 28 - 03 - 2019	TIME: 08:35	
CHECKED BY: G. KACHIWALA		DATE: 01 - 04 - 2019	TIME: 13:36	
APPROVED BY: M. SABELLI		DATE: 01 - 04 - 2019	TIME: 14:18	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
TEST No.	1	2	3	4	1	2	3
CONTAINER No.	R8		C4		C18	C27	C12
MASS OF WET SOIL + CONTAINER(g)	57.0		40.0		38.5	39.0	44.0
MASS OF DRY SOIL + CONTAINER(g)	49.5		35.5		36.5	37.5	42.0
MASS OF CONTAINER (g)	30		25		26.5	29	30.5
MASS OF DRY SOIL (g)	19.5		10.5		10.0	8.5	11.5
MASS OF WATER (g)	7.50		4.50		2.00	1.50	2.00
MOISTURE CONTENT %	38.5	38.8	42.9	42.4	20.0	17.6	17.4
No. BLOWS	27		23			18.3	

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) %	40.6
PLASTIC LIMIT (PL) %	18.3
PLASTICITY INDEX (PI)	**22**
NATURAL MOISTURE CONTENT %	28.9
FINENESS INDEX	1650.0



REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 01 / DEPTH 0.000 - 0.180 (m)

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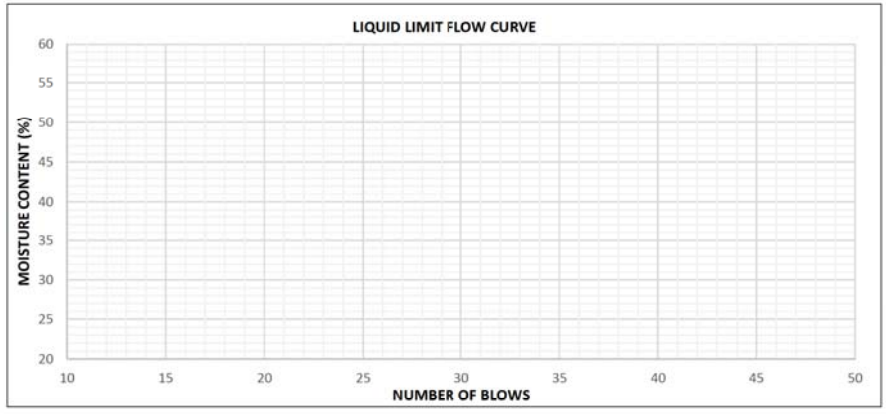
LAB REF: GC458 / 18MAR19 / 18:00		SAMPLE No. OT-SUB / BH01 / AL02 / 18MAR19		
SAMPLED BY: GEOCONSULT		DATE: 18 - 03 - 2019	TIME: 12:42	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 278	8 453 100	1 025 (m)	0.180-0.540
TYPE OF MATERIAL: MOIST BLACK SANDY SILTY CLAY				
TESTED BY: S. THANGATO		DATE: 28 - 03 - 2019	TIME: 08:30	
CHECKED BY: G. KACHIWALA		DATE: 01 - 04 - 2019	TIME: 13:36	
APPROVED BY: M. SABELLI		DATE: 01 - 04 - 2019	TIME: 14:18	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
TEST No.	1	2	3	4	1	2	3
CONTAINER No.	C31		R44		R14	C13	K3
MASS OF WET SOIL + CONTAINER(g)	47.5		43.0		38.5	38.0	40.5
MASS OF DRY SOIL + CONTAINER(g)	41.5		37.5		36.5	36.0	38.5
MASS OF CONTAINER (g)	30		28		28	28	30
MASS OF DRY SOIL (g)	11.5		9.5		8.5	8.0	8.5
MASS OF WATER (g)	6.00		5.50		2.00	2.00	2.00
MOISTURE CONTENT %	52.2	53.2	57.9	57.3	23.5	25.0	23.5
No. BLOWS	31		22			24.0	

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) %	55.3
PLASTIC LIMIT (PL) %	24.0
PLASTICITY INDEX (PI)	**31**
NATURAL MOISTURE CONTENT %	30.4
FINENESS INDEX	2604.0



REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 01 / DEPTH 0.180 - 0.540 (m)

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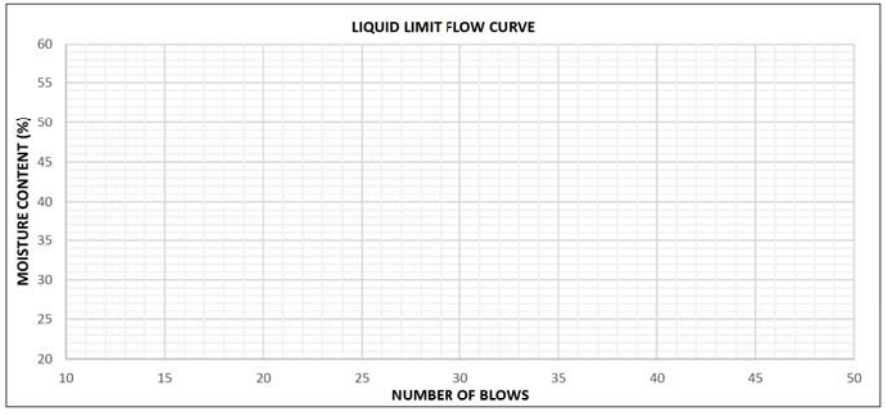
LAB REF: GC458 / 18MAR19 / 18:00		SAMPLE No. OT-SUB / BH01 / AL03 / 18MAR19		
SAMPLED BY: GEOCONSULT		DATE: 18 - 03 - 2019	TIME: 13:14	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 278	8 453 100	1 025 (m)	0.540-2.000
TYPE OF MATERIAL: MOIST DARK REDDISH SANDY SILTY CLAY				
TESTED BY: S. THANGATO		DATE: 28 - 03 - 2019	TIME: 15:39	
CHECKED BY: G. KACHIWALA		DATE: 01 - 04 - 2019	TIME: 13:36	
APPROVED BY: M. SABELLI		DATE: 01 - 04 - 2019	TIME: 14:18	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
TEST No.	1	2	3	4	1	2	3
CONTAINER No.	C1		R6		C9	C4	C16
MASS OF WET SOIL + CONTAINER(g)	62.5		63.0		43.5	37.0	43.0
MASS OF DRY SOIL + CONTAINER(g)	52.5		50.5		41.0	35.0	40.5
MASS OF CONTAINER (g)	34.5		29.5		30	25	28.5
MASS OF DRY SOIL (g)	18.0		21.0		11.0	10.0	12.0
MASS OF WATER (g)	10.00		12.50		2.50	2.00	2.50
MOISTURE CONTENT %	55.6	53.9	59.5	56.5	22.7	20.0	20.8
No. BLOWS	19		15			21.2	

LINEAR SHRINKAGE	1
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	12.4
LINEAR SHRINKAGE %	12.9
LIQUID LIMIT (LL) %	55.2
PLASTIC LIMIT (PL) %	21.2
PLASTICITY INDEX (PI)	**34**
NATURAL MOISTURE CONTENT %	29.5
FINENESS INDEX	1768.0



REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 01 / DEPTH 0.540 - 2.000 (m)

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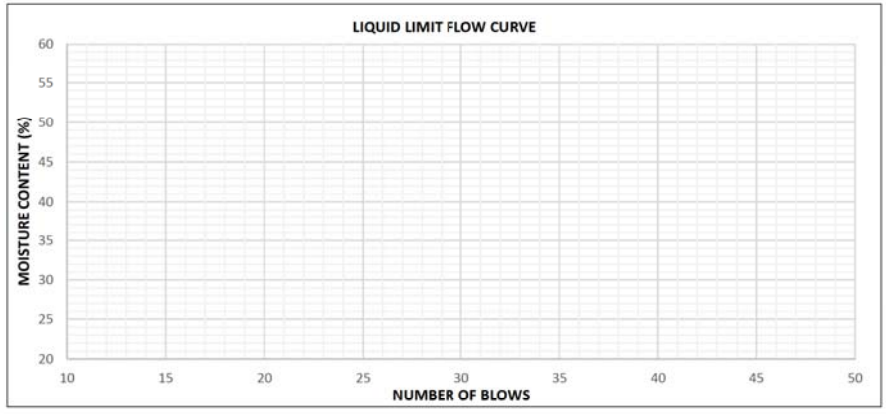
LAB REF: GC458 / 18MAR19 / 18:00		SAMPLE No. OT-SUB / BH01 / AL04 / 18MAR19		
SAMPLED BY: GEOCONSULT		DATE: 18 - 03 - 2019	TIME: 13:14	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 278	8 453 100	1 025 (m)	2.000-3.100
TYPE OF MATERIAL: MOIST RED BLACKISH SANDY SILTY CLAY				
TESTED BY: S. MATCHADO		DATE: 01 - 04 - 2019	TIME: 15:39	
CHECKED BY: G. KACHIWALA		DATE: 09 - 04 - 2019	TIME: 13:36	
APPROVED BY: M. SABELLI		DATE: 09 - 04 - 2019	TIME: 14:18	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
TEST No.	1	2	3	4	1	2	3
CONTAINER No.	C19		R7		J	M	K
MASS OF WET SOIL + CONTAINER(g)	51.5		54.0		38.5	43.5	41.0
MASS OF DRY SOIL + CONTAINER(g)	42.5		45.5		36.0	40.0	38.0
MASS OF CONTAINER (g)	25		29.5		25.5	26	26
MASS OF DRY SOIL (g)	17.5		16.0		10.5	14.0	12.0
MASS OF WATER (g)	9.00		8.50		2.50	3.50	3.00
MOISTURE CONTENT %	51.4	53.0	53.1	53.7	23.8	25.0	25.0
No. BLOWS	35		28			24.6	

LINEAR SHRINKAGE	2
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	12.4
LINEAR SHRINKAGE %	12.9
LIQUID LIMIT (LL) %	53.3
PLASTIC LIMIT (PL) %	24.6
PLASTICITY INDEX (PI)	**29**
NATURAL MOISTURE CONTENT %	29.0
FINENESS INDEX	2726.0



REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 01 / DEPTH 2.000 - 3.100 (m)

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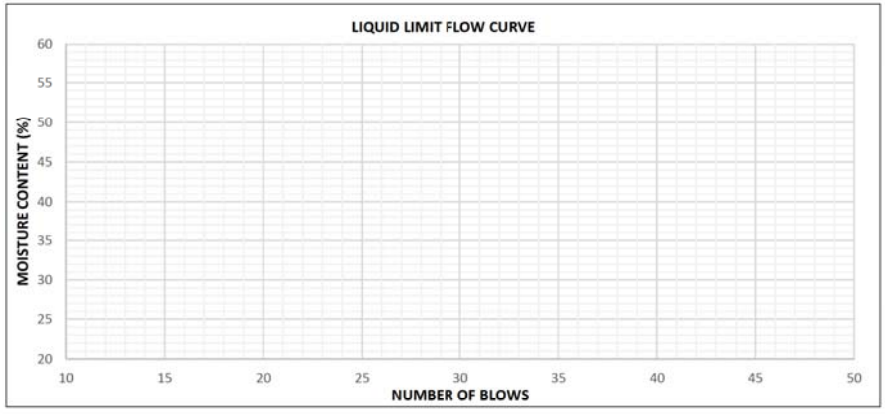
LAB REF: GC458 / 18MAR19 / 18:00		SAMPLE No. OT-SUB / BH01 / AL05 / 18MAR19		
SAMPLED BY: GEOCONSULT		DATE: 18 - 03 - 2019	TIME: 15:40	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 278	8 453 100	1 025 (m)	3.100-6.000
TYPE OF MATERIAL: MOIST MOLTLED SANDY SILTY CLAY				
TESTED BY: S. MATCHADO		DATE: 01 - 04 - 2019	TIME: 15:23	
CHECKED BY: G. KACHIWALA		DATE: 09 - 04 - 2019	TIME: 13:36	
APPROVED BY: M. SABELLI		DATE: 09 - 04 - 2019	TIME: 14:18	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
TEST No.	1	2	3	4	1	2	3
CONTAINER No.	R27		RA1		R14	R16	R1
MASS OF WET SOIL + CONTAINER(g)	64.5		75.0		54.0	59.0	56.0
MASS OF DRY SOIL + CONTAINER(g)	54.5		60.0		49.5	53.5	51.5
MASS OF CONTAINER (g)	30		28.5		28	28.5	29.5
MASS OF DRY SOIL (g)	24.5		31.5		21.5	25.0	22.0
MASS OF WATER (g)	10.00		15.00		4.50	5.50	4.50
MOISTURE CONTENT %	40.8	41.6	47.6	47.1	20.9	22.0	20.5
No. BLOWS	30		22			21.1	

LINEAR SHRINKAGE	9
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	12.4
LINEAR SHRINKAGE %	12.9
LIQUID LIMIT (LL) %	44.4
PLASTIC LIMIT (PL) %	21.1
PLASTICITY INDEX (PI)	**23**
NATURAL MOISTURE CONTENT %	26.0
FINENESS INDEX	2162



REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 01 / DEPTH 3.100 - 6.000 (m)

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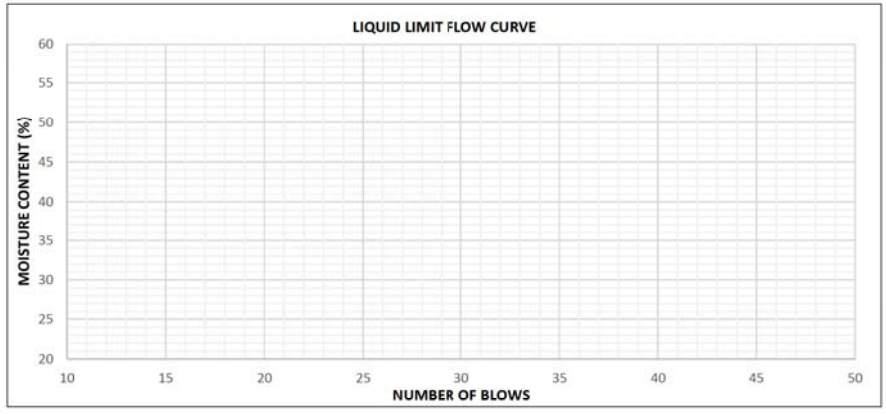
LAB REF: GC457 / 17MAR19 / 18:00		SAMPLE No. OT-SUB / BH02 / AL01 / 17MAR19		
SAMPLED BY: GEOCONSULT		DATE: 18 - 03 - 2019	TIME: 10:13	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 282	8 453 078	1 026(m)	0.000-0.500
TYPE OF MATERIAL: MOIST DARK BROWN SANDY SILTY CLAY				
TESTED BY: S. THANGATO		DATE: 28 - 03 - 2019	TIME: 08:35	
CHECKED BY: G. KACHIWALA		DATE: 01 - 04 - 2019	TIME: 13:36	
APPROVED BY: M. SABELLI		DATE: 01 - 04 - 2019	TIME: 14:18	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
TEST No.	1	2	3	4	1	2	3
CONTAINER No.	C22		C2		R8	R29	C24
MASS OF WET SOIL + CONTAINER(g)	43.5		46.5		46.0	38.5	42.5
MASS OF DRY SOIL + CONTAINER(g)	36.5		39.5		43.0	36.5	40.5
MASS OF CONTAINER (g)	22		25.3		30	29	32
MASS OF DRY SOIL (g)	14.5		14.2		13.0	7.5	8.5
MASS OF WATER (g)	7.00		7.00		3.00	2.00	2.00
MOISTURE CONTENT %	48.3	49.2	49.3	49.3	23.1	26.7	23.5
No. BLOWS	34		26			24.4	

LINEAR SHRINKAGE	4
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	12.7
LINEAR SHRINKAGE %	10.2
LIQUID LIMIT (LL) %	49.3
PLASTIC LIMIT (PL) %	24.4
PLASTICITY INDEX (PI)	**25**
NATURAL MOISTURE CONTENT %	25.3
FINENESS INDEX	2225.0



REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 02 / DEPTH 0.000 - 0.500 (m)

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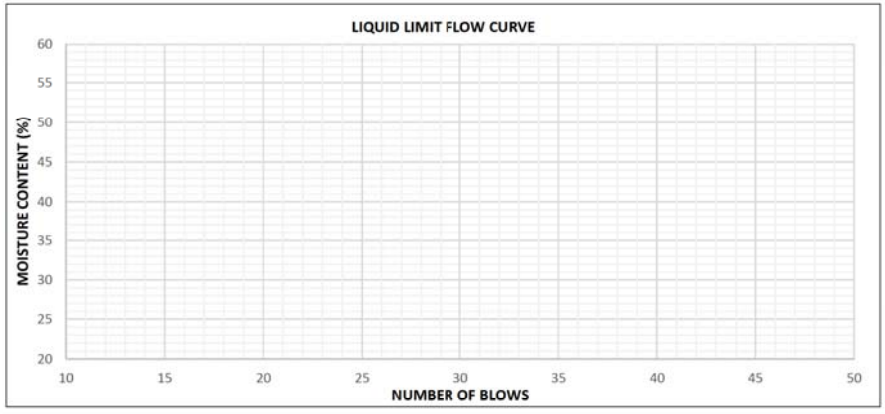
LAB REF: GC457 / 17MAR19 / 18:00		SAMPLE No. OT-SUB / BH02 / AL02 / 17MAR19		
SAMPLED BY: GEOCONSULT		DATE: 18 - 03 - 2019	TIME: 10:50	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 282	8 453 078	1 026(m)	0.500-2.000
TYPE OF MATERIAL: MOIST LIGHT BROWN SANDY SILTY CLAY				
TESTED BY: E. NKHUKU		DATE: 01 - 04 - 2019	TIME: 08:35	
CHECKED BY: G. KACHIWALA		DATE: 08 - 04 - 2019	TIME: 13:36	
APPROVED BY: M. SABELLI		DATE: 08 - 04 - 2019	TIME: 14:18	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
TEST No.	1	2	3	4	1	2	3
CONTAINER No.	K2		R29		R24	C18	R19
MASS OF WET SOIL + CONTAINER(g)	68.0		72.5		45.5	42.0	48.0
MASS OF DRY SOIL + CONTAINER(g)	54.0		53.5		43.0	39.0	45.0
MASS OF CONTAINER (g)	28		22		33	26.5	33
MASS OF DRY SOIL (g)	26.0		31.5		10.0	12.5	12.0
MASS OF WATER (g)	14.00		19.00		2.50	3.00	3.00
MOISTURE CONTENT %	53.8	53.8	60.3	59.1	25.0	24.0	25.0
No. BLOWS	26		20			24.7	

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) %	56.5
PLASTIC LIMIT (PL) %	24.7
PLASTICITY INDEX (PI)	**32**
NATURAL MOISTURE CONTENT %	23.1
FINENESS INDEX	2400.0



REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 02 / DEPTH 0.500 - 2.000 (m)

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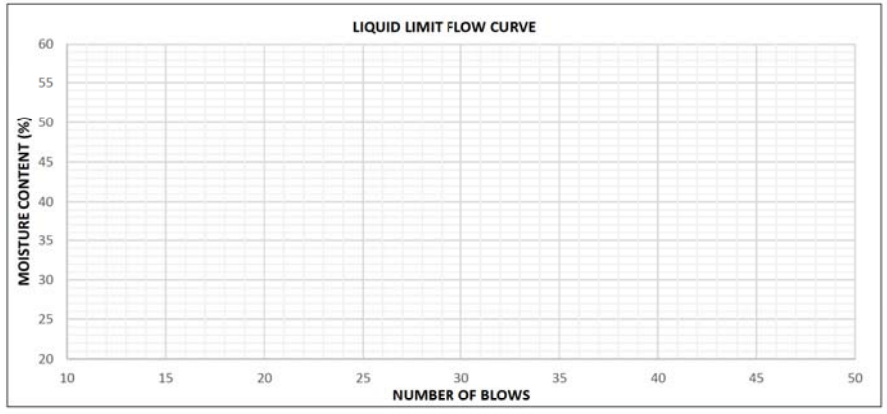
LAB REF: GC457 / 17MAR19 / 18:00		SAMPLE No. OT-SUB / BH02 / AL03 / 17MAR19		
SAMPLED BY: GEOCONSULT		DATE: 18 - 03 - 2019	TIME: 11:38	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 282	8 453 078	1 026(m)	2.000-5.000
TYPE OF MATERIAL: MOIST LIGHT BROWN SANDY SILTY CLAY				
TESTED BY: M. MILANZI		DATE: 03 - 04 - 2019	TIME: 08:43	
CHECKED BY: G. KACHIWALA		DATE: 08 - 04 - 2019	TIME: 13:36	
APPROVED BY: M. SABELLI		DATE: 08 - 04 - 2019	TIME: 14:18	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
TEST No.	1	2	3	4	1	2	3
CONTAINER No.	R24		C29		R16	C17	C18
MASS OF WET SOIL + CONTAINER(g)	44.0		48.0		40.0	39.0	37.5
MASS OF DRY SOIL + CONTAINER(g)	40.0		40.5		38.0	36.5	35.5
MASS OF CONTAINER (g)	31.5		28		28.5	26	26.5
MASS OF DRY SOIL (g)	8.5		12.5		9.5	10.5	9.0
MASS OF WATER (g)	4.00		7.50		2.00	2.50	2.00
MOISTURE CONTENT %	47.1	48.5	60.0	58.8	21.1	23.8	22.2
No. BLOWS	35		21			22.4	

LINEAR SHRINKAGE	7
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	12.7
LINEAR SHRINKAGE %	10.2
LIQUID LIMIT (LL) %	53.6
PLASTIC LIMIT (PL) %	22.4
PLASTICITY INDEX (PI)	**31**
NATURAL MOISTURE CONTENT %	25.9
FINENESS INDEX	1984.0



REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 02 / DEPTH 2.000 - 5.000 (m)

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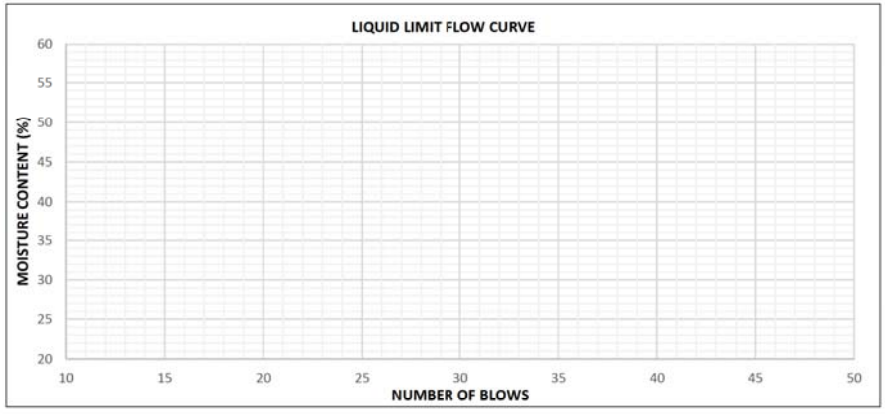
LAB REF: GC457 / 17MAR19 / 18:00		SAMPLE No. OT-SUB / BH02 / AL04 / 17MAR19		
SAMPLED BY: GEOCONSULT		DATE: 18 - 03 - 2019	TIME: 13:00	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 282	8 453 078	1 026(m)	5.000-6.000
TYPE OF MATERIAL: MOIST STIFF MOLTLED SANDY SILTY CLAY				
TESTED BY: E. NKHUKU		DATE: 04 - 04 - 2019	TIME: 08:40	
CHECKED BY: G. KACHIWALA		DATE: 08 - 04 - 2019	TIME: 13:36	
APPROVED BY: M. SABELLI		DATE: 08 - 04 - 2019	TIME: 14:18	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
TEST No.	1	2	3	4	1	2	3
CONTAINER No.	C15		C16		R16	K3	C26
MASS OF WET SOIL + CONTAINER(g)	65.0		66.0		40.0	44.5	42.5
MASS OF DRY SOIL + CONTAINER(g)	53.0		52.5		38.0	42.0	40.0
MASS OF CONTAINER (g)	30		28.5		28	29.5	28.5
MASS OF DRY SOIL (g)	23.0		24.0		10.0	12.5	11.5
MASS OF WATER (g)	12.00		13.50		2.00	2.50	2.50
MOISTURE CONTENT %	52.2	52.7	56.3	54.6	20.0	20.0	21.7
No. BLOWS	29		19			20.6	

LINEAR SHRINKAGE	1
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	12.2
LINEAR SHRINKAGE %	14.8
LIQUID LIMIT (LL) %	53.6
PLASTIC LIMIT (PL) %	20.6
PLASTICITY INDEX (PI)	**33**
NATURAL MOISTURE CONTENT %	25.9
FINENESS INDEX	1650.0



REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 02 / DEPTH 5.000 - 6.000 (m)

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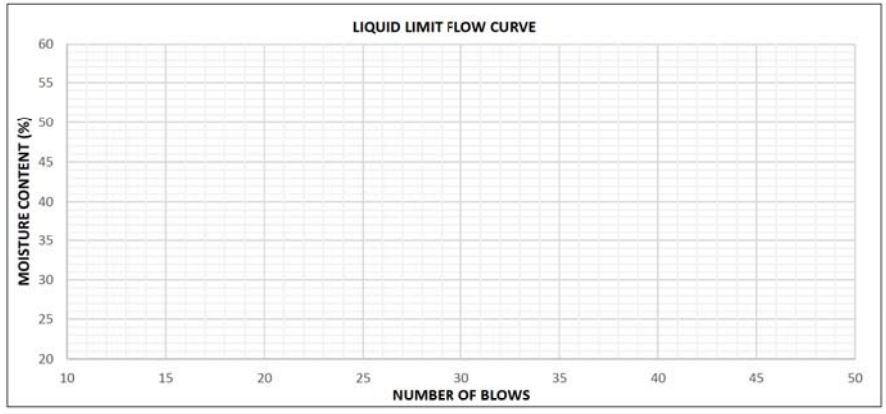
LAB REF: GC457 / 17MAR19 / 18:00		SAMPLE No. OT-SUB / BH02 / AL05 / 17MAR19		
SAMPLED BY: GEOCONSULT		DATE: 18 - 03 - 2019	TIME: 13:50	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 282	8 453 078	1 026(m)	6.000-7.000
TYPE OF MATERIAL: MOIST MOLTLED SILTY SANDY CLAY				
TESTED BY: S. MATCHADO		DATE: 04 - 04 - 2019	TIME: 08:40	
CHECKED BY: G. KACHIWALA		DATE: 08 - 04 - 2019	TIME: 13:36	
APPROVED BY: M. SABELLI		DATE: 08 - 04 - 2019	TIME: 14:18	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
TEST No.	1	2	3	4	1	2	3
CONTAINER No.	C1		R12		R4	R24	C17
MASS OF WET SOIL + CONTAINER(g)	58.5		56.0		41.0	41.0	38.0
MASS OF DRY SOIL + CONTAINER(g)	52.0		48.0		39.5	39.5	36.0
MASS OF CONTAINER (g)	34.5		29		32	31.5	26
MASS OF DRY SOIL (g)	17.5		19.0		7.5	8.0	10.0
MASS OF WATER (g)	6.50		8.00		1.50	1.50	2.00
MOISTURE CONTENT %	37.1	37.5	42.1	42.1	20.0	18.8	20.0
No. BLOWS	29		26			19.6	

LINEAR SHRINKAGE	14
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	12.7
LINEAR SHRINKAGE %	10.2
LIQUID LIMIT (LL) %	39.8
PLASTIC LIMIT (PL) %	19.6
PLASTICITY INDEX (PI)	**20**
NATURAL MOISTURE CONTENT %	18.2
FINENESS INDEX	760.0



REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 02 / DEPTH 6.000 - 7.000 (m)

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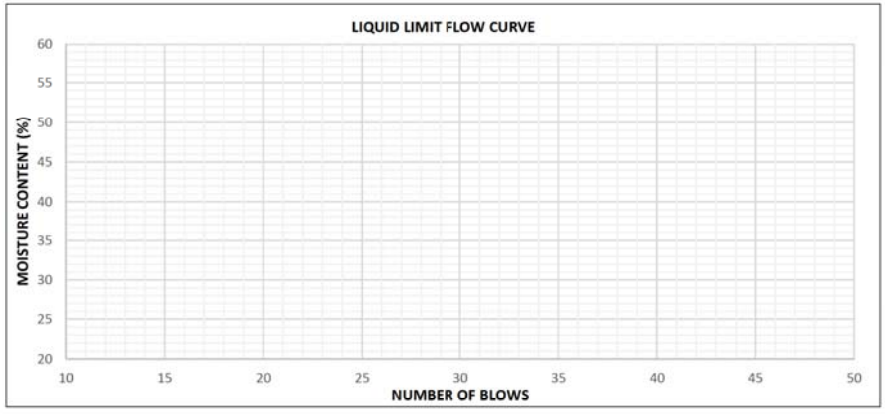
LAB REF: GC457 / 17MAR19 / 18:00		SAMPLE No. OT-SUB / BH02 / AL06 / 17MAR19		
SAMPLED BY: GEOCONSULT		DATE: 18 - 03 - 2019	TIME: 13:50	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 282	8 453 078	1 026(m)	7.000-7.300
TYPE OF MATERIAL: MOIST MOLTLED SANDY SILTY CLAY WITH SPOTS OF MICA				
TESTED BY: S. MATCHADO		DATE: 04 - 04 - 2019	TIME: 08:40	
CHECKED BY: G. KACHIWALA		DATE: 08 - 04 - 2019	TIME: 13:36	
APPROVED BY: M. SABELLI		DATE: 08 - 04 - 2019	TIME: 14:18	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
TEST No.	1	2	3	4	1	2	3
CONTAINER No.	R20		C5		C30	R21	C22
MASS OF WET SOIL + CONTAINER(g)	47.5		49.0		46.5	40.5	34.5
MASS OF DRY SOIL + CONTAINER(g)	43.0		44.0		44.0	39.0	32.5
MASS OF CONTAINER (g)	28		28.5		30	30	21
MASS OF DRY SOIL (g)	15.0		15.5		14.0	9.0	11.5
MASS OF WATER (g)	4.50		5.00		2.50	1.50	2.00
MOISTURE CONTENT %	30.0	30.3	32.3	31.6	17.9	16.7	17.4
No. BLOWS	27		21			17.3	

LINEAR SHRINKAGE	8
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	13.0
LINEAR SHRINKAGE %	7.7
LIQUID LIMIT (LL) %	31.0
PLASTIC LIMIT (PL) %	17.3
PLASTICITY INDEX (PI)	**14**
NATURAL MOISTURE CONTENT %	23.8
FINENESS INDEX	1162.0



REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 02 / DEPTH 7.000 - 7.300 (m)

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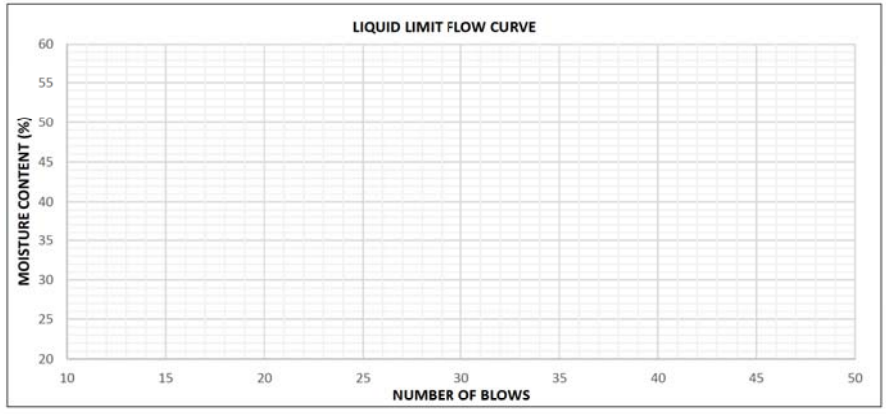
LAB REF: GC457 / 17MAR19 / 18:00		SAMPLE No. OT-SUB / BH02 / AL07 / 17MAR19		
SAMPLED BY: GEOCONSULT		DATE: 18 - 03 - 2019	TIME: 15:20	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 282	8 453 078	1 026(m)	7.300-7.900
TYPE OF MATERIAL: MOIST DARK GREY SILTY SANDY CLAY CONTAINS MICA				
TESTED BY: S. MATCHADO		DATE: 04 - 04 - 2019	TIME: 08:40	
CHECKED BY: G. KACHIWALA		DATE: 08 - 04 - 2019	TIME: 13:36	
APPROVED BY: M. SABELLI		DATE: 08 - 04 - 2019	TIME: 14:18	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
TEST No.	1	2	3	4	1	2	3
CONTAINER No.	C12		C11		F	I	J
MASS OF WET SOIL + CONTAINER(g)	47.0		48.0		38.0	36.5	37.5
MASS OF DRY SOIL + CONTAINER(g)	40.5		41.5		35.5	34.0	35.0
MASS OF CONTAINER (g)	28		30.5		25.5	25.5	25.5
MASS OF DRY SOIL (g)	12.5		11.0		10.0	8.5	9.5
MASS OF WATER (g)	6.50		6.50		2.50	2.50	2.50
MOISTURE CONTENT %	52.0	53.0	59.1	57.3	25.0	29.4	26.3
No. BLOWS	30		18			26.9	

LINEAR SHRINKAGE	10
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	12.6
LINEAR SHRINKAGE %	11.1
LIQUID LIMIT (LL) %	55.2
PLASTIC LIMIT (PL) %	26.9
PLASTICITY INDEX (PI)	**28**
NATURAL MOISTURE CONTENT %	20.0
FINENESS INDEX	1092.0



REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 02 / DEPTH 7.300 - 7.900 (m)

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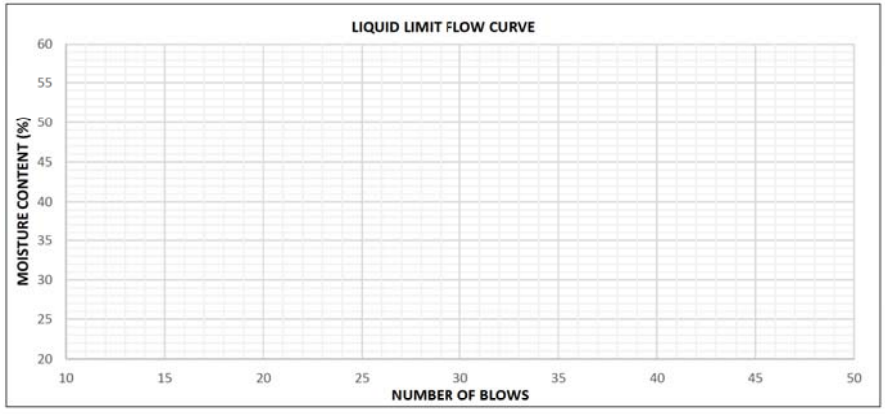
LAB REF: GC463 / 24MAR19 / 18:00		SAMPLE No. OT-SUB / BH03 / AL01 / 24MAR19		
SAMPLED BY: GEOCONSULT		DATE: 24 - 03 - 2019	TIME: 15:13	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 306	8 453 072	1 023(m)	0.000-0.140
TYPE OF MATERIAL: TOP SOIL				
TESTED BY: E. NKHUKU		DATE: 04 - 04 - 2019	TIME: 08:35	
CHECKED BY: G. KACHIWALA		DATE: 06 - 04 - 2019	TIME: 13:36	
APPROVED BY: M. SABELLI		DATE: 06 - 04 - 2019	TIME: 14:18	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
TEST No.	1	2	3	4	1	2	3
CONTAINER No.	R8		R10		C11	C9	C7
MASS OF WET SOIL + CONTAINER(g)	47.0		67.0		37.5	37.5	39.0
MASS OF DRY SOIL + CONTAINER(g)	43.0		58.0		36.5	36.5	38.0
MASS OF CONTAINER (g)	30		31.5		30	30	31.5
MASS OF DRY SOIL (g)	13.0		26.5		6.5	6.5	6.5
MASS OF WATER (g)	4.00		9.00		1.00	1.00	1.00
MOISTURE CONTENT %	30.8	30.5	34.0	32.3	15.4	15.4	15.4
No. BLOWS	22		15			15.4	

LINEAR SHRINKAGE	15
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	13.2
LINEAR SHRINKAGE %	6.1
LIQUID LIMIT (LL) %	31.4
PLASTIC LIMIT (PL) %	15.4
PLASTICITY INDEX (PI)	**16**
NATURAL MOISTURE CONTENT %	15.9
FINENESS INDEX	640.0



REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 03 / DEPTH 0.000 - 0.140 (m)

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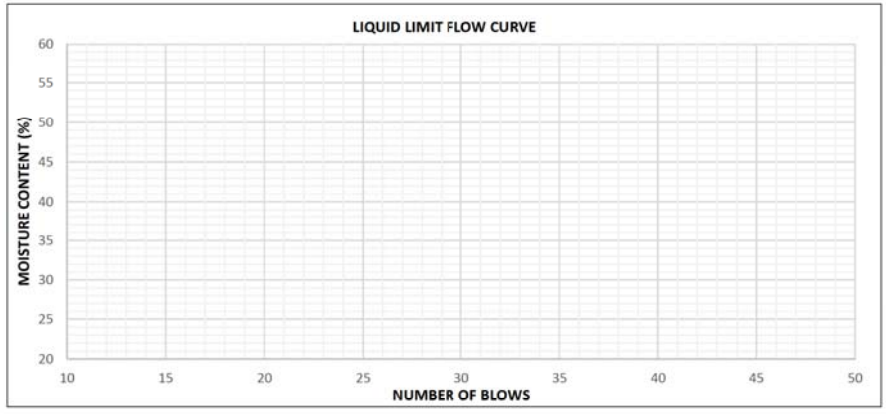
LAB REF: GC463 / 24MAR19 / 18:00		SAMPLE No. OT-SUB / BH03 / AL02 / 24MAR19		
SAMPLED BY: GEOCONSULT		DATE: 24 - 03 - 2019	TIME: 15:13	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 306	8 453 072	1 023(m)	0.140-0.700
TYPE OF MATERIAL: MOIST BLACK SANDY SILTY CLAY				
TESTED BY: S. MATCHADO		DATE: 04 - 04 - 2019	TIME: 08:35	
CHECKED BY: G. KACHIWALA		DATE: 06 - 04 - 2019	TIME: 13:36	
APPROVED BY: M. SABELLI		DATE: 06 - 04 - 2019	TIME: 14:18	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
TEST No.	1	2	3	4	1	2	3
CONTAINER No.	F		R22		C10	R30	D
MASS OF WET SOIL + CONTAINER(g)	47.0		47.5		39.0	39.5	38.5
MASS OF DRY SOIL + CONTAINER(g)	41.0		40.5		36.5	37.0	37.0
MASS OF CONTAINER (g)	30		29		28.5	29	32
MASS OF DRY SOIL (g)	11.0		11.5		8.0	8.0	5.0
MASS OF WATER (g)	6.00		7.00		2.50	2.50	1.50
MOISTURE CONTENT %	54.5	55.6	60.9	60.9	31.3	31.3	30.0
No. BLOWS	32		26			30.8	

LINEAR SHRINKAGE	11
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	12.4
LINEAR SHRINKAGE %	12.9
LIQUID LIMIT (LL) %	58.3
PLASTIC LIMIT (PL) %	30.8
PLASTICITY INDEX (PI)	**27**
NATURAL MOISTURE CONTENT %	27.3
FINENESS INDEX	1512



REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 03 / DEPTH 0.140 0.700 (m)

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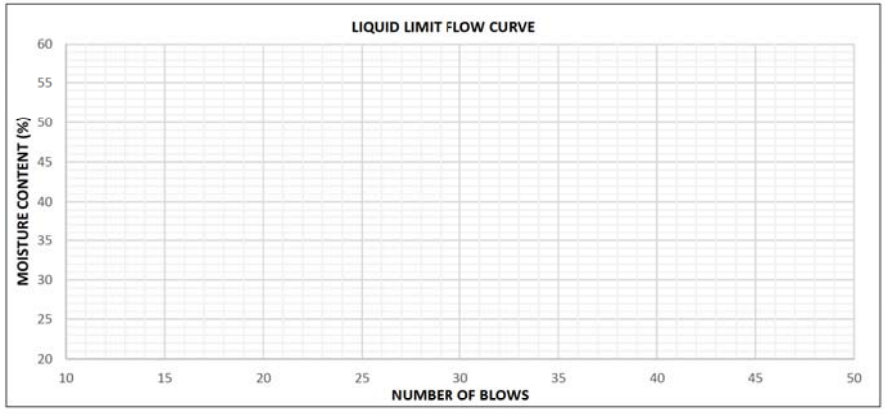
LAB REF: GC463 / 24MAR19 / 18:00		SAMPLE No. OT-SUB / BH03 / AL03 / 24MAR19		
SAMPLED BY: GEOCONSULT		DATE: 24 - 03 - 2019	TIME: 16:10	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 306	8 453 072	1 023(m)	0.700-4.000
TYPE OF MATERIAL: MOIST GREYISH BROWN SANDY SILTY CLAY				
TESTED BY: S. MATCHADO		DATE: 03 - 04 - 2019	TIME: 08:35	
CHECKED BY: G. KACHIWALA		DATE: 06 - 04 - 2019	TIME: 13:36	
APPROVED BY: M. SABELLI		DATE: 06 - 04 - 2019	TIME: 14:18	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
TEST No.	1	2	3	4	1	2	3
CONTAINER No.	C10		R5		C9	R28	R19
MASS OF WET SOIL + CONTAINER(g)	50.0		52.5		41.5	39.0	42.0
MASS OF DRY SOIL + CONTAINER(g)	42.0		43.0		39.0	37.0	40.0
MASS OF CONTAINER (g)	28.5		28.5		30	29	33
MASS OF DRY SOIL (g)	13.5		14.5		9.0	8.0	7.0
MASS OF WATER (g)	8.00		9.50		2.50	2.00	2.00
MOISTURE CONTENT %	59.3	61.0	65.5	66.2	27.8	25.0	28.6
No. BLOWS	35		28			27.1	

LINEAR SHRINKAGE	2
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	12.0
LINEAR SHRINKAGE %	16.7
LIQUID LIMIT (LL) %	63.6
PLASTIC LIMIT (PL) %	27.1
PLASTICITY INDEX (PI)	**36**
NATURAL MOISTURE CONTENT %	30.8
FINENESS INDEX	2052.0



REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 03 / DEPTH 0.700 - 4.000 (m)

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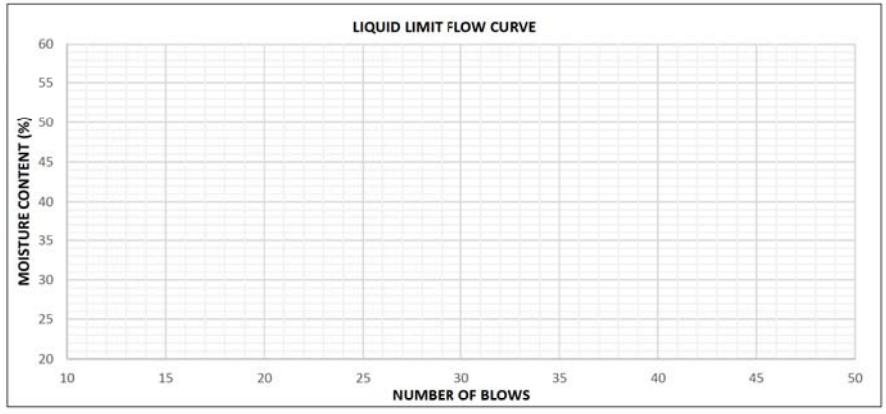
LAB REF: GC463 / 23MAR19 / 18:00		SAMPLE No. OT-SUB / BH04 / AL04 / 24MAR19		
SAMPLED BY: GEOCONSULT		DATE: 24 - 03 - 2019	TIME: 11:40	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 295	8 453 081	1 040(m)	2.000-3.700
TYPE OF MATERIAL: MOIST GREYISH BROWN SANDY SILTY CLAY				
TESTED BY: S. MATCHADO		DATE: 04 - 04 - 2019	TIME: 08:35	
CHECKED BY: G. KACHIWALA		DATE: 06 - 04 - 2019	TIME: 13:36	
APPROVED BY: M. SABELLI		DATE: 06 - 04 - 2019	TIME: 14:18	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
TEST No.	1	2	3	4	1	2	3
CONTAINER No.	R13		C9		R29	C22	C20
MASS OF WET SOIL + CONTAINER(g)	57.0		49.0		36.5	34.0	39.5
MASS OF DRY SOIL + CONTAINER(g)	48.0		39.5		35.0	31.5	37.0
MASS OF CONTAINER (g)	33.5		25		29	22	28
MASS OF DRY SOIL (g)	14.5		14.5		6.0	9.5	9.0
MASS OF WATER (g)	9.00		9.50		1.50	2.50	2.50
MOISTURE CONTENT %	62.1	63.3	65.5	65.5	25.0	26.3	27.8
No. BLOWS	33		26			26.4	

LINEAR SHRINKAGE	4
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	11.6
LINEAR SHRINKAGE %	20.7
LIQUID LIMIT (LL) %	64.4
PLASTIC LIMIT (PL) %	26.4
PLASTICITY INDEX (PI)	**38**
NATURAL MOISTURE CONTENT %	32.9
FINENESS INDEX	1302.0



REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 04 / DEPTH 2.000 - 3.700 (m)

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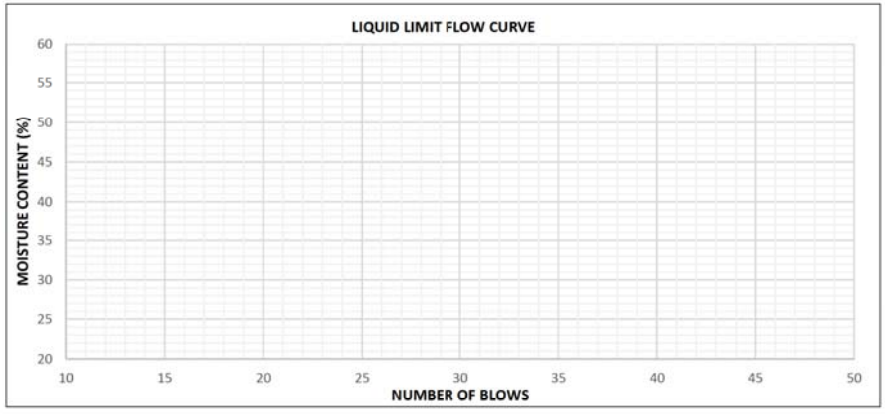
LAB REF: GC463 / 23MAR19 / 18:00		SAMPLE No. OT-SUB / BH04 / AL04 / 24MAR19		
SAMPLED BY: GEOCONSULT		DATE: 24 - 03 - 2019	TIME: 12:00	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 295	8 453 081	1 040(m)	3.700-6.000
TYPE OF MATERIAL: MOIST BROWN SANDY SILTY CLAY WITH STRIPES OF COTTON SOIL				
TESTED BY: S. MATCHADO		DATE: 04 - 04 - 2019	TIME: 08:35	
CHECKED BY: G. KACHIWALA		DATE: 06 - 04 - 2019	TIME: 13:36	
APPROVED BY: M. SABELLI		DATE: 06 - 04 - 2019	TIME: 14:18	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
TEST No.	1	2	3	4	1	2	3
CONTAINER No.	C25		R18		R1	C7	R4
MASS OF WET SOIL + CONTAINER(g)	33.5		41.0		39.0	41.0	42.0
MASS OF DRY SOIL + CONTAINER(g)	30.0		37.0		37.0	39.0	40.0
MASS OF CONTAINER (g)	22		29		29.5	31.5	32
MASS OF DRY SOIL (g)	8.0		8.0		7.5	7.5	8.0
MASS OF WATER (g)	3.50		4.00		2.00	2.00	2.00
MOISTURE CONTENT %	43.8	45.1	50.0	49.5	26.7	26.7	25.0
No. BLOWS	35		24			26.1	

LINEAR SHRINKAGE	8
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	12.5
LINEAR SHRINKAGE %	12.0
LIQUID LIMIT (LL) %	47.3
PLASTIC LIMIT (PL) %	26.1
PLASTICITY INDEX (PI)	**21**
NATURAL MOISTURE CONTENT %	26.6
FINENESS INDEX	1368.0



REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 04 / DEPTH 3.700 - 6.000 (m)

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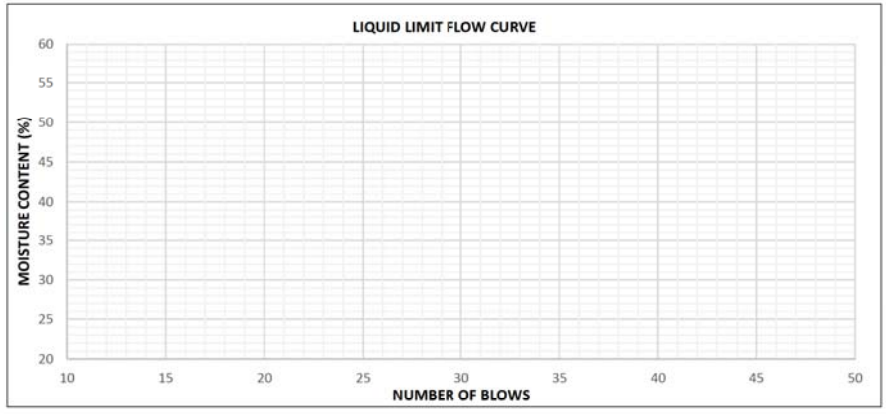
LAB REF: GC463A / 23MAR19 / 18:00		SAMPLE No. OT-SUB / BH04 / AL01 / 23MAR19		
SAMPLED BY: GEOCONSULT		DATE: 23 - 03 - 2019	TIME: 17:53	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 295	8 453 081	1 040(m)	0.000-0.130
TYPE OF MATERIAL: TOP SOIL				
TESTED BY: S. MATCHADO		DATE: 04 - 04 - 2019	TIME: 08:35	
CHECKED BY: G. KACHIWALA		DATE: 06 - 04 - 2019	TIME: 13:36	
APPROVED BY: M. SABELLI		DATE: 06 - 04 - 2019	TIME: 14:18	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
TEST No.	1	2	3	4	1	2	3
CONTAINER No.	C21		R13		C27	C5	C8
MASS OF WET SOIL + CONTAINER(g)	46.5		50.0		39.0	38.5	38.0
MASS OF DRY SOIL + CONTAINER(g)	41.5		44.0		37.0	36.5	36.0
MASS OF CONTAINER (g)	29.5		31		27.5	28	27.5
MASS OF DRY SOIL (g)	12.0		13.0		9.5	8.5	8.5
MASS OF WATER (g)	5.00		6.00		2.00	2.00	2.00
MOISTURE CONTENT %	41.7	42.1	46.2	44.8	21.1	23.5	23.5
No. BLOWS	27		19			22.7	

LINEAR SHRINKAGE	7
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	12.6
LINEAR SHRINKAGE %	11.1
LIQUID LIMIT (LL) %	43.4
PLASTIC LIMIT (PL) %	22.7
PLASTICITY INDEX (PI)	**21**
NATURAL MOISTURE CONTENT %	25.8
FINENESS INDEX	1302.0



REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 04 / DEPTH 0.000 - 0.130 (m)

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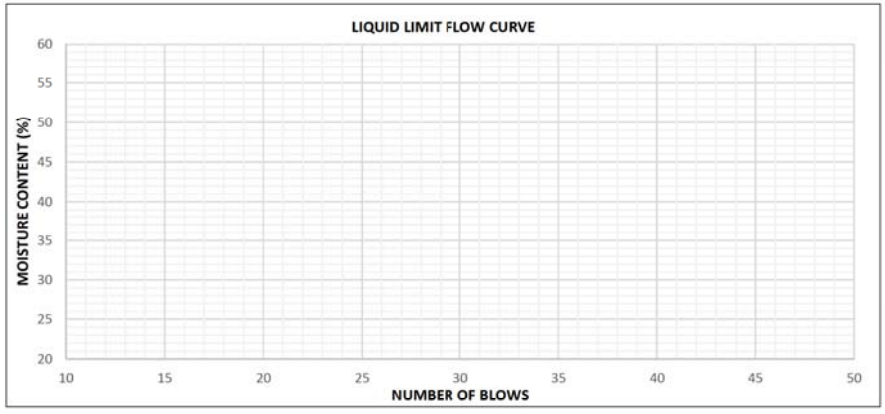
LAB REF: GC463A / 23MAR19 / 18:00		SAMPLE No. OT-SUB / BH04 / AL02 / 23MAR19		
SAMPLED BY: GEOCONSULT		DATE: 23 - 03 - 2019	TIME: 17:55	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 295	8 453 081	1 040(m)	0.130-0.900
TYPE OF MATERIAL: MOIST BLACK SANDY SILTY CLAY				
TESTED BY: S. MATCHADO		DATE: 04 - 04 - 2019	TIME: 08:35	
CHECKED BY: G. KACHIWALA		DATE: 06 - 04 - 2019	TIME: 13:36	
APPROVED BY: M. SABELLI		DATE: 06 - 04 - 2019	TIME: 14:18	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
TEST No.	1	2	3	4	1	2	3
CONTAINER No.	R19		C25		C8	R18	R28
MASS OF WET SOIL + CONTAINER(g)	47.5		46.5		39.5	40.5	41.5
MASS OF DRY SOIL + CONTAINER(g)	42.0		37.0		37.5	38.5	39.0
MASS OF CONTAINER (g)	33		22		29	31	29
MASS OF DRY SOIL (g)	9.0		15.0		8.5	7.5	10.0
MASS OF WATER (g)	5.50		9.50		2.00	2.00	2.50
MOISTURE CONTENT %	61.1	61.7	63.3	62.7	23.5	26.7	25.0
No. BLOWS	28		23			25.1	

LINEAR SHRINKAGE	2
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	12.1
LINEAR SHRINKAGE %	15.7
LIQUID LIMIT (LL) %	62.2
PLASTIC LIMIT (PL) %	25.1
PLASTICITY INDEX (PI)	**37**
NATURAL MOISTURE CONTENT %	25.6
FINENESS INDEX	1702.0



REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 04 / DEPTH 0.130 - 0.900 (m)

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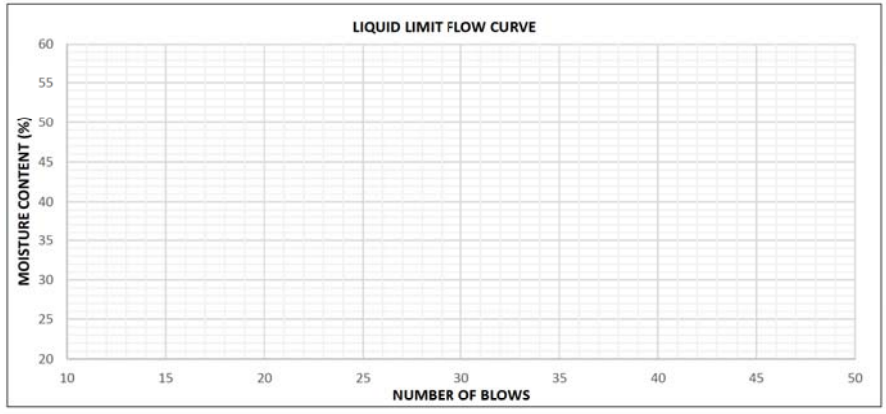
LAB REF: GC463A / 23MAR19 / 18:00		SAMPLE No. OT-SUB / BH04 / AL03 / 23MAR19		
SAMPLED BY: GEOCONSULT		DATE: 23 - 03 - 2019	TIME: 17:55	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 295	8 453 081	1 040(m)	0.900-2.000
TYPE OF MATERIAL: MOIST BLACK GREYISH SANDY SILTY CLAY				
TESTED BY: S. MATCHADO		DATE: 04 - 04 - 2019	TIME: 08:35	
CHECKED BY: G. KACHIWALA		DATE: 06 - 04 - 2019	TIME: 13:36	
APPROVED BY: M. SABELLI		DATE: 06 - 04 - 2019	TIME: 14:18	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

ATTERBURG LIMITS STANDARD: BS 1377, 2 (C)

TYPE OF TEST	LIQUID LIMITS (LL)				PLASTIC LIMITS (PL)		
TEST No.	1	2	3	4	1	2	3
CONTAINER No.	R26		R22		R44	C13	R20
MASS OF WET SOIL + CONTAINER(g)	57.0		58.0		38.0	38.0	39.5
MASS OF DRY SOIL + CONTAINER(g)	48.0		46.5		36.0	36.0	37.0
MASS OF CONTAINER (g)	33.5		29		28.5	28	28
MASS OF DRY SOIL (g)	14.5		17.5		7.5	8.0	9.0
MASS OF WATER (g)	9.00		11.50		2.00	2.00	2.50
MOISTURE CONTENT %	62.1	63.3	65.7	66.4	26.7	25.0	27.8
No. BLOWS	34		27			26.5	

LINEAR SHRINKAGE	5
INITIAL LENGTH OF SPECIMEN (cm)	14.0
LENGTH OF OVERN DRY SPECIMEN (cm)	12.5
LINEAR SHRINKAGE %	12.0
LIQUID LIMIT (LL) %	64.8
PLASTIC LIMIT (PL) %	26.5
PLASTICITY INDEX (PI)	**38**
NATURAL MOISTURE CONTENT %	32.2
FINENESS INDEX	1824.0



REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 04 / DEPTH 0.900 - 2.000 (m)

4.4 Gradation

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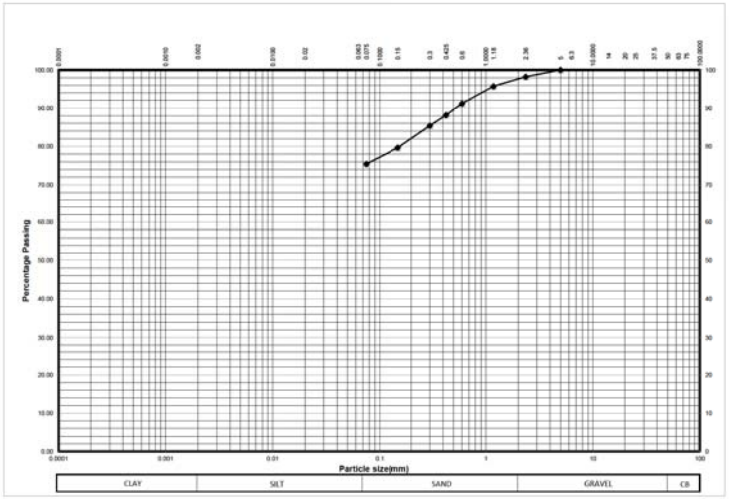
LAB REF: GC458 / 18MAR19 / 18:00		SAMPLE No. OT-SUB / BH01 / GC01 / 18MAR19		
SAMPLED BY: GEOCONSULT		DATE: 18 - 03 - 2019	TIME: 12:42	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 278	8 453 100	1 025 (m)	0.000-0.180
TYPE OF MATERIAL: MOIST BLACKISH BROWN SANDY SILTY CLAY				
TESTED BY: G. KONDE		DATE: 02 - 04 - 2019	TIME: 09:47	
CHECKED BY: G. KACHIWALA		DATE: 04 - 04- 2019	TIME: 14:00	
APPROVED BY: M. SABELLI		DATE: 04 - 04- 2019	TIME: 15:00	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

SIEVE ANALYSIS (GRADATION) STANDARD: BS 1377

SIEVE	MASS	PERCENTAGE			GRADATION SPECIFICATION			ZONE
(mm)	RETAINED	RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.000								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300								
5.000	0.0	0.00	100.00	100				
2.360	7.0	1.75	98.25	98				
1.180	17.0	4.26	95.74	96				
0.600	35.0	8.77	91.23	91				
0.425	47.0	11.78	88.22	88				
0.300	58.0	14.54	85.46	85				
0.150	81.0	20.30	79.70	80				
0.075	98.0	24.56	75.44	75				
0 pan	301.0	75.44						
TOTAL (g)	399.0							



REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 01 / DEPTH 0.000 - 0.180 (m)

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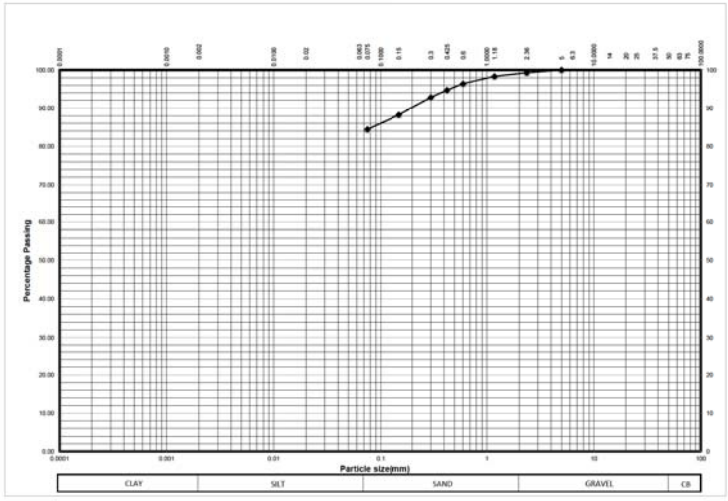
LAB REF: GC458 / 18MAR19 / 18:00		SAMPLE No. OT-SUB / BH01 / GC02 / 18MAR19		
SAMPLED BY: GEOCONSULT		DATE: 18 - 03 - 2019	TIME: 12:42	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 278	8 453 100	1 025 (m)	0.180-0.540
TYPE OF MATERIAL: MOIST BLACKISH BROWN SANDY SILTY CLAY				
TESTED BY: G. KONDE		DATE: 02 - 04 - 2019	TIME: 09:07	
CHECKED BY: G. KACHIWALA		DATE: 04 - 04- 2019	TIME: 14:00	
APPROVED BY: M. SABELLI		DATE: 04 - 04- 2019	TIME: 15:00	
PROJECT: OLD TOWN SUBSTATION		**CLIENT:** YEC		

SIEVE ANALYSIS (GRADATION) STANDARD: BS 1377

SIEVE	MASS	PERCENTAGE			GRADATION SPECIFICATION			ZONE
(mm)	RETAINED	RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.000								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300								
5.000	0.0	0.00	100.00	100				
2.360	3.0	0.72	99.28	99				
1.180	7.0	1.67	98.33	98				
0.600	15.0	3.58	96.42	96				
0.425	22.0	5.25	94.75	95				
0.300	30.0	7.16	92.84	93				
0.150	49.0	11.69	88.31	88				
0.075	65.0	15.51	84.49	84				
0 pan	354.0	84.49						
TOTAL (g)	419.0							



REMARKS:SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 01 / DEPTH 0.180 - 0.540 (m)

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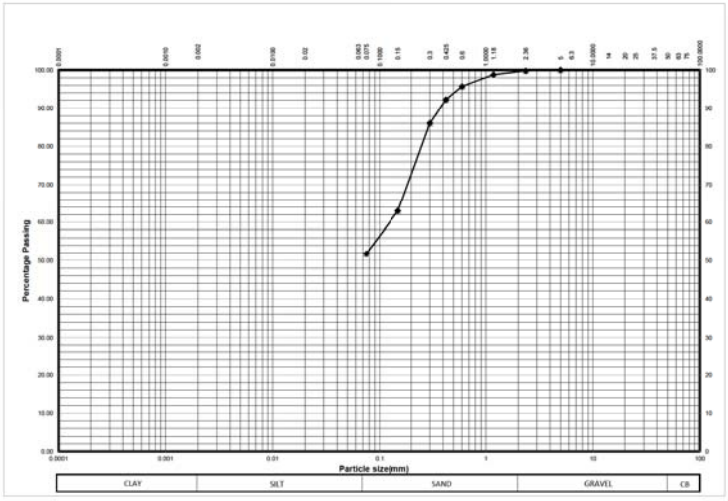
LAB REF: GC458 / 18MAR19 / 18:00		SAMPLE No. OT-SUB / BH01 / GC03 / 18MAR19		
SAMPLED BY: GEOCONSULT		DATE: 18 - 03 - 2019	TIME: 12:42	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 278	8 453 100	1 025 (m)	0.540 - 2.000
TYPE OF MATERIAL: MOIST DARK REDDISH SANDY SILTY CLAY				
TESTED BY: G. KONDE		DATE: 02 - 04 - 2019	TIME: 09:07	
CHECKED BY: G. KACHIWALA		DATE: 04 - 04- 2019	TIME: 14:00	
APPROVED BY: M. SABELLI		DATE: 04 - 04- 2019	TIME: 15:00	
PROJECT: OLD TOWN SUBSTATION		**CLIENT:** YEC		

SIEVE ANALYSIS (GRADATION) STANDARD: BS 1377

SIEVE	MASS	PERCENTAGE			GRADATION SPECIFICATION			ZONE
(mm)	RETAINED	RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.000								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300								
5.000	0.0	0.00	100.00	100				
2.360	1.0	0.20	99.80	100				
1.180	6.0	1.23	98.77	99				
0.600	21.0	4.29	95.71	96				
0.425	38.0	7.77	92.23	92				
0.300	68.0	13.91	86.09	86				
0.150	181.0	37.01	62.99	63				
0.075	236.0	48.26	51.74	52				
0 pan	253.0	51.74						
TOTAL (g)	489.0							



REMARKS:SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 01 / DEPTH 0.540 - 2.000 (m)

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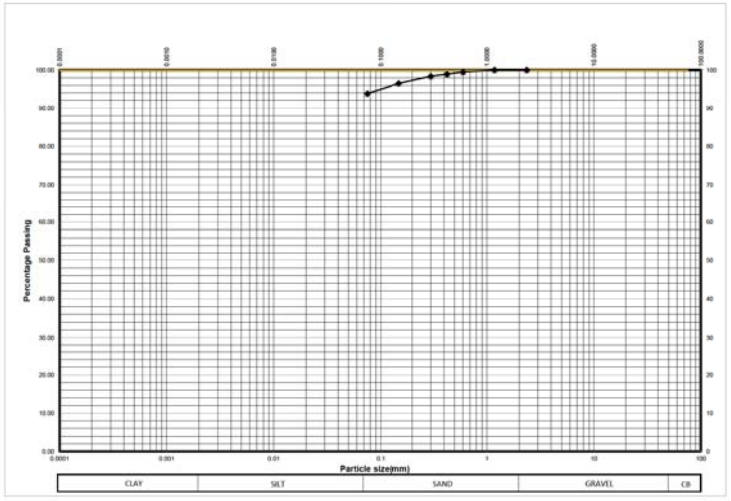
LAB REF: GC458 / 18MAR19 / 18:00		SAMPLE No. OT-SUB / BH01 / GC04 / 18MAR19		
SAMPLED BY: GEOCONSULT		DATE: 18 - 03 - 2019	TIME: 12:42	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 278	8 453 100	1 025 (m)	2.000 - 3.100
TYPE OF MATERIAL: MOIST RED BLACKISH SANDY SILTY CLAY				
TESTED BY: G. KONDE		DATE: 02 - 04 - 2019	TIME: 09:07	
CHECKED BY: G. KACHIWALA		DATE: 04 - 04- 2019	TIME: 14:00	
APPROVED BY: M. SABELLI		DATE: 04 - 04- 2019	TIME: 15:00	
PROJECT: OLD TOWN SUBSTATION		**CLIENT:** YEC		

SIEVE ANALYSIS (GRADATION) STANDARD: BS 1377

SIEVE	MASS	PERCENTAGE			GRADATION SPECIFICATION			ZONE
(mm)	RETAINED	RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.000								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300								
5.000								
2.360	0.0	0.00	100.00	100				
1.180	0.0	0.00	100.00	100				
0.600	2.0	0.54	99.46	99				
0.425	4.0	1.07	98.93	99				
0.300	6.0	1.61	98.39	98				
0.150	13.0	3.48	96.52	97				
0.075	23.0	6.16	93.84	94				
0 pan	350.5	93.84						
TOTAL (g)	373.5							



REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 01 / DEPTH 0.540 - 2.000 (m)

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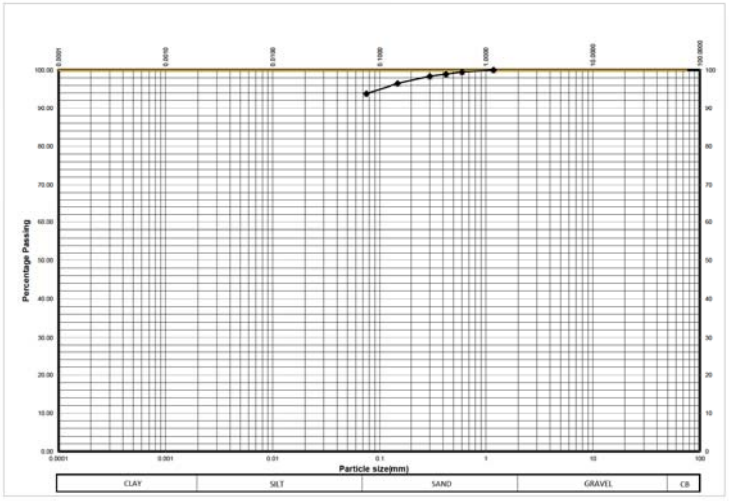
LAB REF: GC458 / 18MAR19 / 18:00		SAMPLE No. OT-SUB / BH01 / GC05/ 18MAR19		
SAMPLED BY: GEOCONSULT		DATE: 18 - 03 - 2019	TIME: 15:40	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 278	8 453 100	1 025 (m)	3.100-6.000
TYPE OF MATERIAL: MOIST MOLTLED SANDY SILTY CLAY				
TESTED BY: G. KONDE		DATE: 02 - 04 - 2019	TIME: 09:07	
CHECKED BY: G. KACHIWALA		DATE: 04 - 04- 2019	TIME: 14:00	
APPROVED BY: M. SABELLI		DATE: 04 - 04- 2019	TIME: 15:00	
PROJECT: OLD TOWN SUBSTATION		**CLIENT:** YEC		

SIEVE ANALYSIS (GRADATION) STANDARD: BS 1377

SIEVE	MASS	PERCENTAGE			GRADATION SPECIFICATION			ZONE
(mm)	RETAINED	RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.000								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300								
5.000								
2.360								
1.180	0.0	0.00	100.00	100				
0.600	2.0	0.54	99.46	99				
0.425	4.0	1.07	98.93	99				
0.300	6.0	1.61	98.39	98				
0.150	13.0	3.49	96.51	97				
0.075	23.0	6.17	93.83	94				
0 pan	349.5	93.83						
TOTAL (g)	372.5							



REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 01 / DEPTH 3.100 - 6.000 (m)

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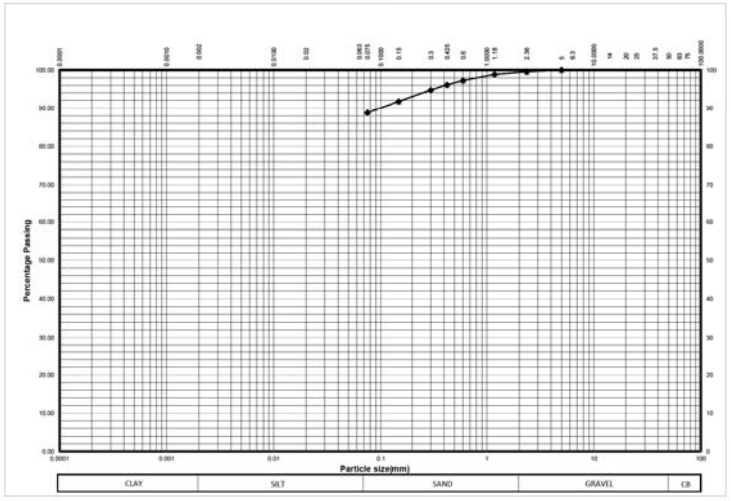
LAB REF: GC457 / 17MAR19 / 18:00		SAMPLE No. OT-SUB / BH02 / GC01 / 17MAR19		
SAMPLED BY: GEOCONSULT		DATE: 17 - 03 - 2019	TIME: 10:13	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 282	8 453 078	1 026(m)	0.000-0.500
TYPE OF MATERIAL: MOIST DARK BROWN SANDY SILTY CLAY				
TESTED BY: Y. NANG'OMBA		DATE: 02 - 04 - 2019	TIME: 09:07	
CHECKED BY: G. KACHIWALA		DATE: 04 - 04- 2019	TIME: 14:00	
APPROVED BY: M. SABELLI		DATE: 04 - 04- 2019	TIME: 15:00	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

SIEVE ANALYSIS (GRADATION) STANDARD: BS 1377

SIEVE	MASS	PERCENTAGE			GRADATION SPECIFICATION			ZONE
(mm)	RETAINED	RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.000								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300								
5.000	0.0	0.00	100.00	100				
2.360	2.0	0.46	99.54	100				
1.180	5.0	1.14	98.86	99				
0.600	12.0	2.73	97.27	97				
0.425	17.0	3.87	96.13	96				
0.300	23.0	5.24	94.76	95				
0.150	36.0	8.20	91.80	92				
0.075	49.0	11.16	88.84	89				
0 pan	390.0	88.84						
TOTAL (g)	439.0							



REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 02 / DEPTH 0.000 - 0.500 (m)

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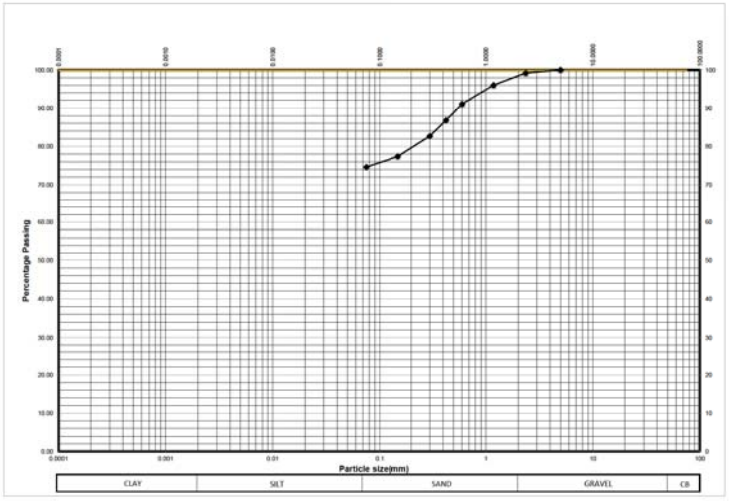
LAB REF: GC457 / 17MAR19 / 18:00		SAMPLE No. OT-SUB / BH02 / GC02 / 17MAR19		
SAMPLED BY: GEOCONSULT		DATE: 17 - 03 - 2019	TIME: 10:50	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 282	8 453 078	1 026(m)	0.500-2.000
TYPE OF MATERIAL: MOIST LIGHT BROWN SANDY SILTY CLAY				
TESTED BY: Y. NANG'OMBA		DATE: 02 - 04 - 2019	TIME: 09:40	
CHECKED BY: G. KACHIWALA		DATE: 04 - 04- 2019	TIME: 14:00	
APPROVED BY: M. SABELLI		DATE: 04 - 04- 2019	TIME: 15:00	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

SIEVE ANALYSIS (GRADATION) STANDARD: BS 1377

SIEVE	MASS	PERCENTAGE			GRADATION SPECIFICATION			ZONE
(mm)	RETAINED	RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.000								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300								
5.000	0.0	0.00	100.00	100				
2.360	3.0	0.80	99.20	99				
1.180	15.0	3.98	96.02	96				
0.600	33.5	8.90	91.10	91				
0.425	49.5	13.15	86.85	87				
0.300	65.0	17.26	82.74	83				
0.150	85.0	22.58	77.42	77				
0.075	95.5	25.37	74.63	75				
0 pan	281.0	74.63						
TOTAL (g)	376.5							



REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 02 / DEPTH 0.500 - 2.000 (m)

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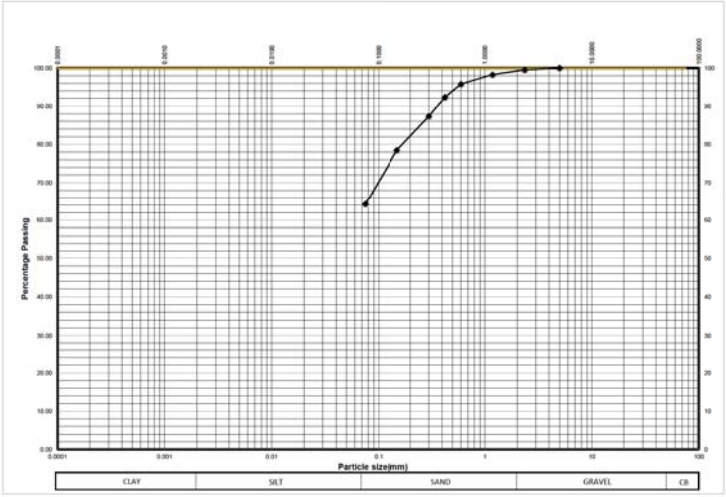
LAB REF: GC457 / 17MAR19 / 18:00			SAMPLE No. OT-SUB / BH02 / GC03 / 17MAR19		
SAMPLED BY: GEOCONSULT			DATE: 17 - 03 - 2019	TIME: 11:38	
LOCATION: 36L UTM	EASTING		NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 282		8 453 078	1 026(m)	2.000-5.000
TYPE OF MATERIAL: MOIST STIFF BROWN YELLOWISH SANDY SILTY CLAY					
TESTED BY: Y. NANG'OMBA			DATE: 02 - 04 - 2019	TIME: 09:40	
CHECKED BY: G. KACHIWALA			DATE: 04 - 04- 2019	TIME: 14:00	
APPROVED BY: M. SABELLI			DATE: 04 - 04- 2019	TIME: 15:00	
PROJECT: OLD TOWN SUBSTATION		**CLIENT:** YEC			

SIEVE ANALYSIS (GRADATION) STANDARD: BS 1377

SIEVE	MASS	PERCENTAGE			GRADATION SPECIFICATION			ZONE
(mm)	RETAINED	RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.000								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300								
5.000	0.0	0.00	100.00	100				
2.360	2.0	0.49	99.51	100				
1.180	7.0	1.73	98.27	98				
0.600	17.0	4.20	95.80	96				
0.425	31.0	7.65	92.35	92				
0.300	51.0	12.59	87.41	87				
0.150	87.0	21.48	78.52	79				
0.075	145.0	35.80	64.20	64				
0 pan	260.0	64.20						
TOTAL (g)	405.0							



REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 02 / DEPTH 2.000 - 5.000 (m)

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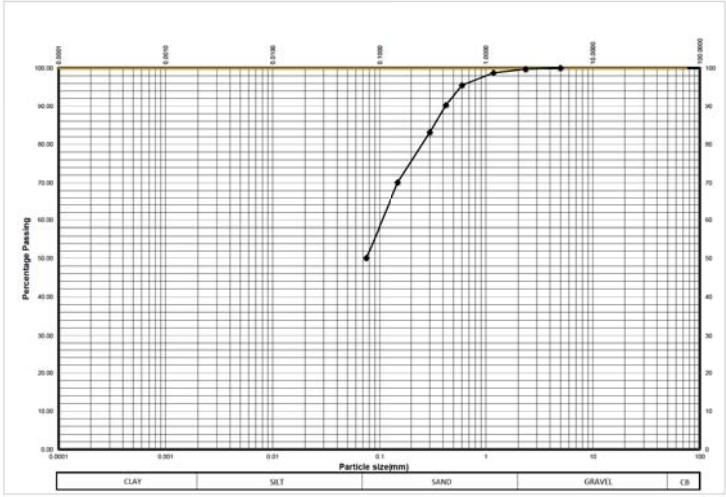
LAB REF: GC457 / 17MAR19 / 18:00			SAMPLE No. OT-SUB / BH02 / GC04 / 17MAR19		
SAMPLED BY: GEOCONSULT			DATE: 17 - 03 - 2019	TIME: 13:00	
LOCATION: 36L UTM	EASTING		NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 282		8 453 078	1 026(m)	5.000-6.00
TYPE OF MATERIAL: MOIST STIFF MOLTLED SANDY SILTY CLAY					
TESTED BY: Y. NANG'OMBA			DATE: 02 - 04 - 2019	TIME: 09:07	
CHECKED BY: G. KACHIWALA			DATE: 04 - 04- 2019	TIME: 14:00	
APPROVED BY: M. SABELLI			DATE: 04 - 04- 2019	TIME: 15:00	
PROJECT: OLD TOWN SUBSTATION		**CLIENT:** YEC			

SIEVE ANALYSIS (GRADATION) STANDARD: BS 1377

SIEVE	MASS	PERCENTAGE			GRADATION SPECIFICATION			ZONE
(mm)	RETAINED	RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.000								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300								
5.000	0.0	0.00	100.00	100				
2.360	1.5	0.29	99.71	100				
1.180	6.5	1.27	98.73	99				
0.600	23.0	4.51	95.49	95				
0.425	49.5	9.70	90.30	90				
0.300	86.0	16.85	83.15	83				
0.150	152.5	29.87	70.13	70				
0.075	255.0	49.95	50.05	50				
0 pan	255.5	50.05						
TOTAL (g)	510.5							



REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 02 / DEPTH 5.000 - 6.000 (m)

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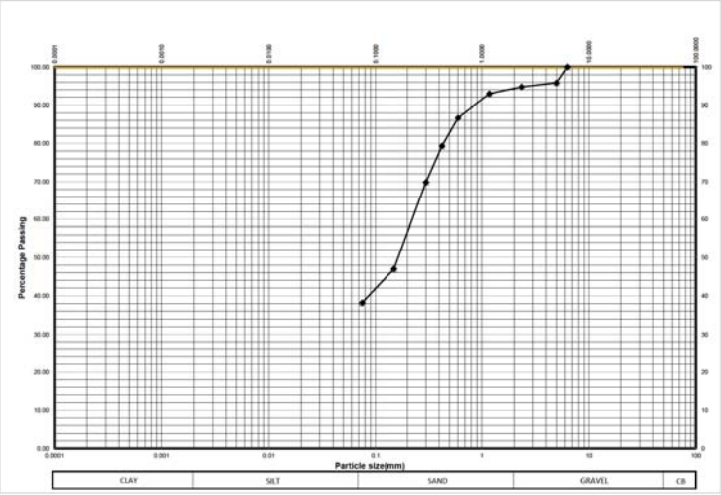
LAB REF: GC457 / 17MAR19 / 18:00			SAMPLE No. OT-SUB / BH02 / GC05 / 17MAR19		
SAMPLED BY: GEOCONSULT			DATE: 17 - 03 - 2019	TIME: 13:50	
LOCATION: 36L UTM	EASTING		NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 282		8 453 078	1 026(m)	6.000-7.000
TYPE OF MATERIAL: MOIST MOLTLED SILTY SANDY CLAY					
TESTED BY: Y. NANG'OMBA			DATE: 03 - 04 - 2019	TIME: 11:47	
CHECKED BY: G. KACHIWALA			DATE: 04 - 04- 2019	TIME: 14:00	
APPROVED BY: M. SABELLI			DATE: 04 - 04- 2019	TIME: 15:00	
PROJECT: OLD TOWN SUBSTATION		**CLIENT:** YEC			

SIEVE ANALYSIS (GRADATION) STANDARD: BS 1377

SIEVE	MASS	PERCENTAGE			GRADATION SPECIFICATION			ZONE
(mm)	RETAINED	RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.000								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300	0.0	0.00	100.00	100				
5.000	14.0	4.18	95.82	96				
2.360	17.5	5.22	94.78	95				
1.180	23.5	7.01	92.99	93				
0.600	44.5	13.28	86.72	87				
0.425	69.0	20.60	79.40	79				
0.300	101.0	30.15	69.85	70				
0.150	177.5	52.99	47.01	47				
0.075	207.0	61.79	38.21	38				
0 pan	128.0	38.21						
TOTAL (g)	335.0							



REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 02 / DEPTH 6.000 - 7.000 (m)

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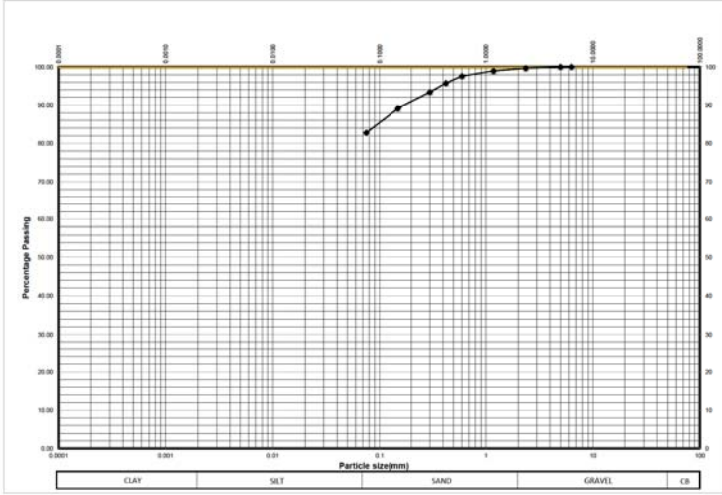
LAB REF: GC457 / 17MAR19 / 18:00			SAMPLE No. OT-SUB / BH02 / GC06 / 17MAR19		
SAMPLED BY: GEOCONSULT			DATE: 17 - 03 - 2019	TIME: 13:50	
LOCATION: 36L UTM	EASTING		NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 282		8 453 078	1 026(m)	7.000-7.300
TYPE OF MATERIAL: MOIST MOLTLED SANDY SILTY CLAY WITH SPOTS OF MICA					
TESTED BY: Y. NANG'OMBA			DATE: 02 - 04 - 2019	TIME: 09:07	
CHECKED BY: G. KACHIWALA			DATE: 04 - 04- 2019	TIME: 14:00	
APPROVED BY: M. SABELLI			DATE: 04 - 04- 2019	TIME: 15:00	
PROJECT: OLD TOWN SUBSTATION		**CLIENT:** YEC			

SIEVE ANALYSIS (GRADATION) STANDARD: BS 1377

SIEVE	MASS	PERCENTAGE			GRADATION SPECIFICATION			ZONE
(mm)	RETAINED	RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.000								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300	0.0	0.00	100.00	100				
5.000	0.0	0.00	100.00	100				
2.360	1.5	0.34	99.66	100				
1.180	4.5	1.03	98.97	99				
0.600	10.5	2.39	97.61	98				
0.425	18.5	4.21	95.79	96				
0.300	29.0	6.61	93.39	93				
0.150	47.5	10.82	89.18	89				
0.075	75.5	17.20	82.80	83				
0 pan	363.5	82.80						
TOTAL (g)	439.0							



REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 02 / DEPTH 7.000 - 7.300 (m)

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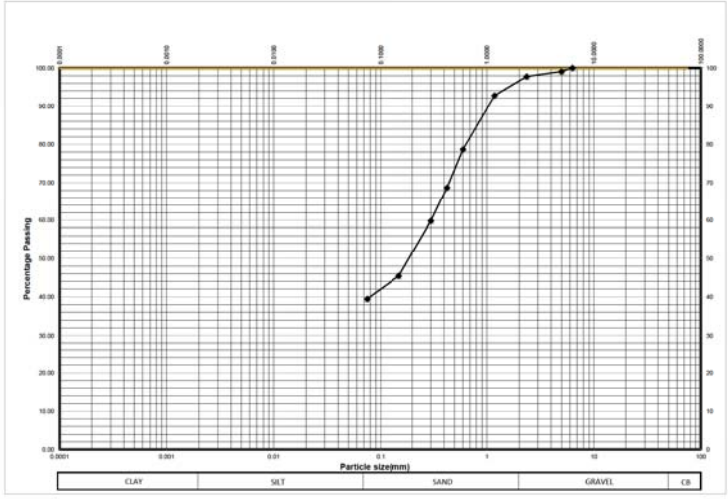
LAB REF: GC457 / 17MAR19 / 18:00		SAMPLE No. OT-SUB / BH02 / GC07 / 17MAR19		
SAMPLED BY: GEOCONSULT		DATE: 17 - 03 - 2019	TIME: 15:20	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 282	8 453 078	1 026(m)	7.300-7.900
TYPE OF MATERIAL: MOIST DARK GREY SILTY SANDY CLAY CONTAINS MICA				
TESTED BY: Y. NANG'OMBA		DATE: 03 - 04 - 2019	TIME: 08:40	
CHECKED BY: G. KACHIWALA		DATE: 04 - 04- 2019	TIME: 14:00	
APPROVED BY: M. SABELLI		DATE: 04 - 04- 2019	TIME: 15:00	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

SIEVE ANALYSIS (GRADATION) STANDARD: BS 1377

SIEVE	MASS	PERCENTAGE			GRADATION SPECIFICATION			ZONE
(mm)	RETAINED	RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.000								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300	0.0	0.00	100.00	100				
5.000	3.5	0.92	99.08	99				
2.360	8.5	2.25	97.75	98				
1.180	27.5	7.27	92.73	93				
0.600	80.5	21.27	78.73	79				
0.425	118.5	31.31	68.69	69				
0.300	152.0	40.16	59.84	60				
0.150	206.5	54.56	45.44	45				
0.075	229.0	60.50	39.50	39				
0 pan	149.5	39.50						
TOTAL (g)	378.5							



REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 02 / DEPTH 7.300 -7.900 (m)

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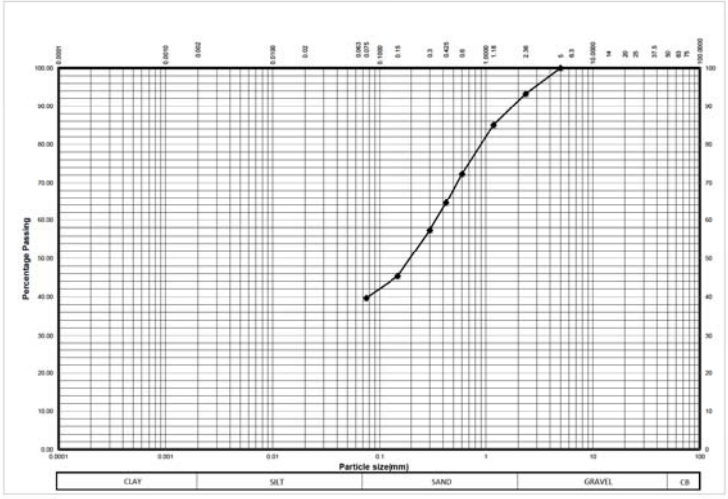
LAB REF: GC463 / 24MAR19 / 18:00		SAMPLE No. OT-SUB / BH03 / G01 / 24MAR19		
SAMPLED BY: GEOCONSULT		DATE: 24 - 03 - 2019	TIME: 15:13	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 306	8 453 072	1 023(m)	0.000-0.140
TYPE OF MATERIAL: TOP SOIL				
TESTED BY: Y. NANG'OMBA		DATE: 02 - 04 - 2019	TIME: 09:07	
CHECKED BY: G. KACHIWALA		DATE: 04 - 04- 2019	TIME: 14:00	
APPROVED BY: M. SABELLI		DATE: 04 - 04- 2019	TIME: 15:00	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

SIEVE ANALYSIS (GRADATION) STANDARD: BS 1377

SIEVE	MASS	PERCENTAGE			GRADATION SPECIFICATION			ZONE
(mm)	RETAINED	RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.000								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300								
5.000	0.0	0.00	100.00	100				
2.360	19.0	6.74	93.26	93				
1.180	42.0	14.89	85.11	85				
0.600	78.0	27.66	72.34	72				
0.425	100.0	35.46	64.54	65				
0.300	120.0	42.55	57.45	57				
0.150	154.0	54.61	45.39	45				
0.075	170.0	60.28	39.72	40				
0 pan	112.0	39.72						
TOTAL (g)	282.0							



REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 03 / DEPTH 0.000 - 0.140 (m)

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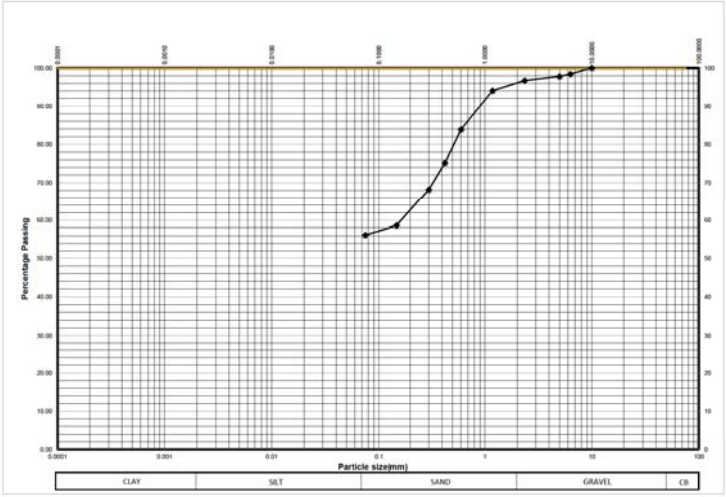
LAB REF: GC463 / 24MAR19 / 18:00			SAMPLE No. OT-SUB / BH03 / G02 / 24MAR19		
SAMPLED BY: GEOCONSULT			DATE: 24 - 03 - 2019	TIME: 15:13	
LOCATION: 36L UTM	EASTING		NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 306		8 453 072	1 023(m)	0.140-0.700
TYPE OF MATERIAL: MOIST BLACK SANDY SILTY CLAY					
TESTED BY: Y. NANG'OMBA			DATE: 02 - 04 - 2019	TIME: 09:07	
CHECKED BY: G. KACHIWALA			DATE: 04 - 04- 2019	TIME: 14:00	
APPROVED BY: M. SABELLI			DATE: 04 - 04- 2019	TIME: 15:00	
PROJECT: OLD TOWN SUBSTATION		**CLIENT:** YEC			

SIEVE ANALYSIS (GRADATION) STANDARD: BS 1377

SIEVE	MASS	PERCENTAGE			GRADATION SPECIFICATION			ZONE
(mm)	RETAINED	RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.000								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000	0.00	0.00	100.00	100				
6.300	5.00	1.56	98.44	98				
5.000	7.00	2.18	97.82	98				
2.360	10.50	3.28	96.72	97				
1.180	19.00	5.93	94.07	94				
0.600	51.50	16.07	83.93	84				
0.425	79.50	24.80	75.20	75				
0.300	102.00	31.83	68.17	68				
0.150	132.50	41.34	58.66	59				
0.075	140.50	43.84	56.16	56				
0 pan	185.00	57.72						
TOTAL (g)	320.50							



REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 03 / DEPTH 0.140 - 0.700 (m)

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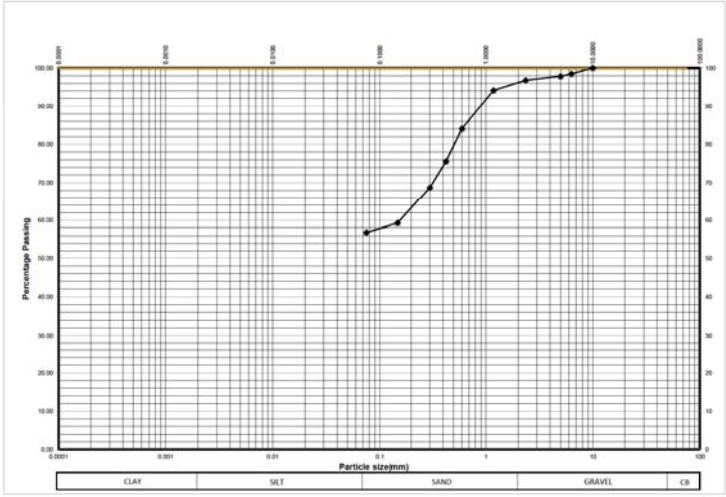
LAB REF: GC463 / 24MAR19 / 18:00			SAMPLE No. OT-SUB / BH03 / G03 / 24MAR19		
SAMPLED BY: GEOCONSULT			DATE: 24 - 03 - 2019	TIME: 16:10	
LOCATION: 36L UTM	EASTING		NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 306		8 453 072	1 023(m)	0.700-4.000
TYPE OF MATERIAL: MOIST GREYISH BROWN SANDY SILTY CLAY					
TESTED BY: Y. NANG'OMBA			DATE: 03 - 04 - 2019	TIME: 10:15	
CHECKED BY: G. KACHIWALA			DATE: 04 - 04- 2019	TIME: 14:00	
APPROVED BY: M. SABELLI			DATE: 04 - 04- 2019	TIME: 15:00	
PROJECT: OLD TOWN SUBSTATION		**CLIENT:** YEC			

SIEVE ANALYSIS (GRADATION) STANDARD: BS 1377

SIEVE	MASS	PERCENTAGE			GRADATION SPECIFICATION			ZONE
(mm)	RETAINED	RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.000								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000	0.0	0.00	100.00	100				
6.300	5.0	1.54	98.46	98				
5.000	7.0	2.15	97.85	98				
2.360	10.5	3.23	96.77	97				
1.180	19.0	5.84	94.16	94				
0.600	51.5	15.82	84.18	84				
0.425	79.5	24.42	75.58	76				
0.300	102.0	31.34	68.66	69				
0.150	132.5	40.71	59.29	59				
0.075	140.5	43.16	56.84	57				
0 pan	185.0	56.84						
TOTAL (g)	325.5							



REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 03 / DEPTH 0.700 - 4.000 (m)

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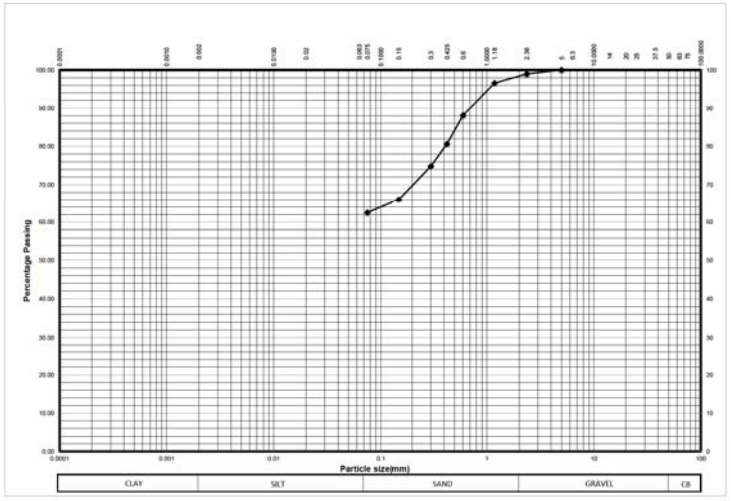
LAB REF: GC463 / 24MAR19 / 18:00			SAMPLE No. OT-SUB / BH04 / G4 / 24MAR19		
SAMPLED BY: GEOCONSULT			DATE: 24 - 03 - 2019	TIME: 11:40	
LOCATION: 36L UTM	EASTING		NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 295		8 453 081	1 040(m)	2.000-3.700
TYPE OF MATERIAL: MOIST GREYISH BROWN SANDY SILTY CLAY					
TESTED BY: Y. NANG'OMBA			DATE: 02 - 04 - 2019	TIME: 09:07	
CHECKED BY: G. KACHIWALA			DATE: 04 - 04- 2019	TIME: 14:00	
APPROVED BY: M. SABELLI			DATE: 04 - 04- 2019	TIME: 15:00	
PROJECT: OLD TOWN SUBSTATION			**CLIENT:** YEC		

SIEVE ANALYSIS (GRADATION) STANDARD: BS 1377

SIEVE	MASS	PERCENTAGE			GRADATION SPECIFICATION			ZONE
(mm)	RETAINED	RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.000								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300								
5.000	0.0	0.00	100.00	100				
2.360	4.5	1.04	98.96	99				
1.180	15.0	3.45	96.55	97				
0.600	51.5	11.85	88.15	88				
0.425	84.0	19.33	80.67	81				
0.300	109.5	25.20	74.80	75				
0.150	147.5	33.95	66.05	66				
0.075	163.0	37.51	62.49	62				
0 pan	271.5	62.49						
TOTAL (g)	434.5							



REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 04 / DEPTH 2.000 - 3.700 (m)

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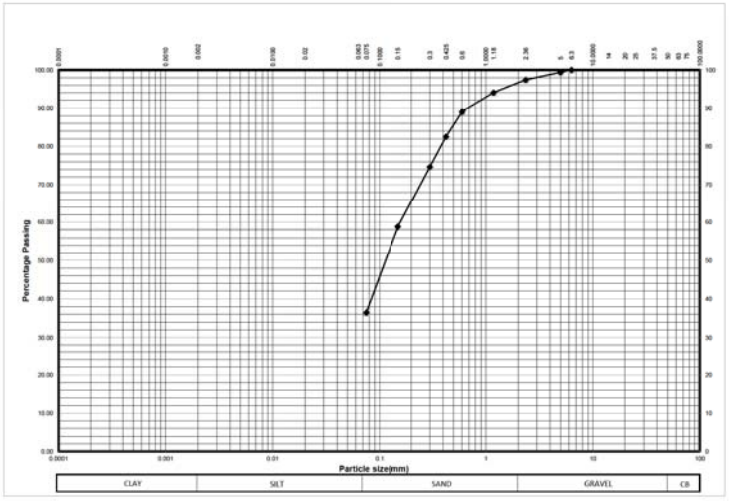
LAB REF: GC463 / 24MAR19 / 18:00			SAMPLE No. OT-SUB / BH04 / G5 / 24MAR19		
SAMPLED BY: GEOCONSULT			DATE: 24 - 03 - 2019	TIME: 12:00	
LOCATION: 36L UTM	EASTING		NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 295		8 453 081	1 040(m)	3.700-6.000
TYPE OF MATERIAL: MOIST BROWN SANDY SILTY CLAY WITH STRIPES OF COTTON SOIL					
TESTED BY: Y. NANG'OMBA			DATE: 04 - 04 - 2019	TIME: 10:15	
CHECKED BY: G. KACHIWALA			DATE: 05 - 04- 2019	TIME: 14:00	
APPROVED BY: M. SABELLI			DATE: 05 - 04- 2019	TIME: 15:00	
PROJECT: OLD TOWN SUBSTATION			**CLIENT:** YEC		

SIEVE ANALYSIS (GRADATION) STANDARD: BS 1377

SIEVE	MASS	PERCENTAGE			GRADATION SPECIFICATION			ZONE
(mm)	RETAINED	RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.000								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300	0.0	0.00	100.00	100				
5.000	1.5	0.59	99.41	99				
2.360	6.5	2.57	97.43	97				
1.180	15.0	5.94	94.06	94				
0.600	27.5	10.89	89.11	89				
0.425	44.0	17.43	82.57	83				
0.300	64.0	25.35	74.65	75				
0.150	104.0	41.19	58.81	59				
0.075	160.5	63.56	36.44	36				
0 pan	92.0	36.44						
TOTAL (g)	252.5							



REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 04 / DEPTH 3.700 - 6.000 (m)

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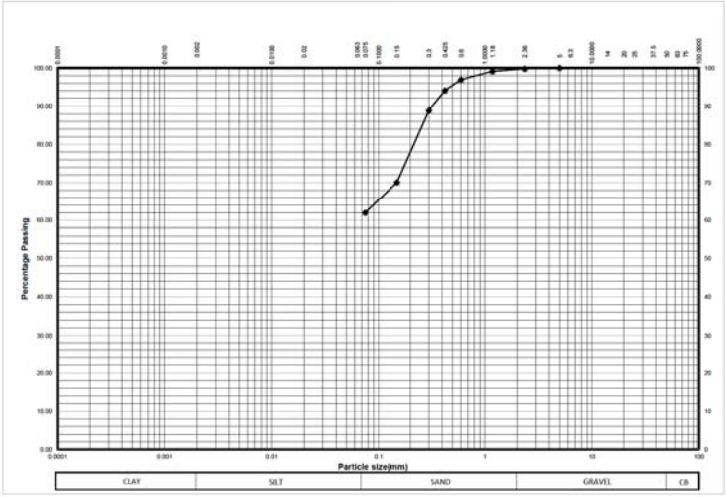
LAB REF: GC463A / 23MAR19 / 18:00		SAMPLE No. OT-SUB / BH04 / G01 / 23MAR19		
SAMPLED BY: GEOCONSULT		DATE: 23 - 03 - 2019	TIME: 17:53	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 295	8 453 081	1 040(m)	0.000-0.130
TYPE OF MATERIAL: TOP SOIL				
TESTED BY: Y. NANG'OMBA		DATE: 02 - 04 - 2019	TIME: 09:07	
CHECKED BY: G. KACHIWALA		DATE: 04 - 04- 2019	TIME: 14:00	
APPROVED BY: M. SABELLI		DATE: 04 - 04- 2019	TIME: 15:00	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

SIEVE ANALYSIS (GRADATION) STANDARD: BS 1377

SIEVE	MASS	PERCENTAGE			GRADATION SPECIFICATION			ZONE
(mm)	RETAINED	RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.000								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300								
5.000	0.0	0.00	100.00	100				
2.360	1.0	0.22	99.78	100				
1.180	4.0	0.88	99.12	99				
0.600	14.0	3.07	96.93	97				
0.425	27.0	5.92	94.08	94				
0.300	50.5	11.07	88.93	89				
0.150	136.5	29.93	70.07	70				
0.075	173.5	38.05	61.95	62				
0 pan	282.5	61.95						
TOTAL (g)	456.0							



REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 04 / DEPTH 0.000 - 0.130 (m)

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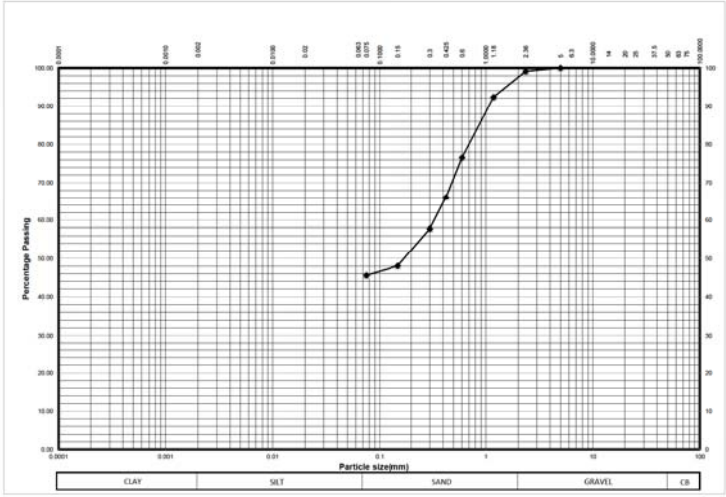
LAB REF: GC463A / 23MAR19 / 18:00		SAMPLE No. OT-SUB / BH04 / G02 / 23MAR19		
SAMPLED BY: GEOCONSULT		DATE: 23 - 03 - 2019	TIME: 17:53	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 295	8 453 081	1 040(m)	0.130-0.900
TYPE OF MATERIAL: MOIST BLACK SANDY SILTY CLAY				
TESTED BY: Y. NANG'OMBA		DATE: 02 - 04 - 2019	TIME: 09:07	
CHECKED BY: G. KACHIWALA		DATE: 04 - 04- 2019	TIME: 14:00	
APPROVED BY: M. SABELLI		DATE: 04 - 04- 2019	TIME: 15:00	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

SIEVE ANALYSIS (GRADATION) STANDARD: BS 1377

SIEVE	MASS	PERCENTAGE			GRADATION SPECIFICATION			ZONE
(mm)	RETAINED	RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.000								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300								
5.000	0.0	0.00	100.00	100				
2.360	2.5	0.89	99.11	99				
1.180	21.5	7.62	92.38	92				
0.600	66.0	23.40	76.60	77				
0.425	95.5	33.87	66.13	66				
0.300	119.0	42.20	57.80	58				
0.150	146.5	51.95	48.05	48				
0.075	153.5	54.43	45.57	46				
0 pan	128.5	45.57						
TOTAL (g)	282.0							



REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 04 / DEPTH 0.130 - 0.900 (m)

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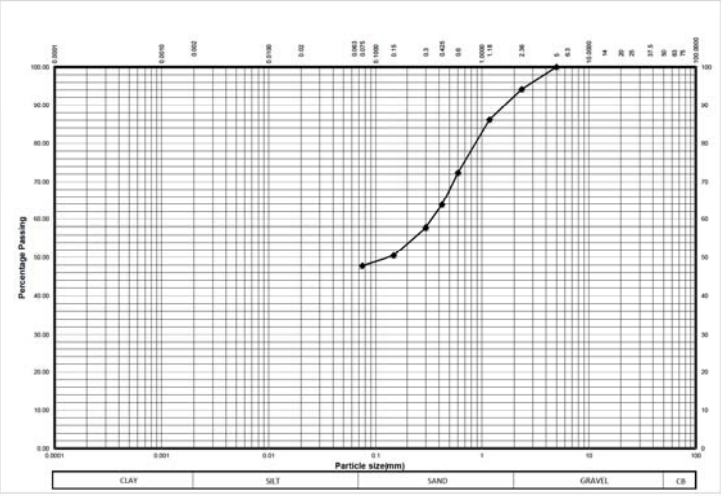
LAB REF: GC463A / 23MAR19 / 18:00		SAMPLE No. OT-SUB / BH04 / G03 / 23MAR19		
SAMPLED BY: GEOCONSULT		DATE: 23 - 03 - 2019	TIME: 17:55	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 295	8 453 081	1 040(m)	0.900-2.000
TYPE OF MATERIAL: MOIST BLACK GREYISH SANDY SILTY CLAY				
TESTED BY: Y. NANG'OMBA		DATE: 02 - 04 - 2019	TIME: 09:07	
CHECKED BY: G. KACHIWALA		DATE: 04 - 04- 2019	TIME: 14:00	
APPROVED BY: M. SABELLI		DATE: 04 - 04- 2019	TIME: 15:00	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

SIEVE ANALYSIS (GRADATION) STANDARD: BS 1377

SIEVE	MASS	PERCENTAGE			GRADATION SPECIFICATION			ZONE
(mm)	RETAINED	RETAINED	PASSING		BASE	SUBBASE	SL SEAL	
75.000								
50.000								
37.000								
28.000								
25.000								
20.000								
14.000								
12.500								
10.000								
6.300								
5.000	0.0	0.00	100.00	100				
2.360	31.5	5.82	94.18	94				
1.180	74.5	13.77	86.23	86				
0.600	149.5	27.63	72.37	72				
0.425	196.0	36.23	63.77	64				
0.300	228.0	42.14	57.86	58				
0.150	268.0	49.54	50.46	50				
0.075	282.5	52.22	47.78	48				
0 pan	258.5	47.78						
TOTAL (g)	541.0							



REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 04 / DEPTH 0.900 - 2.000 (m)

4.5 Natural Moisture Content

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LAB REF: GC458 / 18MAR19 / 18:00		SAMPLE No: OT-SUB / BH01 / NMC01 / 18MAR19		
SAMPLED BY: GEOCONSULT		DATE: 18 - 03 - 2019	TIME: 12:42	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 278	8 453 100	1 025 (m)	0.000-0.180
TYPE OF MATERIAL: MOIST BLACKISH BROWN SANDY SILTY CLAY				
TESTED BY: Y. NANG'OMBA		DATE: 19 - 03 - 2019	TIME: 08:30	
CHECKED BY: G. KACHIWALA		DATE: 20 - 03 - 2019	TIME: 09:00	
APPROVED BY: M. SABELLI		DATE: 20 - 03 - 2019	TIME: 10:00	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: BS1377

MASS OF WET SOIL + CONTAINER (g)	287.5
MASS OF DRY SOIL AND CONTAINER (g)	238.0
CONTAINER No.	GC5
MASS OF CONTAINER (g)	66.5
MASS OF DRY SOIL (g)	171.5
MASS OF WATER (g)	49.5
MOISTURE CONTENT %	28.9
NATURAL MOISTURE CONTENT :	**28.9**

REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 01 / DEPTH 0.000 - 0.180 (m)

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LAB REF: GC458 / 18MAR19 / 18:00		SAMPLE No: OT-SUB / BH01 / NMC02 / 18MAR19		
SAMPLED BY: GEOCONSULT		DATE: 18 - 03 - 2019	TIME: 12:42	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 278	8 453 100	1 025 (m)	0.180-0.540
TYPE OF MATERIAL: MOIST BLACK SANDY SILTY CLAY				
TESTED BY: Y. NANG'OMBA		DATE: 19 - 03 - 2019	TIME: 08:30	
CHECKED BY: G. KACHIWALA		DATE: 20 - 03 - 2019	TIME: 09:00	
APPROVED BY: M. SABELLI		DATE: 20 - 03 - 2019	TIME: 10:00	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: BS1377

MASS OF WET SOIL + CONTAINER (g)	277.5
MASS OF DRY SOIL AND CONTAINER (g)	225.5
CONTAINER No.	GC15
MASS OF CONTAINER (g)	54.5
MASS OF DRY SOIL (g)	171.0
MASS OF WATER (g)	52.0
MOISTURE CONTENT %	30.4
NATURAL MOISTURE CONTENT :	**30.4**

REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 01 / DEPTH 0.180 - 0.540 (m)

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LAB REF: GC458 / 18MAR19 / 18:00		SAMPLE No: OT-SUB / BH01 / NMC03 / 18MAR19		
SAMPLED BY: GEOCONSULT		DATE: 18 - 03 - 2019	TIME: 13:14	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 278	8 453 100	1 025 (m)	0.540-2.000
TYPE OF MATERIAL: MOIST DARK REDDISH SANDY SILTY CLAY				
TESTED BY: Y. NANG'OMBA		DATE: 19 - 03 - 2019	TIME: 08:30	
CHECKED BY: G. KACHIWALA		DATE: 20 - 03 - 2019	TIME: 09:00	
APPROVED BY: M. SABELLI		DATE: 20 - 03 - 2019	TIME: 10:00	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: BS1377

MASS OF WET SOIL + CONTAINER (g)	273.5
MASS OF DRY SOIL AND CONTAINER (g)	223.0
CONTAINER No.	GC16
MASS OF CONTAINER (g)	52.0
MASS OF DRY SOIL (g)	171.0
MASS OF WATER (g)	50.5
MOISTURE CONTENT %	29.5
NATURAL MOISTURE CONTENT :	**29.5**

REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 01 / DEPTH 0.540 - 2.000 (m)

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LAB REF: GC458 / 18MAR19 / 18:00		SAMPLE No: OT-SUB / BH01 / NMC04 / 18MAR19		
SAMPLED BY: GEOCONSULT		DATE: 18 - 03 - 2019	TIME: 13:14	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 278	8 453 100	1 025 (m)	2.000-3.100
TYPE OF MATERIAL: MOIST RED BLACKISH SANDY SILTY CLAY				
TESTED BY: Y. NANG'OMBA		DATE: 19 - 03 - 2019	TIME: 08:30	
CHECKED BY: G. KACHIWALA		DATE: 20 - 03 - 2019	TIME: 09:00	
APPROVED BY: M. SABELLI		DATE: 20 - 03 - 2019	TIME: 10:00	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: BS1377

MASS OF WET SOIL + CONTAINER (g)	294.0
MASS OF DRY SOIL AND CONTAINER (g)	244.5
CONTAINER No.	GC3
MASS OF CONTAINER (g)	74.0
MASS OF DRY SOIL (g)	170.5
MASS OF WATER (g)	49.5
MOISTURE CONTENT %	29.0
NATURAL MOISTURE CONTENT :	**29.0**

REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 01 / DEPTH 2.000 - 3.100 (m)

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LAB REF: GC458 / 18MAR19 / 18:00		SAMPLE No: OT-SUB / BH01 / NMC05 / 18MAR19		
SAMPLED BY: GEOCONSULT		DATE: 18 - 03 - 2019	TIME: 13:14	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 278	8 453 100	1 025 (m)	3.100-6.000
TYPE OF MATERIAL: MOIST MOLTLED SANDY SILTY CLAY				
TESTED BY: Y. NANG'OMBA		DATE: 19 - 03 - 2019	TIME: 08:30	
CHECKED BY: G. KACHIWALA		DATE: 20 - 03 - 2019	TIME: 09:00	
APPROVED BY: M. SABELLI		DATE: 20 - 03 - 2019	TIME: 10:00	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: BS1377

MASS OF WET SOIL + CONTAINER (g)	327.0
MASS OF DRY SOIL AND CONTAINER (g)	269.5
CONTAINER No.	GC19
MASS OF CONTAINER (g)	48.5
MASS OF DRY SOIL (g)	221.0
MASS OF WATER (g)	57.5
MOISTURE CONTENT %	26.0
NATURAL MOISTURE CONTENT :	**26.0**

REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 01 / DEPTH 3.100 - 6.000 (m)

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LAB REF: GC458 / 18MAR19 / 18:00		SAMPLE No: OT-SUB /BH01/SPT/NMC06/18MAR19		
SAMPLED BY: GEOCONSULT		DATE: 18 - 03 - 2019	TIME: 12:45	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 278	8 453 100	1 025 (m)	1.000
TYPE OF MATERIAL: MOIST DARK REDDISH SANDY SILTY CLAY				
TESTED BY: Y. NANG'OMBA		DATE: 19 - 03 - 2019	TIME: 08:30	
CHECKED BY: G. KACHIWALA		DATE: 20 - 03 - 2019	TIME: 09:00	
APPROVED BY: M. SABELLI		DATE: 20 - 03 - 2019	TIME: 10:00	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: BS1377

MASS OF WET SOIL + CONTAINER (g)	331.5
MASS OF DRY SOIL AND CONTAINER (g)	266.0
CONTAINER No.	GC19A
MASS OF CONTAINER (g)	49.0
MASS OF DRY SOIL (g)	217.0
MASS OF WATER (g)	65.5
MOISTURE CONTENT %	30.2
NATURAL MOISTURE CONTENT :	**30.2**

REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 01 / SPT @ 1.000 (m)

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LAB REF: GC458 / 18MAR19 / 18:00		SAMPLE No: OT-SUB /BH01/SPT/NMC07/18MAR19		
SAMPLED BY: GEOCONSULT		DATE: 18 - 03 - 2019	TIME: 13:20	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 278	8 453 100	1 025 (m)	2.000
TYPE OF MATERIAL: MOIST DARK REDDISH SANDY SILTY CLAY				
TESTED BY: Y. NANG'OMBA		DATE: 19 - 03 - 2019	TIME: 08:30	
CHECKED BY: G. KACHIWALA		DATE: 20 - 03 - 2019	TIME: 09:00	
APPROVED BY: M. SABELLI		DATE: 20 - 03 - 2019	TIME: 10:00	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: BS1377

MASS OF WET SOIL + CONTAINER (g)	496.5
MASS OF DRY SOIL AND CONTAINER (g)	399.5
CONTAINER No.	GC8B
MASS OF CONTAINER (g)	70.0
MASS OF DRY SOIL (g)	329.5
MASS OF WATER (g)	97.0
MOISTURE CONTENT %	29.4
NATURAL MOISTURE CONTENT :	**29.4**

REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 01 / SPT @ 2.000 (m)

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LAB REF: GC458 / 18MAR19 / 18:00		SAMPLE No: OT-SUB /BH01/SPT/NMC08/18MAR19		
SAMPLED BY: GEOCONSULT		DATE: 18 - 03 - 2019	TIME: 13:38	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 278	8 453 100	1 025 (m)	3.000
TYPE OF MATERIAL: MOIST RED BLACKISH SANDY SILTY CLAY				
TESTED BY: Y. NANG'OMBA		DATE: 19 - 03 - 2019	TIME: 08:30	
CHECKED BY: G. KACHIWALA		DATE: 20 - 03 - 2019	TIME: 09:00	
APPROVED BY: M. SABELLI		DATE: 20 - 03 - 2019	TIME: 10:00	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: BS1377

MASS OF WET SOIL + CONTAINER (g)	561.5
MASS OF DRY SOIL AND CONTAINER (g)	457.0
CONTAINER No.	GC7
MASS OF CONTAINER (g)	73.5
MASS OF DRY SOIL (g)	383.5
MASS OF WATER (g)	104.5
MOISTURE CONTENT %	27.2
NATURAL MOISTURE CONTENT :	**27.2**

REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 01 / SPT @ 3.000 (m)

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LAB REF: GC458 / 18MAR19 / 18:00		SAMPLE No: OT-SUB /BH01/SPT/NMC09/18MAR19		
SAMPLED BY: GEOCONSULT		DATE: 18 - 03 - 2019	TIME: 14:24	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 278	8 453 100	1 025 (m)	4.000
TYPE OF MATERIAL: MOIST RED BLACKISH SANDY SILTY CLAY				
TESTED BY: Y. NANG'OMBA		DATE: 19 - 03 - 2019	TIME: 08:30	
CHECKED BY: G. KACHIWALA		DATE: 20 - 03 - 2019	TIME: 09:00	
APPROVED BY: M. SABELLI		DATE: 20 - 03 - 2019	TIME: 10:00	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: BS1377

MASS OF WET SOIL + CONTAINER (g)	546.5
MASS OF DRY SOIL AND CONTAINER (g)	459.5
CONTAINER No.	GC9
MASS OF CONTAINER (g)	66.5
MASS OF DRY SOIL (g)	393.0
MASS OF WATER (g)	87.0
MOISTURE CONTENT %	22.1
NATURAL MOISTURE CONTENT :	**22.1**

REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 01 / SPT @ 4.000 (m)

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LAB REF: GC458 / 18MAR19 / 18:00		SAMPLE No: OT-SUB /BH01/SPT/NMC10/18MAR19		
SAMPLED BY: GEOCONSULT		DATE: 18 - 03 - 2019	TIME: 16:12	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 278	8 453 100	1 025 (m)	5.000
TYPE OF MATERIAL: MOIST RED BLACKISH SANDY SILTY CLAY				
TESTED BY: Y. NANG'OMBA		DATE: 19 - 03 - 2019	TIME: 08:30	
CHECKED BY: G. KACHIWALA		DATE: 20 - 03 - 2019	TIME: 09:00	
APPROVED BY: M. SABELLI		DATE: 20 - 03 - 2019	TIME: 10:00	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: BS1377

MASS OF WET SOIL + CONTAINER (g)	557.0
MASS OF DRY SOIL AND CONTAINER (g)	465.5
CONTAINER No.	GC2B
MASS OF CONTAINER (g)	73.0
MASS OF DRY SOIL (g)	392.5
MASS OF WATER (g)	91.5
MOISTURE CONTENT %	23.3
NATURAL MOISTURE CONTENT :	**23.3**

REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 01 / SPT @ 5.000 (m)

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LAB REF: GC458 / 18MAR19 / 18:00		SAMPLE No: OT-SUB /BH01/SPT/NMC11/18MAR19		
SAMPLED BY: GEOCONSULT		DATE: 18 - 03 - 2019	TIME: 16:52	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 278	8 453 100	1 025 (m)	6.000
TYPE OF MATERIAL: MOIST RED BLACKISH SANDY SILTY CLAY				
TESTED BY: Y. NANG'OMBA		DATE: 19 - 03 - 2019	TIME: 08:30	
CHECKED BY: G. KACHIWALA		DATE: 20 - 03 - 2019	TIME: 09:00	
APPROVED BY: M. SABELLI		DATE: 20 - 03 - 2019	TIME: 10:00	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: BS1377

MASS OF WET SOIL + CONTAINER (g)	580.0
MASS OF DRY SOIL AND CONTAINER (g)	510.5
CONTAINER No.	GC21
MASS OF CONTAINER (g)	49.5
MASS OF DRY SOIL (g)	461.0
MASS OF WATER (g)	69.5
MOISTURE CONTENT %	15.1
NATURAL MOISTURE CONTENT :	**15.1**

REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 01 / SPT @ 6.000 (m)

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LAB REF: GC457 / 17MAR19 / 18:00		SAMPLE No: OT-SUB / BH02 / NMC01 / 17MAR19		
SAMPLED BY: GEOCONSULT		DATE: 17 - 03 - 2019	TIME: 10:13	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 282	8 453 078	1 026(m)	0.000-0.500
TYPE OF MATERIAL: MOIST DARK BROWN SANDY SILTY CLAY				
TESTED BY: Y. NANG'OMBA		DATE: 19 - 03 - 2019	TIME: 08:30	
CHECKED BY: G. KACHIWALA		DATE: 20 - 03 - 2019	TIME: 09:00	
APPROVED BY: M. SABELLI		DATE: 20 - 03 - 2019	TIME: 10:00	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: BS1377

MASS OF WET SOIL + CONTAINER (g)	295.0
MASS OF DRY SOIL AND CONTAINER (g)	245.5
CONTAINER No.	GC11
MASS OF CONTAINER (g)	50.0
MASS OF DRY SOIL (g)	195.5
MASS OF WATER (g)	49.5
MOISTURE CONTENT %	25.3
NATURAL MOISTURE CONTENT :	**25.3**

REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 02 / DEPTH 0.000 - 0.500 (m)

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LAB REF: GC457 / 17MAR19 / 18:00		SAMPLE No: OT-SUB / BH02 / NMC02 / 17MAR19		
SAMPLED BY: GEOCONSULT		DATE: 17 - 03 - 2019	TIME: 10:50	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 282	8 453 078	1 026(m)	0.500-2.000
TYPE OF MATERIAL: MOIST LIGHT BROWN SANDY SILTY CLAY				
TESTED BY: Y. NANG'OMBA		DATE: 19 - 03 - 2019	TIME: 08:30	
CHECKED BY: G. KACHIWALA		DATE: 20 - 03 - 2019	TIME: 09:00	
APPROVED BY: M. SABELLI		DATE: 20 - 03 - 2019	TIME: 10:00	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: BS1377

MASS OF WET SOIL + CONTAINER (g)	290.0
MASS OF DRY SOIL AND CONTAINER (g)	245.0
CONTAINER No.	GC10
MASS OF CONTAINER (g)	50.0
MASS OF DRY SOIL (g)	195.0
MASS OF WATER (g)	45.0
MOISTURE CONTENT %	23.1
NATURAL MOISTURE CONTENT :	**23.1**

REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 02 / DEPTH 0.500 - 2.000 (m)

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LAB REF: GC457 / 17MAR19 / 18:00		SAMPLE No: OT-SUB / BH02 / NMC03 / 17MAR19		
SAMPLED BY: GEOCONSULT		DATE: 17 - 03 - 2019	TIME: 11:38	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 282	8 453 078	1 026(m)	2.000-5.000
TYPE OF MATERIAL: MOIST STIFF BROWN YELLOWISH SANDY SILTY CLAY				
TESTED BY: Y. NANG'OMBA		DATE: 19 - 03 - 2019	TIME: 08:30	
CHECKED BY: G. KACHIWALA		DATE: 20 - 03 - 2019	TIME: 09:00	
APPROVED BY: M. SABELLI		DATE: 20 - 03 - 2019	TIME: 10:00	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: BS1377

MASS OF WET SOIL + CONTAINER (g)	311.5
MASS OF DRY SOIL AND CONTAINER (g)	262.5
CONTAINER No.	GC2B
MASS OF CONTAINER (g)	73.0
MASS OF DRY SOIL (g)	189.5
MASS OF WATER (g)	49.0
MOISTURE CONTENT %	25.9
NATURAL MOISTURE CONTENT :	**25.9**

REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 02 / DEPTH 2.000 - 5.000 (m)

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LAB REF: GC457 / 17MAR19 / 18:00		SAMPLE No: OT-SUB / BH02 / NMC04 / 17MAR19		
SAMPLED BY: GEOCONSULT		DATE: 17 - 03 - 2019	TIME: 13:00	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 282	8 453 078	1 026(m)	5.000-6.000
TYPE OF MATERIAL: MOIST STIFF MOLTLED SANDY SILTY CLAY				
TESTED BY: Y. NANG'OMBA		DATE: 19 - 03 - 2019	TIME: 08:30	
CHECKED BY: G. KACHIWALA		DATE: 20 - 03 - 2019	TIME: 09:00	
APPROVED BY: M. SABELLI		DATE: 20 - 03 - 2019	TIME: 10:00	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: BS1377

MASS OF WET SOIL + CONTAINER (g)	268.5
MASS OF DRY SOIL AND CONTAINER (g)	223.0
CONTAINER No.	GC13
MASS OF CONTAINER (g)	47.5
MASS OF DRY SOIL (g)	175.5
MASS OF WATER (g)	45.5
MOISTURE CONTENT %	25.9
NATURAL MOISTURE CONTENT :	**25.9**

REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 02 / DEPTH 5.000 - 6.000 (m)

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LAB REF: GC457 / 17MAR19 / 18:00		SAMPLE No: OT-SUB / BH02 / NMC05 / 17MAR19		
SAMPLED BY: GEOCONSULT		DATE: 17 - 03 - 2019	TIME: 13:50	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 282	8 453 078	1 026(m)	6.000-7.000
TYPE OF MATERIAL: MOIST MOLTLED SANDY SILTY CLAY				
TESTED BY: Y. NANG'OMBA		DATE: 19 - 03 - 2019	TIME: 08:30	
CHECKED BY: G. KACHIWALA		DATE: 20 - 03 - 2019	TIME: 09:00	
APPROVED BY: M. SABELLI		DATE: 20 - 03 - 2019	TIME: 10:00	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: BS1377

MASS OF WET SOIL + CONTAINER (g)	263.0
MASS OF DRY SOIL AND CONTAINER (g)	230.5
CONTAINER No.	GC111
MASS OF CONTAINER (g)	51.5
MASS OF DRY SOIL (g)	179.0
MASS OF WATER (g)	32.5
MOISTURE CONTENT %	18.2
NATURAL MOISTURE CONTENT :	**18.2**

REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 02 / DEPTH 6.000 - 7.000 (m)

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LAB REF: GC457 / 17MAR19 / 18:00		SAMPLE No: OT-SUB / BH02 / NMC06 / 17MAR19		
SAMPLED BY: GEOCONSULT		DATE: 17 - 03 - 2019	TIME: 14:28	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 282	8 453 078	1 026(m)	7.000-7.300
TYPE OF MATERIAL: MOIST MOLTLED SILTY SANDY CLAY WITH SPOTS OF MICA				
TESTED BY: Y. NANG'OMBA		DATE: 19 - 03 - 2019	TIME: 08:30	
CHECKED BY: G. KACHIWALA		DATE: 20 - 03 - 2019	TIME: 09:00	
APPROVED BY: M. SABELLI		DATE: 20 - 03 - 2019	TIME: 10:00	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: BS1377

MASS OF WET SOIL + CONTAINER (g)	351.0
MASS OF DRY SOIL AND CONTAINER (g)	293.0
CONTAINER No.	GC19A
MASS OF CONTAINER (g)	49.0
MASS OF DRY SOIL (g)	244.0
MASS OF WATER (g)	58.0
MOISTURE CONTENT %	23.8
NATURAL MOISTURE CONTENT :	**23.8**

REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 02 / DEPTH 7.000 - 7.300 (m)

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LAB REF: GC457 / 17MAR19 / 18:00		SAMPLE No: OT-SUB / BH02 / NMC07 / 17MAR19		
SAMPLED BY: GEOCONSULT		DATE: 17 - 03 - 2019	TIME: 15:20	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 282	8 453 078	1 026(m)	7.300-7.900
TYPE OF MATERIAL: MOIST DARK GREY SILTY SANDY CLAY CONTAINS MICA				
TESTED BY: Y. NANG'OMBA		DATE: 19 - 03 - 2019	TIME: 08:30	
CHECKED BY: G. KACHIWALA		DATE: 20 - 03 - 2019	TIME: 09:00	
APPROVED BY: M. SABELLI		DATE: 20 - 03 - 2019	TIME: 10:00	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: BS1377

MASS OF WET SOIL + CONTAINER (g)	359.5
MASS OF DRY SOIL AND CONTAINER (g)	312.0
CONTAINER No.	GC3
MASS OF CONTAINER (g)	74.0
MASS OF DRY SOIL (g)	238.0
MASS OF WATER (g)	47.5
MOISTURE CONTENT %	20.0
NATURAL MOISTURE CONTENT :	**20.0**

REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 02 / DEPTH 7.300 - 7.900 (m)

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LAB REF: GC457 / 17MAR19 / 18:00		SAMPLE No: OT-SUB /BH02/SPT/NMC08/17MAR19		
SAMPLED BY: GEOCONSULT		DATE: 17 - 03 - 2019	TIME: 10:15	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 282	8 453 078	1 026 (m)	1.000
TYPE OF MATERIAL: MOIST LIGHT BROWN SANDY SILTY CLAY				
TESTED BY: Y. NANG'OMBA		DATE: 19 - 03 - 2019	TIME: 08:30	
CHECKED BY: G. KACHIWALA		DATE: 20 - 03 - 2019	TIME: 09:00	
APPROVED BY: M. SABELLI		DATE: 20 - 03 - 2019	TIME: 10:00	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: BS1377

MASS OF WET SOIL + CONTAINER (g)	466.0
MASS OF DRY SOIL AND CONTAINER (g)	391.5
CONTAINER No.	DTB
MASS OF CONTAINER (g)	121.5
MASS OF DRY SOIL (g)	270.0
MASS OF WATER (g)	74.5
MOISTURE CONTENT %	27.6
NATURAL MOISTURE CONTENT :	**27.6**

REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 02 / SPT @ 1.000 (m)

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LAB REF: GC457 / 17MAR19 / 18:00		SAMPLE No: OT-SUB /BH02/SPT/NMC09/17MAR19		
SAMPLED BY: GEOCONSULT		DATE: 17 - 03 - 2019	TIME: 10:59	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 282	8 453 078	1 026 (m)	2.000
TYPE OF MATERIAL: MOIST LIGHT BROWN SANDY SILTY CLAY				
TESTED BY: Y. NANG'OMBA		DATE: 19 - 03 - 2019	TIME: 08:30	
CHECKED BY: G. KACHIWALA		DATE: 20 - 03 - 2019	TIME: 09:00	
APPROVED BY: M. SABELLI		DATE: 20 - 03 - 2019	TIME: 10:00	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: BS1377

MASS OF WET SOIL + CONTAINER (g)	423.5
MASS OF DRY SOIL AND CONTAINER (g)	351.0
CONTAINER No.	GC7
MASS OF CONTAINER (g)	73.5
MASS OF DRY SOIL (g)	277.5
MASS OF WATER (g)	72.5
MOISTURE CONTENT %	26.1
NATURAL MOISTURE CONTENT :	**26.1**

REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 02 / SPT @ 2.000 (m)

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LAB REF: GC457 / 17MAR19 / 18:00		SAMPLE No: OT-SUB /BH02/SPT/NMC10/17MAR19		
SAMPLED BY: GEOCONSULT		DATE: 17 - 03 - 2019	TIME: 11:42	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 282	8 453 078	1 026 (m)	3.000
TYPE OF MATERIAL: MOIST BROWN YELLOWISH SANDY SILTY CLAY				
TESTED BY: Y. NANG'OMBA		DATE: 19 - 03 - 2019	TIME: 08:30	
CHECKED BY: G. KACHIWALA		DATE: 20 - 03 - 2019	TIME: 09:00	
APPROVED BY: M. SABELLI		DATE: 20 - 03 - 2019	TIME: 10:00	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: BS1377

MASS OF WET SOIL + CONTAINER (g)	522.0
MASS OF DRY SOIL AND CONTAINER (g)	445.5
CONTAINER No.	GOK
MASS OF CONTAINER (g)	126.5
MASS OF DRY SOIL (g)	319.0
MASS OF WATER (g)	76.5
MOISTURE CONTENT %	24.0
NATURAL MOISTURE CONTENT :	**24.0**

REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 02 / SPT @ 3.000 (m)

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LAB REF: GC457 / 17MAR19 / 18:00		SAMPLE No: OT-SUB /BH02/SPT/NMC11/17MAR19		
SAMPLED BY: GEOCONSULT		DATE: 17 - 03 - 2019	TIME: 12:17	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 282	8 453 078	1 026 (m)	4.000
TYPE OF MATERIAL: MOIST STIFF BROWN YELLOWISH SANDY SILTY CLAY				
TESTED BY: Y. NANG'OMBA		DATE: 19 - 03 - 2019	TIME: 08:30	
CHECKED BY: G. KACHIWALA		DATE: 20 - 03 - 2019	TIME: 09:00	
APPROVED BY: M. SABELLI		DATE: 20 - 03 - 2019	TIME: 10:00	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: BS1377

MASS OF WET SOIL + CONTAINER (g)	573.0
MASS OF DRY SOIL AND CONTAINER (g)	502.0
CONTAINER No.	GC23
MASS OF CONTAINER (g)	79.0
MASS OF DRY SOIL (g)	423.0
MASS OF WATER (g)	71.0
MOISTURE CONTENT %	16.8
NATURAL MOISTURE CONTENT :	**16.8**

REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 02 / SPT @ 4.000 (m)

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LAB REF: GC457 / 17MAR19 / 18:00		SAMPLE No: OT-SUB /BH02/SPT/NMC12/17MAR19		
SAMPLED BY: GEOCONSULT		DATE: 17 - 03 - 2019	TIME: 13:07	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 282	8 453 078	1 026 (m)	5.000
TYPE OF MATERIAL: MOIST STIFF MOLTLED SANDY SILTY CLAY				
TESTED BY: Y. NANG'OMBA		DATE: 19 - 03 - 2019	TIME: 08:30	
CHECKED BY: G. KACHIWALA		DATE: 20 - 03 - 2019	TIME: 09:00	
APPROVED BY: M. SABELLI		DATE: 20 - 03 - 2019	TIME: 10:00	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: BS1377

MASS OF WET SOIL + CONTAINER (g)	591.5
MASS OF DRY SOIL AND CONTAINER (g)	473.0
CONTAINER No.	C23
MASS OF CONTAINER (g)	92.0
MASS OF DRY SOIL (g)	381.0
MASS OF WATER (g)	118.5
MOISTURE CONTENT %	31.1
NATURAL MOISTURE CONTENT :	**31.1**

REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 02 / SPT @ 5.000 (m)

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LAB REF: GC457 / 17MAR19 / 18:00		SAMPLE No: OT-SUB /BH02/SPT/NMC13/17MAR19		
SAMPLED BY: GEOCONSULT		DATE: 17 - 03 - 2019	TIME: 13:54	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 282	8 453 078	1 026 (m)	6.000
TYPE OF MATERIAL: MOIST STIFF MOLTLED SILTY SANDY CLAY				
TESTED BY: Y. NANG'OMBA		DATE: 19 - 03 - 2019	TIME: 08:30	
CHECKED BY: G. KACHIWALA		DATE: 20 - 03 - 2019	TIME: 09:00	
APPROVED BY: M. SABELLI		DATE: 20 - 03 - 2019	TIME: 10:00	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: BS1377

MASS OF WET SOIL + CONTAINER (g)	703.5
MASS OF DRY SOIL AND CONTAINER (g)	598.0
CONTAINER No.	GC28
MASS OF CONTAINER (g)	103.0
MASS OF DRY SOIL (g)	495.0
MASS OF WATER (g)	105.5
MOISTURE CONTENT %	21.3
NATURAL MOISTURE CONTENT :	**21.3**

REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 02 / SPT @ 6.000 (m)

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LAB REF: GC457 / 17MAR19 / 18:00		SAMPLE No: OT-SUB /BH02/SPT/NMC14/17MAR19		
SAMPLED BY: GEOCONSULT		DATE: 17 - 03 - 2019	TIME: 14:33	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 282	8 453 078	1 026 (m)	7.000
TYPE OF MATERIAL: MOIST STIFF MOLTLED SANDY SILTY CLAY WITH SPOTS OF MICA				
TESTED BY: Y. NANG'OMBA		DATE: 19 - 03 - 2019	TIME: 08:30	
CHECKED BY: G. KACHIWALA		DATE: 20 - 03 - 2019	TIME: 09:00	
APPROVED BY: M. SABELLI		DATE: 20 - 03 - 2019	TIME: 10:00	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: BS1377

MASS OF WET SOIL + CONTAINER (g)	612.0
MASS OF DRY SOIL AND CONTAINER (g)	546.0
CONTAINER No.	GCI
MASS OF CONTAINER (g)	88.0
MASS OF DRY SOIL (g)	458.0
MASS OF WATER (g)	66.0
MOISTURE CONTENT %	14.4
NATURAL MOISTURE CONTENT :	**14.4**

REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 02 / SPT @ 7.000 (m)

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LAB REF: GC457 / 17MAR19 / 18:00		SAMPLE No: OT-SUB /BH02/SPT/NMC15/17MAR19		
SAMPLED BY: GEOCONSULT		DATE: 17 - 03 - 2019	TIME: 14:33	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 282	8 453 078	1 026 (m)	7.900
TYPE OF MATERIAL: MOIST DARK GREY SILTY SANDY CLAY CONTAINS MICA				
TESTED BY: Y. NANG'OMBA		DATE: 19 - 03 - 2019	TIME: 08:30	
CHECKED BY: G. KACHIWALA		DATE: 20 - 03 - 2019	TIME: 09:00	
APPROVED BY: M. SABELLI		DATE: 20 - 03 - 2019	TIME: 10:00	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: BS1377

MASS OF WET SOIL + CONTAINER (g)	612.0
MASS OF DRY SOIL AND CONTAINER (g)	546.0
CONTAINER No.	GCI
MASS OF CONTAINER (g)	88.0
MASS OF DRY SOIL (g)	458.0
MASS OF WATER (g)	66.0
MOISTURE CONTENT %	14.4
NATURAL MOISTURE CONTENT :	**14.4**

REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 02 / SPT @ 7.000 (m)

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LAB REF: GC463 / 24MAR19 / 18:00		SAMPLE No: OT-SUB / BH03 / NMC01 / 24MAR19		
SAMPLED BY: GEOCONSULT		DATE: 24 - 03 - 2019	TIME: 15:13	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 306	8 453 072	1 023(m)	0.000-0.140
TYPE OF MATERIAL: TOP SOIL				
TESTED BY: Y. NANG'OMBA		DATE: 26 - 03 - 2019	TIME: 08:30	
CHECKED BY: G. KACHIWALA		DATE: 27 - 03 - 2019	TIME: 09:00	
APPROVED BY: M. SABELLI		DATE: 27 - 03 - 2019	TIME: 10:00	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: BS1377

MASS OF WET SOIL + CONTAINER (g)	340.0
MASS OF DRY SOIL AND CONTAINER (g)	300.5
CONTAINER No.	GC14B
MASS OF CONTAINER (g)	52.0
MASS OF DRY SOIL (g)	248.5
MASS OF WATER (g)	39.5
MOISTURE CONTENT %	15.9
NATURAL MOISTURE CONTENT :	**15.9**

REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 03 / DEPTH 0.000 - 0.140 (m)

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LAB REF: GC463 / 24MAR19 / 18:00		SAMPLE No: OT-SUB / BH03 / NMC02 / 24MAR19		
SAMPLED BY: GEOCONSULT		DATE: 24 - 03 - 2019	TIME: 15:13	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 306	8 453 072	1 023(m)	0.140-0.700
TYPE OF MATERIAL: MOIST BLACK SANDY SILTY CLAY				
TESTED BY: Y. NANG'OMBA		DATE: 26 - 03 - 2019	TIME: 08:30	
CHECKED BY: G. KACHIWALA		DATE: 27 - 03 - 2019	TIME: 09:00	
APPROVED BY: M. SABELLI		DATE: 27 - 03 - 2019	TIME: 10:00	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: BS1377

MASS OF WET SOIL + CONTAINER (g)	270.0
MASS OF DRY SOIL AND CONTAINER (g)	223.0
CONTAINER No.	GC4
MASS OF CONTAINER (g)	51.0
MASS OF DRY SOIL (g)	172.0
MASS OF WATER (g)	47.0
MOISTURE CONTENT %	27.3
NATURAL MOISTURE CONTENT :	**27.3**

REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 03 / DEPTH 0.140 - 0.700 (m)

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LAB REF: GC463 / 24MAR19 / 18:00		SAMPLE No: OT-SUB / BH03 / NMC03 / 24MAR19		
SAMPLED BY: GEOCONSULT		DATE: 24 - 03 - 2019	TIME: 16:10	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 306	8 453 072	1 023(m)	0.700-4.000
TYPE OF MATERIAL: MOIST GREYISH BROWN SANDY SILTY CLAY				
TESTED BY: Y. NANG'OMBA		DATE: 26 - 03 - 2019	TIME: 08:30	
CHECKED BY: G. KACHIWALA		DATE: 27 - 03 - 2019	TIME: 09:00	
APPROVED BY: M. SABELLI		DATE: 27 - 03 - 2019	TIME: 10:00	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: BS1377

MASS OF WET SOIL + CONTAINER (g)	345.5
MASS OF DRY SOIL AND CONTAINER (g)	281.5
CONTAINER No.	GC1
MASS OF CONTAINER (g)	74.0
MASS OF DRY SOIL (g)	207.5
MASS OF WATER (g)	64.0
MOISTURE CONTENT %	30.8
NATURAL MOISTURE CONTENT :	**30.8**

REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 03 / DEPTH 0.700 - 4.000 (m)

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LAB REF: GC463 / 24MAR19 / 18:00		SAMPLE No: OT-SUB /BH03/SPT/NMC04/24MAR19		
SAMPLED BY: GEOCONSULT		DATE: 24 - 03 - 2019	TIME: 15:28	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 306	8 453 072	1 023(m)	1.000
TYPE OF MATERIAL: MOIST GREYISH BROWN SANDY SILTY CLAY				
TESTED BY: Y. NANG'OMBA		DATE: 26 - 03 - 2019	TIME: 08:30	
CHECKED BY: G. KACHIWALA		DATE: 27 - 03 - 2019	TIME: 09:00	
APPROVED BY: M. SABELLI		DATE: 27 - 03 - 2019	TIME: 10:00	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: BS1377

MASS OF WET SOIL + CONTAINER (g)	462.0
MASS OF DRY SOIL AND CONTAINER (g)	364.0
CONTAINER No.	GC8
MASS OF CONTAINER (g)	49.0
MASS OF DRY SOIL (g)	315.0
MASS OF WATER (g)	98.0
MOISTURE CONTENT %	31.1
NATURAL MOISTURE CONTENT :	**31.1**

REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 03 / SPT @ 1.000 (m)

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LAB REF: GC463 / 24MAR19 / 18:00		SAMPLE No: OT-SUB /BH03/SPT/NMC05/24MAR19		
SAMPLED BY: GEOCONSULT		DATE: 24 - 03 - 2019	TIME: 15:43	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 306	8 453 072	1 023(m)	2.000
TYPE OF MATERIAL: MOIST GREYISH BROWN SANDY SILTY CLAY				
TESTED BY: Y. NANG'OMBA		DATE: 26 - 03 - 2019	TIME: 08:30	
CHECKED BY: G. KACHIWALA		DATE: 27 - 03 - 2019	TIME: 09:00	
APPROVED BY: M. SABELLI		DATE: 27 - 03 - 2019	TIME: 10:00	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: BS1377

MASS OF WET SOIL + CONTAINER (g)	549.0
MASS OF DRY SOIL AND CONTAINER (g)	426.0
CONTAINER No.	GC111
MASS OF CONTAINER (g)	51.5
MASS OF DRY SOIL (g)	374.5
MASS OF WATER (g)	123.0
MOISTURE CONTENT %	32.8
NATURAL MOISTURE CONTENT :	**32.8**

REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 03 / SPT @ 2.000 (m)

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LAB REF: GC463 / 24MAR19 / 18:00		SAMPLE No: OT-SUB /BH03/SPT/NMC06/24MAR19		
SAMPLED BY: GEOCONSULT		DATE: 24 - 03 - 2019	TIME: 15:59	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 306	8 453 072	1 023(m)	3.000
TYPE OF MATERIAL: MOIST GREYISH BROWN SANDY SILTY CLAY				
TESTED BY: Y. NANG'OMBA		DATE: 26 - 03 - 2019	TIME: 08:30	
CHECKED BY: G. KACHIWALA		DATE: 27 - 03 - 2019	TIME: 09:00	
APPROVED BY: M. SABELLI		DATE: 27 - 03 - 2019	TIME: 10:00	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: BS1377

MASS OF WET SOIL + CONTAINER (g)	497.5
MASS OF DRY SOIL AND CONTAINER (g)	393.5
CONTAINER No.	GC11
MASS OF CONTAINER (g)	50.0
MASS OF DRY SOIL (g)	343.5
MASS OF WATER (g)	104.0
MOISTURE CONTENT %	30.3
NATURAL MOISTURE CONTENT :	**30.3**

REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 03 / SPT @ 3.000 (m)

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LAB REF: GC463 / 24MAR19 / 18:00		SAMPLE No: OT-SUB /BH03/SPT/NMC07/24MAR19		
SAMPLED BY: GEOCONSULT		DATE: 24 - 03 - 2019	TIME: 16:21	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 306	8 453 072	1 023(m)	4.000
TYPE OF MATERIAL: MOIST GREYISH BROWN SANDY SILTY CLAY				
TESTED BY: Y. NANG'OMBA		DATE: 26 - 03 - 2019	TIME: 08:30	
CHECKED BY: G. KACHIWALA		DATE: 27 - 03 - 2019	TIME: 09:00	
APPROVED BY: M. SABELLI		DATE: 27 - 03 - 2019	TIME: 10:00	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: BS1377

MASS OF WET SOIL + CONTAINER (g)	712.0
MASS OF DRY SOIL AND CONTAINER (g)	565.5
CONTAINER No.	GC65
MASS OF CONTAINER (g)	104.5
MASS OF DRY SOIL (g)	461.0
MASS OF WATER (g)	146.5
MOISTURE CONTENT %	31.8
NATURAL MOISTURE CONTENT :	**31.8**

REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 03 / SPT @ 4.000 (m)

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LAB REF: GC464 / 25MAR19 / 18:00		SAMPLE No: OT-SUB /BH03/SPT/NMC08/25MAR19		
SAMPLED BY: GEOCONSULT		DATE: 25 - 03 - 2019	TIME: 10:01	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 306	8 453 072	1 023(m)	5.000
TYPE OF MATERIAL: MOIST GREYISH BROWN SANDY SILTY CLAY				
TESTED BY: Y. NANG'OMBA		DATE: 26 - 03 - 2019	TIME: 08:30	
CHECKED BY: G. KACHIWALA		DATE: 27 - 03 - 2019	TIME: 09:00	
APPROVED BY: M. SABELLI		DATE: 27 - 03 - 2019	TIME: 10:00	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: BS1377

MASS OF WET SOIL + CONTAINER (g)	693.5
MASS OF DRY SOIL AND CONTAINER (g)	584.5
CONTAINER No.	GC28
MASS OF CONTAINER (g)	103.0
MASS OF DRY SOIL (g)	481.5
MASS OF WATER (g)	109.0
MOISTURE CONTENT %	22.6
NATURAL MOISTURE CONTENT :	**22.6**

REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 03 / SPT @ 5.000 (m)

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LAB REF: GC464 / 25MAR19 / 18:00		SAMPLE No: OT-SUB /BH03/SPT/NMC09/25MAR19		
SAMPLED BY: GEOCONSULT		DATE: 25 - 03 - 2019	TIME: 10:19	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 306	8 453 072	1 023(m)	6.000
TYPE OF MATERIAL: MOIST GREYISH BROWN SANDY SILTY CLAY				
TESTED BY: Y. NANG'OMBA		DATE: 26 - 03 - 2019	TIME: 08:30	
CHECKED BY: G. KACHIWALA		DATE: 27 - 03 - 2019	TIME: 09:00	
APPROVED BY: M. SABELLI		DATE: 27 - 03 - 2019	TIME: 10:00	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: BS1377

MASS OF WET SOIL + CONTAINER (g)	182.5
MASS OF DRY SOIL AND CONTAINER (g)	168.0
CONTAINER No.	GC31
MASS OF CONTAINER (g)	90.5
MASS OF DRY SOIL (g)	77.5
MASS OF WATER (g)	14.5
MOISTURE CONTENT %	18.7
NATURAL MOISTURE CONTENT :	**18.7**

REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 03 / SPT @ 6.000 (m)

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LAB REF: GC464 / 25MAR19 / 18:00		SAMPLE No: OT-SUB /BH03/SPT/NMC10/25MAR19		
SAMPLED BY: GEOCONSULT		DATE: 25 - 03 - 2019	TIME: 10:36	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 306	8 453 072	1 023(m)	7.000
TYPE OF MATERIAL: MOIST DECOMPOSED ROCK				
TESTED BY: Y. NANG'OMBA		DATE: 26 - 03 - 2019	TIME: 08:30	
CHECKED BY: G. KACHIWALA		DATE: 27 - 03 - 2019	TIME: 09:00	
APPROVED BY: M. SABELLI		DATE: 27 - 03 - 2019	TIME: 10:00	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: BS1377

MASS OF WET SOIL + CONTAINER (g)	625.5
MASS OF DRY SOIL AND CONTAINER (g)	504.5
CONTAINER No.	GC32
MASS OF CONTAINER (g)	91.5
MASS OF DRY SOIL (g)	413.0
MASS OF WATER (g)	121.0
MOISTURE CONTENT %	29.3
NATURAL MOISTURE CONTENT :	**29.3**

REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 03 / SPT @ 7.000 (m)

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LAB REF: GC463 / 24MAR19 / 18:00		SAMPLE No: OT-SUB / BH04 / NMC04 / 24MAR19		
SAMPLED BY: GEOCONSULT		DATE: 24 - 03 - 2019	TIME: 11:40	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 295	8 453 081	1 040(m)	2.000-3.700
TYPE OF MATERIAL: MOIST GREYISH BROWN SANDY SILTY CLAY				
TESTED BY: Y. NANG'OMBA		DATE: 26 - 03 - 2019	TIME: 08:30	
CHECKED BY: G. KACHIWALA		DATE: 27 - 03 - 2019	TIME: 09:00	
APPROVED BY: M. SABELLI		DATE: 27 - 03 - 2019	TIME: 10:00	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: BS1377

MASS OF WET SOIL + CONTAINER (g)	289.5
MASS OF DRY SOIL AND CONTAINER (g)	230.5
CONTAINER No.	GC17
MASS OF CONTAINER (g)	51.0
MASS OF DRY SOIL (g)	179.5
MASS OF WATER (g)	59.0
MOISTURE CONTENT %	32.9
NATURAL MOISTURE CONTENT :	**32.9**

REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 04 / DEPTH 2.000 - 3.700 (m)

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LAB REF: GC463 / 24MAR19 / 18:00		SAMPLE No: OT-SUB / BH04 / NMC05 / 24MAR19		
SAMPLED BY: GEOCONSULT		DATE: 24 - 03 - 2019	TIME: 12:00	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 295	8 453 081	1 040(m)	3.700-6.000
TYPE OF MATERIAL: MOIST BROWN SANDY SILTY CLAY WITH STRIPES OF COTTON SOIL				
TESTED BY: Y. NANG'OMBA		DATE: 26 - 03 - 2019	TIME: 08:30	
CHECKED BY: G. KACHIWALA		DATE: 27 - 03 - 2019	TIME: 09:00	
APPROVED BY: M. SABELLI		DATE: 27 - 03 - 2019	TIME: 10:00	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: BS1377

MASS OF WET SOIL + CONTAINER (g)	301.0
MASS OF DRY SOIL AND CONTAINER (g)	252.5
CONTAINER No.	GC12
MASS OF CONTAINER (g)	70.0
MASS OF DRY SOIL (g)	182.5
MASS OF WATER (g)	48.5
MOISTURE CONTENT %	26.6
NATURAL MOISTURE CONTENT :	**26.6**

REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 04 / DEPTH 3.700 - 6.000 (m)

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LAB REF: GC463 / 24MAR19 / 18:00		SAMPLE No: OT-SUB /BH04/SPT/NMC07/24MAR19		
SAMPLED BY: GEOCONSULT		DATE: 24 - 03 - 2019	TIME:11:20	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 295	8 453 081	1 040(m)	2.000
TYPE OF MATERIAL: MOIST BLACK GREYISH SANDY SILTY CLAY				
TESTED BY: Y. NANG'OMBA		DATE: 26 - 03 - 2019	TIME: 08:30	
CHECKED BY: G. KACHIWALA		DATE: 27 - 03 - 2019	TIME: 09:00	
APPROVED BY: M. SABELLI		DATE: 27 - 03 - 2019	TIME: 10:00	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: BS1377

MASS OF WET SOIL + CONTAINER (g)	510.5
MASS OF DRY SOIL AND CONTAINER (g)	409.5
CONTAINER No.	GC23
MASS OF CONTAINER (g)	92.0
MASS OF DRY SOIL (g)	317.5
MASS OF WATER (g)	101.0
MOISTURE CONTENT %	31.8
NATURAL MOISTURE CONTENT :	**31.8**

REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 04 / SPT @ 2.000 (m)

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LAB REF: GC463 / 24MAR19 / 18:00		SAMPLE No: OT-SUB /BH04/SPT/NMC08/24MAR19		
SAMPLED BY: GEOCONSULT		DATE: 24 - 03 - 2019	TIME:11:42	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 295	8 453 081	1 040(m)	3.000
TYPE OF MATERIAL: MOIST GREYISH BROWN SANDY SILTY CLAY				
TESTED BY: Y. NANG'OMBA		DATE: 26 - 03 - 2019	TIME: 08:30	
CHECKED BY: G. KACHIWALA		DATE: 27 - 03 - 2019	TIME: 09:00	
APPROVED BY: M. SABELLI		DATE: 27 - 03 - 2019	TIME: 10:00	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: BS1377

MASS OF WET SOIL + CONTAINER (g)	667.0
MASS OF DRY SOIL AND CONTAINER (g)	538.0
CONTAINER No.	DTB
MASS OF CONTAINER (g)	121.5
MASS OF DRY SOIL (g)	416.5
MASS OF WATER (g)	129.0
MOISTURE CONTENT %	31.0
NATURAL MOISTURE CONTENT :	**31.0**

REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 04 / SPT @ 3.000 (m)

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LAB REF: GC463 / 24MAR19 / 18:00		SAMPLE No: OT-SUB /BH04/SPT/NMC09/24MAR19		
SAMPLED BY: GEOCONSULT		DATE: 24 - 03 - 2019	TIME:12:07	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 295	8 453 081	1 040(m)	4.000
TYPE OF MATERIAL: MOIST BROWN SANDY SILTY CLAY WITH STRIPES OF COTTON SOIL				
TESTED BY: Y. NANG'OMBA		DATE: 26 - 03 - 2019	TIME: 08:30	
CHECKED BY: G. KACHIWALA		DATE: 27 - 03 - 2019	TIME: 09:00	
APPROVED BY: M. SABELLI		DATE: 27 - 03 - 2019	TIME: 10:00	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: BS1377

MASS OF WET SOIL + CONTAINER (g)	489.0
MASS OF DRY SOIL AND CONTAINER (g)	396.0
CONTAINER No.	GC13
MASS OF CONTAINER (g)	47.5
MASS OF DRY SOIL (g)	348.5
MASS OF WATER (g)	93.0
MOISTURE CONTENT %	26.7
NATURAL MOISTURE CONTENT :	**26.7**

REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 04 / SPT @ 4.000 (m)

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LAB REF: GC463 / 24MAR19 / 18:00		SAMPLE No: OT-SUB /BH04/SPT/NMC10/24MAR19		
SAMPLED BY: GEOCONSULT		DATE: 24 - 03 - 2019	TIME:12:50	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 295	8 453 081	1 040(m)	5.000
TYPE OF MATERIAL: MOIST BROWN SANDY SILTY CLAY WITH STRIPES OF COTTON SOIL				
TESTED BY: Y. NANG'OMBA		DATE: 26 - 03 - 2019	TIME: 08:30	
CHECKED BY: G. KACHIWALA		DATE: 27 - 03 - 2019	TIME: 09:00	
APPROVED BY: M. SABELLI		DATE: 27 - 03 - 2019	TIME: 10:00	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: BS1377

MASS OF WET SOIL + CONTAINER (g)	525.5
MASS OF DRY SOIL AND CONTAINER (g)	445.5
CONTAINER No.	GCK
MASS OF CONTAINER (g)	127.0
MASS OF DRY SOIL (g)	318.5
MASS OF WATER (g)	80.0
MOISTURE CONTENT %	25.1
NATURAL MOISTURE CONTENT :	**25.1**

REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 04 / SPT @ 5.000 (m)

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LAB REF: GC463A / 23MAR19 / 18:00		SAMPLE No: OT-SUB / BH04 / NMC01 / 23MAR19		
SAMPLED BY: GEOCONSULT		DATE: 23 - 03 - 2019	TIME: 17:53	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 295	8 453 081	1 040(m)	0.000-0.130
TYPE OF MATERIAL: TOP SOIL				
TESTED BY: Y. NANG'OMBA		DATE: 26 - 03 - 2019	TIME: 08:30	
CHECKED BY: G. KACHIWALA		DATE: 27 - 03 - 2019	TIME: 09:00	
APPROVED BY: M. SABELLI		DATE: 27 - 03 - 2019	TIME: 10:00	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: BS1377

MASS OF WET SOIL + CONTAINER (g)	290.0
MASS OF DRY SOIL AND CONTAINER (g)	244.0
CONTAINER No.	GC10
MASS OF CONTAINER (g)	66.0
MASS OF DRY SOIL (g)	178.0
MASS OF WATER (g)	46.0
MOISTURE CONTENT %	25.8
NATURAL MOISTURE CONTENT :	**25.8**

REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 04 / DEPTH 0.000 - 0.130 (m)

A9-101

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LAB REF: GC463A / 23MAR19 / 18:00		SAMPLE No: OT-SUB / BH04 / NMC02 / 23MAR19		
SAMPLED BY: GEOCONSULT		DATE: 23 - 03 - 2019	TIME: 17:55	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 295	8 453 081	1 040(m)	0.130-0.900
TYPE OF MATERIAL: MOIST BLACK SANDY SILTY CLAY				
TESTED BY: Y. NANG'OMBA		DATE: 26 - 03 - 2019	TIME: 08:30	
CHECKED BY: G. KACHIWALA		DATE: 27 - 03 - 2019	TIME: 09:00	
APPROVED BY: M. SABELLI		DATE: 27 - 03 - 2019	TIME: 10:00	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: BS1377

MASS OF WET SOIL + CONTAINER (g)	344.0
MASS OF DRY SOIL AND CONTAINER (g)	288.0
CONTAINER No.	GC14
MASS OF CONTAINER (g)	69.0
MASS OF DRY SOIL (g)	219.0
MASS OF WATER (g)	56.0
MOISTURE CONTENT %	25.6
NATURAL MOISTURE CONTENT :	**25.6**

REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 04 / DEPTH 0.130 - 0.900 (m)

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LAB REF: GC463A / 23MAR19 / 18:00		SAMPLE No: OT-SUB / BH04 / NMC03 / 23MAR19		
SAMPLED BY: GEOCONSULT		DATE: 23 - 03 - 2019	TIME: 17:55	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 295	8 453 081	1 040(m)	0.900-2.000
TYPE OF MATERIAL: MOIST BLACK GREYISH SANDY SILTY CLAY				
TESTED BY: Y. NANG'OMBA		DATE: 26 - 03 - 2019	TIME: 08:30	
CHECKED BY: G. KACHIWALA		DATE: 27 - 03 - 2019	TIME: 09:00	
APPROVED BY: M. SABELLI		DATE: 27 - 03 - 2019	TIME: 10:00	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: BS1377

MASS OF WET SOIL + CONTAINER (g)	351.0
MASS OF DRY SOIL AND CONTAINER (g)	284.0
CONTAINER No.	GC6
MASS OF CONTAINER (g)	76.0
MASS OF DRY SOIL (g)	208.0
MASS OF WATER (g)	67.0
MOISTURE CONTENT %	32.2
NATURAL MOISTURE CONTENT :	**32.2**

REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 04 / DEPTH 0.900 - 2.000 (m)

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LAB REF: GC463A / 23MAR19 / 18:00		SAMPLE No: OT-SUB /BH04/SPT/NMC06/23MAR19		
SAMPLED BY: GEOCONSULT		DATE: 23 - 03 - 2019	TIME:17:48	
LOCATION: 36L UTM	EASTING	NORTHING	ELEVATION	DEPTH (m)
OLD TOWN SUBSTATION	0 583 295	8 453 081	1 040(m)	1.000
TYPE OF MATERIAL: MOIST BLACK GREYISH SANDY SILTY CLAY				
TESTED BY: Y. NANG'OMBA		DATE: 26 - 03 - 2019	TIME: 08:30	
CHECKED BY: G. KACHIWALA		DATE: 27 - 03 - 2019	TIME: 09:00	
APPROVED BY: M. SABELLI		DATE: 27 - 03 - 2019	TIME: 10:00	

PROJECT: OLD TOWN SUBSTATION **CLIENT:** YEC

NATURAL MOISTURE CONTENT - OVEN DRYING METHOD STANDARD: BS1377

MASS OF WET SOIL + CONTAINER (g)	526.0
MASS OF DRY SOIL AND CONTAINER (g)	430.0
CONTAINER No.	GOK
MASS OF CONTAINER (g)	126.5
MASS OF DRY SOIL (g)	303.5
MASS OF WATER (g)	96.0
MOISTURE CONTENT %	31.6
NATURAL MOISTURE CONTENT :	**31.6**

REMARKS: SAMPLED FROM OLD TOWN SUBSTATION / BOREHOLE 04 / SPT @ 1.000 (m)

4.6 UCS Results

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LAB REF: GC430 / 15APR19 / 10:10		SAMPLE No. YEC / OT / BH01 / 15APR19		
SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 15 / 04 / 2018	TIME: 11:07	
LOCATION:	EASTING	NORTHING	ELEVATION	DEPTH
OT S.S. BH01	583278	8453100		8.0M
TYPE OF MATERIAL: ROCK CORES				
TESTED BY: S. THANGATO		DATE: 15 / 04 / 2019	TIME: 10:20	
CHECKED BY: G. KACHIWALA		DATE: 15 / 04 / 2019	TIME: 10:30	
APPROVED BY: M. SABELLI		DATE: 15 / 04 / 2019	TIME: 14:00	

PROJECT: UPGRADING OLD TOWN SUBSTATION **CLIENT:** YEC ENGINEERING

COMPRESSIVE STRENGTH TEST FOR ROCK CORE

Sample No.		**1**
Wt. Of Sample Before Soaking	g	2167
Date Of Coring	Day	18-03-19
Date Tested	Day	15-04-19
Age	Days	28
Shape		GOOD
Length	mm	160
Diameter	mm	80
Area Of Specimen	mm²	5026
Maximum Load	KN	239.9
Compressive Strength without factor	N/mm²	47.7
Compressive Strength x 1.02 factor	N/mm²	48.7
Average Compressive Strength	N/mm²	**48.7**

REMARKS: UN SOAKED CORE BH01 8.0M

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LAB REF: GC430 / 15APR19 / 10:30		SAMPLE No. YEC / OT / BH04 / 15APR19		
SAMPLED BY: GEOCONSULT LAB. TEAM		DATE: 15 / 04 / 2018	TIME: 11:07	
LOCATION:	EASTING	NORTHING	ELEVATION	DEPTH
OT S.S. BH04	583295	845301		9.000 (m)
TYPE OF MATERIAL: ROCK CORES				
TESTED BY: S. THANGATO		DATE: 15 / 04 / 2019	TIME: 10:20	
CHECKED BY: G. KACHIWALA		DATE: 15 / 04 / 2019	TIME: 10:30	
APPROVED BY: M. SABELLI		DATE: 15 / 04 / 2019	TIME: 14:00	

PROJECT: UPGRADING OLD TOWN SUBSTATION

CLIENT: YEC ENGINEERING

COMPRESSIVE STRENGTH TEST FOR ROCK CORE

Sample No.		**2**	
Wt. Of Sample Before Soaking	g	2108	
Date Of Coring	Day	24-03-19	
Date Tested	Day	15-04-19	
Age	Days	22	
Shape		GOOD	
Length	mm	160	
Diameter	mm	80	
Area Of Specimen	mm²	5026	
Maximum Load	KN	169.7	
Compressive Strength without factor	N/mm²	33.8	
Compressive Strength x 1.02 factor	N/mm²	34.4	
Average Compressive Strength	N/mm²	**34.4**	

REMARKS: UN SOAKED CORE TAKEN FROM DEPTH 9.000 METRES AT BH04.