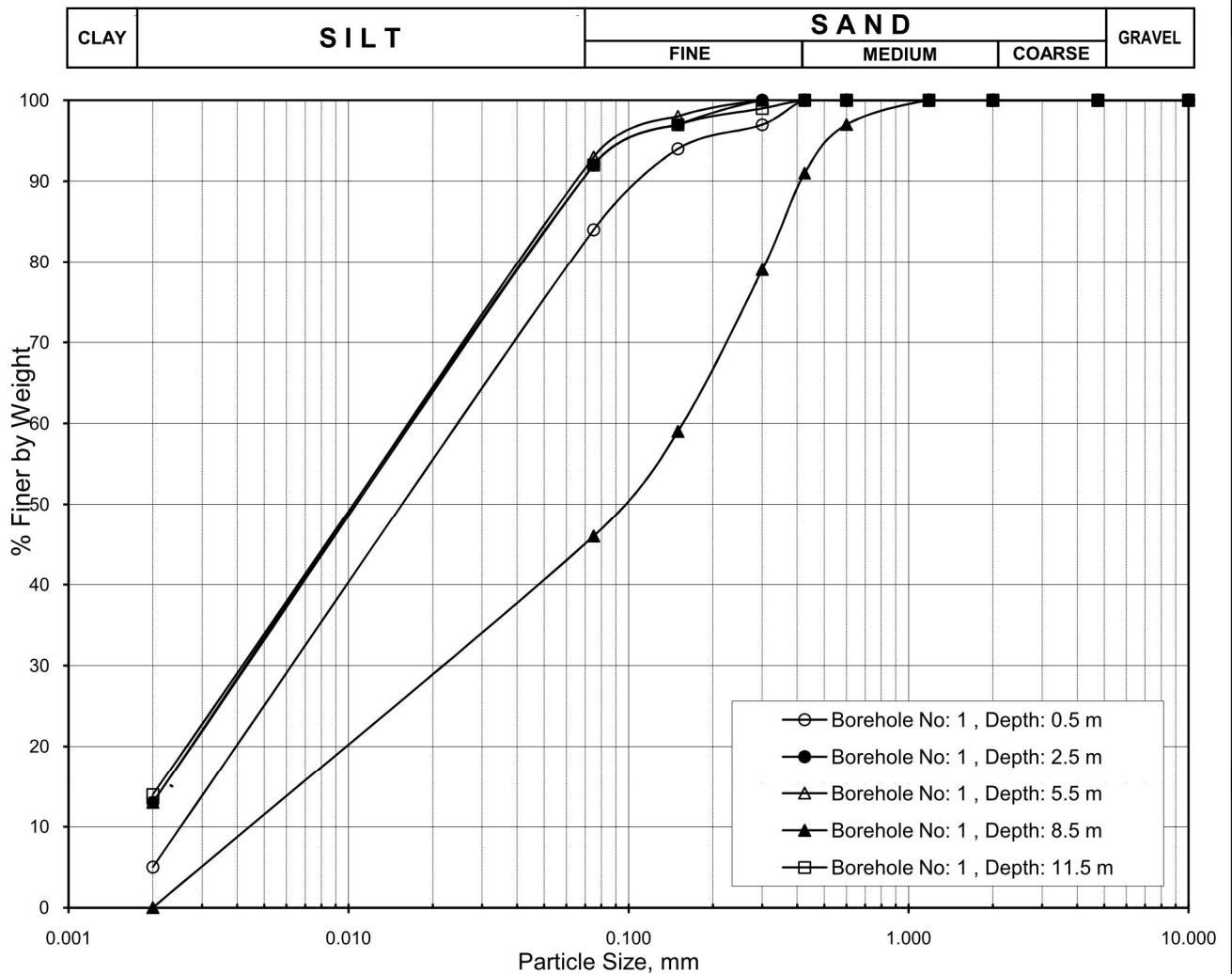


Grain Size Analysis

SAMPLE DETAILS			TEST RESULTS						
Borehole Number	Sample Depth, m	Sample Description	% Gravel	% Sand	% Silt	% Clay			
BH-1	0.50	Sandy silt (ML-CL)	0	16	79	5			
BH-1	2.50	Clayey silt (CL)	0	8	79	13			
BH-1	5.50	Clayey silt (CL)	0	7	80	13			
BH-1	8.50	Silty Fine sand (SM)	0	54	46	0			
BH-1	11.50	Clayey silt (CL)	0	8	78	14			

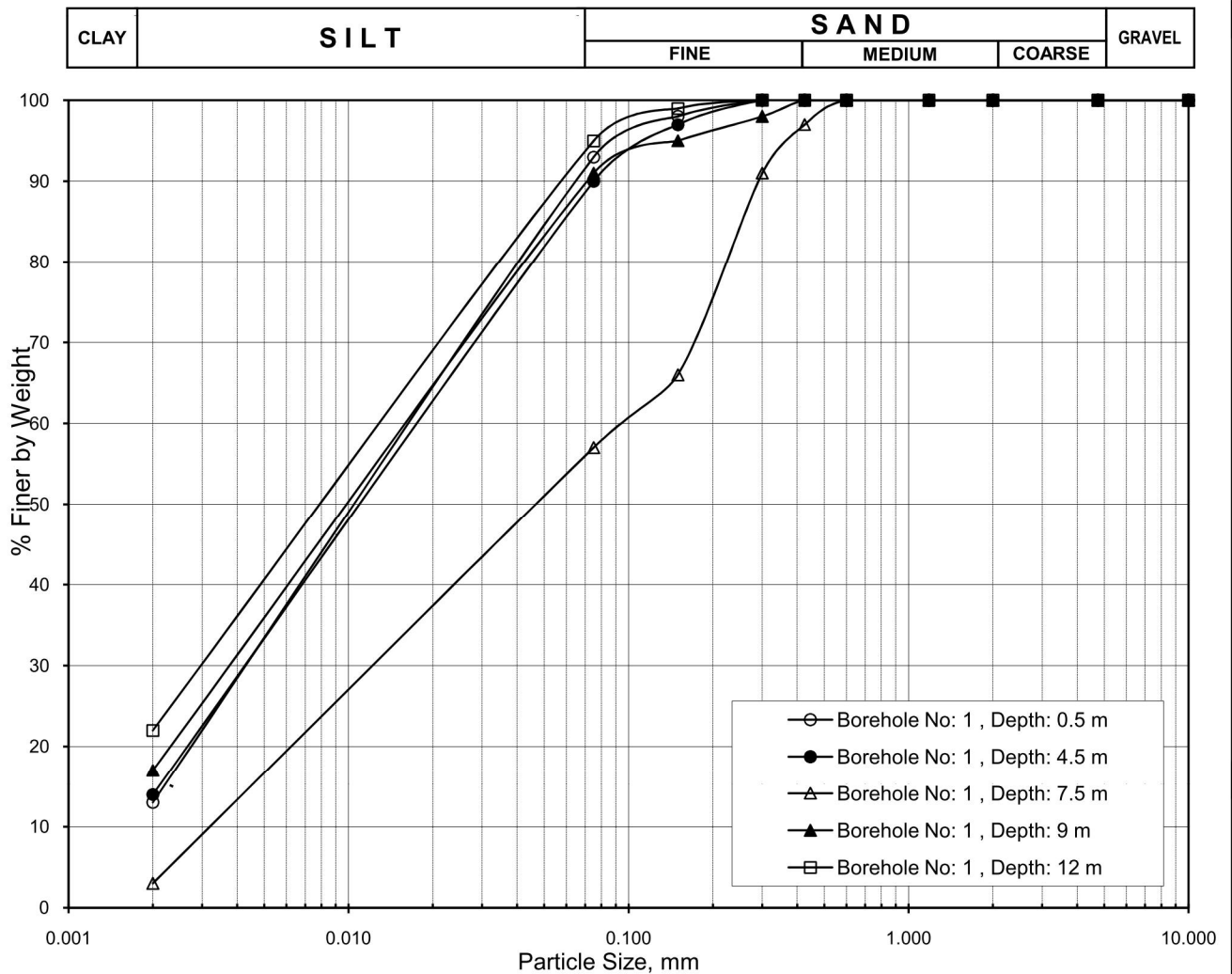


Location: Minor Bridge at Ch. 15+227 Km

Geotechnical Investigation for Hapur - Muzaffarnagar Section of DFCC Meerut

Grain Size Analysis

SAMPLE DETAILS			TEST RESULTS						
Borehole Number	Sample Depth, m	Sample Description	% Gravel	% Sand	% Silt	% Clay			
BH-1	0.50	Clayey silt (CL)	0	7	80	13			
BH-1	4.50	Clayey silt (CL)	0	10	76	14			
BH-1	7.50	Sandy Silt (ML)	0	43	54	3			
BH-1	9.00	Clayey silt (CI)	0	9	74	17			
BH-1	12.00	Clayey silt (CI)	0	5	73	22			

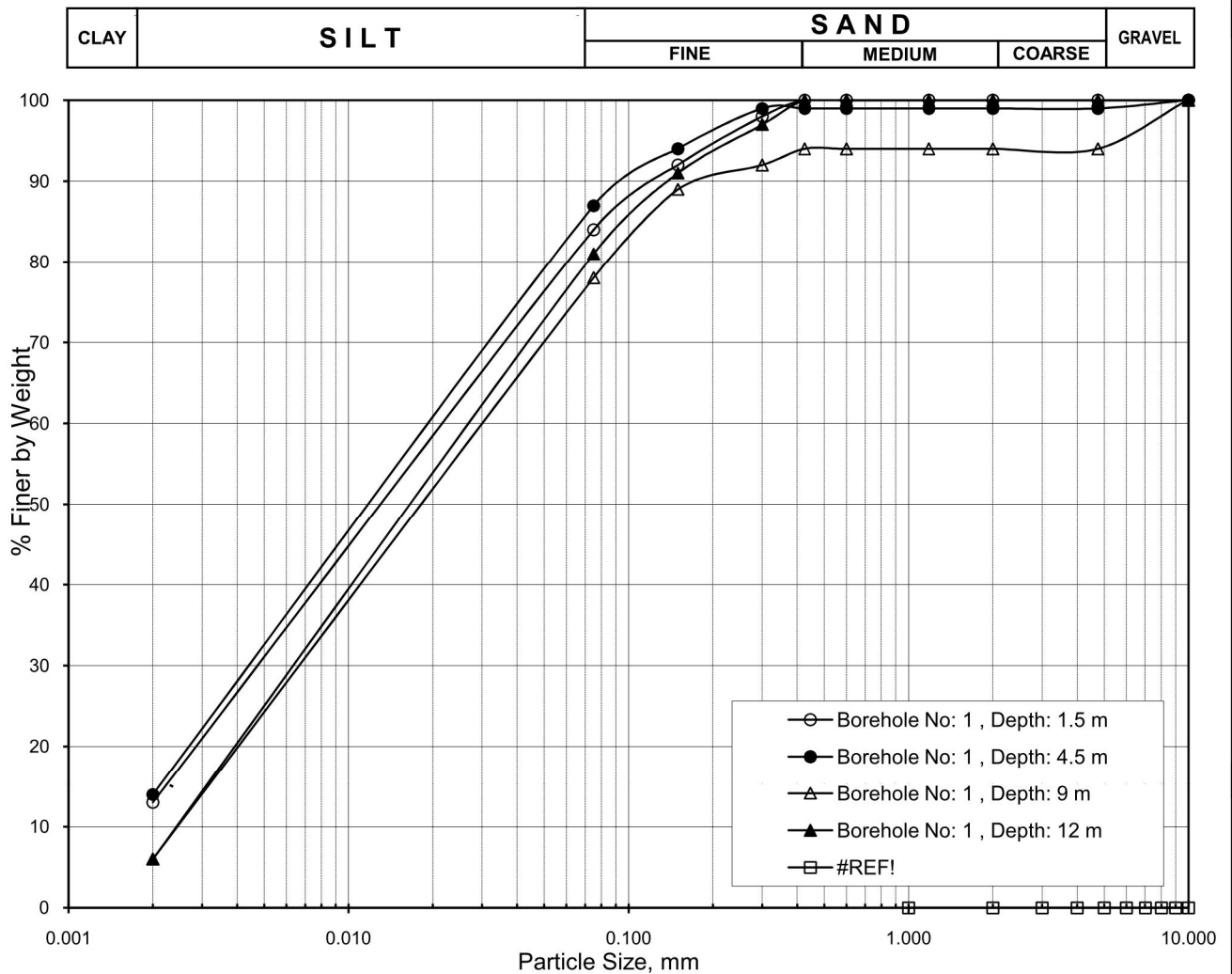


Location: Minor Bridge at Ch. 16+144 Km

Geotechnical Investigation for Hapur - Muzaffarnagar Section of DFCC Meerut

Grain Size Analysis

SAMPLE DETAILS			TEST RESULTS						
Borehole Number	Sample Depth, m	Sample Description	% Gravel	% Sand	% Silt	% Clay			
BH-1	1.50	Clayey silt (CL)	0	16	71	13			
BH-1	4.50	Clayey silt (CL)	1	12	73	14			
BH-1	9.00	Sandy Silt (ML)	6	16	72	6			
BH-1	12.00	Clayey silt (CI)	0	19	75	6			

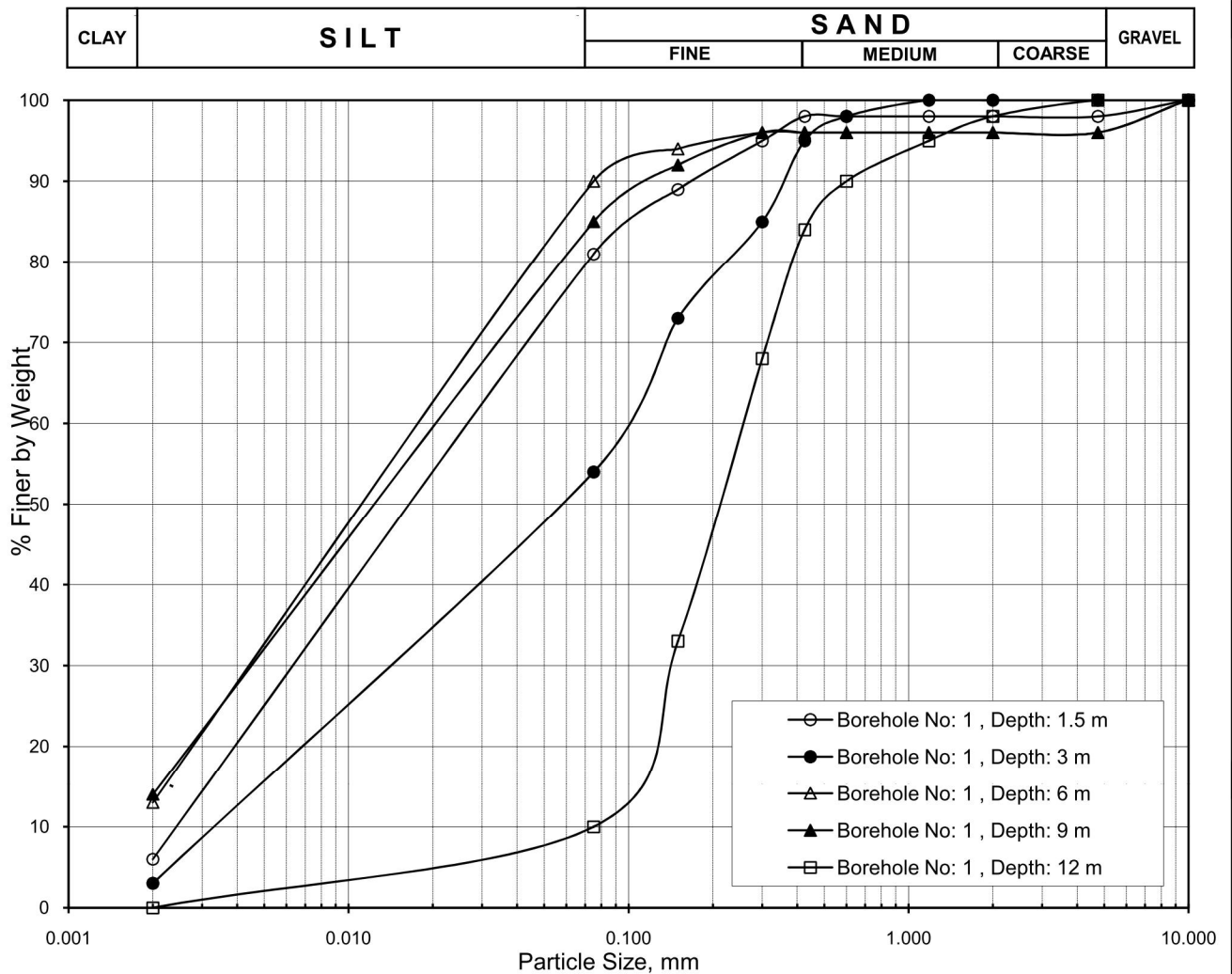


Location: Minor Bridge at Ch. 17+338 Km

Geotechnical Investigation for Hapur - Muzaffarnagar Section of DFCC Meerut

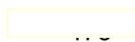
Grain Size Analysis

SAMPLE DETAILS			TEST RESULTS						
Borehole Number	Sample Depth, m	Sample Description	% Gravel	% Sand	% Silt	% Clay			
BH-1	1.50	Sandy silt (ML-CL)	2	17	75	6			
BH-1	3.00	Sandy Silt (ML)	0	46	51	3			
BH-1	6.00	Clayey silt (CL)	4	6	77	13			
BH-1	9.00	Clayey silt (CL)	4	11	71	14			
BH-1	12.00	Fine sand (SP-SM)	0	90	10	0			



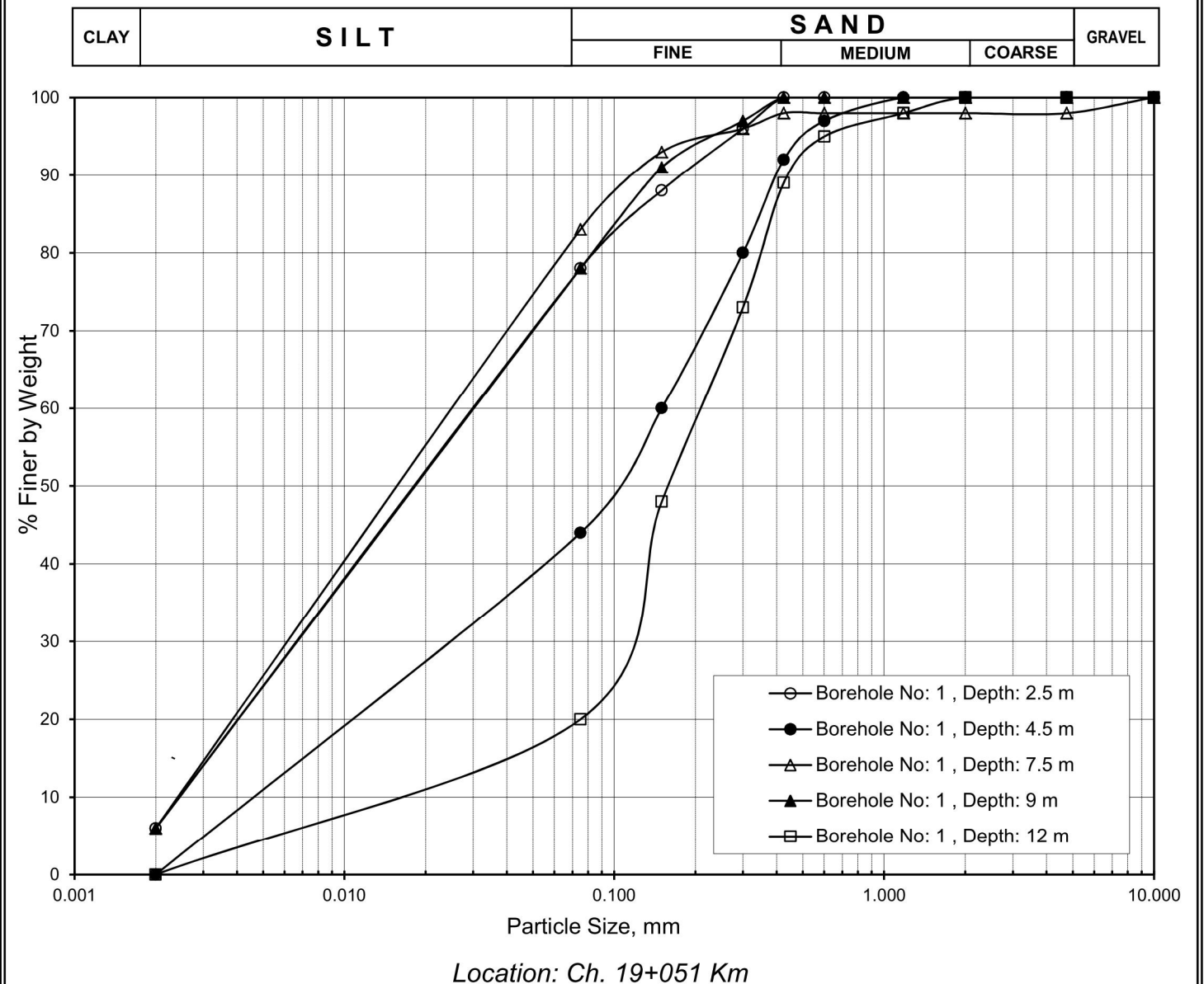
Location: Minor Bridge at Ch. 18+070 Km

Geotechnical Investigation for Hapur - Muzaffarnagar Section of DFCC Meerut



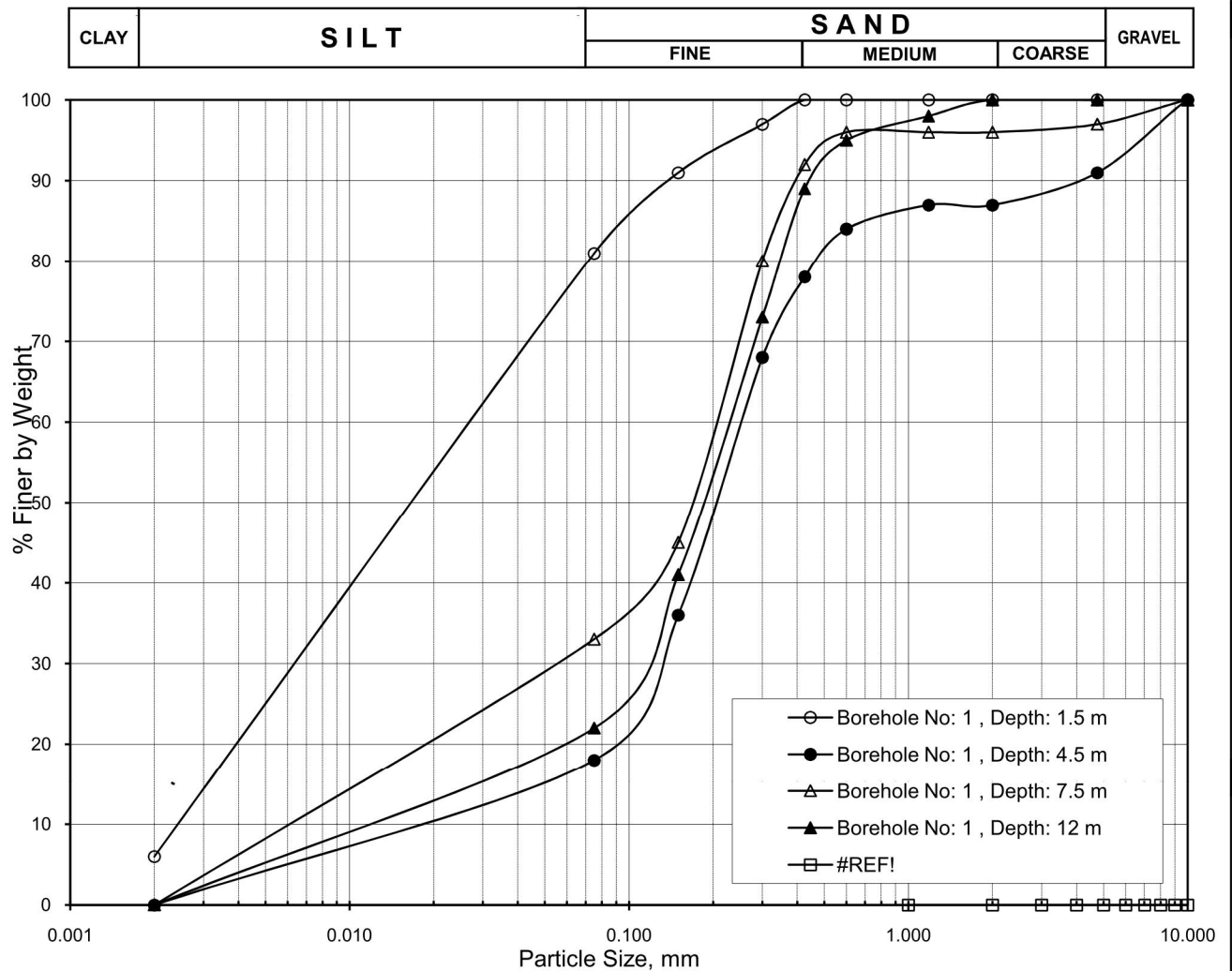
Grain Size Analysis

SAMPLE DETAILS			TEST RESULTS						
Borehole Number	Sample Depth, m	Sample Description	% Gravel	% Sand	% Silt	% Clay			
BH-1	2.50	Sandy silt (ML-CL)	0	22	72	6			
BH-1	4.50	Silty Fine sand (SM)	0	56	44	0			
BH-1	7.50	Sandy silt (ML-CL)	2	15	77	6			
BH-1	9.00	Sandy silt (ML-CL)	0	22	72	6			
BH-1	12.00	Silty Fine sand (SM)	0	80	20	0			



Grain Size Analysis

SAMPLE DETAILS			TEST RESULTS						
Borehole Number	Sample Depth, m	Sample Description	% Gravel	% Sand	% Silt	% Clay			
BH-1	1.50	Sandy silt (ML-CL)	0	19	75	6			
BH-1	4.50	Silty Fine sand (SM)	9	73	18	0			
BH-1	7.50	Silty Fine sand (SM)	3	64	33	0			
BH-1	12.00	Silty Fine sand (SM)	0	78	22	0			

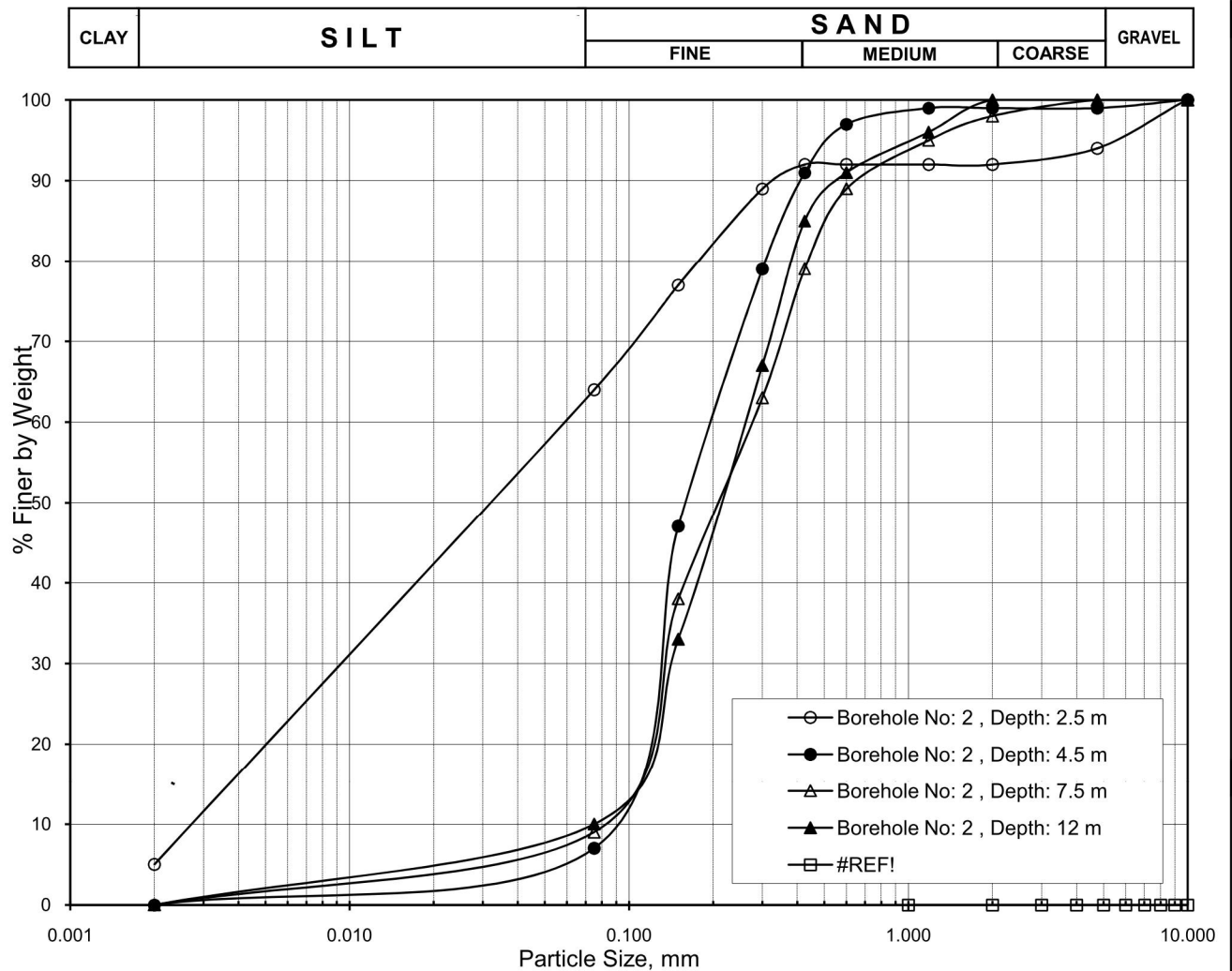


Location: Minor Bridge at Ch. 19+955 Km

Geotechnical Investigation for Hapur - Muzaffarnagar Section of DFCC Meerut

Grain Size Analysis

SAMPLE DETAILS			TEST RESULTS						
Borehole Number	Sample Depth, m	Sample Description	% Gravel	% Sand	% Silt	% Clay			
BH-2	2.50	Sandy silt (ML-CL)	6	30	59	5			
BH-2	4.50	Fine sand (SP-SM)	1	92	7	0			
BH-2	7.50	Fine sand (SP-SM)	0	91	9	0			
BH-2	12.00	Fine sand (SP-SM)	0	90	10	0			

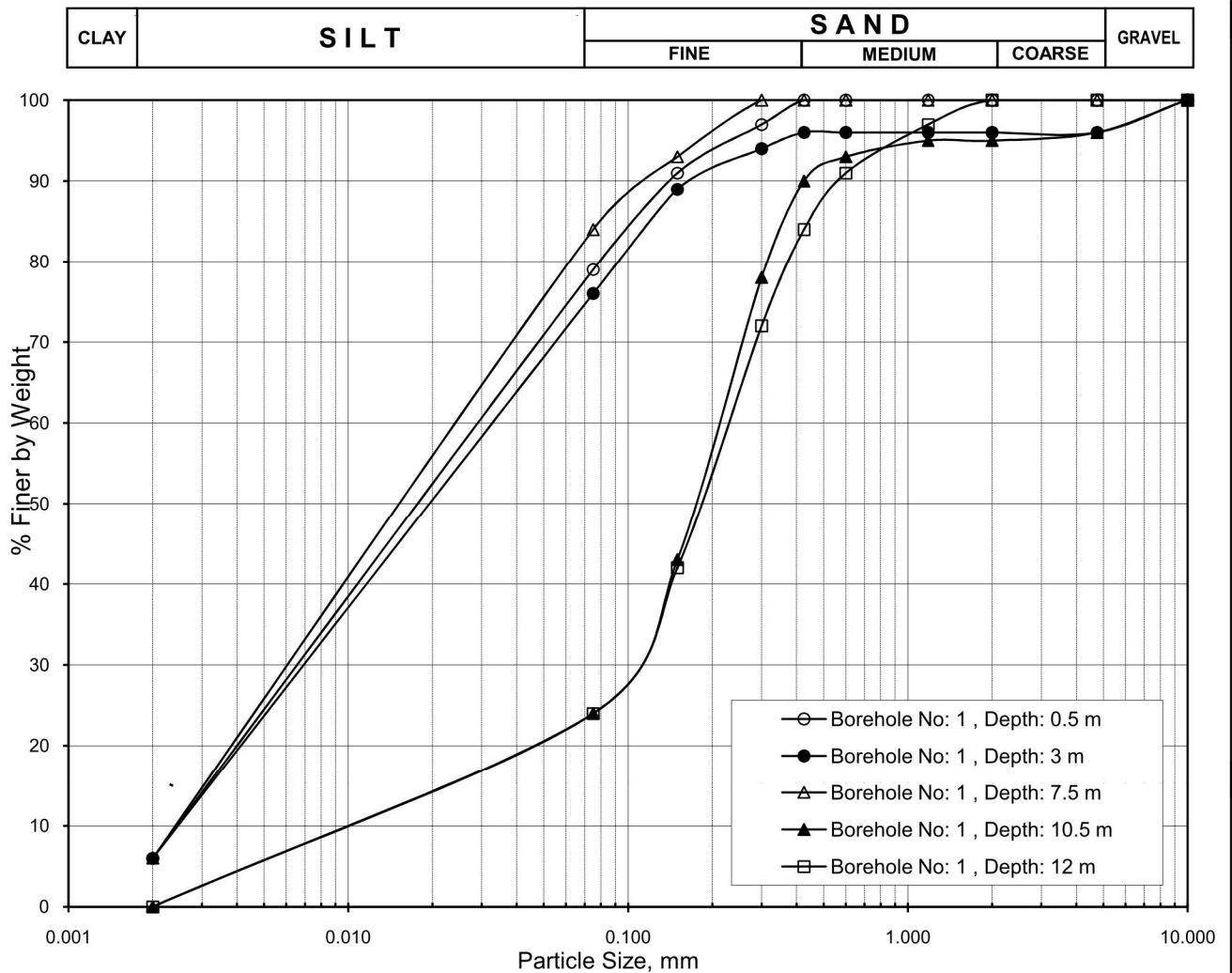


Location: Minor Bridge at Ch. 19+955 Km

Geotechnical Investigation for Hapur - Muzaffarnagar Section of DFCC Meerut

Grain Size Analysis

SAMPLE DETAILS			TEST RESULTS						
Borehole Number	Sample Depth, m	Sample Description	% Gravel	% Sand	% Silt	% Clay			
BH-1	0.50	Sandy silt (ML-CL)	0	21	73	6			
BH-1	3.00	Sandy silt (ML-CL)	4	20	70	6			
BH-1	7.50	Sandy silt (ML-CL)	0	16	78	6			
BH-1	10.50	Silty Fine sand (SM)	4	72	24	0			
BH-1	12.00	Silty Fine sand (SM)	0	76	24	0			

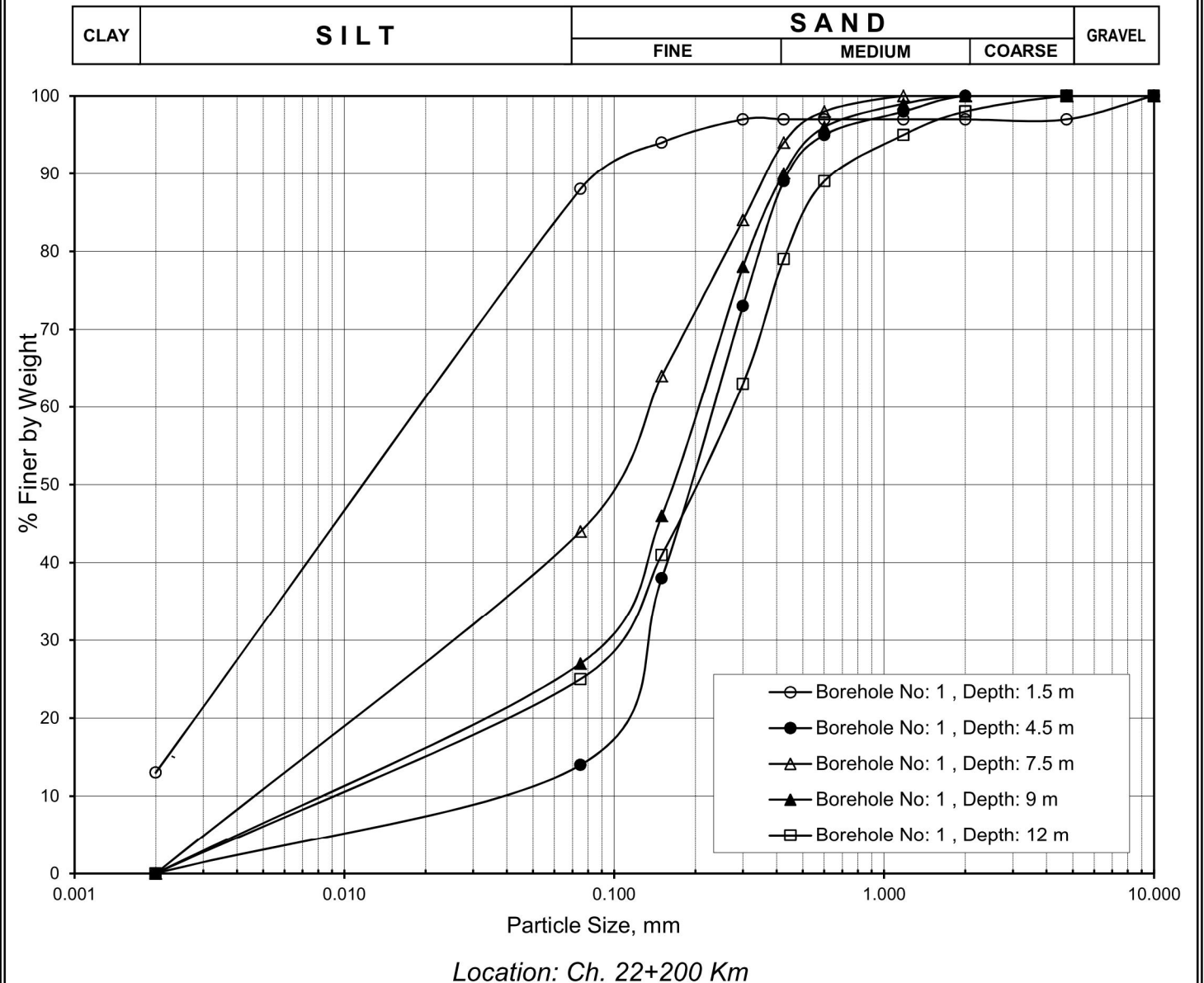


Location: Minor Bridge at Ch. 20+935 Km

Geotechnical Investigation for Hapur - Muzaffarnagar Section of DFCC Meerut

Grain Size Analysis

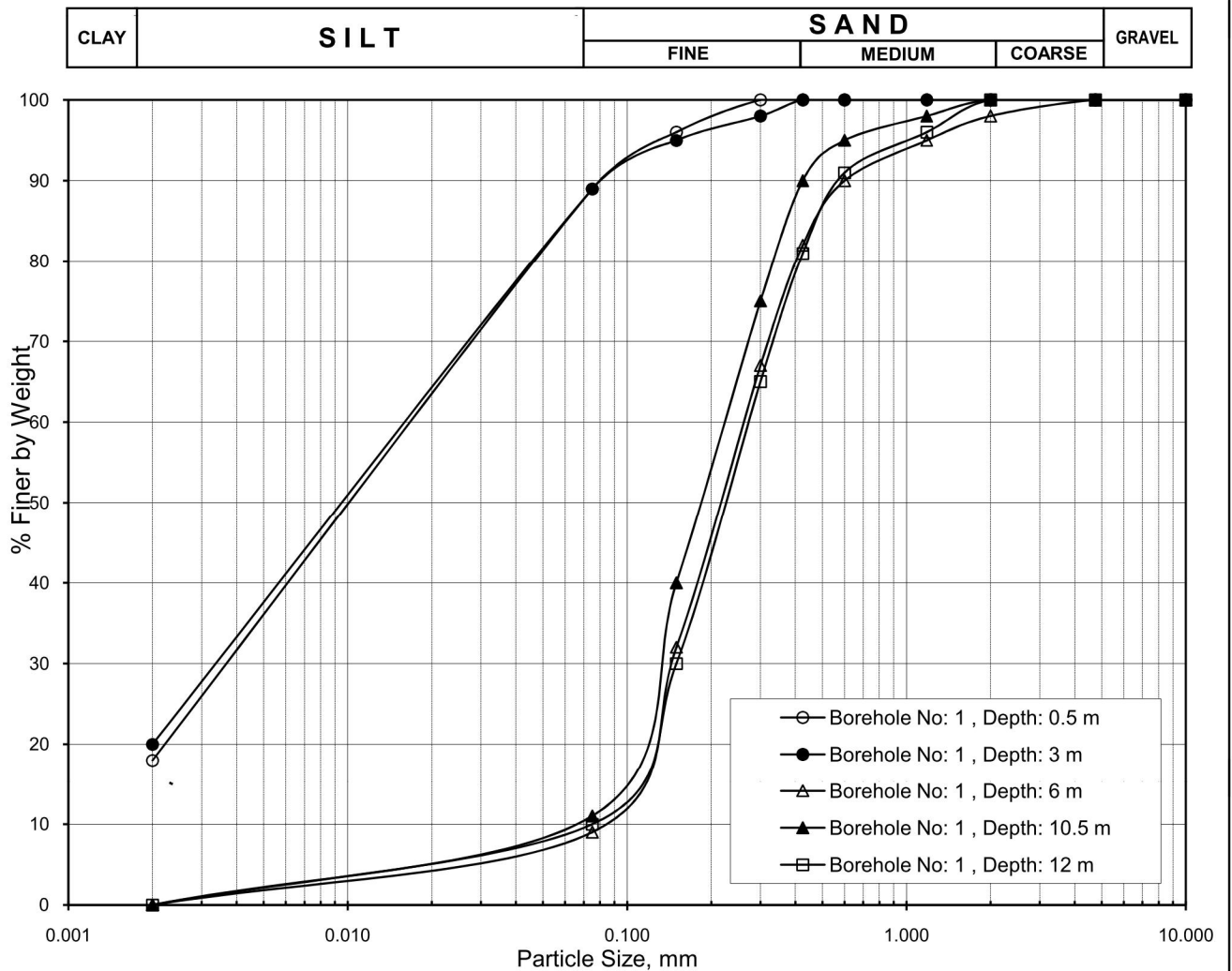
SAMPLE DETAILS			TEST RESULTS						
Borehole Number	Sample Depth, m	Sample Description	% Gravel	% Sand	% Silt	% Clay			
BH-1	1.50	Clayey silt (CL)	3	9	75	13			
BH-1	4.50	Silty Fine sand (SM)	0	86	14	0			
BH-1	7.50	Silty Fine sand (SM)	0	56	44	0			
BH-1	9.00	Silty Fine sand (SM)	0	73	27	0			
BH-1	12.00	Silty Fine sand (SM)	0	75	25	0			



Location: Ch. 22+200 Km

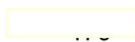
Grain Size Analysis

SAMPLE DETAILS			TEST RESULTS						
Borehole Number	Sample Depth, m	Sample Description	% Gravel	% Sand	% Silt	% Clay			
BH-1	0.50	Clayey silt (CI)	0	11	71	18			
BH-1	3.00	Clayey silt (CI)	0	11	69	20			
BH-1	6.00	Fine sand (SP-SM)	0	91	9	0			
BH-1	10.50	Fine sand (SP-SM)	0	89	11	0			
BH-1	12.00	Fine sand (SP-SM)	0	90	10	0			



Location: Minor Bridge at Ch. 23+808 Km

Geotechnical Investigation for Hapur - Muzaffarnagar Section of DFCC Meerut



CHEMICAL TEST RESULTS**SOIL-WATER EXTRACT :**

Borehole No.	Depth, (m)	Sulphate Content (SO ₃), %	Chloride Content, %	pH Value
1	2.50	0.06	0.04	7.4

**REQUIREMENTS FOR CONCRETE EXPOSED TO SULPHATE ATTACK AS
PER IS : 456-2000, CLAUSES 8.2.2.4 AND 9.1.2, TABLE 4, PAGE-19**

Class	Concentration of Sulphates, expressed as SO ₃	
	In-Soil-Water Extract (Total) Percent	In Groundwater (mg/l)
1	Traces (<0.2)	Less than 300
2	0.2 to 0.5	300-1200
3	0.5 to 1.0	1200-2500
4	1.0 to 2.0	2500-5000
5	> 2.0	> 5000

CLASSIFICATION OF CHLORIDE CONDITIONS IN GROUNDWATER*

Classification	Chloride Limits	
	Temperate Climate	Tropical Climate
Negligible	0-2000 ppm	Not Applicable
Moderate	2000-10,000 ppm	0-2000 ppm
High	More than 10,000 ppm	2000-20,000 ppm
Very High	Generally not applicable	Only if considerably in excess of 20,000 ppm

*SOURCE : INSTITUTION OF CIVIL ENGINEERS, LONDON (1979)

Location: Minor Bridge at Ch 13+136 km

Geotechnical Investigation for Hapur - Muzaffarnagar Section of DFCC Meerut

CHEMICAL TEST RESULTS**SOIL-WATER EXTRACT :**

Borehole No.	Depth, (m)	Sulphate Content (SO ₃), %	Chloride Content, %	pH Value
1	2.50	0.12	0.03	7.5

**REQUIREMENTS FOR CONCRETE EXPOSED TO SULPHATE ATTACK AS
PER IS : 456-2000, CLAUSES 8.2.2.4 AND 9.1.2, TABLE 4, PAGE-19**

Class	Concentration of Sulphates, expressed as SO ₃	
	In-Soil-Water Extract (Total) Percent	In Groundwater (mg/l)
1	Traces (<0.2)	Less than 300
2	0.2 to 0.5	300-1200
3	0.5 to 1.0	1200-2500
4	1.0 to 2.0	2500-5000
5	> 2.0	> 5000

CLASSIFICATION OF CHLORIDE CONDITIONS IN GROUNDWATER*

Classification	Chloride Limits	
	Temperate Climate	Tropical Climate
Negligible	0-2000 ppm	Not Applicable
Moderate	2000-10,000 ppm	0-2000 ppm
High	More than 10,000 ppm	2000-20,000 ppm
Very High	Generally not applicable	Only if considerably in excess of 20,000 ppm

*SOURCE : INSTITUTION OF CIVIL ENGINEERS, LONDON (1979)

Location: Minor Bridge at Ch 15+227 km

Geotechnical Investigation for Hapur - Muzaffarnagar Section of DFCC Meerut

CHEMICAL TEST RESULTS**SOIL-WATER EXTRACT :**

Borehole No.	Depth, (m)	Sulphate Content (SO ₃), %	Chloride Content, %	pH Value
1	2.50	0.11	0.02	7.4

**REQUIREMENTS FOR CONCRETE EXPOSED TO SULPHATE ATTACK AS
PER IS : 456-2000, CLAUSES 8.2.2.4 AND 9.1.2, TABLE 4, PAGE-19**

Class	Concentration of Sulphates, expressed as SO ₃	
	In-Soil-Water Extract (Total) Percent	In Groundwater (mg/l)
1	Traces (<0.2)	Less than 300
2	0.2 to 0.5	300-1200
3	0.5 to 1.0	1200-2500
4	1.0 to 2.0	2500-5000
5	> 2.0	> 5000

CLASSIFICATION OF CHLORIDE CONDITIONS IN GROUNDWATER*

Classification	Chloride Limits	
	Temperate Climate	Tropical Climate
Negligible	0-2000 ppm	Not Applicable
Moderate	2000-10,000 ppm	0-2000 ppm
High	More than 10,000 ppm	2000-20,000 ppm
Very High	Generally not applicable	Only if considerably in excess of 20,000 ppm

*SOURCE : INSTITUTION OF CIVIL ENGINEERS, LONDON (1979)

Location: Minor Bridge at Ch 16+144 km

Geotechnical Investigation for Hapur - Muzaffarnagar Section of DFCC Meerut

CHEMICAL TEST RESULTS**SOIL-WATER EXTRACT :**

Borehole No.	Depth, (m)	Sulphate Content (SO ₃), %	Chloride Content, %	pH Value
1	1.50	0.13	0.03	7.5

**REQUIREMENTS FOR CONCRETE EXPOSED TO SULPHATE ATTACK AS
PER IS : 456-2000, CLAUSES 8.2.2.4 AND 9.1.2, TABLE 4, PAGE-19**

Class	Concentration of Sulphates, expressed as SO ₃	
	In-Soil-Water Extract (Total) Percent	In Groundwater (mg/l)
1	Traces (<0.2)	Less than 300
2	0.2 to 0.5	300-1200
3	0.5 to 1.0	1200-2500
4	1.0 to 2.0	2500-5000
5	> 2.0	> 5000

CLASSIFICATION OF CHLORIDE CONDITIONS IN GROUNDWATER*

Classification	Chloride Limits	
	Temperate Climate	Tropical Climate
Negligible	0-2000 ppm	Not Applicable
Moderate	2000-10,000 ppm	0-2000 ppm
High	More than 10,000 ppm	2000-20,000 ppm
Very High	Generally not applicable	Only if considerably in excess of 20,000 ppm

*SOURCE : INSTITUTION OF CIVIL ENGINEERS, LONDON (1979)

Location: Minor Bridge at Ch 17+338 km

Geotechnical Investigation for Hapur - Muzaffarnagar Section of DFCC Meerut

CHEMICAL TEST RESULTS**SOIL-WATER EXTRACT :**

Borehole No.	Depth, (m)	Sulphate Content (SO ₃), %	Chloride Content, %	pH Value
1	2.50	0.11	0.02	7.3

**REQUIREMENTS FOR CONCRETE EXPOSED TO SULPHATE ATTACK AS
PER IS : 456-2000, CLAUSES 8.2.2.4 AND 9.1.2, TABLE 4, PAGE-19**

Class	Concentration of Sulphates, expressed as SO ₃	
	In-Soil-Water Extract (Total) Percent	In Groundwater (mg/l)
1	Traces (<0.2)	Less than 300
2	0.2 to 0.5	300-1200
3	0.5 to 1.0	1200-2500
4	1.0 to 2.0	2500-5000
5	> 2.0	> 5000

CLASSIFICATION OF CHLORIDE CONDITIONS IN GROUNDWATER*

Classification	Chloride Limits	
	Temperate Climate	Tropical Climate
Negligible	0-2000 ppm	Not Applicable
Moderate	2000-10,000 ppm	0-2000 ppm
High	More than 10,000 ppm	2000-20,000 ppm
Very High	Generally not applicable	Only if considerably in excess of 20,000 ppm

*SOURCE : INSTITUTION OF CIVIL ENGINEERS, LONDON (1979)

Location: Minor Bridge at Ch 18+070 km

Geotechnical Investigation for Hapur - Muzaffarnagar Section of DFCC Meerut

CHEMICAL TEST RESULTS

SOIL-WATER EXTRACT :

Borehole No.	Depth, (m)	Sulphate Content (SO ₃), %	Chloride Content, %	pH Value
1	2.50	0.14	0.04	7.6

**REQUIREMENTS FOR CONCRETE EXPOSED TO SULPHATE ATTACK AS
PER IS : 456-2000, CLAUSES 8.2.2.4 AND 9.1.2, TABLE 4, PAGE-19**

Class	Concentration of Sulphates, expressed as SO ₃	
	In-Soil-Water Extract (Total) Percent	In Groundwater (mg/l)
1	Traces (<0.2)	Less than 300
2	0.2 to 0.5	300-1200
3	0.5 to 1.0	1200-2500
4	1.0 to 2.0	2500-5000
5	> 2.0	> 5000

CLASSIFICATION OF CHLORIDE CONDITIONS IN GROUNDWATER*

Classification	Chloride Limits	
	Temperate Climate	Tropical Climate
Negligible	0-2000 ppm	Not Applicable
Moderate	2000-10,000 ppm	0-2000 ppm
High	More than 10,000 ppm	2000-20,000 ppm
Very High	Generally not applicable	Only if considerably in excess of 20,000 ppm

*SOURCE : INSTITUTION OF CIVIL ENGINEERS, LONDON (1979)

Location: Ch 19+051 km

Geotechnical Investigation for Hapur - Muzaffarnagar Section of DFCC Meerut

CHEMICAL TEST RESULTS**SOIL-WATER EXTRACT :**

Borehole No.	Depth, (m)	Sulphate Content (SO ₃), %	Chloride Content, %	pH Value
1	2.50	0.14	0.04	7.4
1	3.00	0.13	0.02	7.3

**REQUIREMENTS FOR CONCRETE EXPOSED TO SULPHATE ATTACK AS
PER IS : 456-2000, CLAUSES 8.2.2.4 AND 9.1.2, TABLE 4, PAGE-19**

Class	Concentration of Sulphates, expressed as SO ₃	
	In-Soil-Water Extract (Total) Percent	In Groundwater (mg/l)
1	Traces (<0.2)	Less than 300
2	0.2 to 0.5	300-1200
3	0.5 to 1.0	1200-2500
4	1.0 to 2.0	2500-5000
5	> 2.0	> 5000

CLASSIFICATION OF CHLORIDE CONDITIONS IN GROUNDWATER*

Classification	Chloride Limits	
	Temperate Climate	Tropical Climate
Negligible	0-2000 ppm	Not Applicable
Moderate	2000-10,000 ppm	0-2000 ppm
High	More than 10,000 ppm	2000-20,000 ppm
Very High	Generally not applicable	Only if considerably in excess of 20,000 ppm

*SOURCE : INSTITUTION OF CIVIL ENGINEERS, LONDON (1979)

Location: Minor Bridge at Ch 19+955 km

Geotechnical Investigation for Hapur - Muzaffarnagar Section of DFCC Meerut

482

CHEMICAL TEST RESULTS**SOIL-WATER EXTRACT :**

Borehole No.	Depth, (m)	Sulphate Content (SO ₃), %	Chloride Content, %	pH Value
1	2.50	0.14	0.04	7.6

**REQUIREMENTS FOR CONCRETE EXPOSED TO SULPHATE ATTACK AS
PER IS : 456-2000, CLAUSES 8.2.2.4 AND 9.1.2, TABLE 4, PAGE-19**

Class	Concentration of Sulphates, expressed as SO ₃	
	In-Soil-Water Extract (Total) Percent	In Groundwater (mg/l)
1	Traces (<0.2)	Less than 300
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4	1.0 to 2.0	2500-5000
5	> 2.0	> 5000

CLASSIFICATION OF CHLORIDE CONDITIONS IN GROUNDWATER*

Classification	Chloride Limits	
	Temperate Climate	Tropical Climate
Negligible	0-2000 ppm	Not Applicable
Moderate	2000-10,000 ppm	0-2000 ppm
High	More than 10,000 ppm	2000-20,000 ppm
Very High	Generally not applicable	Only if considerably in excess of 20,000 ppm

*SOURCE : INSTITUTION OF CIVIL ENGINEERS, LONDON (1979)

Location: Minor Bridge at Ch 20+935 km

Geotechnical Investigation for Hapur - Muzaffarnagar Section of DFCC Meerut

483

CHEMICAL TEST RESULTS

SOIL-WATER EXTRACT :

Borehole No.	Depth, (m)	Sulphate Content (SO ₃), %	Chloride Content, %	pH Value
1	2.50	0.12	0.03	7.4

**REQUIREMENTS FOR CONCRETE EXPOSED TO SULPHATE ATTACK AS
PER IS : 456-2000, CLAUSES 8.2.2.4 AND 9.1.2, TABLE 4, PAGE-19**

Class	Concentration of Sulphates, expressed as SO ₃	
	In-Soil-Water Extract (Total) Percent	In Groundwater (mg/l)
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4	1.0 to 2.0	2500-5000
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CLASSIFICATION OF CHLORIDE CONDITIONS IN GROUNDWATER*

Classification	Chloride Limits	
	Temperate Climate	Tropical Climate
Negligible	0-2000 ppm	Not Applicable
Moderate	2000-10,000 ppm	0-2000 ppm
High	More than 10,000 ppm	2000-20,000 ppm
Very High	Generally not applicable	Only if considerably in excess of 20,000 ppm

*SOURCE : INSTITUTION OF CIVIL ENGINEERS, LONDON (1979)

Location: Ch 22+200 km

Geotechnical Investigation for Hapur - Muzaffarnagar Section of DFCC Meerut

CHEMICAL TEST RESULTS**SOIL-WATER EXTRACT :**

Borehole No.	Depth, (m)	Sulphate Content (SO ₃), %	Chloride Content, %	pH Value
1	2.50	0.12	0.03	7.4

**REQUIREMENTS FOR CONCRETE EXPOSED TO SULPHATE ATTACK AS
PER IS : 456-2000, CLAUSES 8.2.2.4 AND 9.1.2, TABLE 4, PAGE-19**

Class	Concentration of Sulphates, expressed as SO ₃	
	In-Soil-Water Extract (Total) Percent	In Groundwater (mg/l)
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CLASSIFICATION OF CHLORIDE CONDITIONS IN GROUNDWATER*

Classification	Chloride Limits	
	Temperate Climate	Tropical Climate
Negligible	0-2000 ppm	Not Applicable
Moderate	2000-10,000 ppm	0-2000 ppm
High	More than 10,000 ppm	2000-20,000 ppm
Very High	Generally not applicable	Only if considerably in excess of 20,000 ppm

*SOURCE : INSTITUTION OF CIVIL ENGINEERS, LONDON (1979)

Location: Minor Bridge at Ch 23+808 km

Geotechnical Investigation for Hapur - Muzaffarnagar Section of DFCC Meerut



SUMMARY OF LABORATORY TEST RESULTS



CLIENT: SKYLARK		Job No. 1342																																		
PROJECT: Geotechnical Investigation Works For Skylark DFCCIL Meerut		Test Report No: XPL/2015-16/02																																		
SL.NO	CHAINAGE/ BH.NO.	Type of Sample	Depth (m)	Moisture %	Bulk Density g/cc	Dry Density g/cc	Grain size Analysis (%)				Atterberg Limit (%)			Classification	Permeability (cm/sec)	Specific Gravity	F.S.I. %	Modified Proctor		Standard Proctor		CBR Test %	Direct Shear Test c kPa	φ Degree	Consolidation Test			Swelling Pressure kpa	Shrinkage Limit %	Chemical Analysis *						
							Gravel	Sand	Fines	Silt	Clay	LL	PL					PI	OMC%	MDD Mg/m ³	OMC%				MDD Mg/m ³	C ₁	C _c			P _c	C _r	Sulphates mg/l	Chlorides mg/l			
23		UDS-1	2.50	13.50	1.89	1.66	12	10	78	0	26	NP		ML																						
24		SPT-2	3.00				1	13	81	5			ML									29.0														
25		UDS-2	5.50	20.60	1.96	1.63	19	3	64	14	25	18	7	CL		2.70	16.67																			
26	27290 / BH-2	UDS-3	8.50	18.50	2.08	1.76	1	24	72	3	23	17	5	ML		2.63	10.00																			
27		SPT-8	12.00				0	24	75	1	23	NP		ML																						
28		SPT-11	16.50				0	87	13					SM								33.7														
29		SPT-15	22.50				0	77	23					SM		2.69						32.2														
30		SPT-19	28.50				0	95	5					SP-SM								34.1														
31		UDS-1	2.50	15.00	1.89	1.64	4	14	67	15	24	17	7	CL		2.70																				
32	27820 / BH-1	UDS-2	5.50	15.80	1.96	1.69	1	24	60	15	33	19	14	CL		2.64	NIL																			
33		SPT-5	7.50				0	7	90	3				ML								31.2														
34		SPT-8	12.00				0	72	28	0				SM								31.8														
35		UDS-1	2.50	14.90	1.93	1.68	0	12	79	9	25	17	8	CL		2.69																				
36		SPT-2	3.00				9	20	71	0				ML								32.0														
37	28660 / BH-1	UDS-2	5.50	17.50	2.00	1.70	21	9	67	3	27	NP		ML		2.62	NIL																			
38		SPT-5	7.50				14	16	70	0	23	NP		ML																						
39		SPT-7	10.50				0	92	8	0				SP-SM								33.0														

Remark * Not in NABL Scope
* NP - Non Plastic

Checked by: *[Signature]*
Date: 18/05/15

Authorised Signatory: *[Signature]*
Date: 18/05/15



MOISTURE CONTENT & DENSITY TEST OF SOIL
IS: 2720-1973(Part-II) (Reaffirmed 2007)



PROJECT: Geotechnical Investigation Works For Skylark DFCCIL Meerut JOB NO: 1342
 SITE REF: Meerut Test Report No: XPL/2015-16/02

MOISTURE CONTENT	24920		25760		26530
Borehole No./Pit no.	BH-1		BH-1		BH-1
Sample No.	UDS-1	UDS-2	UDS-1	UDS-2	UDS-1
Depth (m)	2.50	5.50	2.50	5.50	2.50
Oven No.	OV-1	OV-1	OV-1	OV-1	OV-1
Sample Extruder No.	EB-1	EB-1	EB-1	EB-1	EB-1
Balance No.	XPL/EB-06	XPL/EB-06	XPL/EB-05	XPL/EB-05	XPL/EB-05
Soil Type	Sandy SILT	Poorly Graded SAND	Sandy SILT	Poorly Graded SAND	Sandy SILT
Container No.	ST-160	ST-101	ST-107	ST-15	ST-138
Wt.Can. W1,g	19.02	18.87	19.20	19.52	24.00
Wt.Can.+ Wet Soil,(W2),g	49.55	58.94	52.52	61.72	73.70
Wt.Can.+ Dry Soil,(W3),g	48.73	54.64	51.02	58.78	68.24
Wt.Water (W2-W3),g	0.82	4.30	1.50	2.94	5.46
Wt.Dry Soil (W3-W1),g	29.71	35.77	31.82	39.26	44.24
Water Content, w, % = $\{(W2-W3)/(W3-W1)\} \times 100$	2.8	12.0	4.7	7.5	12.3

IN-SITU DENSITY					
Balance No.	XPL/EB-04	XPL/EB-04	XPL/EB-04	XPL/EB-04	XPL/EB-04
Vernier Calliper No.	EB-2	EB-2	EB-2	EB-2	EB-2
Steel Tape No.	XPL/ST-1	XPL/ST-1	XPL/ST-1	XPL/ST-1	XPL/ST-1
Container No.	B-61	B-69	B-42	B-99	B-9
Wt. Tube+Soil, g	4306	4394	4252	4793	4554
Wt.of Tube	2586	2966	2912	2929	2578
Dia of Tube, g(Average) cm	6.5	6.5	6.5	6.5	6.5
Length of sample, cm	28.0	23.0	22.0	30.0	31.0
Wt Soil (W)	1720	1428	1340	1864	1976
Vol. Soil (V), cm ³	930	764	730	996	1029
In-Situ Density, $\rho_s = (W/V)$ g/cm ³	1.85	1.87	1.83	1.87	1.92
Dry Density, $\rho_d = [gt/(1+w)]$ g/cm ³	1.80	1.67	1.75	1.74	1.71

Tested by <i>B. Singh</i>	Checked By <i>RM</i>	Authorised Signatory <i>[Signature]</i>
Date: <i>20/5/15</i>	Date: <i>18/8/15</i>	Date: <i>18/8/15</i>



MOISTURE CONTENT & DENSITY TEST OF SOIL
IS: 2720-1973(Part-II) (Reaffirmed 2007)



PROJECT: Geotechnical Investigation Works For Skylark DFCCIL Meerut JOB NO: 1342
 SITE REF: Meerut Test Report No: XPL/2015-16/02

MOISTURE CONTENT	26530	27290			27290
Borehole No./Pit no.	BH-1	BH-1			BH-2
Sample No.	UDS-2	UDS-1	UDS-2	UDS-3	UDS-1
Depth (m)	5.50	2.50	5.50	11.50	2.50
Oven No.	OV-1	OV-1	OV-1	OV-1	OV-1
Sample Extruder No.	EB-1	EB-1	EB-1	EB-1	EB-1
Balance No.	XPL/EB-05	XPL/EB-06	XPL/EB-06	XPL/EB-06	XPL/EB-05
Soil Type	Poorly Graded SAND	Silty SAND	Silty Clay	Silty Clay	Sandy SILT
Container No.	ST-160	ST-138	ST-15	ST-104	ST-172
Wt.Can. W1,g	20.04	25.32	20.54	23.87	23.58
Wt.Can.+ Wet Soil,(W2),g	62.49	52.32	54.90	58.05	58.95
Wt.Can.+ Dry Soil,(W3),g	58.50	49.70	49.76	51.89	54.73
Wt.Water (W2-W3),g	3.99	2.62	5.14	6.16	4.22
Wt.Dry Soil (W3-W1),g	38.46	24.38	29.22	28.02	31.15
Water Content, w, % = $\frac{(W2-W3)}{(W3-W1)} \times 100$	10.4	10.7	17.6	22.0	13.5

IN-SITU DENSITY					
Balance No.	XPL/EB-04	XPL/EB-04	XPL/EB-04	XPL/EB-04	XPL/EB-04
Vernier Calliper No.	EB-2	EB-2	EB-2	EB-2	EB-2
Steel Tape No.	XPL/ST-1	XPL/ST-1	XPL/ST-1	XPL/ST-1	XPL/ST-1
Container No.	B-83	B-177	B-303	B-89	B-117
Wt. Tube+Soil, g	4949	4435	5909	6226	6063
Wt.of Tube	2967	2683	3500	3561	4067
Dia of Tube, g(Average) cm	6.5	6.5	6.5	6.5	8
Length of sample, cm	30.0	28.0	37.0	40.0	21.0
Wt Soil (W)	1982	1752	2409	2665	1996
Vol. Soil (V), cm ³	996	930	1228	1328	1056
In-Situ Density, $\rho_t = (W/V)$ g/cm ³	1.99	1.88	1.96	2.01	1.89
Dry Density, $\rho_d = [\rho_t / (1+w)]$ g/cm ³	1.80	1.70	1.67	1.65	1.66

Tested by <i>B. Prinsingh</i>	Checked By <i>RAN</i>	Authorised Signatory <i>[Signature]</i>
Date: <i>20/5/15</i>	Date: <i>18/8/15</i>	Date: <i>18/8/15</i>

B-4



MOISTURE CONTENT & DENSITY TEST OF SOIL
IS: 2720-1973(Part-II) (Reaffirmed 2007)



PROJECT: Geotechnical Investigation Works For Skylark DFCCIL Meerut JOB NO: 1342
 SITE REF: Meerut Test Report No: XPL/2015-16/02

MOISTURE CONTENT	27290		27820	
Borehole No./Pit no.	BH-2		BH-1	
Sample No.	UDS-2	UDS-3	UDS-1	UDS-2
Depth (m)	5.50	8.50	2.50	5.50
Oven No.	OV-1	OV-1	OV-1	OV-1
Sample Extruder No.	EB-1	EB-1	EB-1	EB-1
Balance No.	XPL/EB-05	XPL/EB-06	XPL/EB-06	XPL/EB-06
Soil Type	Silty Clay	Sandy SILT	Silty Clay	Silty Clay
Container No.	ST-164	ST-21	ST-108	ST-141
Wt Can. W1,g	24.42	22.29	21.36	25.08
Wt Can. + Wet Soil,(W2),g	68.54	57.31	66.39	63.20
Wt Can. + Dry Soil,(W3),g	61.01	51.85	60.50	57.99
Wt.Water (W2-W3),g	7.53	5.46	5.89	5.21
Wt.Dry Soil (W3-W1),g	36.59	29.56	39.14	32.91
Water Content, w, % = $\{(W2-W3)/(W3-W1)\} \times 100$	20.6	18.5	15.0	15.8

IN-SITU DENSITY				
Balance No.	XPL/EB-04	XPL/EB-04	XPL/EB-04	XPL/EB-04
Vernier Calliper No.	EB-2	EB-2	EB-2	EB-2
Steel Tape No.	XPL/ST-1	XPL/ST-1	XPL/ST-1	XPL/ST-1
Container No.	B-12	B-102	B-192	B-236
Wt. Tube+Soil, g	6393	5631	5969	7061
Wt.of Tube	3633	4062	4353	4498
Dia of Tube, g(Average) cm	8	8	8	8
Length of sample, cm	28.0	15.0	17.0	26.0
Wt Soil (W)	2760	1569	1616	2563
Vol. Soil (V), cm ³	1408	754	855	1307
In-Situ Density, $\rho_s = (W/V)$ g/cm ³	1.96	2.08	1.89	1.96
Dry Density, $\gamma_d = [gt/(1+w)]$ g/cm ³	1.63	1.76	1.64	1.69

Tested by <i>Bhoushik</i> Date: <i>20/5/15</i>	Checked By <i>RM</i> Date: <i>18/8/15</i>	Authorised Signatory <i>[Signature]</i> Date: <i>18/8/15</i>
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MOISTURE CONTENT & DENSITY TEST OF SOIL
IS: 2720-1973(Part-II) (Reaffirmed 2007)



PROJECT: Geotechnical Investigation Works For Skylark DFCCIL Meerut JOB NO: 1342
 SITE REF: Meerut Test Report No: XPL/2015-16/02

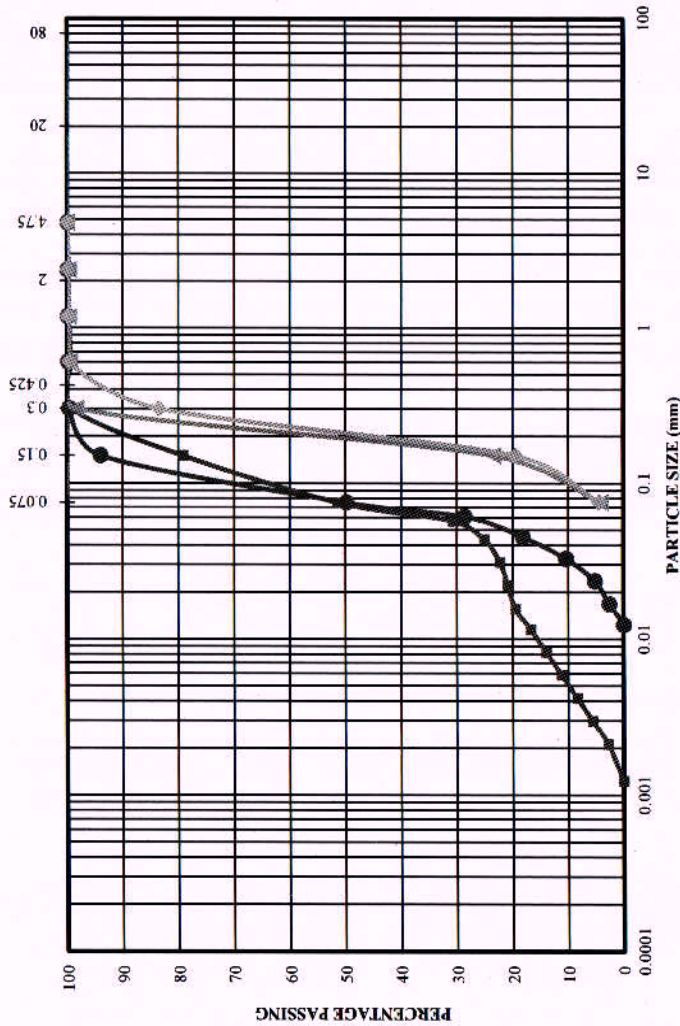
MOISTURE CONTENT	28660	
Borehole No./Pit no.	BH-1	
Sample No.	UDS-1	UDS-2
Depth (m)	2.50	5.50
Oven No.	OV-1	OV-1
Sample Extruder No.	EB-1	EB-1
Balance No.	XPL/EB-05	XPL/EB-06
Soil Type	Silty Clay	Sandy SILT
Container No.	ST-125	ST-177
Wt.Can. W1,g	26.68	20.74
Wt.Can.+ Wet Soil,(W2),g	64.82	68.27
Wt.Can.+ Dry Soil,(W3),g	59.87	61.20
Wt.Water (W2-W3),g	4.95	7.07
Wt.Dry Soil (W3-W1),g	33.19	40.46
Water Content, w, % = $\{(W2-W3)/(W3-W1)\} \times 100$	14.9	17.5

IN-SITU DENSITY		
Balance No.	XPL/EB-04	XPL/EB-04
Vernier Calliper No.	EB-2	EB-2
Steel Tape No.	XPL/ST-1	XPL/ST-1
Container No.	B-304	B-273
Wt Tube+Soil, g	8315	6059
Wt.of Tube	4530	3536
Dia of Tube, g(Average) cm	8	6.5
Length of sample, cm	39.0	38.0
Wt Soil (W)	3785	2523
Vol. Soil (V), cm ³	1961	1261
In-Situ Density, $g_s = (W/V)$ g/cm ³	1.93	2.00
Dry Density, $\gamma_d = [g_s/(1+w)]$ g/cm ³	1.68	1.70

Tested by <i>Brinjingal</i> Date: <i>20/5/15</i>	Choked By <i>RML</i> Date: <i>18/8/15</i>	Authorised Signatory Date: <i>18/8/15</i>
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GRAIN SIZE ANALYSIS (IS : 2720 : PART IV)

GRADING CURVE BASED ON IS : 2720 : PART IV



CLAY	SILT	SAND		GRAVEL		C
		FINE	MEDIUM	COARSE	GRAVEL	

S.NO.	SYMBOL	BH NO./CHAINAGE	SAMPLE NO	DEPTH (M)	DESCRIPTION	GRAVEL %	SAND %	SILT %	CLAY %
1	■	BH-1/24920	UDS-1	2.50	Brownish Sandy SILT (ML)	0	49	48	3
2	●	BH-1/24920	SPT-2	3.00	Brownish Silty SAND(SM)	0	50	50	0
3	▲	BH-1/24920	UDS-2	5.50	Poorly Graded SAND(SP)	0	96	4	4
4	◆	BH-1/24920	SPT-4	6.00	Poorly Graded SAND(SP)	0	96	4	4

Site Ref: Meerut

Operator: Rajam Singh

Checked: [Signature]

Date: 18/8/15

Authorized Signatory: [Signature]

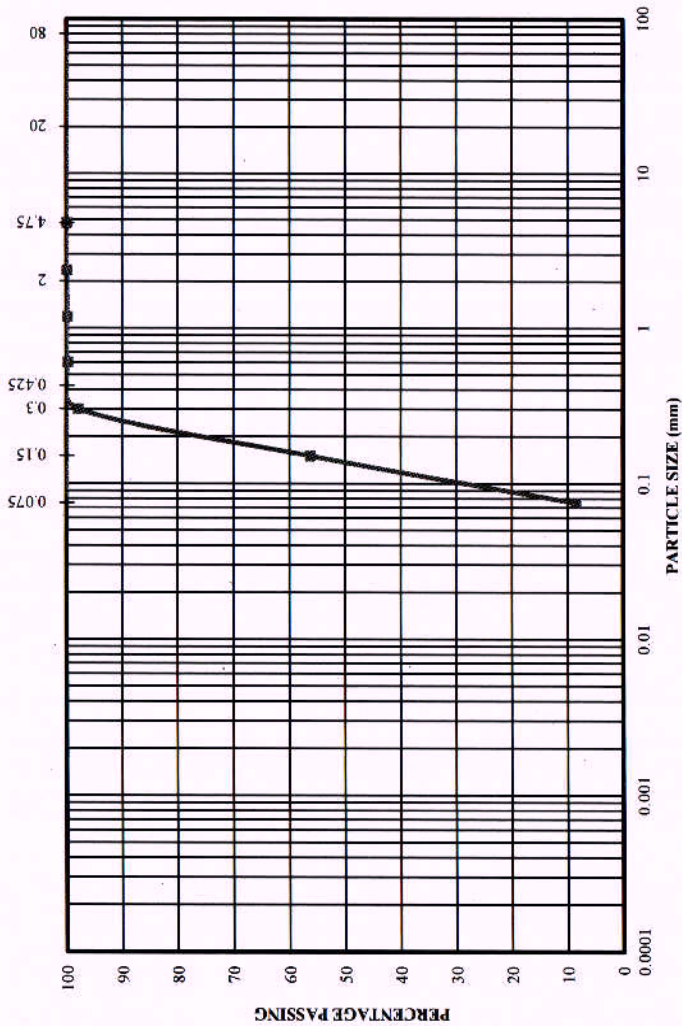
Date: 18/8/15

Test Report No: XPL/2015-16/02

Job No: 1342

GRAIN SIZE ANALYSIS (IS : 2720 : PART IV)

GRADING CURVE BASED ON IS : 2720 : PART IV



CLAY	SILT	SAND	GRAVEL	C
		FINE	MEDIUM	COARSE
		FINE	COARSE	GRAVEL

S.NO.	SYMBOL	BH NO./CHAINAGE	SAMPLE NO	DEPTH (M)	DESCRIPTION	GRAVEL %	SAND %	SILT %	CLAY %
1	■	BH-1/24920	SPT-7	10.50	Poorly Graded SAND(SP-SM)	0	91		9

Job No: 1342
XPL/2015-16/02

Test Report No:

Authorised Signatory
Date: 18/8/15

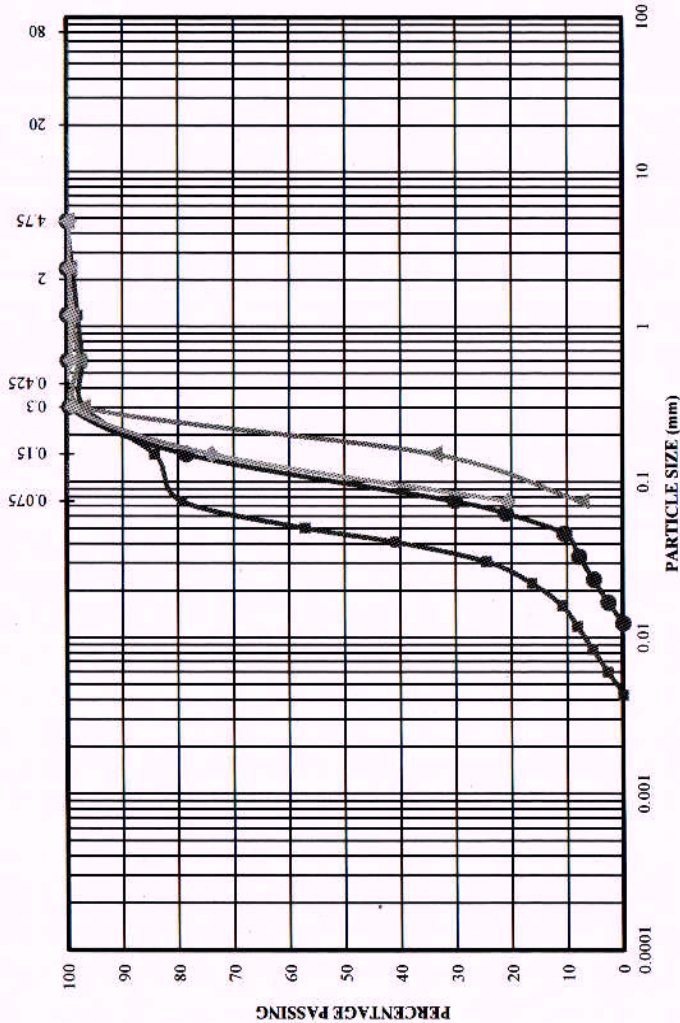
Site Ref: Sky Lark

Operator: *Prasanna Singh*
Date: 18/5/2015

Checked:

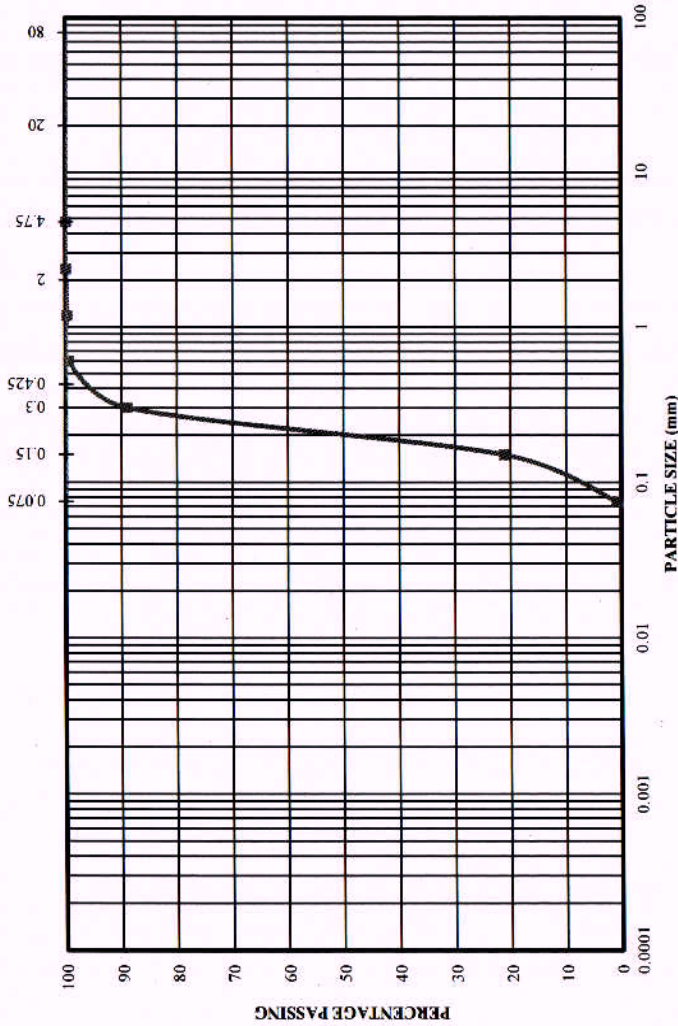
Date: 18/8/15

GRADING CURVE BASED ON IS : 2720 : PART IV



GRAIN SIZE ANALYSIS (IS : 2720 : PART IV)

GRADING CURVE BASED ON IS : 2720 : PART IV



CLAY	SILT	FINE SAND	COARSE SAND	FINE GRAVEL	COARSE GRAVEL	C
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S.NO.	SYMBOL	BH NO./CHAINAGE	SAMPLE NO	DEPTH (M)	DESCRIPTION	GRAVEL %	SAND %	SILT %	CLAY %
1	■	BH-1/25760	SPT-7	10.50	Poorly Graded SAND(SP)	0	99	1	1

Job No: 1342
Test Report No: XPL/2015-16/02

Authorized Signatory
Date: 18/8/15

Site Ref: Sky Lark

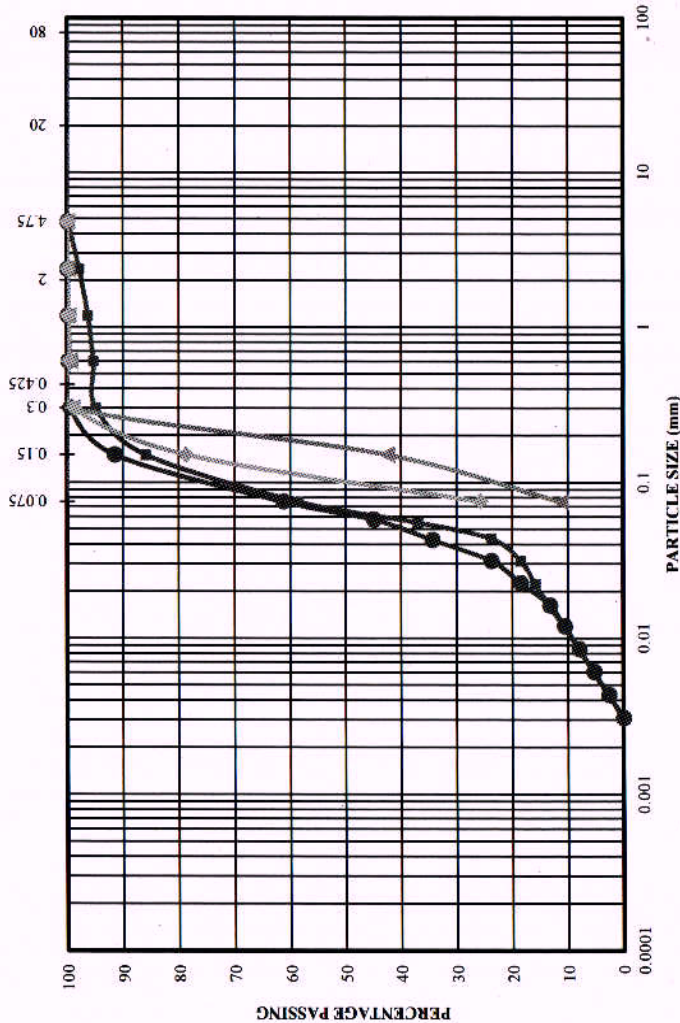
Date: 18/8/15

Checked: [Signature]

Operator: Rajan Singh
Date: 18/5/15

GRAIN SIZE ANALYSIS (IS : 2720 : PART IV)

GRADING CURVE BASED ON IS : 2720 : PART IV



CLAY	SILT	SAND		GRAVEL		C
		FINE	MEDIUM	COARSE	GRAVEL	

S.NO.	SYMBOL	BH NO./CHAINAGE	SAMPLE NO	DEPTH (M)	DESCRIPTION	GRAVEL %	SAND %	SILT %	CLAY %
1	■	BH-1/26530	UDS-1	2.50	Brownish Sandy SILT(ML)	0	41	59	0
2	●	BH-1/26530	SPT-2	3.00	Brownish Sandy SILT(ML)	0	39	61	0
3	▲	BH-1/26530	UDS-2	5.50	Poorly Graded SAND(SP-SM)	0	89	11	
4	◆	BH-1/26530	SPT-4	6.00	Brownish Silty SAND(SM)	0	74	26	

Site Ref: Meerut

Operator: Rajansingh Date: 18/5/15

Checked: *[Signature]* Date: 18/8/15

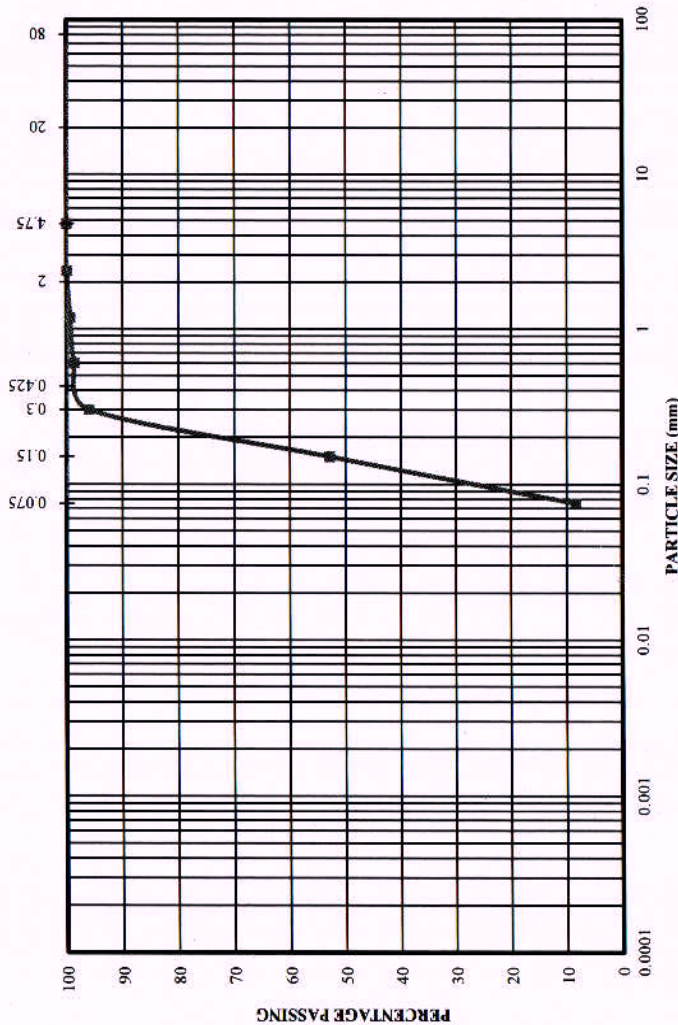
Authorized Signatory: *[Signature]* Date: 18/8/15

Test Report No: XPL/2015-16/02

Job No: 1342

GRAIN SIZE ANALYSIS (IS : 2720 : PART IV)

GRADING CURVE BASED ON IS : 2720 : PART IV



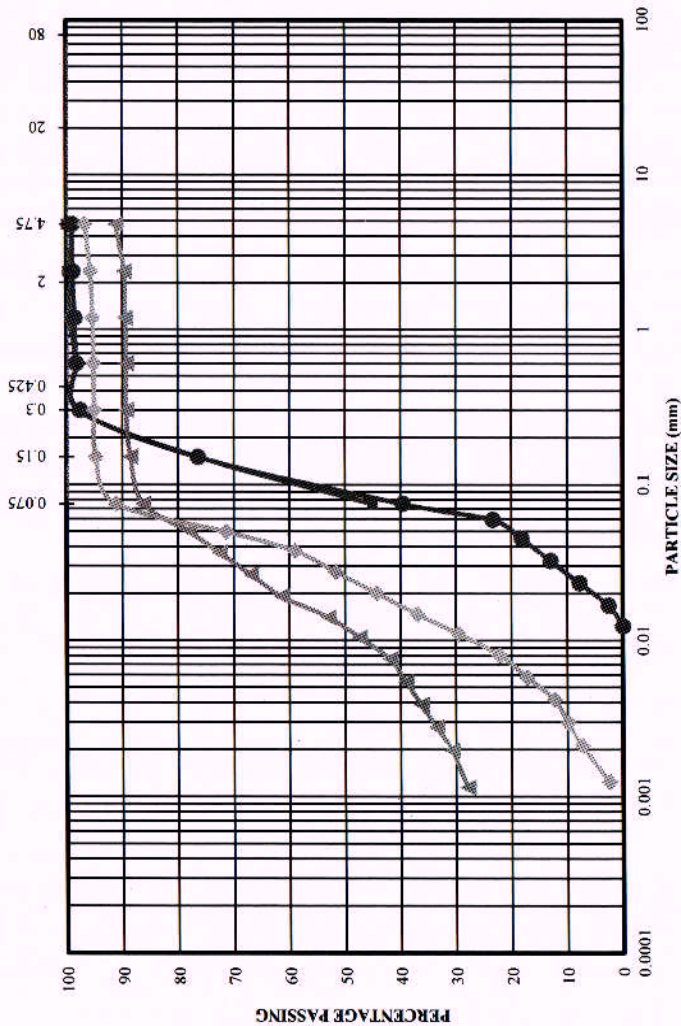
CLAY	SILT	FINE SAND	COARSE SAND	FINE GRAVEL	COARSE GRAVEL	C
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S.NO.	SYMBOL	BH NO./CHAINAGE	SAMPLE NO	DEPTH (M)	DESCRIPTION	GRAVEL %	SAND %	SILT %	CLAY %
1	■—■	BH-1/26530	SPT-7	10.50	Brownish Silty SAND(SM)	0	92	8	8

Site Ref: Sky Lark
Operator: *Rejwan Singh* Date: *18/8/15*
Checked: *R...* Date: *18/8/15*
Test Report No: XPL/2015-16/02
Job No: 1342
Authorised Signatory: *[Signature]* Date: *18/8/15*

GRAIN SIZE ANALYSIS (IS : 2720 : PART IV)

GRADING CURVE BASED ON IS : 2720 : PART IV



CLAY	SILT		SAND		GRAVEL		C
	FINE	MEDIUM	COARSE	FINE	COARSE	GRAVEL	

S.NO.	SYMBOL	BH NO./CHAINAGE	SAMPLE NO	DEPTH (M)	DESCRIPTION	GRAVEL %	SAND %	SILT %	CLAY %
1	■	BH-1/27290	UDS-1	2.50	Brownish Silty SAND(SM)	0	55	45	
2	●	BH-1/27290	SPT-2	3.00	Brownish Silty SAND(SM)	1	59	40	0
3	▲	BH-1/27290	UDS-2	5.50	Brownish Silty CLAY(CL)	9	5	55	31
4	◆	BH-1/27290	SPT-6	9.00	Brownish Sandy SILT (ML)	3	6	84	7

Job No: 1342
Test Report No: XPL/2015-16/02

Authorized Signatory: *[Signature]*
Date: 18/8/15

Date: 18/8/15

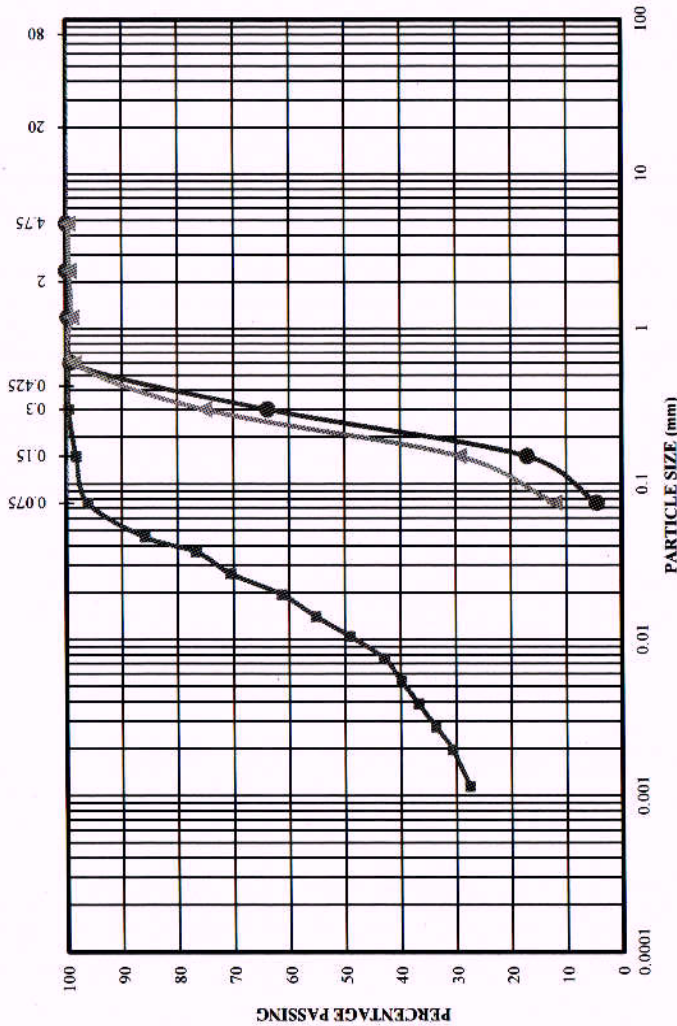
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Operator: Rajarajasingh
Date: 18/8/15

Site Ref: Meerut

GRAIN SIZE ANALYSIS (IS : 2720 : PART IV)

GRADING CURVE BASED ON IS : 2720 : PART IV



CLAY		SILT		SAND		GRAVEL		C	
		FINE	COARSE	FINE	COARSE	FINE	COARSE		

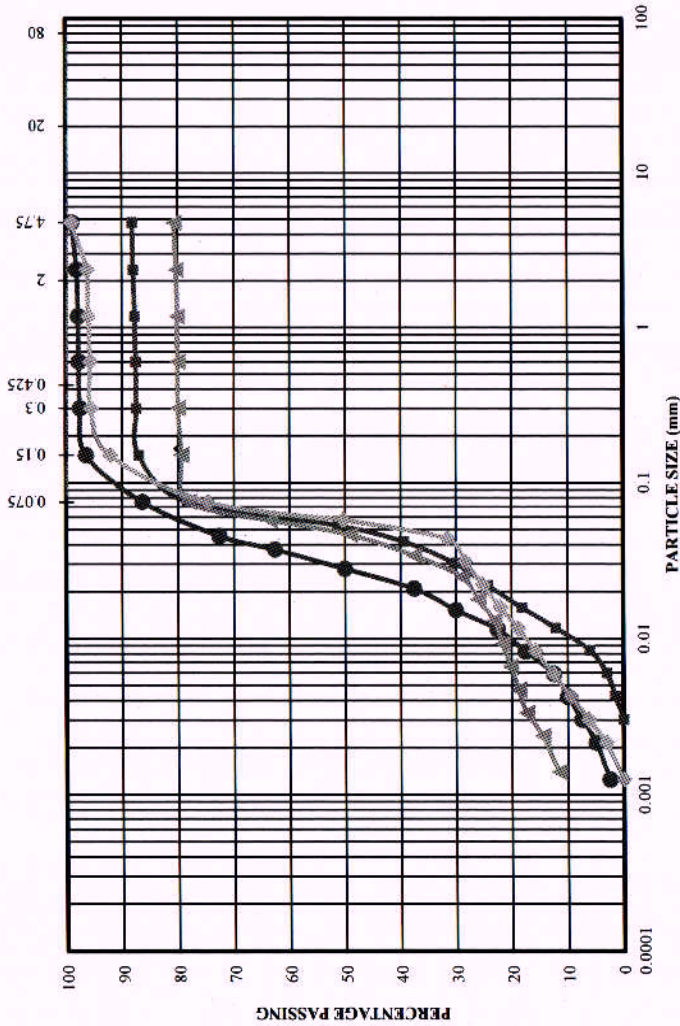
S.NO.	SYMBOL	BH NO./CHAINAGE	SAMPLE NO	DEPTH (M)	DESCRIPTION	GRAVEL %	SAND %	SILT %	CLAY %
1	■	BH-1 / 27290	UDS-3	11.50	Brownish Silty CLAY(CL)	0	4	65	31
2	●	BH-1 / 27290	SPT-11	18.00	Poorly Graded SAND(SP-SM)	0	95	5	0
3	▲	BH-1 / 27290	UDS-2	25.50	Poorly Graded SAND(SP-SM)	0	88	12	0

Site Ref: Meerut
Test Report No: XPL/2015-16/02
Job No: 1342

Operator: *Rajesh Singh* Date: 18/8/15
Checked: *AS* Date: 18/8/15
Authorised Signatory: *[Signature]* Date: 18/8/15

GRAIN SIZE ANALYSIS (IS : 2720 : PART IV)

GRADING CURVE BASED ON IS : 2720 : PART IV



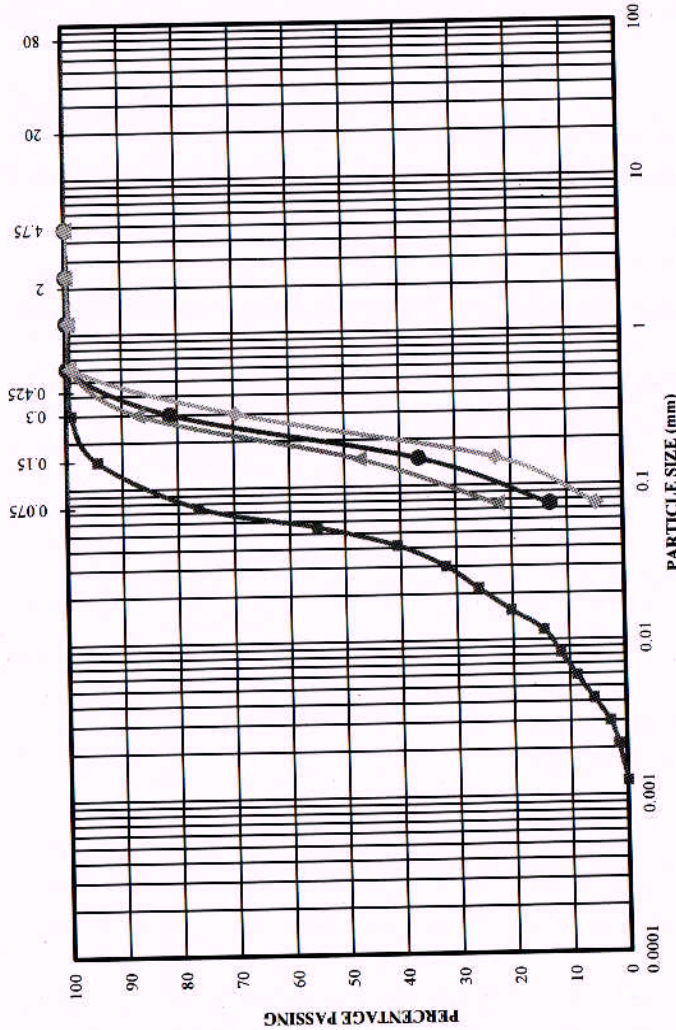
CLAY	SILT			SAND		GRAVEL		C
	FINE	MEDIUM	COARSE	FINE	COARSE	FINE	COARSE	

S.NO.	SYMBOL	BH NO./CHAINAGE	SAMPLE NO	DEPTH (M)	DESCRIPTION	GRAVEL %	SAND %	SILT %	CLAY %
1	■	BH-2/27290	UDS-1	2.50	Brownish Sandy SILT(ML)	12	10	78	0
2	●	BH-2/27290	SPT-2	3.00	Brownish Sandy SILT(ML)	1	13	81	5
3	▲	BH-2/27290	UDS-2	5.50	Brownish Silty CLAY(CL)	19	3	64	14
4	◆	BH-2/27290	UDS-3	8.50	Brownish Sandy SILT(ML)	1	24	72	3

Site Ref: Meerut
 Test Report No: XPL/2015-16/02
 Job No: 1342
 Date: 18/8/15

Operator: Rajan Singh 18/8/15
 Checked: RS Date: 18/8/15
 Authorised Signatory: [Signature] Date: 18/8/15

GRADING CURVE BASED ON IS : 2720 : PART IV



CLAY	SILT	SAND			GRAVEL		C
		FINE	MEDIUM	COARSE	FINE	COARSE	

S.NO	SYMBOL	BH NO./CHAINAGE	SAMPLE NO	DEPTH (M)	DESCRIPTION	GRAVEL %	SAND %	SILT %	CLAY %
1	■	BH-2/27290	SPT-8	12.00	Brownish Sandy SILT (ML)	0	24	75	1
2	●	BH-2/27290	SPT-11	16.50	Brownish Silty SAND (SM)	0	87	13	
3	▲	BH-2/27290	SPT-15	22.50	Brownish Silty SAND (SM)	0	77	23	
4	◆	BH-2/27290	SPT-19	28.50	Poorly Graded SAND (SP-SM)	0	95	5	

Job No: 1342
Test Report No: XPL/2015-16/02

Date: 18/8/15
Authorised Signatory

Site Ref: Meerut

Operator: Rejansingh
Date: 18/8/15

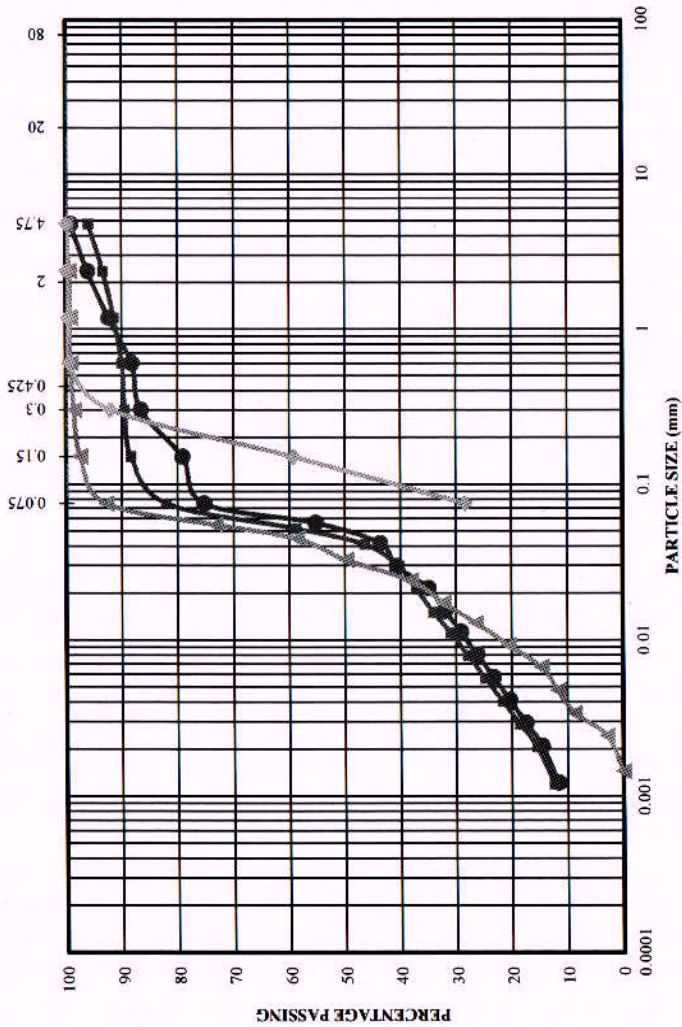
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Date:

18/8/15

GRAIN SIZE ANALYSIS (IS : 2720 : PART IV)

GRADING CURVE BASED ON IS : 2720 : PART IV



CLAY	SILT			SAND			GRAVEL			C
	FINE	MEDIUM	COARSE	FINE	COARSE	GRAVEL				

S.NO.	SYMBOL	BH NO./CHAINAGE	SAMPLE NO	DEPTH (M)	DESCRIPTION	GRAVEL %	SAND %	SILT %	CLAY %
1	■	BH-1/27820	UDS-1	2.50	Brownish Silty CLAY(CL)	4	14	67	15
2	●	BH-1/27820	UDS-2	5.50	Brownish Silty CLAY(CL)	1	24	60	15
3	▲	BH-1/27820	SPT-5	7.50	Brownish Sandy SILT(ML)	0	7	90	3
4	◆	BH-1/27820	SPT-8	12.00	Brownish Silty SAND(SM)	0	72	28	

Site Ref: Meerut

Operator: *Rajam Singh* Date: 18/5/15

Checked: *RS* Date: 18/8/15

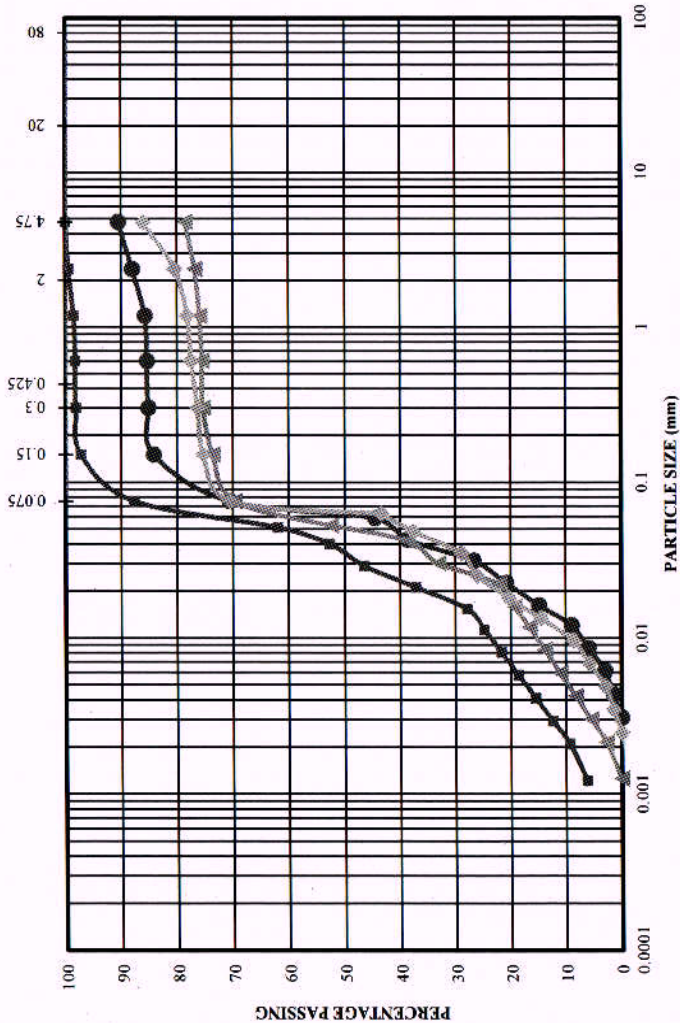
Authorized Signatory: *[Signature]* Date: 18/8/15

Test Report No: XPL/2015-16/02

Job No: 1342

GRAIN SIZE ANALYSIS (IS : 2720 : PART IV)

GRADING CURVE BASED ON IS : 2720 : PART IV



CLAY	SILT			SAND		GRAVEL		C
	FINE	MEDIUM	COARSE	FINE	COARSE	FINE	COARSE	

S.NO.	SYMBOL	BH NO./CHAINAGE	SAMPLE NO	DEPTH (M)	DESCRIPTION	GRAVEL %	SAND %	SILT %	CLAY %
1	■	BH-1/28660	UDS-1	2.50	Brownish Silty CLAY(CL)	0	12	79	9
2	●	BH-1/28660	SPT-2	3.00	Brownish Sandy SILT(ML)	9	20	71	0
3	▲	BH-1/28660	UDS-2	5.50	Brownish Sandy SILT(ML)	21	9	67	3
4	◆	BH-1/28660	SPT-5	7.50	Brownish Sandy SILT(ML)	14	16	70	0

Site Ref: Meerut

Operator: *Pranav Singh* Date: *18/5/2015*

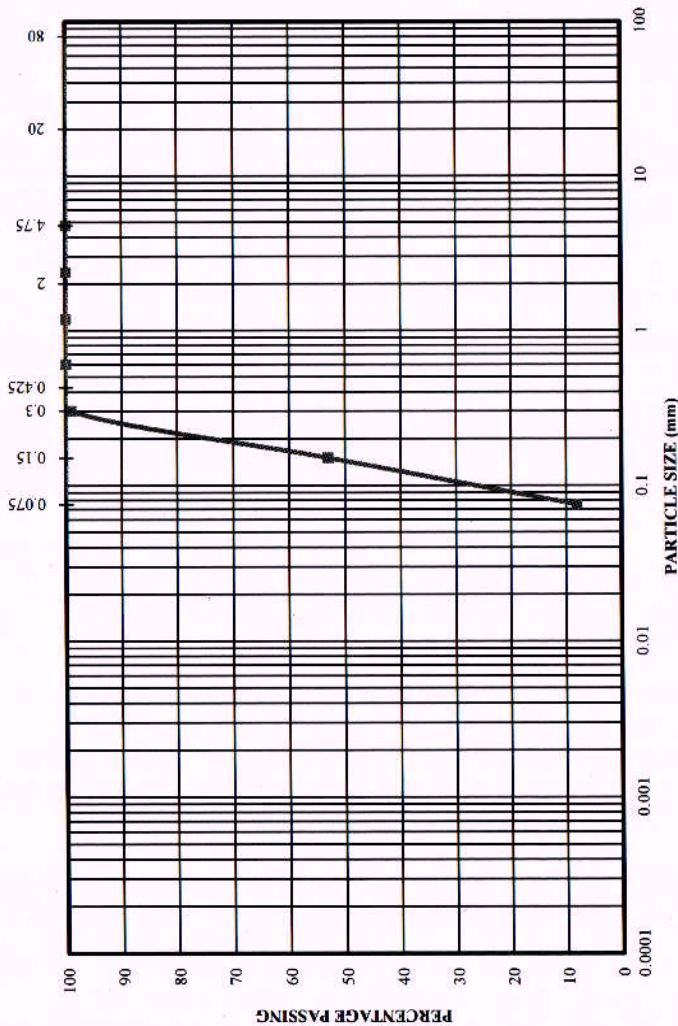
Checked: *PR* Date: *12/8/15*

Authorized Signatory: *[Signature]* Date: *18/8/15*

Test Report No: XPL/2015-16/02

Job No: 1342

GRADING CURVE BASED ON IS : 2720 : PART IV



CLAY	SILT		FINE SAND		MEDIUM SAND		COARSE SAND		FINE GRAVEL		COARSE GRAVEL		C
------	------	--	-----------	--	-------------	--	-------------	--	-------------	--	---------------	--	---

S.NO.	SYMBOL	BH NO./CHAINAGE	SAMPLE NO	DEPTH (M)	DESCRIPTION	GRAVEL %	SAND %	SILT %	CLAY %
1	■	BH-1/28660	SPT-7	10.50	Poorly Graded SAND(SP-SM)	0	92	8	0

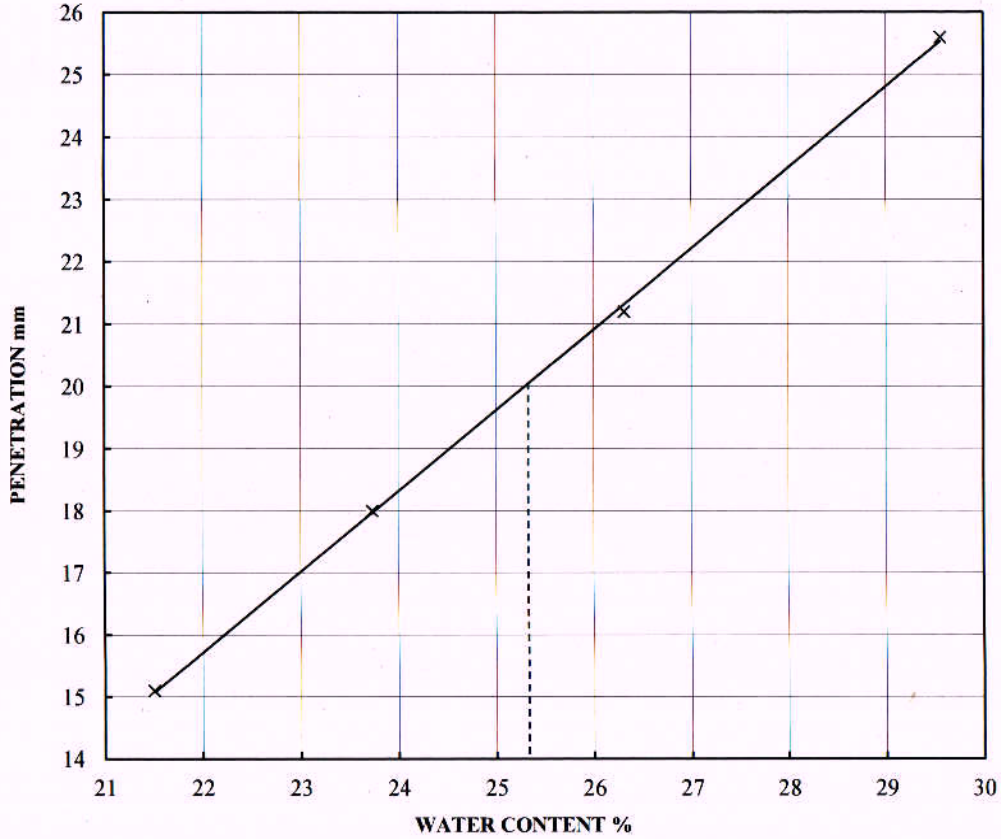
Job No: 1342
Test Report No: XPL/2015-16/02

Authorized Signatory: *[Signature]*
Date: 18/8/15

Site Ref: Meerut

Operator: *Prakash Singh* Date: 18/8/15
Checked: *AS* Date: 18/8/15

I.S. : 2720 : PART 5



HISTORY OF SAMPLE :

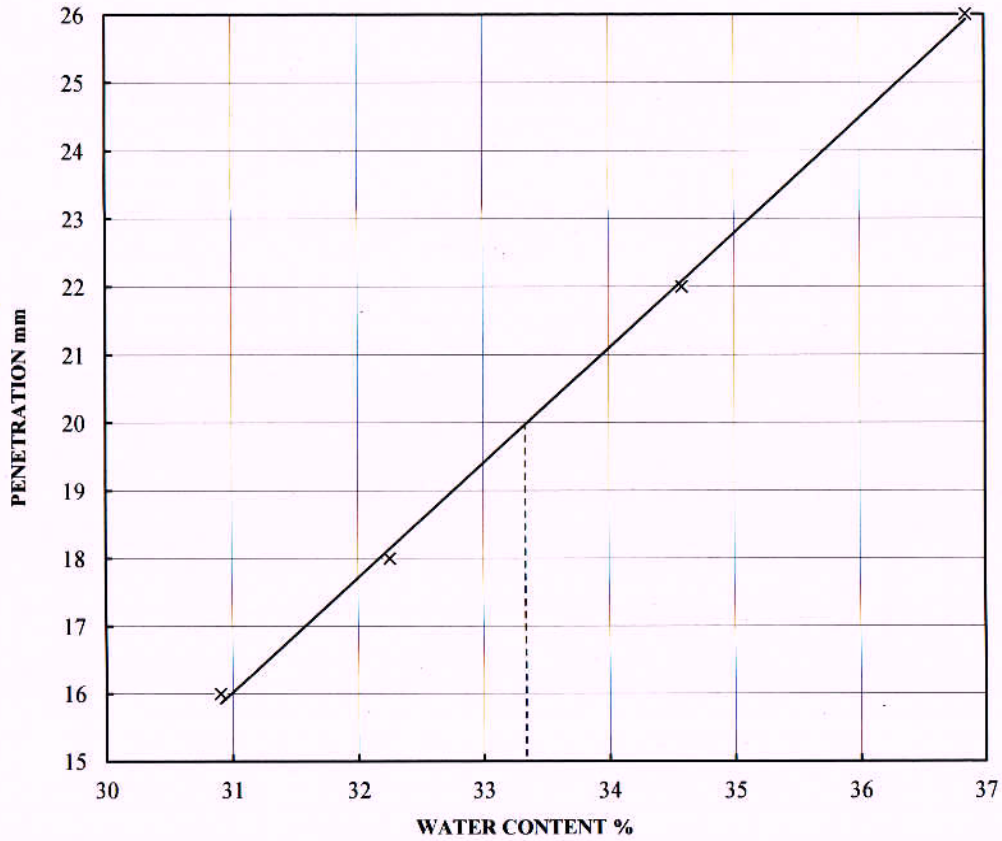
Percentage of passing 0.425mm B.S.Sieve = 80%

	LIQUID LIMIT %				PLASTIC LIMIT %
Wet Weight + Tare (g)	34.73	29.97	30.77	30.04	
Dry Weight + Tare (g)	30.02	25.99	26.30	25.07	NP
Tare Weight (g)	8.10	9.22	9.31	8.27	
Water Content (%)	21.50	23.73	26.31	29.56	
Penetration (mm)	15.10	18.00	21.20	25.60	

LIQUID LIMIT (%) 25
 PLASTIC LIMIT (%) NP
 PLASTICITY INDEX (%) NP

Sample Type : UDS	
Borehole No. 24920/BH-1	Sample No: UDS-1
Depth (m): 2.50	
XPLORER	Site Ref: Meerut
Job No : 1342	
Test Report No: XPL/2015-16/02	
Operator : <i>Wibish</i>	Checked : <i>RM</i>
Date : <i>17/8/15</i>	Date: <i>18/8/15</i>
Authorized Signatory <i>[Signature]</i>	
Date: <i>18/8/15</i>	

I.S. : 2720 : PART 5



HISTORY OF SAMPLE :

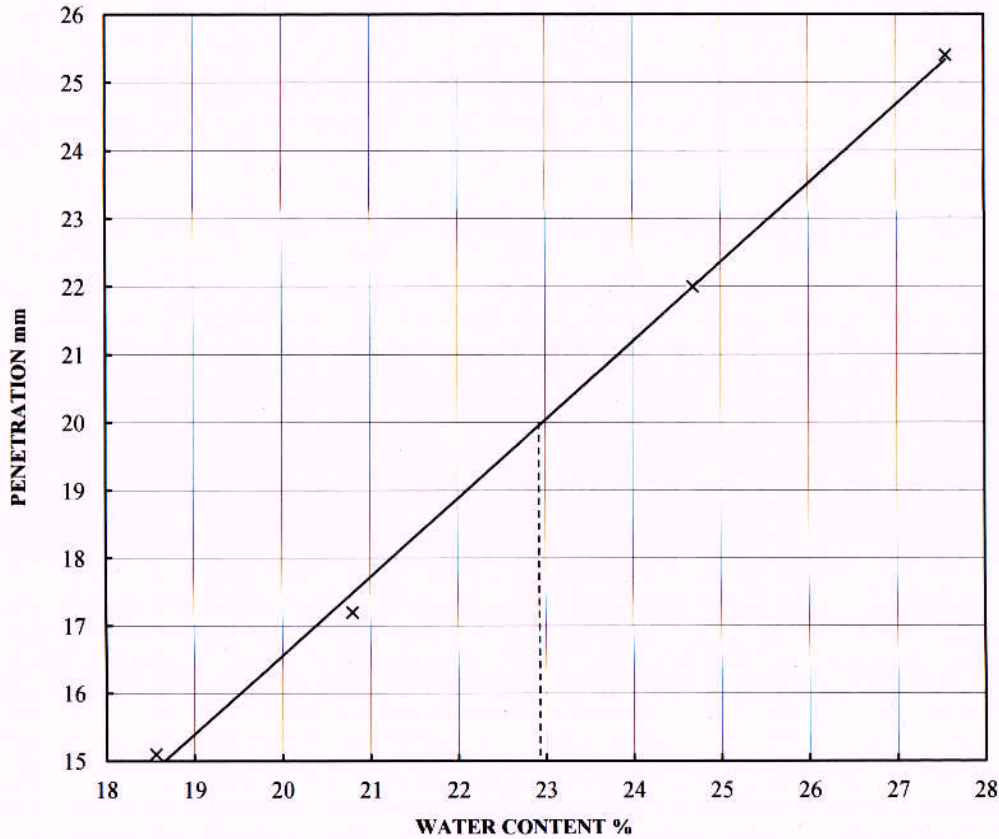
Percentage of passing 0.425mm B.S.Sieve = 72%

	LIQUID LIMIT %				PLASTIC LIMIT %
	25.10	28.53	23.30	31.01	
Wet Weight + Tare (g)	25.10	28.53	23.30	31.01	NP
Dry Weight + Tare (g)	21.03	23.65	19.60	24.87	
Tare Weight (g)	7.86	8.52	8.90	8.21	
Water Content (%)	30.90	32.25	34.58	36.85	
Penetration (mm)	16.00	18.00	22.00	26.00	

LIQUID LIMIT (%)	33
PLASTIC LIMIT (%)	NP
PLASTICITY INDEX (%)	NP

Sample Type : UDS	
Borehole No. 25760/BH-1	Sample No: UDS-1
Depth (m): 2.50	
XPLORER	Site Ref: Meerut
Job No : 1342	
Test Report No: XPL/2015-16/02	
Operator : <i>W. B. Singh</i>	Checked : <i>am</i>
Date : 17/8/15	Date: 18/8/15
Authorised Signatory: <i>[Signature]</i>	
Date: 18/8/15	

I.S. : 2720 : PART 5



HISTORY OF SAMPLE :

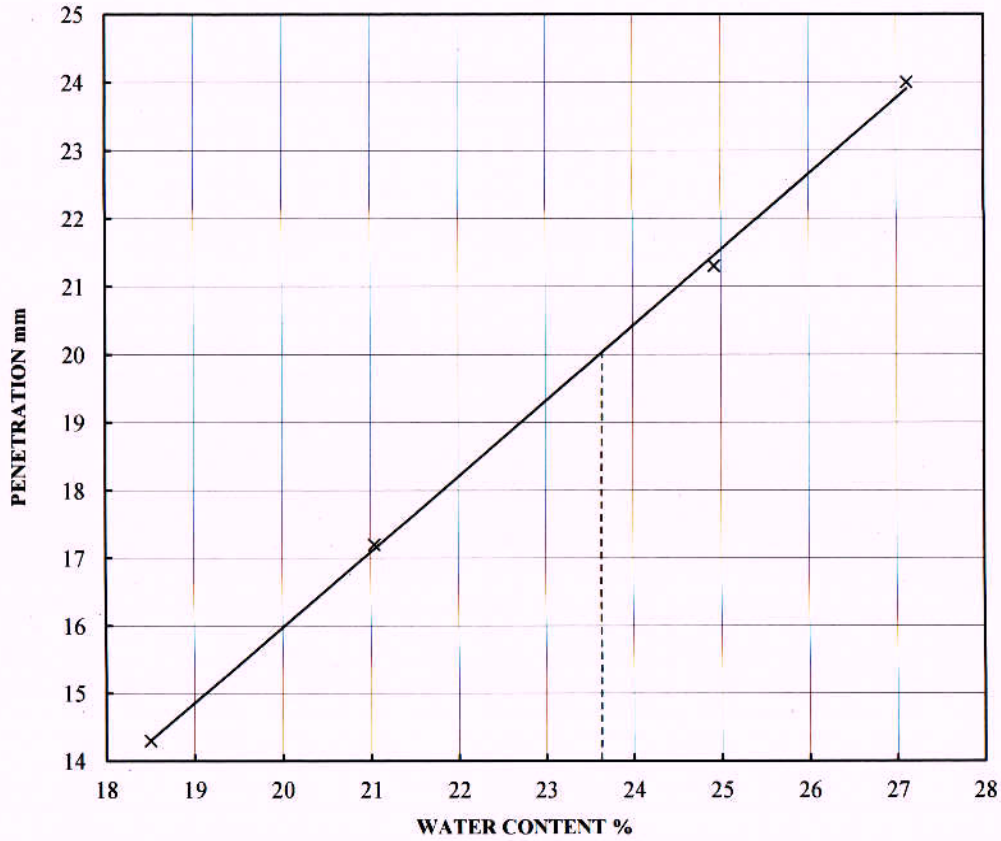
Percentage of passing 0.425mm B.S.Sieve = 79%

	LIQUID LIMIT %				PLASTIC LIMIT %
	25.94	28.84	28.91	27.49	
Wet Weight + Tare (g)	25.94	28.84	28.91	27.49	NP
Dry Weight + Tare (g)	23.35	25.50	25.05	23.30	
Tare Weight (g)	9.40	9.44	9.41	8.10	
Water Content (%)	18.56	20.80	24.68	27.56	
Penetration (mm)	15.10	17.20	22.00	25.40	

LIQUID LIMIT (%) 23
 PLASTIC LIMIT (%) NP
 PLASTICITY INDEX (%) NP

Sample Type : UDS	
Borehole No. 26530/BH-1	Sample No: UDS-1
Depth (m): 2.50	
XPLORER	Site Ref: Meerut
Job No : 1342	
Test Report No: XPL/2015-16/02	
Operator : <i>W. Kash</i>	Checked : <i>RM</i>
Authorised Signatory <i>[Signature]</i>	
Date : <i>17/8/15</i>	Date: <i>18/8/15</i>

I.S. : 2720 : PART 5



HISTORY OF SAMPLE :

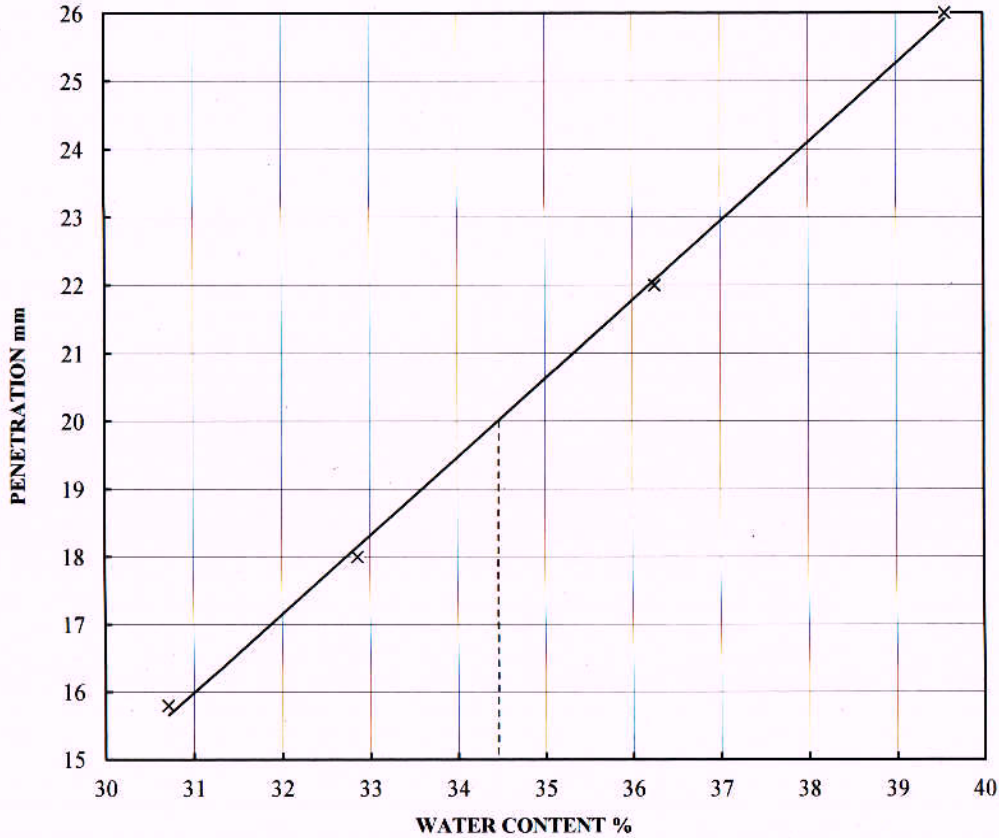
Percentage of passing 0.425mm B.S.Sieve = 79%

	LIQUID LIMIT %				PLASTIC LIMIT %
Wet Weight + Tare (g)	27.09	25.61	27.52	25.71	
Dry Weight + Tare (g)	24.33	22.50	23.65	22.21	NP
Tare Weight (g)	9.42	7.72	8.12	9.30	
Water Content (%)	18.50	21.04	24.92	27.12	
Penetration (mm)	14.30	17.20	21.30	24.00	

LIQUID LIMIT (%)	24
PLASTIC LIMIT (%)	NP
PLASTICITY INDEX (%)	NP

Sample Type : UDS	
Borehole No. 27290/BH-1	Sample No: UDS-1
Depth (m): 2.50	
XPLORER	Site Ref: Meerut
Job No : 1342	
Test Report No: XPL/2015-16/02	
Operator : <i>wish</i>	Checked : <i>nm</i>
Authorised Signatory <i>[Signature]</i>	
Date : 17/5/15	Date: 18/8/15
Date: 18/8/15	

I.S. : 2720 : PART 5



HISTORY OF SAMPLE :

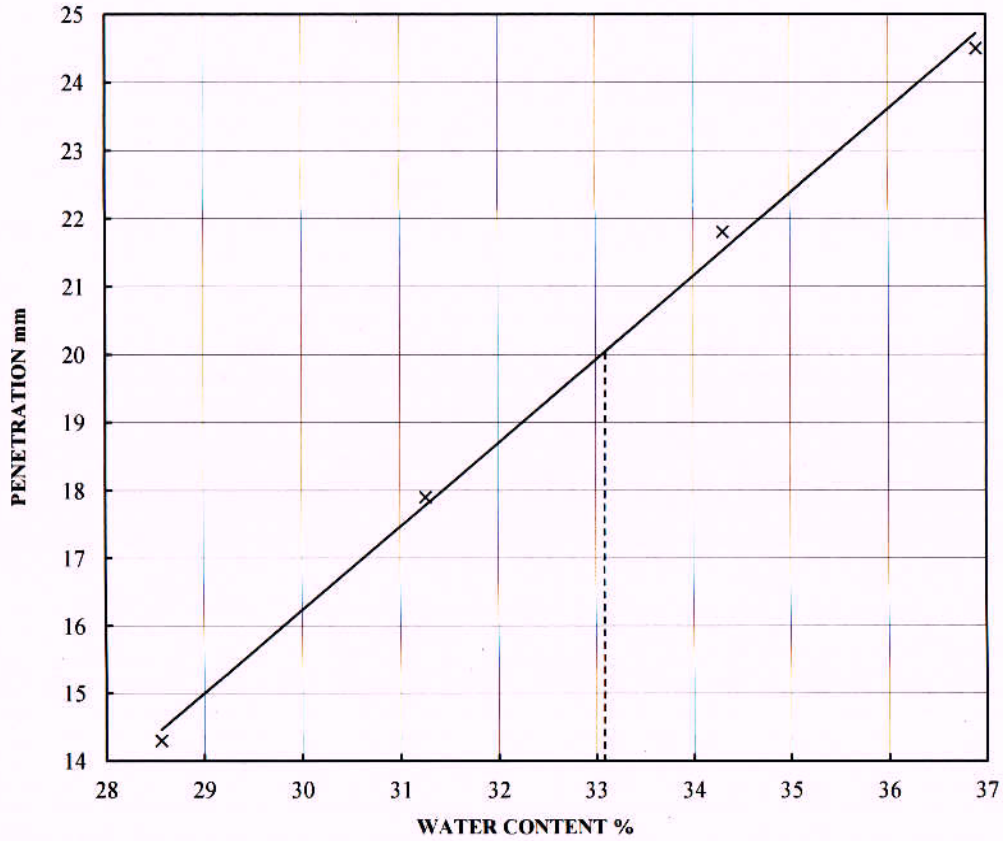
Percentage of passing 0.425mm B.S.Sieve = 87%

	LIQUID LIMIT %				PLASTIC LIMIT %	
	25.80	25.92	24.95	30.65	17.36	18.20
Wet Weight + Tare (g)	25.80	25.92	24.95	30.65	17.36	18.20
Dry Weight + Tare (g)	21.59	21.53	20.82	24.63	15.95	16.53
Tare Weight (g)	7.88	8.17	9.42	9.40	9.95	9.54
Water Content (%)	30.71	32.86	36.25	39.56	23.52	23.89
Penetration (mm)	15.80	18.00	22.00	26.00		

LIQUID LIMIT (%)	34
PLASTIC LIMIT (%)	24
PLASTICITY INDEX (%)	10

Sample Type : UDS	
Borehole No. 27290/BH-1	Sample No: UDS-2
Depth (m): 5.50	
XPLORER	Site Ref: Meerut
Job No : 1342	
Test Report No: XPL/2015-16/02	
Operator : <i>nikesh</i>	Checked : <i>RM</i>
Authorised Signatory <i>[Signature]</i>	
Date : 17/8/15	Date: 18/8/15
Date: 18/8/15	

I.S. : 2720 : PART 5



HISTORY OF SAMPLE :

Percentage of passing 0.425mm B.S.Sieve = 90%

	LIQUID LIMIT %				PLASTIC LIMIT %	
	27.47	26.53	26.10	26.80	19.43	17.96
Wet Weight + Tare (g)	27.47	26.53	26.10	26.80	19.43	17.96
Dry Weight + Tare (g)	23.47	22.37	21.50	21.71	17.89	16.34
Tare Weight (g)	9.46	9.08	8.09	7.93	10.02	7.88
Water Content (%)	28.56	31.26	34.30	36.90	19.60	19.20
Penetration (mm)	14.30	17.90	21.80	24.50		

LIQUID LIMIT (%) 33
 PLASTIC LIMIT (%) 19
 PLASTICITY INDEX (%) 14

Sample Type : UDS

Borehole No. 27290/BH-1 Sample No: UDS-3 Depth (m): 11.50

XPLORER Site Ref: Meerut Job No : 1342
 Test Report No: XPL/2015-16/02

Operator : *W. K. Singh*

Checked : *RM*

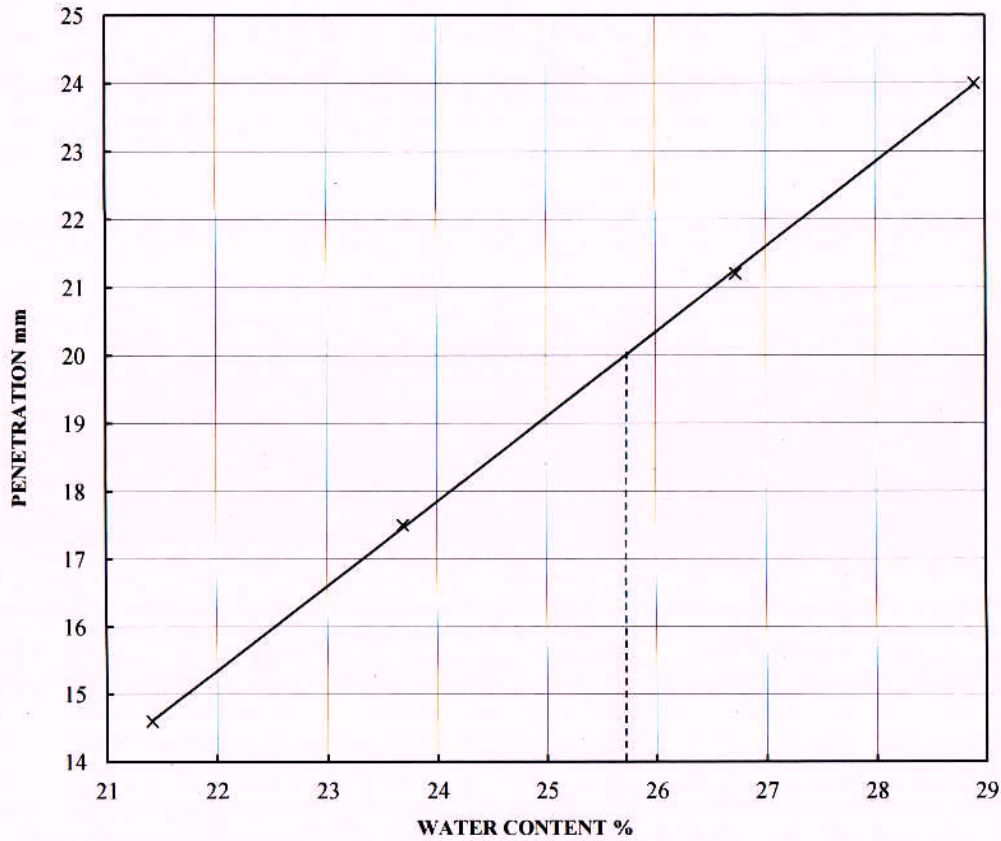
Authorised Signatory *[Signature]*

Date : 17/8/15

Date: 18/8/15

Date: 18/8/15

I.S. : 2720 : PART 5



HISTORY OF SAMPLE :

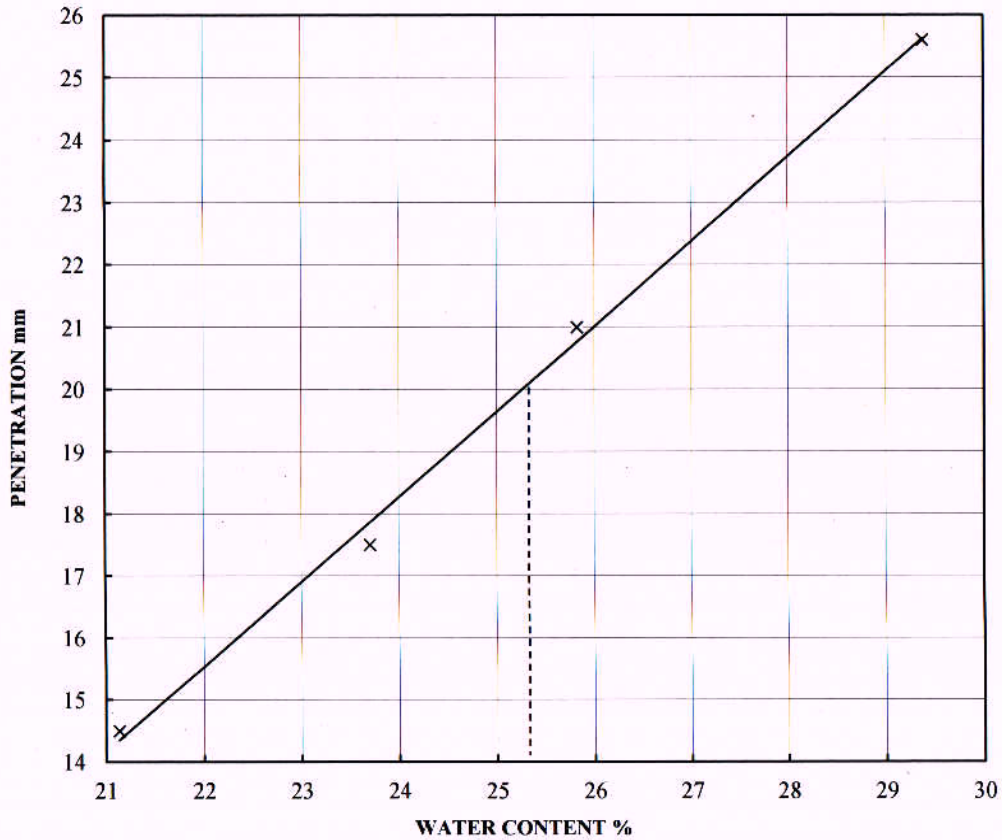
Percentage of passing 0.425mm B.S.Sieve = 80%

	LIQUID LIMIT %				PLASTIC LIMIT %
Wet Weight + Tare (g)	30.81	30.01	22.65	28.40	
Dry Weight + Tare (g)	26.96	25.90	19.55	24.17	NP
Tare Weight (g)	8.98	8.55	7.95	9.52	
Water Content (%)	21.41	23.69	26.72	28.90	
Penetration (mm)	14.60	17.50	21.20	24.00	

LIQUID LIMIT (%) 26
 PLASTIC LIMIT (%) NP
 PLASTICITY INDEX (%) NP

Sample Type : UDS		Borehole No. 27290/BH-2		Sample No: UDS-1		Depth (m): 2.50	
XPLORER		Site Ref: Meerut		Job No: 1342		Test Report No: XPL/2015-16/02	
Operator : <i>nikesh</i>		Checked : <i>RM</i>		Authorised Signatory <i>[Signature]</i>			
Date : <i>17/8/15</i>		Date: <i>18/8/15</i>		Date: <i>18/8/15</i>			

I.S. : 2720 : PART 5



HISTORY OF SAMPLE :

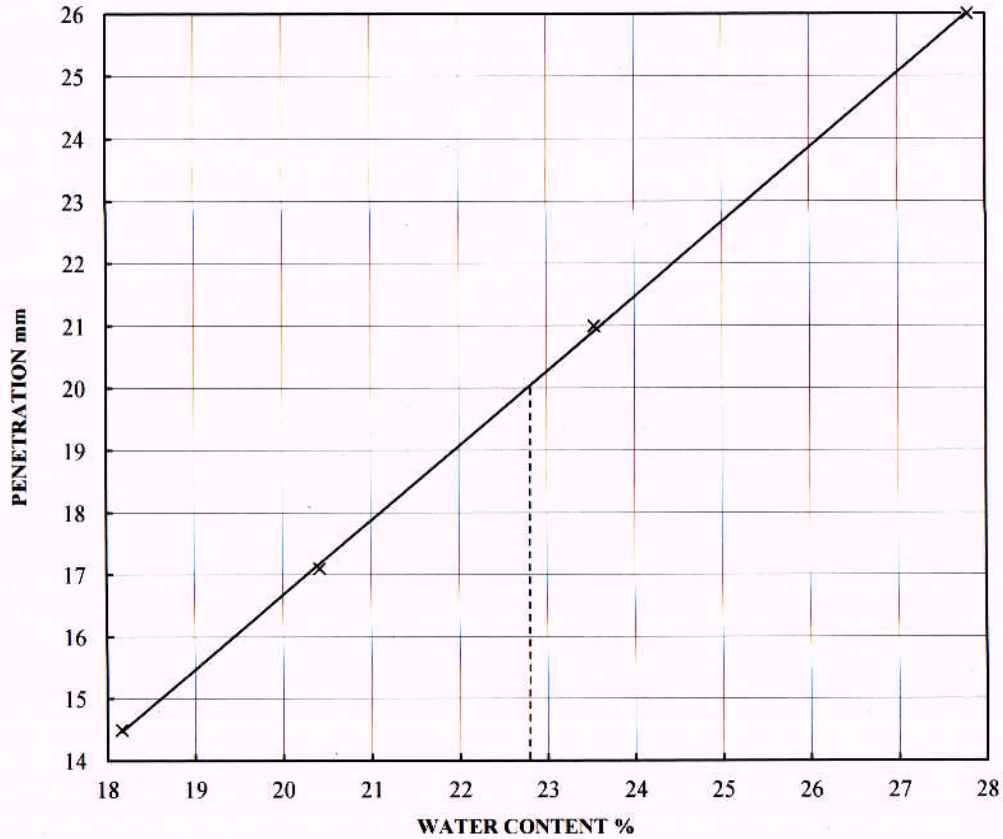
Percentage of passing 0.425mm B.S.Sieve = 69%

	LIQUID LIMIT %				PLASTIC LIMIT %	
	23.41	25.26	25.30	27.34	17.70	19.07
Wet Weight + Tare (g)	23.41	25.26	25.30	27.34	17.70	19.07
Dry Weight + Tare (g)	20.95	22.02	21.85	23.02	16.43	17.33
Tare Weight (g)	9.31	8.35	8.49	8.31	9.44	7.95
Water Content (%)	21.13	23.70	25.82	29.38	18.25	18.55
Penetration (mm)	14.50	17.50	21.00	25.60		

LIQUID LIMIT (%) 25
 PLASTIC LIMIT (%) 18
 PLASTICITY INDEX (%) 7

Sample Type : UDS	
Borehole No. 27290/BH-2	Sample No: UDS-2
Depth (m): 5.50	
XPLORER	Site Ref: Meerut
Job No : 1342	
Test Report No: XPL/2015-16/02	
Operator : <i>Wish</i>	Checked : <i>RM</i>
Authorised Signatory <i>[Signature]</i>	
Date : 17/8/15	Date: 18/8/15
Date: 18/8/15	

I.S. : 2720 : PART 5



HISTORY OF SAMPLE :

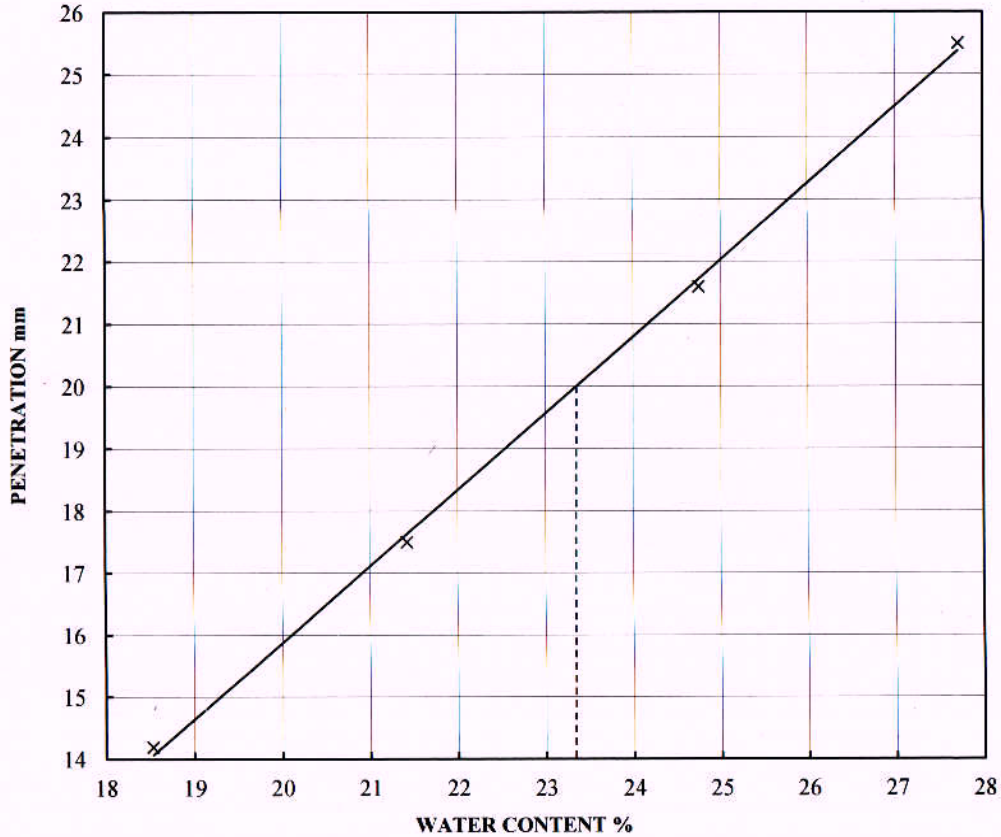
Percentage of passing 0.425mm B.S.Sieve = 76%

	LIQUID LIMIT %				PLASTIC LIMIT %	
	22.67	27.46	26.25	25.47	17.65	18.33
Wet Weight + Tare (g)	22.67	27.46	26.25	25.47	17.65	18.33
Dry Weight + Tare (g)	20.40	24.25	22.95	21.69	16.31	17.02
Tare Weight (g)	7.90	8.53	8.93	8.10	8.18	9.22
Water Content (%)	18.16	20.42	23.54	27.80	16.50	16.85
Penetration (mm)	14.50	17.10	21.00	26.00		

LIQUID LIMIT (%) 23
 PLASTIC LIMIT (%) 17
 PLASTICITY INDEX (%) 6

Sample Type : UDS		Borehole No. 27290/BH-2		Sample No: UDS-3		Depth (m): 8.50	
XPLORER		Site Ref: Meerut		Job No: 1342		Test Report No: XPL/2015-16/02	
Operator : <i>Vijesh</i>		Checked : <i>RM</i>		Authorised Signatory <i>[Signature]</i>			
Date : <i>17/8/15</i>		Date: <i>18/8/15</i>		Date: <i>18/8/15</i>			

I.S. : 2720 : PART 5



HISTORY OF SAMPLE :

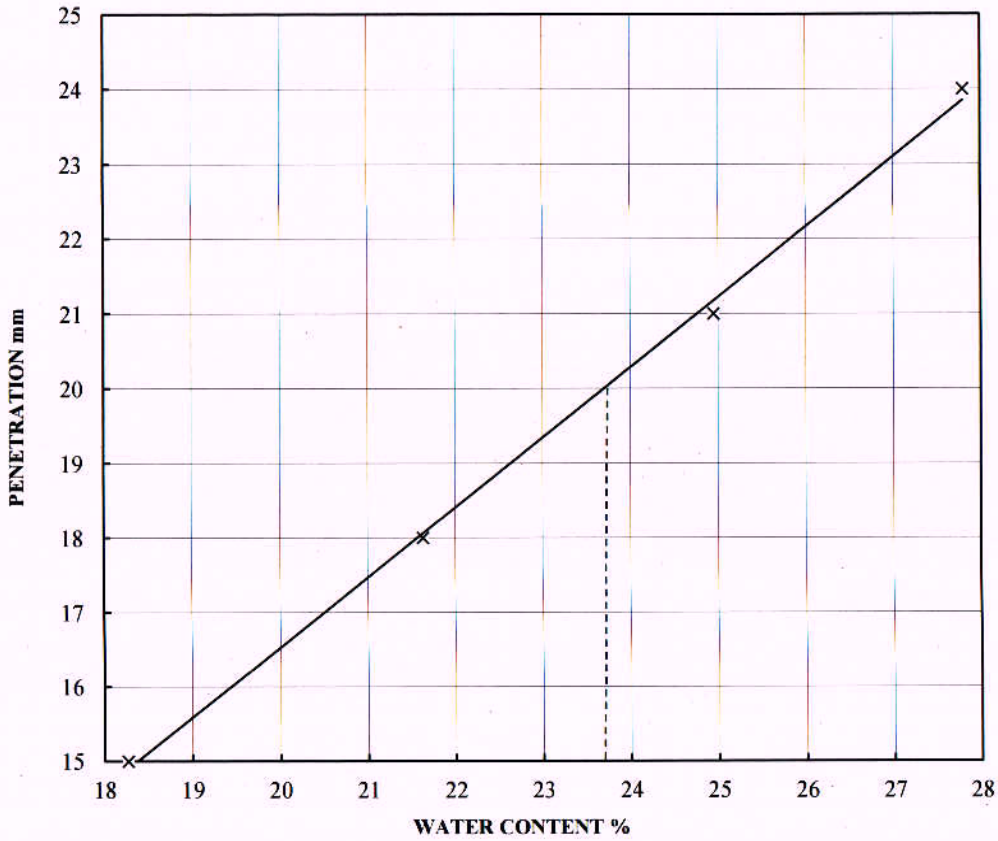
Percentage of passing 0.425mm B.S.Sieve = 76%

	LIQUID LIMIT %				PLASTIC LIMIT %
	22.67	27.46	26.25	25.47	
Wet Weight + Tare (g)	22.67	27.46	26.25	25.47	NP
Dry Weight + Tare (g)	20.40	24.30	22.85	21.69	
Tare Weight (g)	8.15	9.55	9.11	8.06	
Water Content (%)	18.53	21.42	24.75	27.72	
Penetration (mm)	14.20	17.50	21.60	25.50	

LIQUID LIMIT (%) 23
 PLASTIC LIMIT (%) NP
 PLASTICITY INDEX (%) NP

Sample Type : SPT	
Borehole No. 27290/BH-2	Sample No: SPT-8
Depth (m): 12.00	
XPLORER	Site Ref: Meerut
Job No : 1342	
Test Report No: XPL/2015-16/02	
Operator : <i>Nipesh</i>	Checked : <i>AM</i>
Date : 17/8/15	Date: 18/8/15
Authorised Signatory <i>[Signature]</i>	
Date: 18/8/15	

I.S. : 2720 : PART 5



HISTORY OF SAMPLE :

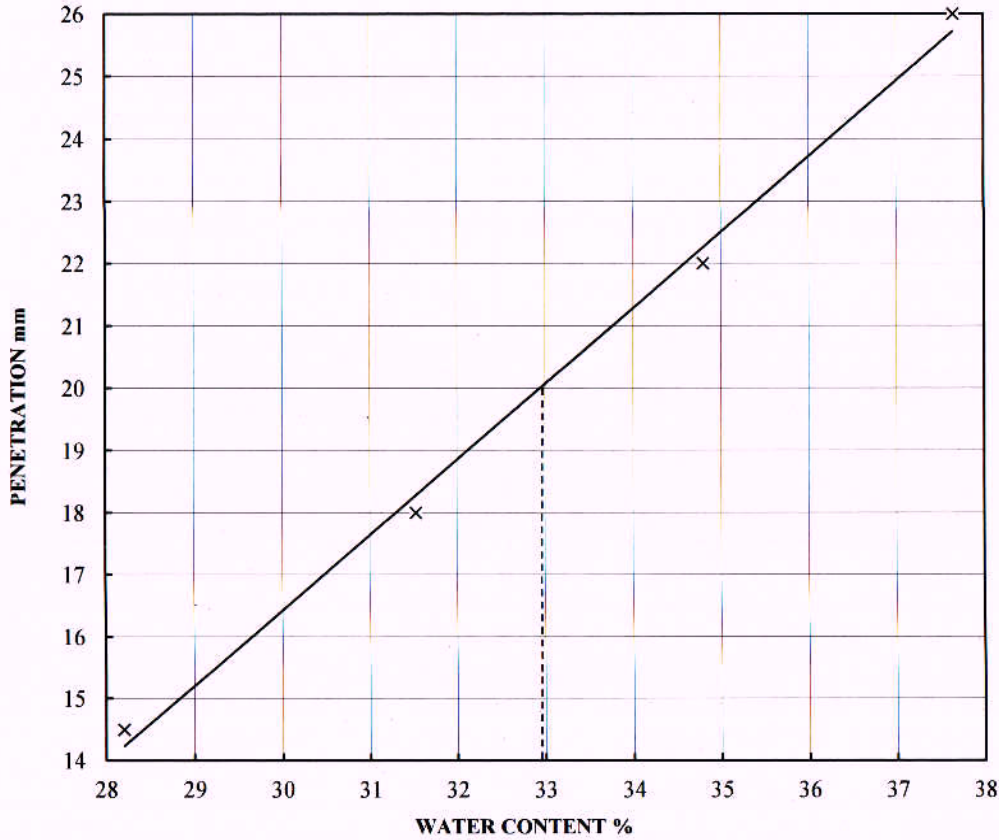
Percentage of passing 0.425mm B.S.Sieve = 50%

	LIQUID LIMIT %				PLASTIC LIMIT %	
	22.53	20.48	20.51	31.56	16.46	16.77
Wet Weight + Tare (g)	22.53	20.48	20.51	31.56	16.46	16.77
Dry Weight + Tare (g)	20.36	18.28	18.04	26.78	15.23	15.66
Tare Weight (g)	8.48	8.11	8.16	9.57	8.11	9.35
Water Content (%)	18.27	21.63	24.95	27.80	17.25	17.53
Penetration (mm)	15.00	18.00	21.00	24.00		

LIQUID LIMIT (%) 24
 PLASTIC LIMIT (%) 17
 PLASTICITY INDEX (%) 7

Sample Type : UDS	
Borehole No. 27820/BH-1	Sample No: UDS-1 Depth (m): 2.50
XPLORER	Site Ref: Meerut Job No : 1342
	Test Report No: XPL/2015-16/02
Operator : <i>vikash</i>	Checked : <i>RM</i> Authorised Signatory <i>[Signature]</i>
Date : <i>17/8/15</i>	Date: <i>18/8/15</i> Date: <i>18/8/15</i>

I.S. : 2720 : PART 5



HISTORY OF SAMPLE :

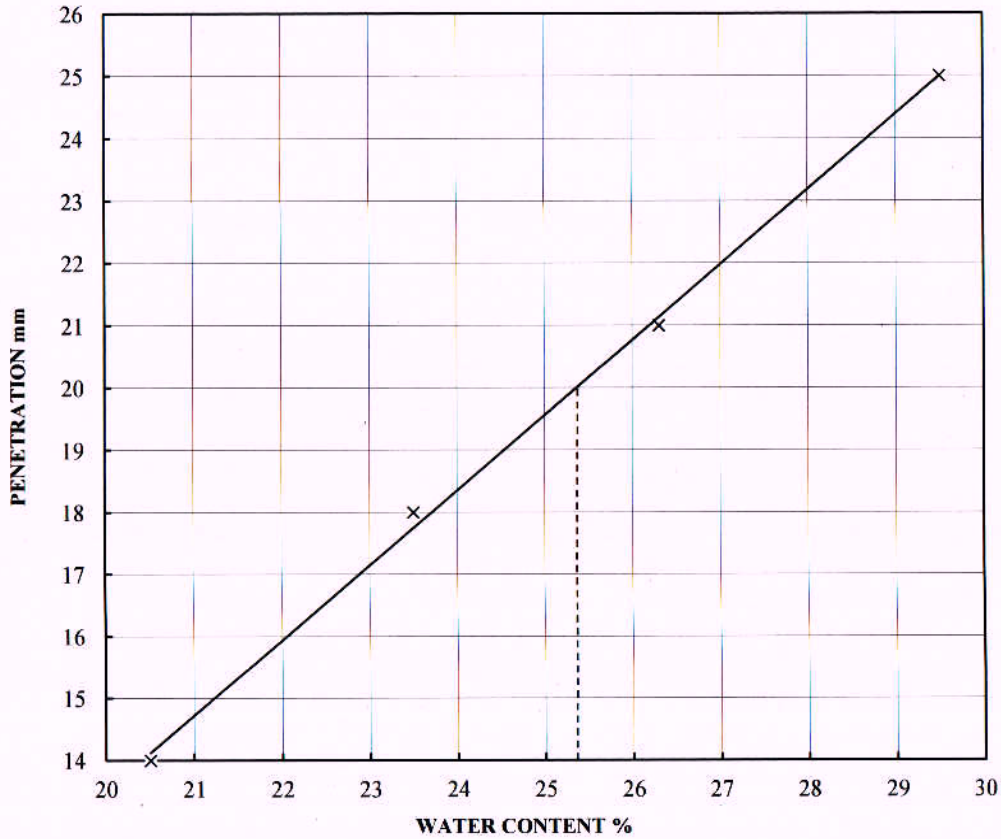
Percentage of passing 0.425mm B.S.Sieve = 63%

	LIQUID LIMIT %				PLASTIC LIMIT %	
	27.47	26.53	26.10	26.80	19.43	17.96
Wet Weight + Tare (g)	27.47	26.53	26.10	26.80	19.43	17.96
Dry Weight + Tare (g)	23.27	22.40	21.50	22.19	17.89	16.34
Tare Weight (g)	8.37	9.30	8.28	9.95	10.02	7.88
Water Content (%)	28.20	31.53	34.80	37.65	19.60	19.20
Penetration (mm)	14.50	18.00	22.00	26.00		

LIQUID LIMIT (%) 33
 PLASTIC LIMIT (%) 19
 PLASTICITY INDEX (%) 14

Sample Type : UDS	
Borehole No. 27290/BH-1	Sample No: UDS-3
Depth (m): 11.50	
XPLORER	Site Ref: Meerut
Job No : 1342	
Test Report No: XPL/2015-16/02	
Operator : <i>Nikesh</i>	Checked : <i>ran</i>
Authorised Signatory <i>[Signature]</i>	
Date : 17/8/15	Date: 18/8/15
Date: 18/8/15	

I.S. : 2720 : PART 5



HISTORY OF SAMPLE :

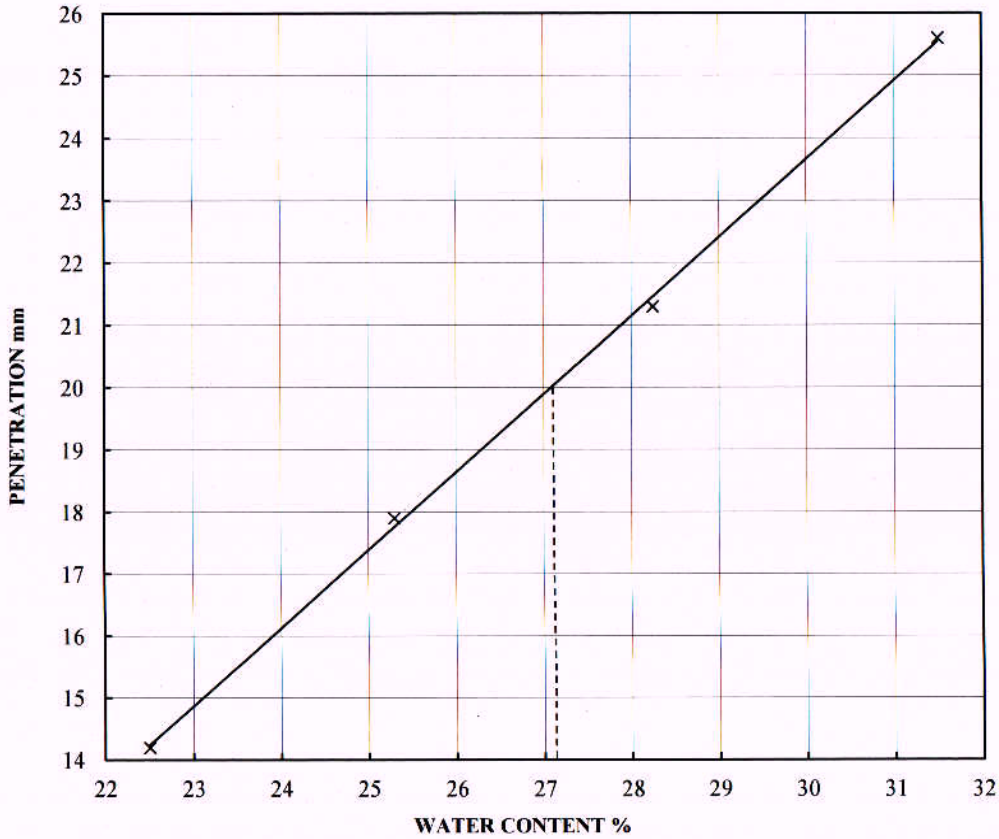
Percentage of passing 0.425mm B.S.Sieve = 64%

	LIQUID LIMIT %				PLASTIC LIMIT %	
	23.69	23.73	22.52	27.84	19.77	18.13
Wet Weight + Tare (g)	23.69	23.73	22.52	27.84	19.77	18.13
Dry Weight + Tare (g)	21.18	20.76	19.54	23.30	18.30	16.86
Tare Weight (g)	8.94	8.13	8.19	7.90	9.46	9.30
Water Content (%)	20.50	23.50	26.30	29.50	16.58	16.85
Penetration (mm)	14.00	18.00	21.00	25.00		

LIQUID LIMIT (%) 25
 PLASTIC LIMIT (%) 17
 PLASTICITY INDEX (%) 8

Sample Type : UDS		Borehole No. 28660/BH-1		Sample No: UDS-1	Depth (m): 2.50
XPLORER		Site Ref: Meerut		Job No : 1342	Test Report No: XPL/2015-16/02
Operator : <i>Wish</i>	Checked : <i>AM</i>	Authorised Signatory <i>[Signature]</i>			
Date : <i>17/8/15</i>	Date: <i>18/8/15</i>	Date: <i>18/8/15</i>			

I.S. : 2720 : PART 5



HISTORY OF SAMPLE :

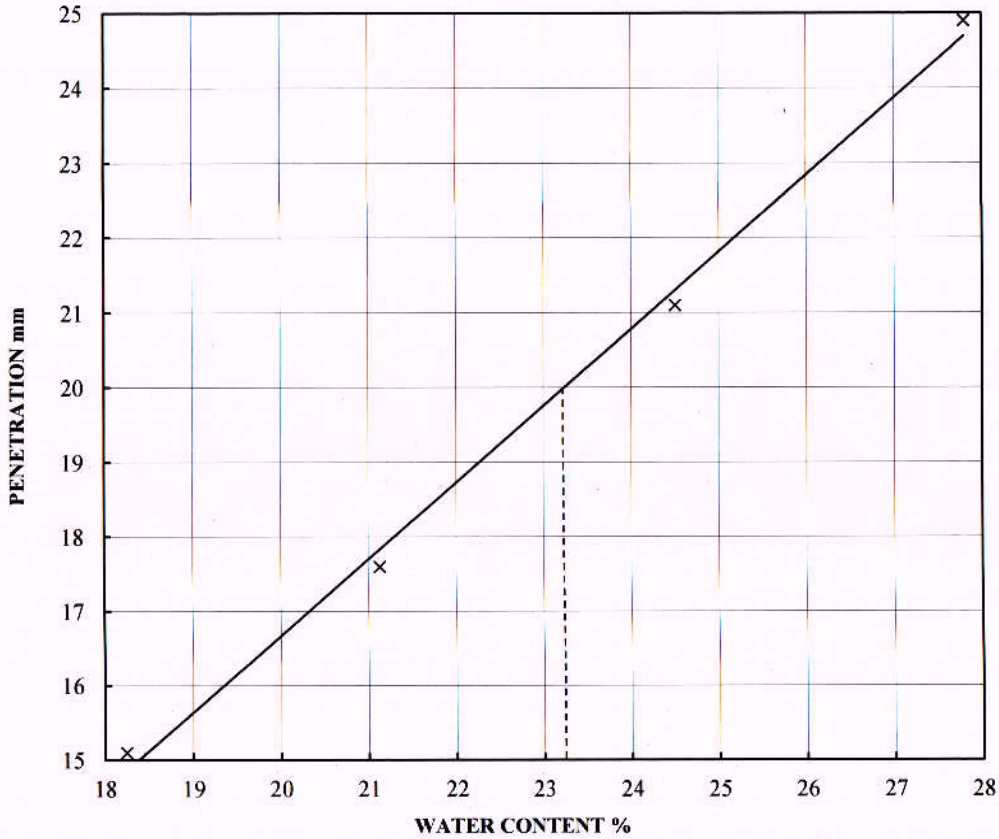
Percentage of passing 0.425mm B.S.Sieve = 78%

	LIQUID LIMIT %				PLASTIC LIMIT %
Wet Weight + Tare (g)	30.29	27.21	26.89	31.60	
Dry Weight + Tare (g)	26.42	23.60	23.10	26.43	NP
Tare Weight (g)	9.22	9.32	9.68	10.00	
Water Content (%)	22.50	25.30	28.24	31.50	
Penetration (mm)	14.20	17.90	21.30	25.60	

LIQUID LIMIT (%) 27
 PLASTIC LIMIT (%) NP
 PLASTICITY INDEX (%) NP

Sample Type : UDS		Borehole No. 28660/BH-1		Sample No: UDS-2	Depth (m): 5.50
XPLORER		Site Ref: Meerut		Job No : 1342	Test Report No: XPL/2015-16/02
Operator : <i>Vikesh</i>	Checked : <i>RM</i>	Authorised Signatory <i>[Signature]</i>			
Date : <i>17/8/15</i>	Date: <i>18/8/15</i>	Date: <i>18/8/15</i>			

I.S. : 2720 : PART 5



HISTORY OF SAMPLE :

Percentage of passing 0.425mm B.S.Sieve = 88%

	LIQUID LIMIT %				PLASTIC LIMIT %
Wet Weight + Tare (g)	29.39	27.69	25.61	28.20	
Dry Weight + Tare (g)	26.42	24.55	22.21	23.86	NP
Tare Weight (g)	10.14	9.69	8.34	8.27	
Water Content (%)	18.24	21.13	24.50	27.80	
Penetration (mm)	15.10	17.60	21.10	24.90	

LIQUID LIMIT (%) 23
 PLASTIC LIMIT (%) NP
 PLASTICITY INDEX (%) NP

Sample Type : SPT	
Borehole No. 28660/BH-1	Sample No: SPT-5 Depth (m): 7.50
XPLORER	Site Ref: Meerut Job No : 1342
	Test Report No: XPL/2015-16/02
Operator : <i>Wishy</i>	Checked : <i>RA</i>
Date : <i>17/8/15</i>	Date: <i>18/8/15</i>
	Authorised Signatory <i>[Signature]</i>

PROJECT : Geotechnical Investigation Works For Skylark DFCCIL Meerut

SITE REF: Meerut

Job No. 1342

Test Report No: XPL/2015-16/02

BH No :- 1 **Sample No :-**UDS-1 **Depth(m)** 2.5
Chainage 24920

Test No :	1	2
ρ_s Bottle No :	SG-12	SG-15
Mass of ρ_s bottle with stopper, M1	37.31	34.42
Mass of ρ_s bottle with Stopper & Soil, M2	47.31	44.42
Mass of ρ_s bottle with Stopper, Soil & Distilled Water, M3	84.17	91.08
Mass of ρ_s bottle with Stopper & Distilled Water, M4	77.84	84.80
$\rho_s = \frac{(M2 - M1)}{(M4 - M1) - (M3 - M2)}$	2.72	2.69

Average Specific Gravity : 2.71

BH No :- 1 **Sample No :-**UDS-2 **Depth(m)** 5.5
Chainage 24920

Test No :	1	2
ρ_s Bottle No :	SG-18	SG-24
Mass of ρ_s bottle with stopper, M1	38.11	39.9
Mass of ρ_s bottle with Stopper & Soil, M2	48.11	49.90
Mass of ρ_s bottle with Stopper, Soil & Distilled Water, M3	91.06	92.75
Mass of ρ_s bottle with Stopper & Distilled Water, M4	84.76	86.47
$\rho_s = \frac{(M2 - M1)}{(M4 - M1) - (M3 - M2)}$	2.70	2.69

Average Specific Gravity : 2.70

Operator :

Checked :

Authorised signatory

Date :

Date :

Date :

FREE SWELL INDEX
Test Method IS 2720:(Part 40)-1977

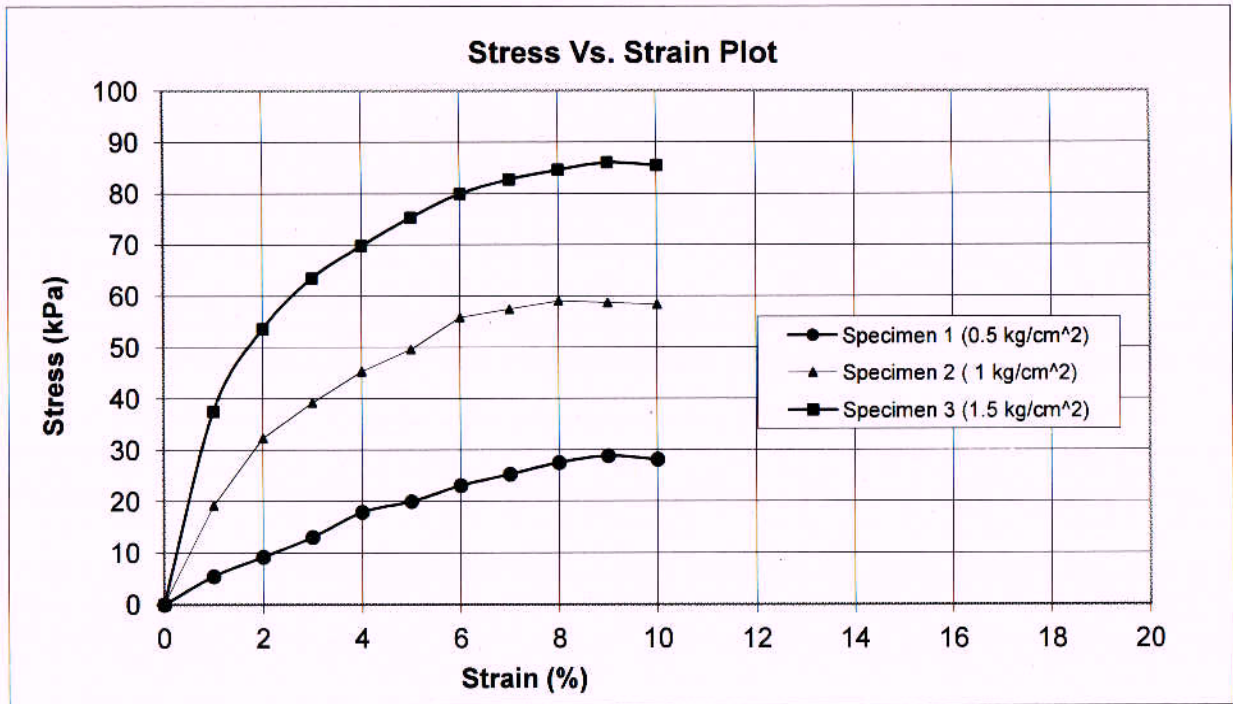
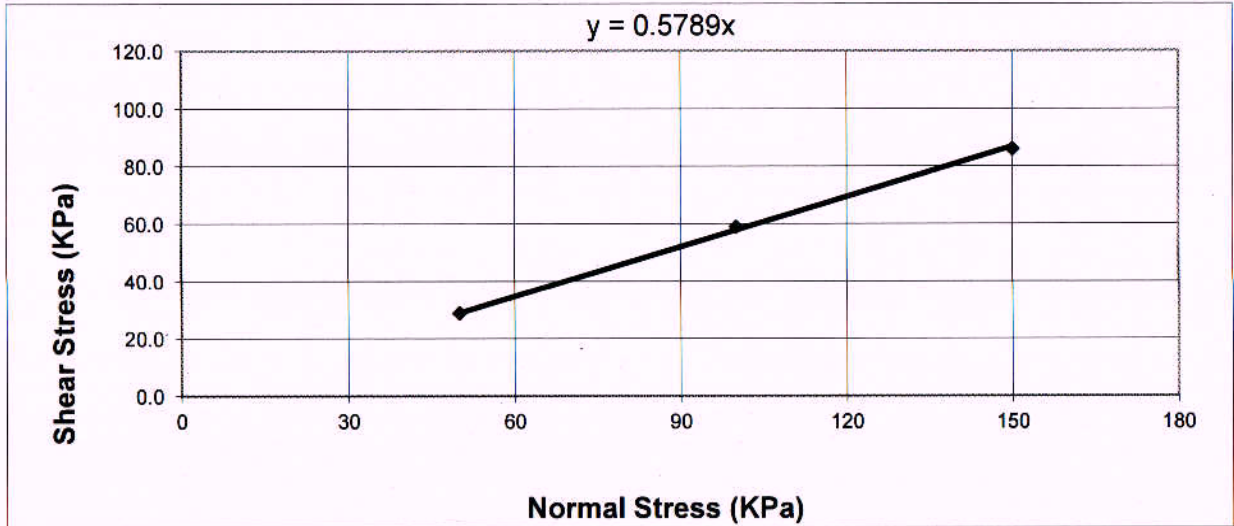
CLIENT / CONSULTANT: Sky Lark
 PROJECT: Geotechnical Investigation Works For Skylark DFCCIL Meerut
 SITE REF: Meerut JOB NO : 1342
 Test Report No: XPL/2015-16/02

Borehole No/ Trial Pit No:	24920/BH-1	25760/BH-1	26530/BH-1	27290/BH-1
Sample No :	UDS-2	UDS-2	UDS-2	UDS-2
Depth (m)	5.50	5.50	5.50	5.50
Volume of Soil in Cylinder Containing Kerosene (V1)cc	6	7	8	16
Volume of Soil in Cylinder Containing Water (V2)cc	6	7	8	19
Free Swell Index (%)=[(V2-V1)/V1]*100	0.00	0.00	0.00	18.75

Borehole No/ Trial Pit No:	27290/BH-1	27290/BH-2	27290/BH-2	27820/BH-1
Sample No :	UDS-3	UDS-2	UDS-3	UDS-2
Depth (m)/ Chainage (km) :	11.50	5.50	8.50	5.50
Volume of Soil in Cylinder Containing Kerosene (V1)cc :	14	12	10	13
Volume of Soil in Cylinder Containing Water (V2)cc	17	14	11	13
Free Swell Index (%)=[(V2-V1)/V1]*100	21.43	16.67	10.00	0.00

Borehole No/ Trial Pit No:	28660/BH-1			
Sample No.	UDS-2			
Depth (m)/ Chainage (km) :	5.50			
Volume of Soil in Cylinder Containing Kerosene (V1)cc	11			
Volume of Soil in Cylinder Containing Water (V2)cc	11			
Free Swell Index (%)=[(V2-V1)/V1]*100	0.00			

Tested by :	Checked by :	Authorised Signatory
Date :	Date : 18/8/15	Date : 18/8/15



Sample Details

Dry-density, (mg/m³) = 1.42
Brownish Silty SAND(SM)

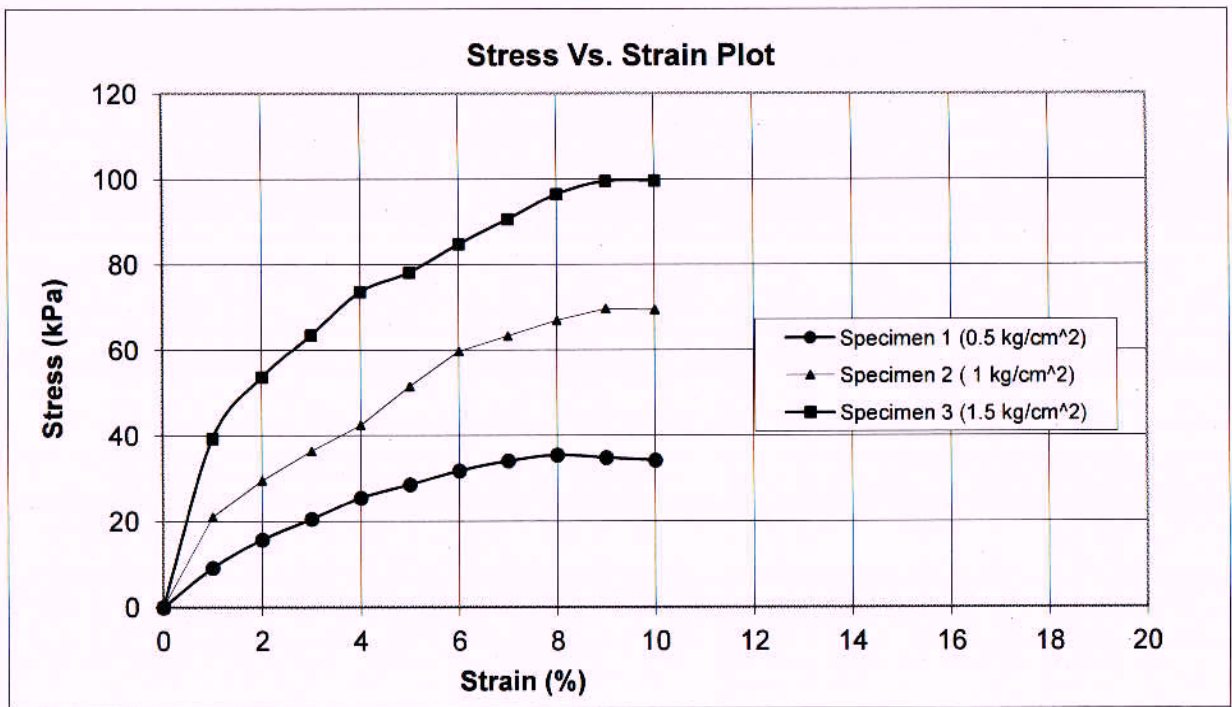
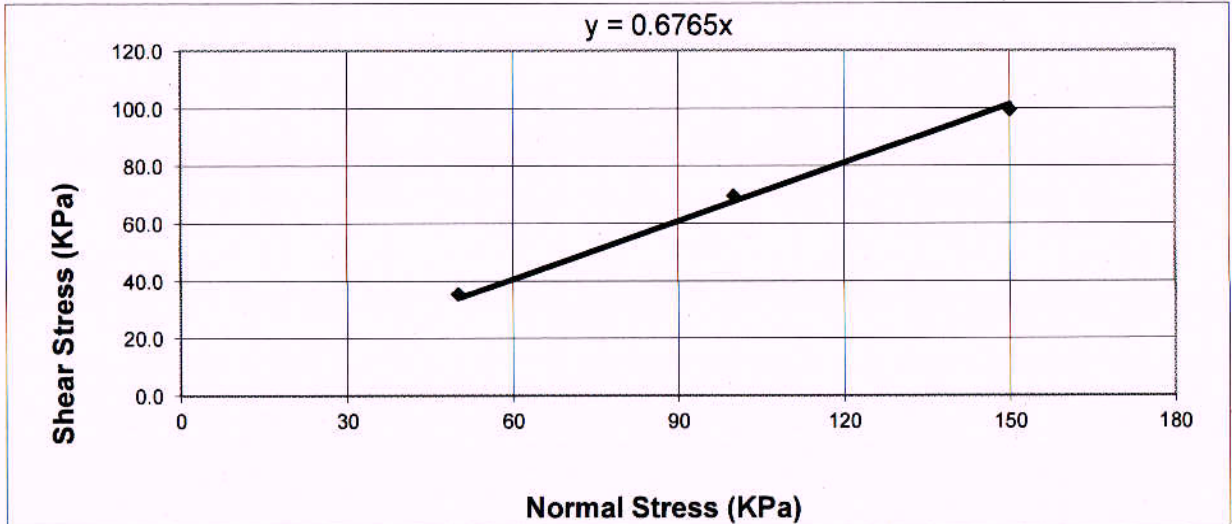
Test Result

$c = 0.0$ kPa
 $\phi = 30.0^\circ$

BH No: 1	Chainage 24920	Sample No.: SPT-2	Depth (m): 3.00
Site Ref: Meerut	Job No : 1342		Test Report No: XPL/2015-16/02

Tested by: *Prinsingh* Checked by: *Ron* Authorised Signatory: *[Signature]*
Date: *28/8/15* Date: *18/8/15* Date: *18/8/15*

DIRECT SHEAR TEST RESULT
I.S.: 2720 : PART XIII



Sample Details

Dry-density, (mg/m³) = 1.42
Poorly Graded SAND (SP)

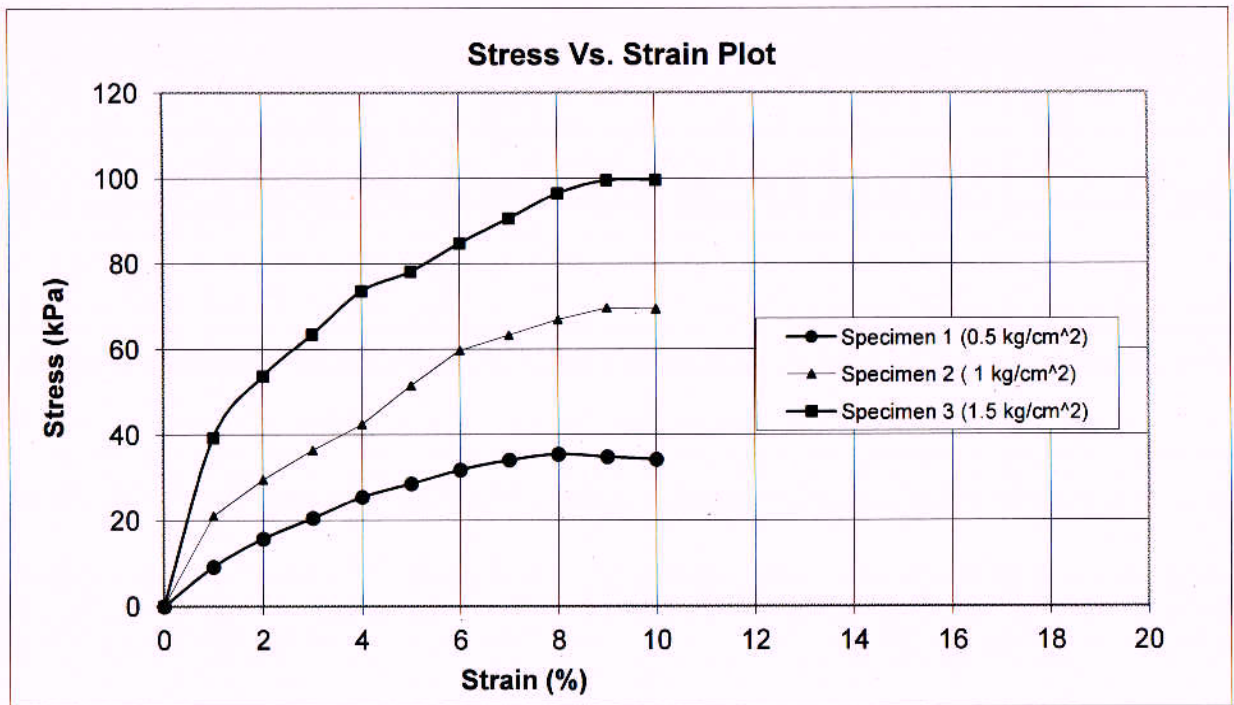
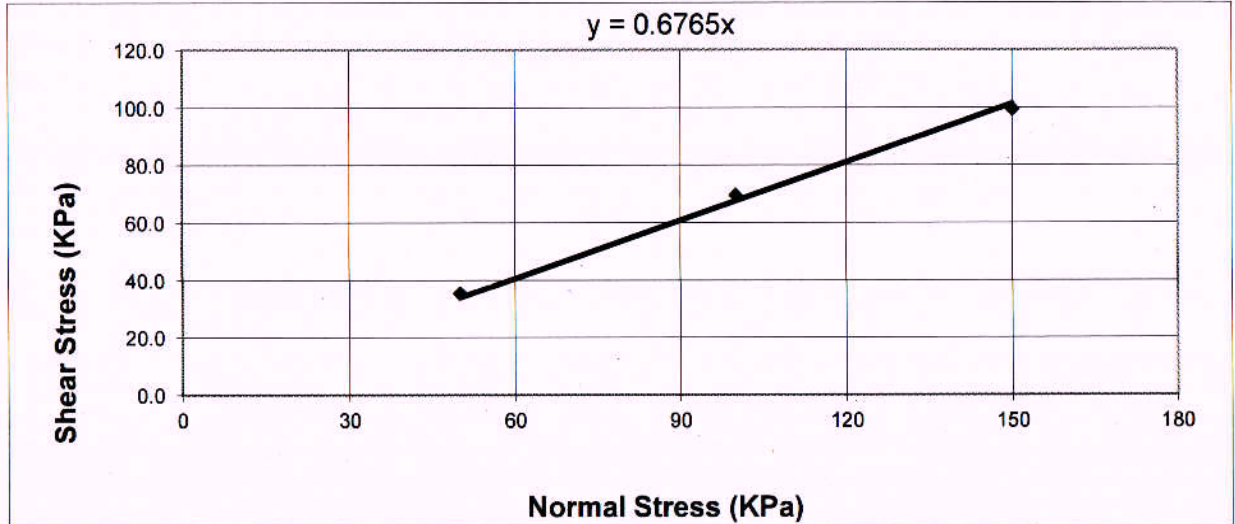
Test Result

$c = 0.0$ kPa
 $\phi = 34.0^\circ$

BH No: 1	Chainage 24920	Sample No.: SPT-4	Depth (m): 6.00
Site Ref: Meerut	Job No: 1342		Test Report No: XPL/2015-16/02

Tested by: <i>Bhim Singh</i>	Checked by: <i>am</i>	Authorised Signatory: <i>[Signature]</i>
Date: <i>28/5/15</i>	Date: <i>18/8/15</i>	Date: <i>18/9/15</i>

DIRECT SHEAR TEST RESULT
I.S.: 2720 : PART XIII



Sample Details

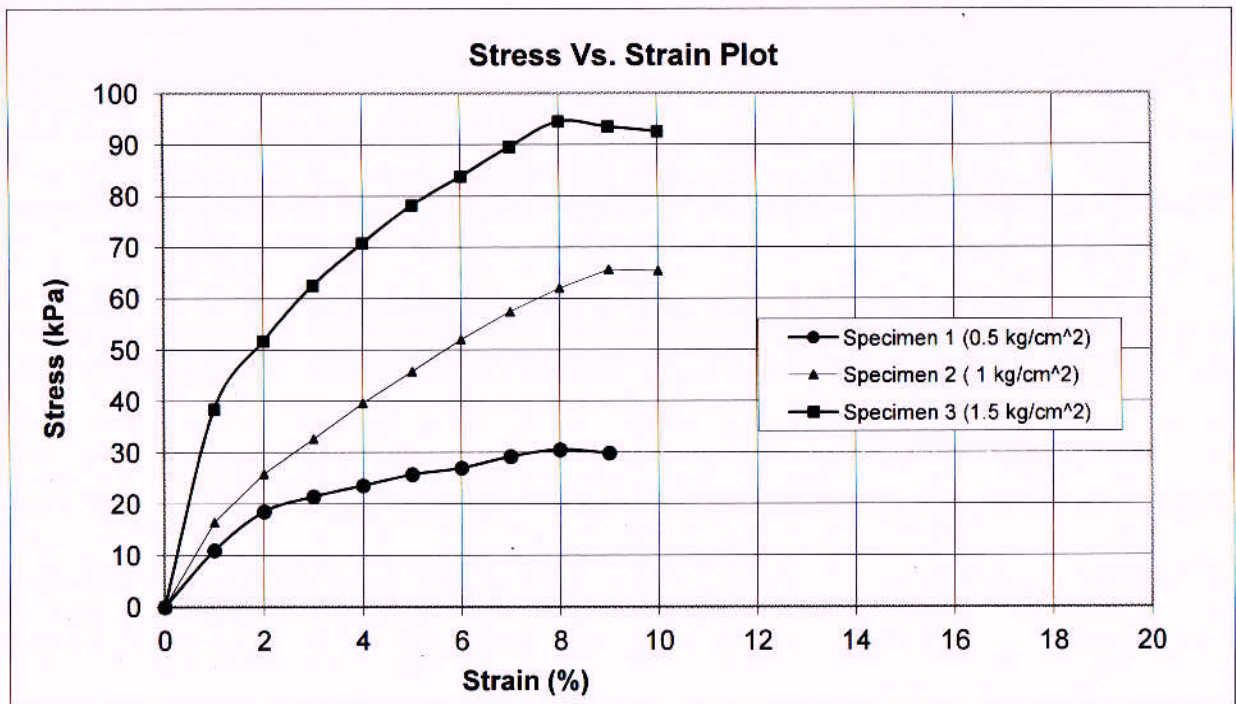
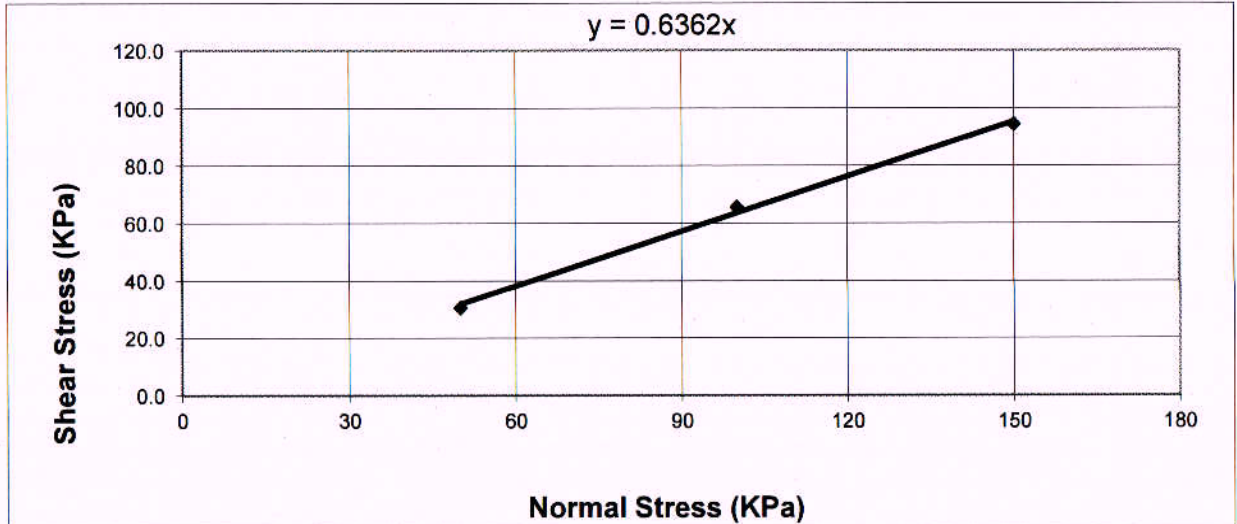
Dry-density, (mg/m³) = 1.54
Poorly Graded SAND (SP-SM)

Test Result

$c = 0.0$ kPa
 $\phi = 34.0^\circ$

BH No: 1	Chainage 24920	Sample No.: SPT-7	Depth (m): 10.50
Site Ref: Meerut	Job No: 1342		Test Report No: XPL/2015-16/02

Tested by: <i>Bhimsingh</i>	Checked by: <i>RM</i>	Authorised Signatory: <i>[Signature]</i>
Date: <i>28/5/15</i>	Date: <i>18/8/15</i>	Date: <i>18/8/15</i>



Sample Details

Dry-density, (mg/m³) = 1.88
Poorly Graded SAND (SP)

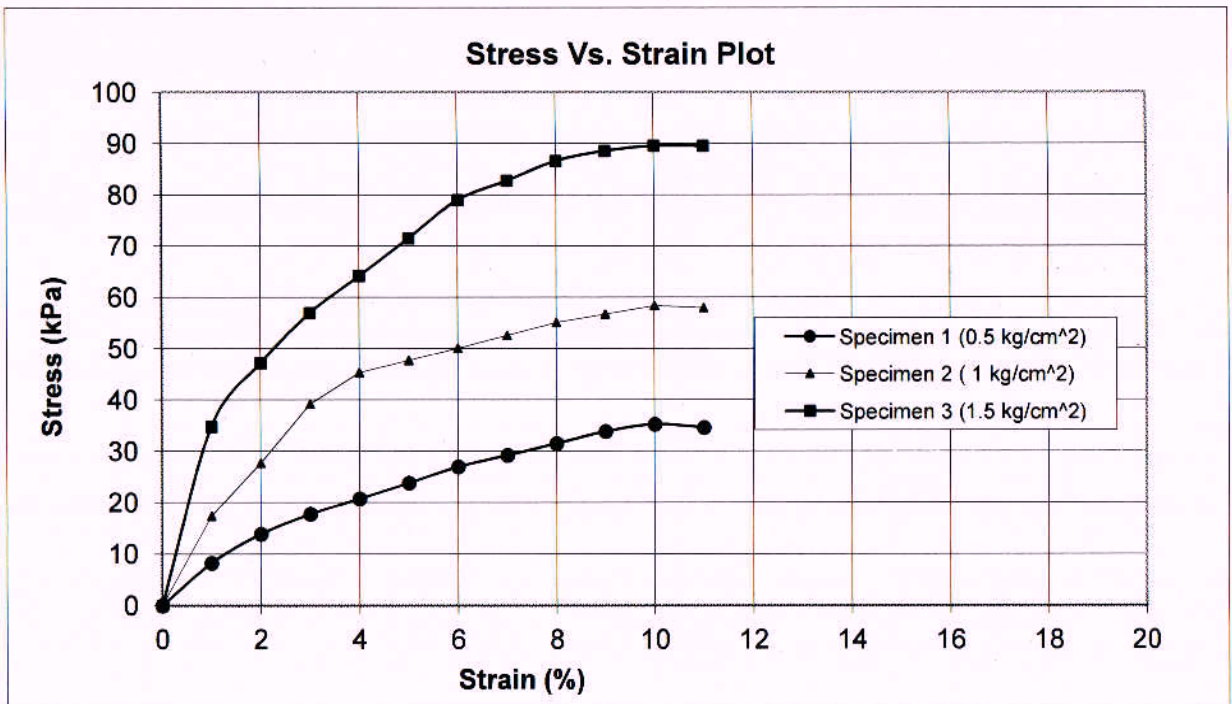
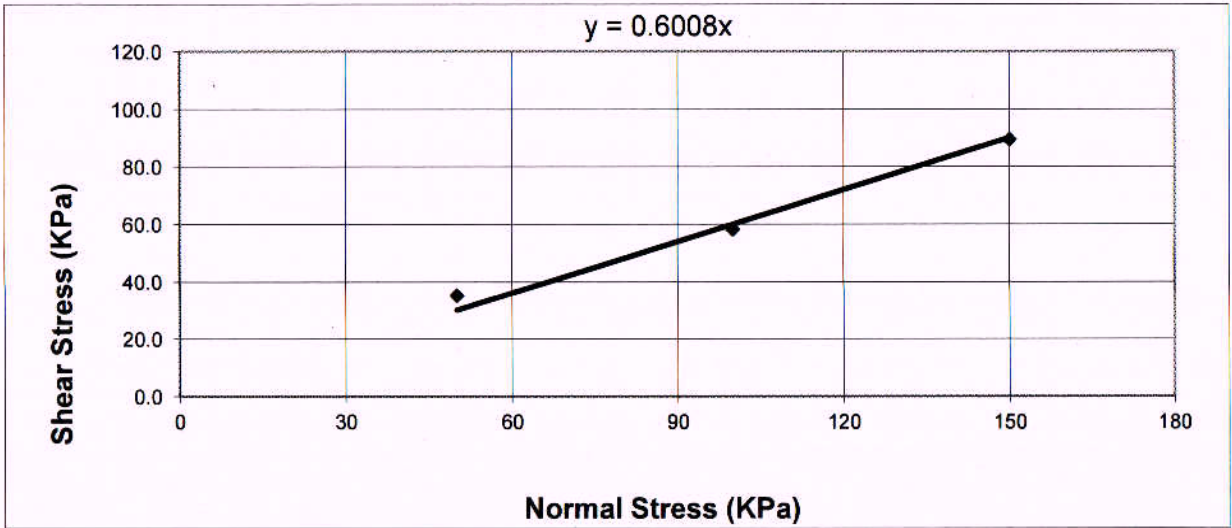
Test Result

c = 0.0 kPa
φ = 32.4 °

BH No: 1	Chainage 24920	Sample No.: UDS-2	Depth (m): 5.50
Site Ref: Meerut	Job No : 1342		Test Report No: XPL/2015-16/02

Tested by: <i>B. W. Singh</i>	Checked by: <i>R. M.</i>	Authorised Signatory: <i>[Signature]</i>
Date: 28/5/15	Date: 18/8/15	Date: 18/8/15

DIRECT SHEAR TEST RESULT
I.S.: 2720 : PART XIII



Sample Details

Dry-density, (mg/m³) = 1.46
Brownish Silty SAND(SM)

Test Result

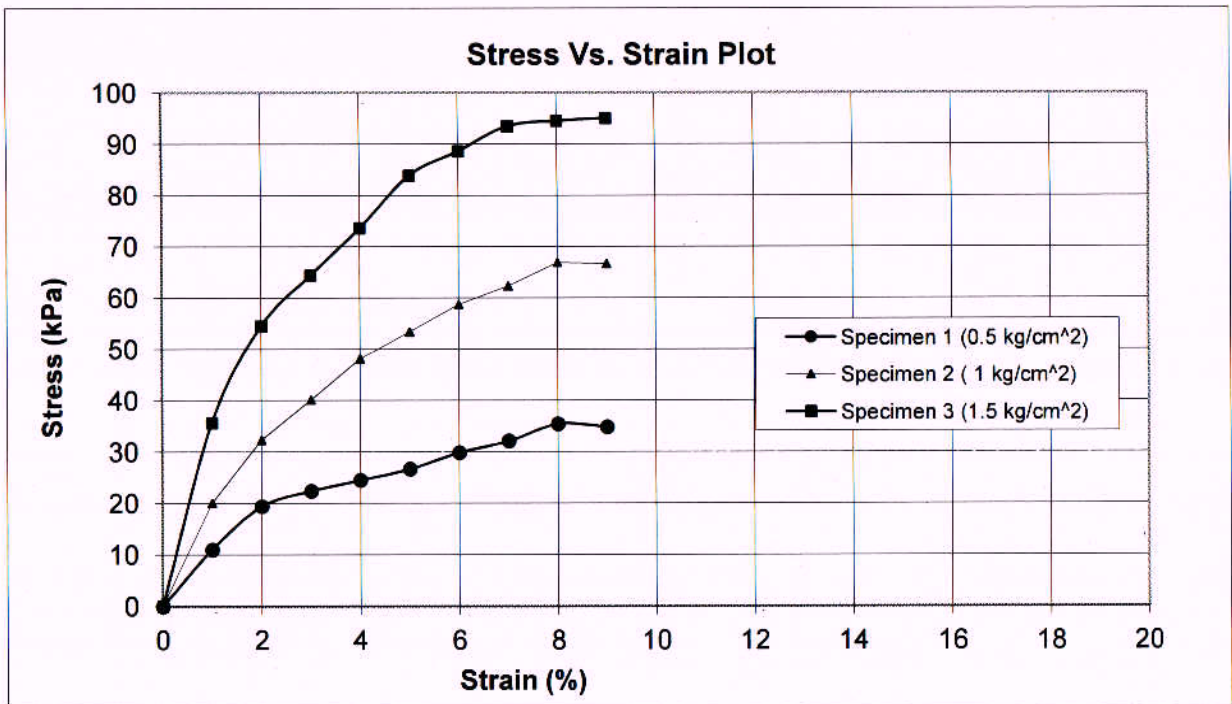
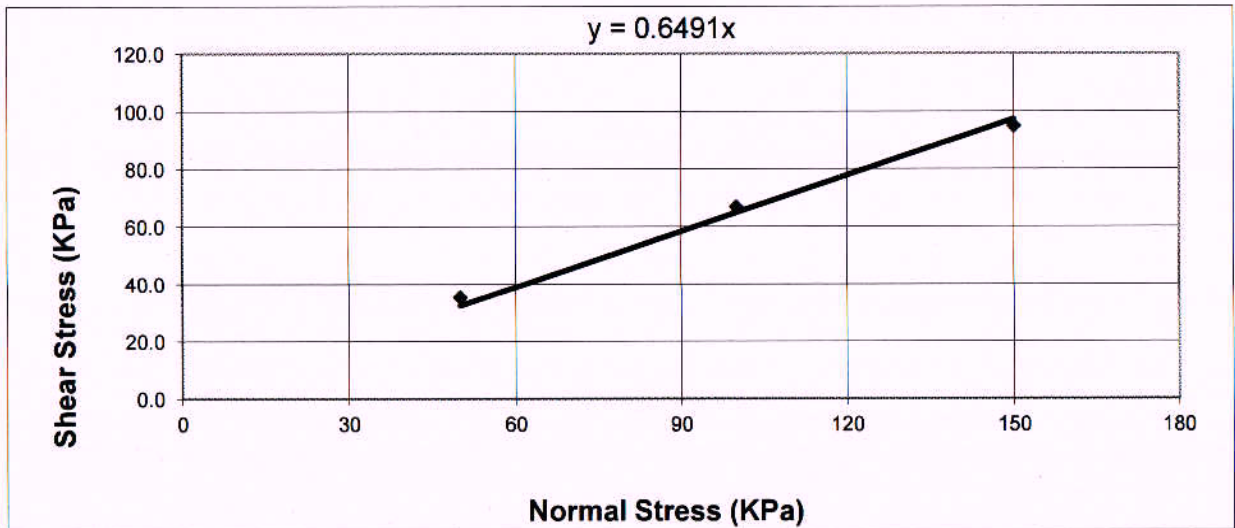
$c = 0.0$ kPa
 $\phi = 31.0^\circ$

BH No: 1	Chainage 25760	Sample No.: SPT-2	Depth (m): 3.00
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Site Ref: Meerut	Job No: 1342
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Test Report No: XPL/2015-16/02

Tested by: <i>Bainsingh</i>	Checked by:	Authorised Signatory:
Date: <i>28/5/15</i>	Date: <i>18/8/15</i>	Date: <i>18/8/15</i>



Sample Details

Dry-density, (mg/m³) = 1.52
Brownish Silty SAND(SM)

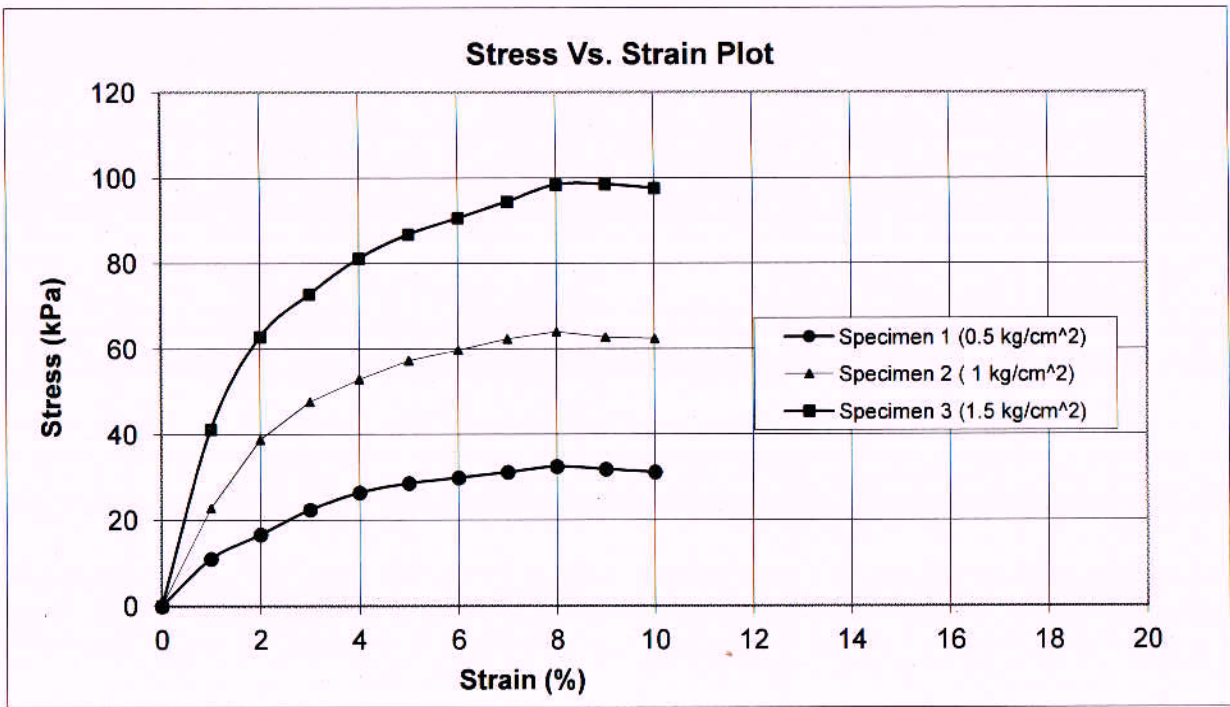
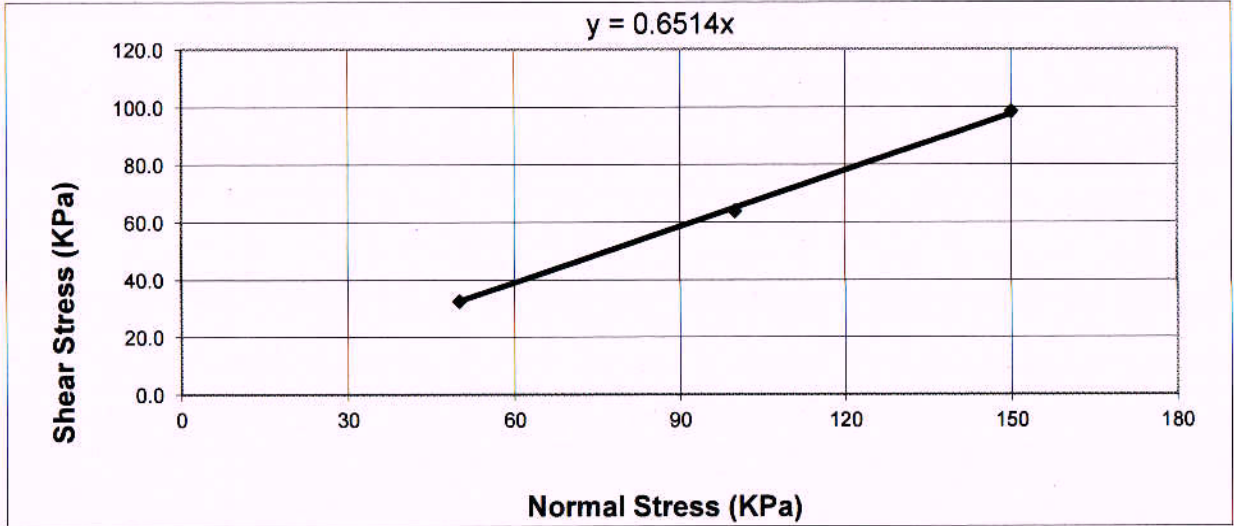
Test Result

c = 0.0 kPa
 $\phi = 33.0^\circ$

BH No: 1	Chainage 25760	Sample No.: SPT-4	Depth (m): 6.00
Site Ref: Meerut	Job No: 1342		Test Report No: XPL/2015-16/02

Tested by: <i>Bhimsingh</i>	Checked by: <i>RM</i>	Authorised Signatory: <i>[Signature]</i>
Date: <i>28/8/15</i>	Date: <i>18/8/15</i>	Date: <i>18/8/15</i>

DIRECT SHEAR TEST RESULT
I.S.: 2720 : PART XIII



Sample Details

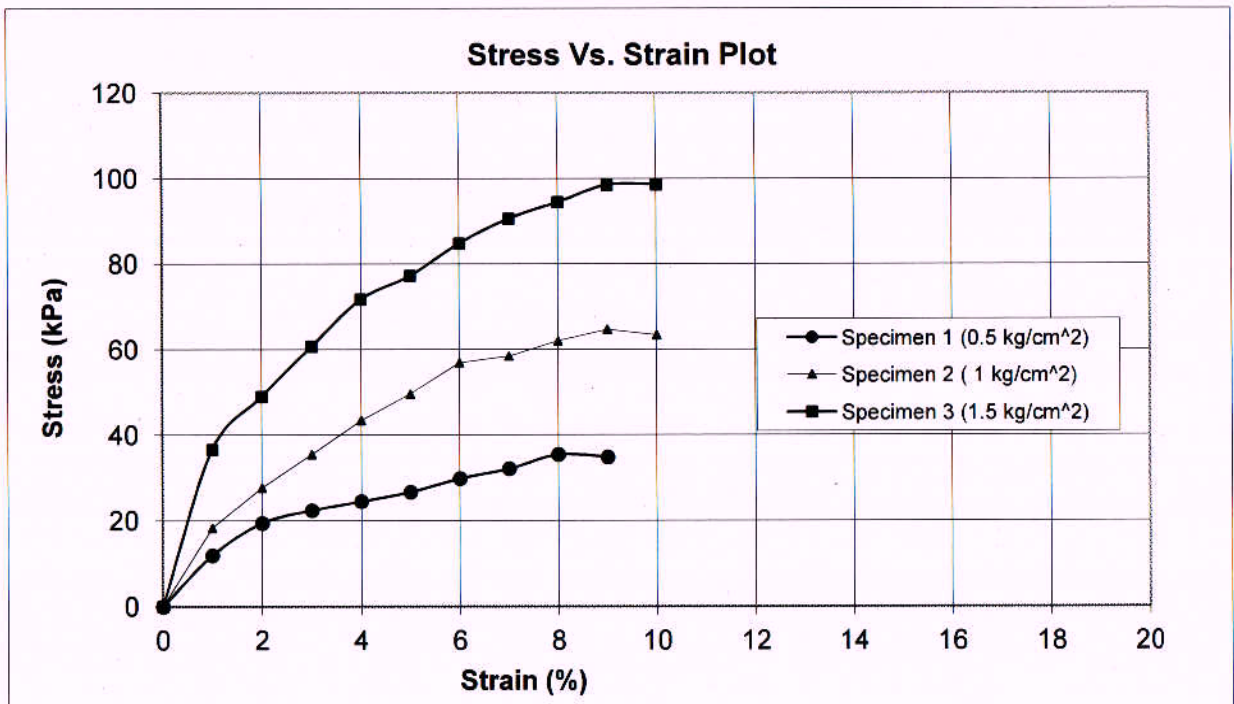
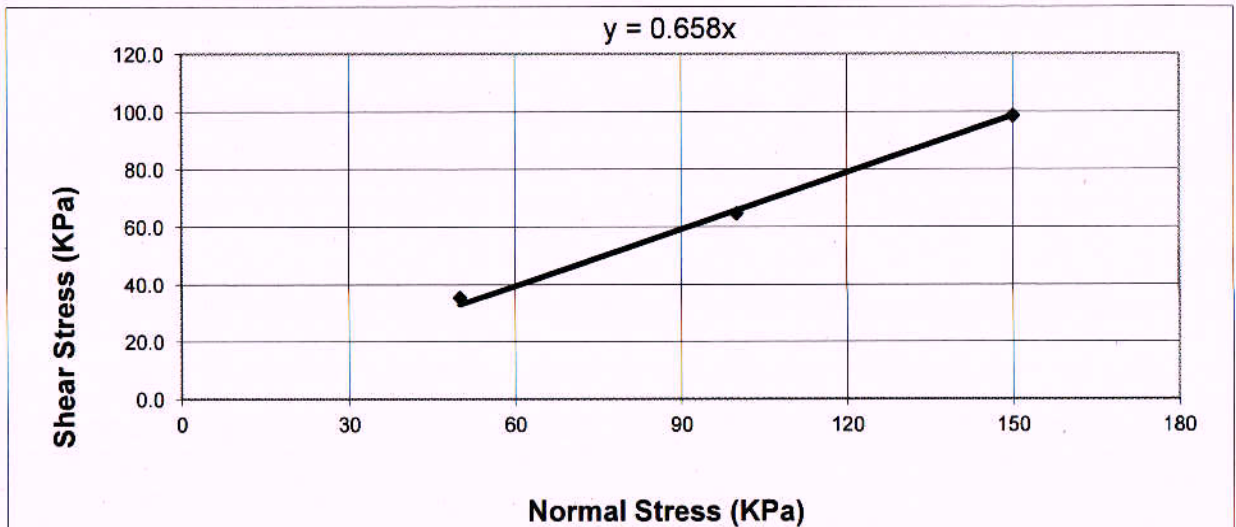
Dry-density, (mg/m³) = 1.53
Poorly Graded SAND(SP)

Test Result

c = 0.0 kPa
φ = 33.1 °

BH No: 1	Chainage 25760	Sample No.: SPT-7	Depth (m): 10.50
Site Ref: Meerut	Job No : 1342		Test Report No: XPL/2015-16/02

Tested by: <i>Bhimsingh</i>	Checked by: <i>AM</i>	Authorised Signatory: <i>[Signature]</i>
Date: 28/5/15	Date: 18/8/15	Date: 19/8/15



Sample Details

Dry-density, (mg/m³) = 1.90
Poorly Graded SAND(SP-SM)

Test Result

c = 0.0 kPa
φ = 33.3 °

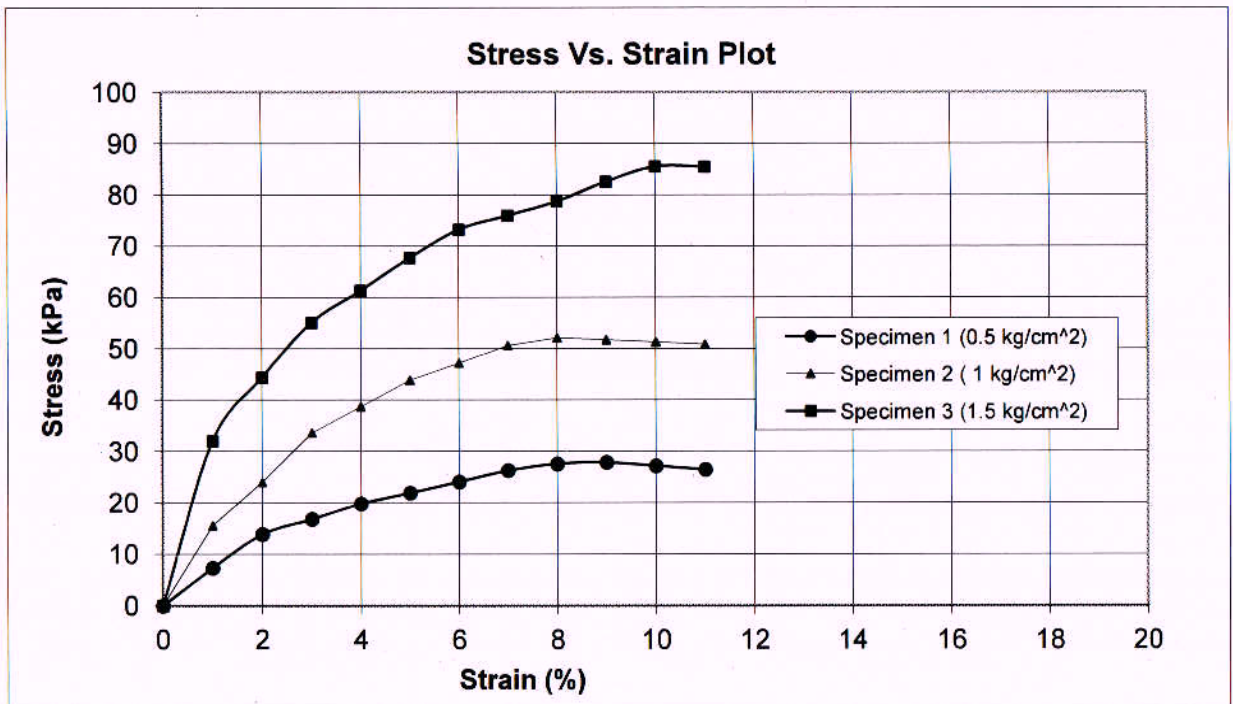
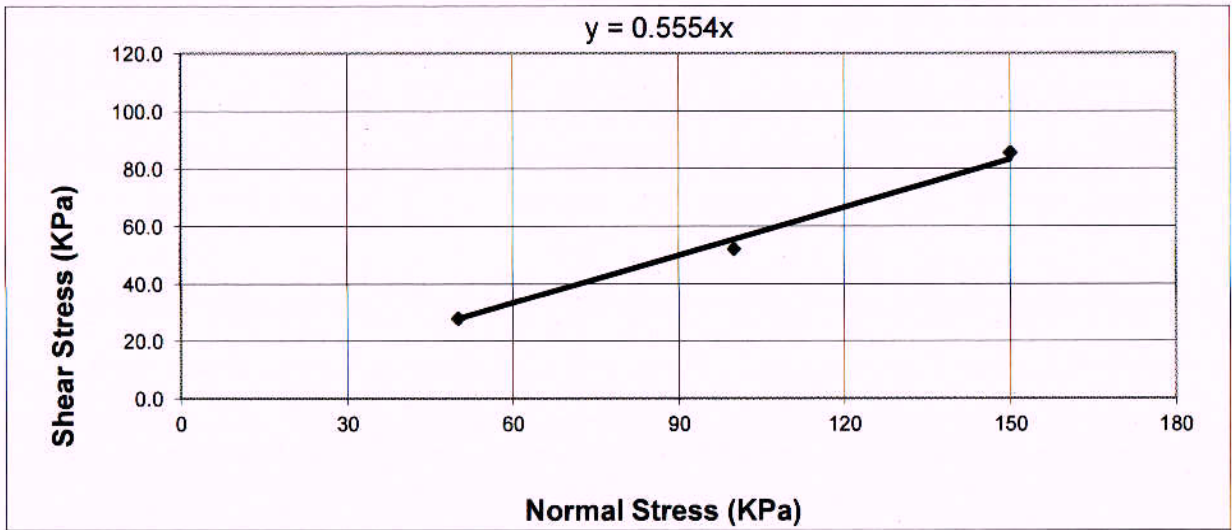
BH No: 1	Chainage 25760	Sample No.: UDS-2	Depth (m): 5.50
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Site Ref: Meerut	Job No: 1342
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Test Report No: XPL/2015-16/02

Tested by: <i>Beinsingh</i>	Checked by: <i>RN</i>	Authorised Signatory: <i>[Signature]</i>
Date: 29/5/15	Date: 18/8/15	Date: 18/8/15

DIRECT SHEAR TEST RESULT
I.S.: 2720 : PART XIII



Sample Details

Dry-density, (mg/m³) = 1.52
Brownish Sandy SILT (ML)

Test Result

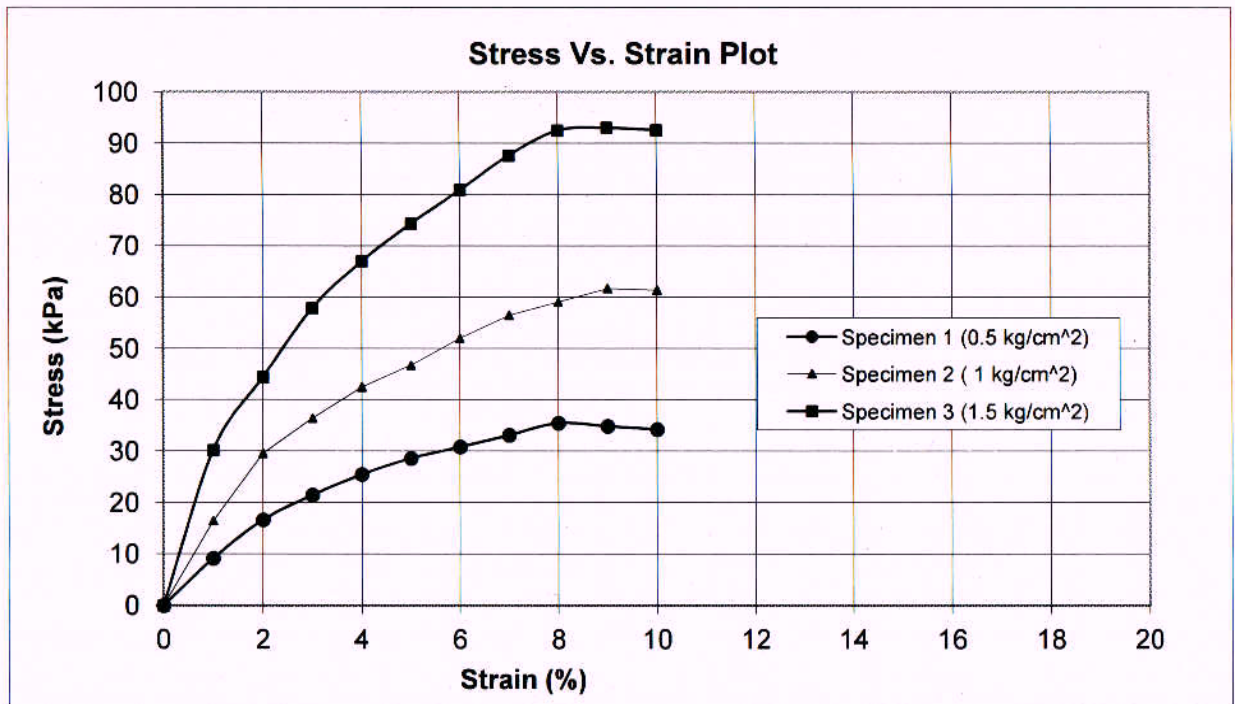
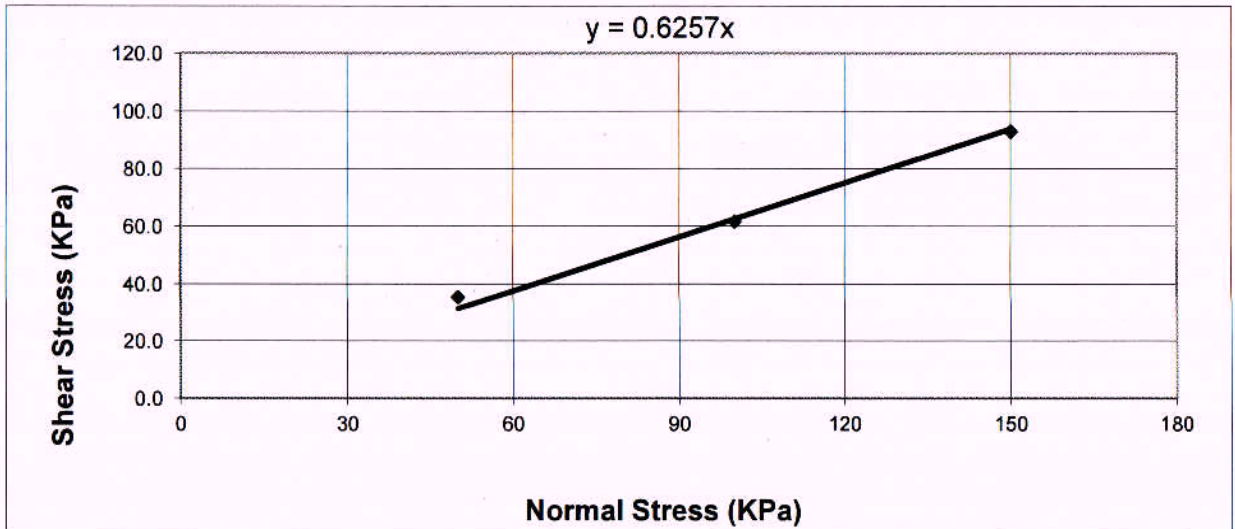
$c = 0.0$ kPa
 $\phi = 29.0^\circ$

BH No: 1	Chainage 26530	Sample No.: SPT-2	Depth (m): 3.00
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Site Ref: Meerut	Job No: 1342
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Test Report No: XPL/2015-16/02

Tested by: <i>Rajiv Singh</i>	Checked by:	Authorised Signatory: <i>[Signature]</i>
Date: <i>29/5/15</i>	Date: <i>18/8/15</i>	Date: <i>18/8/15</i>



Sample Details

Dry-density, (mg/m³) = 1.70
Brownish Silty SAND(SM)

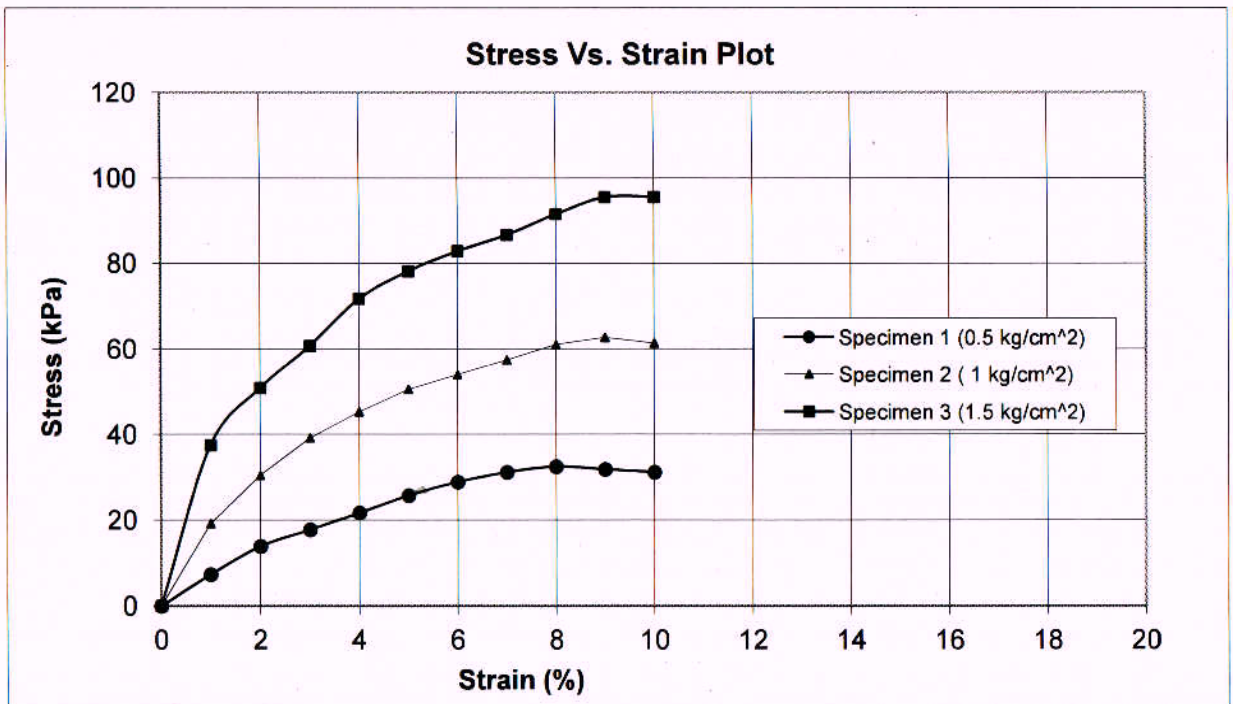
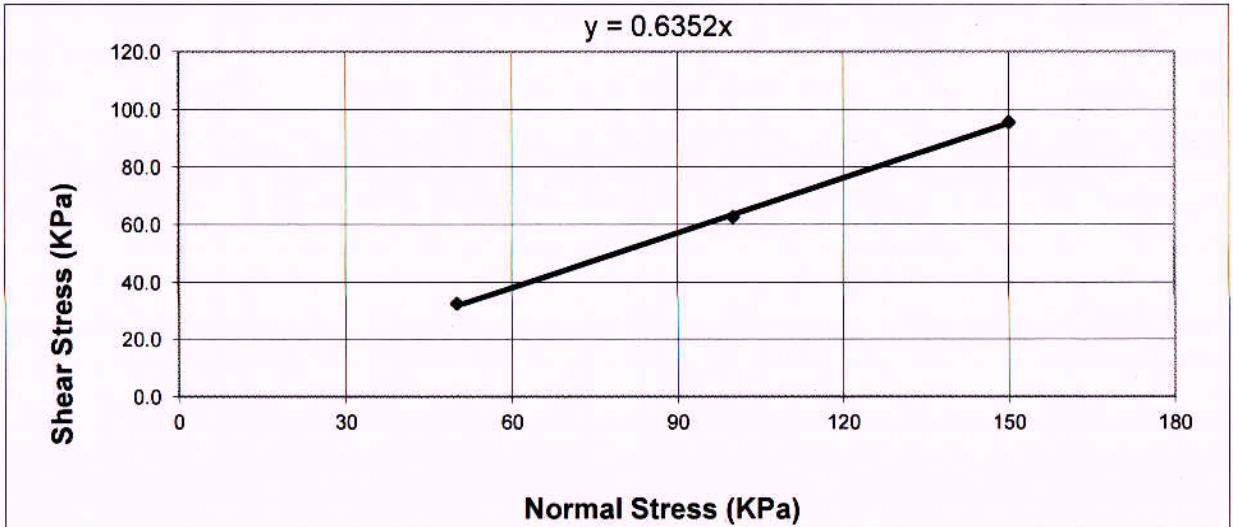
Test Result

$c = 0.0$ kPa
 $\phi = 32.0^\circ$

BH No: 1	Chainage 26530	Sample No.: SPT-4	Depth (m): 6.00
Site Ref: Meerut	Job No: 1342		Test Report No: XPL/2015-16/02

Tested by: *Pravin Singh* Checked by: *AM* Authorised Signatory: *[Signature]*
Date: 29/5/15 Date: 18/8/15 Date: 18/8/15

DIRECT SHEAR TEST RESULT
I.S.: 2720 : PART XIII



Sample Details

Dry-density, (mg/m³) = 1.59
Poorly Graded SAND (SP-SM)

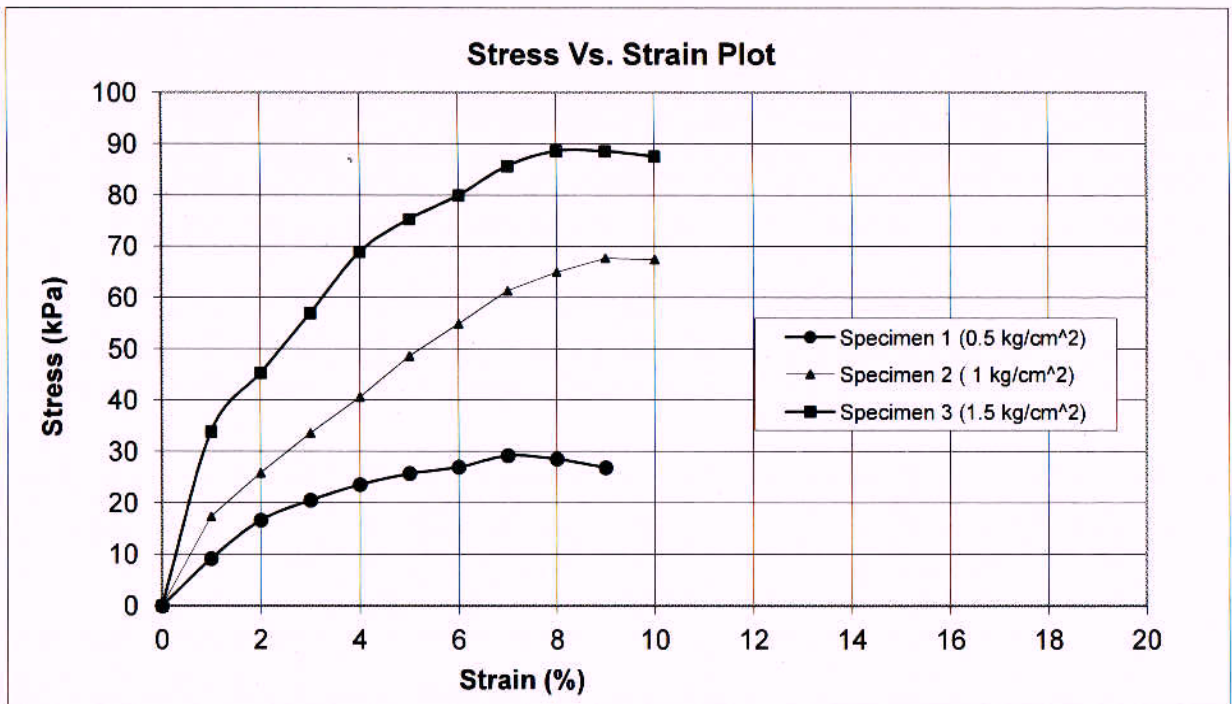
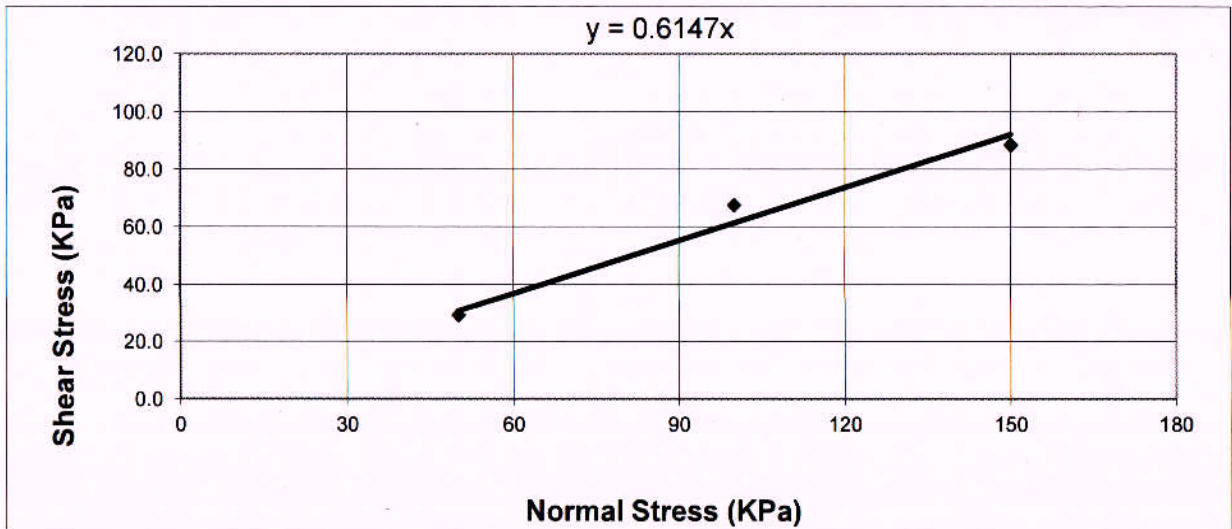
Test Result

$c = 0.0$ kPa
 $\phi = 32.4^\circ$

BH No: 1	Chainage 26530	Sample No.: SPT-7	Depth (m): 10.50
Site Ref: Meerut	Job No: 1342		Test Report No: XPL/2015-16/02

Tested by: <i>Brij Singh</i>	Checked by: <i>AM</i>	Authorised Signatory: <i>[Signature]</i>
Date: 29/5/15	Date: 18/8/15	Date: 18/8/15

DIRECT SHEAR TEST RESULT
I.S.: 2720 : PART XIII



Sample Details

Dry-density, (mg/m³) = 1.86
Poorly Graded SAND (SP-SM)

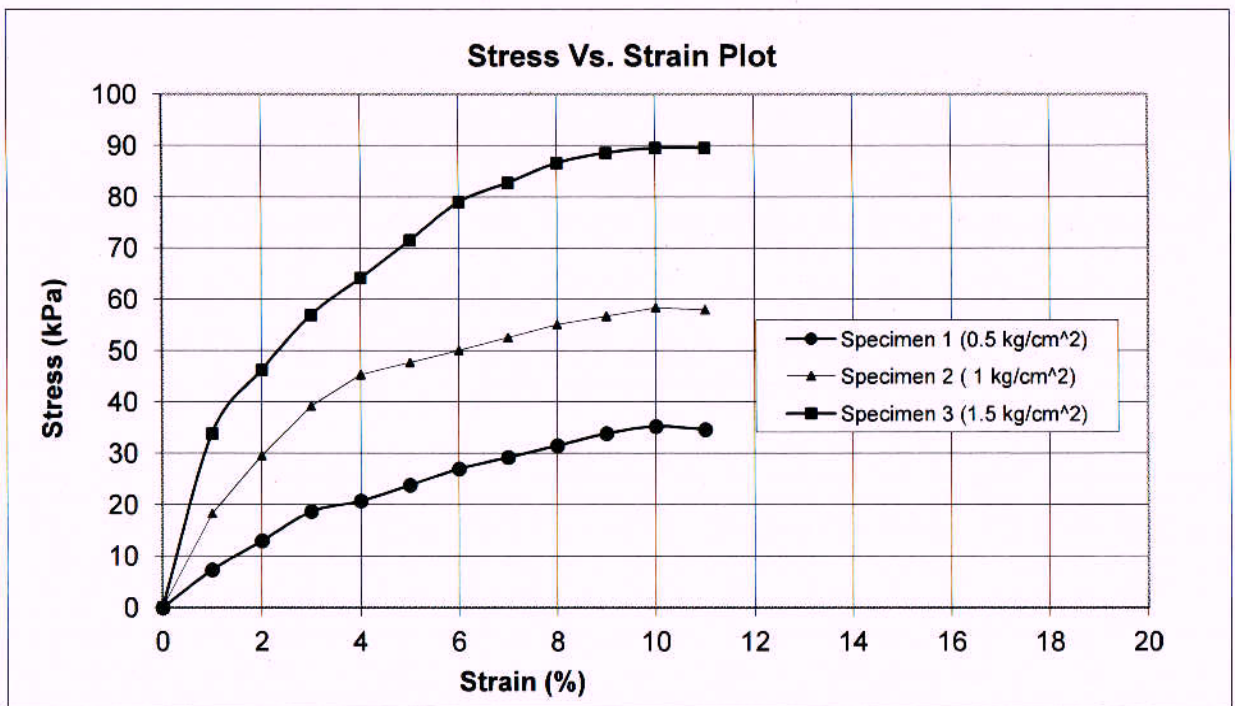
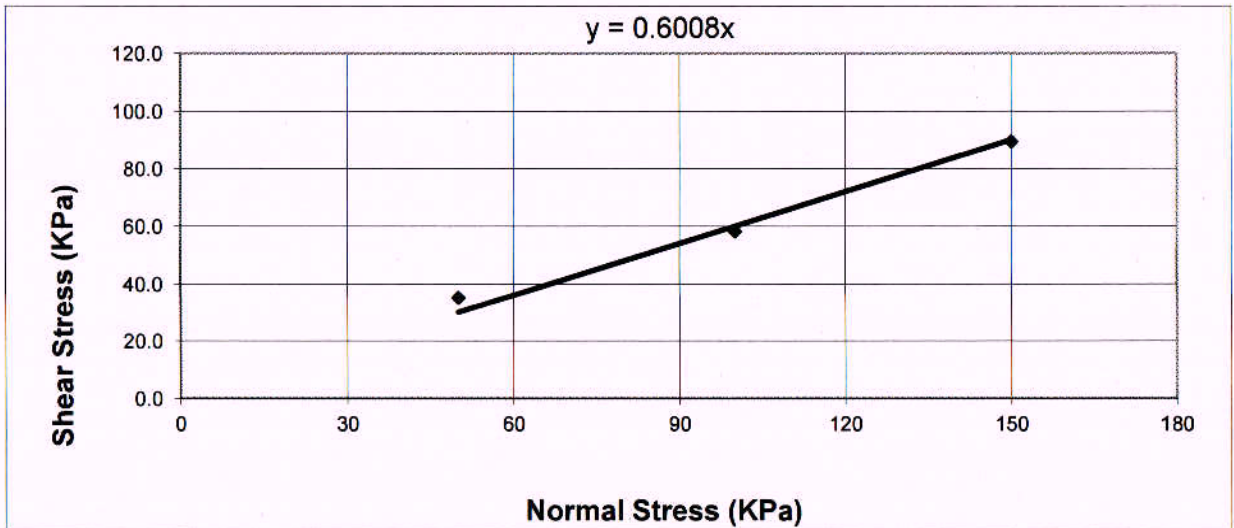
Test Result

$c = 0.0$ kPa
 $\phi = 31.5^\circ$

BH No: 1	Chainage 26530	Sample No.: UDS-2	Depth (m): 5.50
Site Ref: Meerut	Job No: 1342		Test Report No: XPL/2015-16/02

Tested by: *Brin Singh* Checked by: *RM* Authorised Signatory: *[Signature]*
Date: 29/5/15 Date: 18/8/15 Date: 18/8/15

DIRECT SHEAR TEST RESULT
I.S.: 2720 : PART XIII



Sample Details

Dry-density, (mg/m³) = 1.49
Brownish Silty SAND(SM)

Test Result

$c = 0.0$ kPa
 $\phi = 31.0^\circ$

BH No: 1	Chainage 27290	Sample No.: SPT-2	Depth (m): 3.00
Site Ref: Meerut	Job No: 1342		Test Report No: XPL/2015-16/02

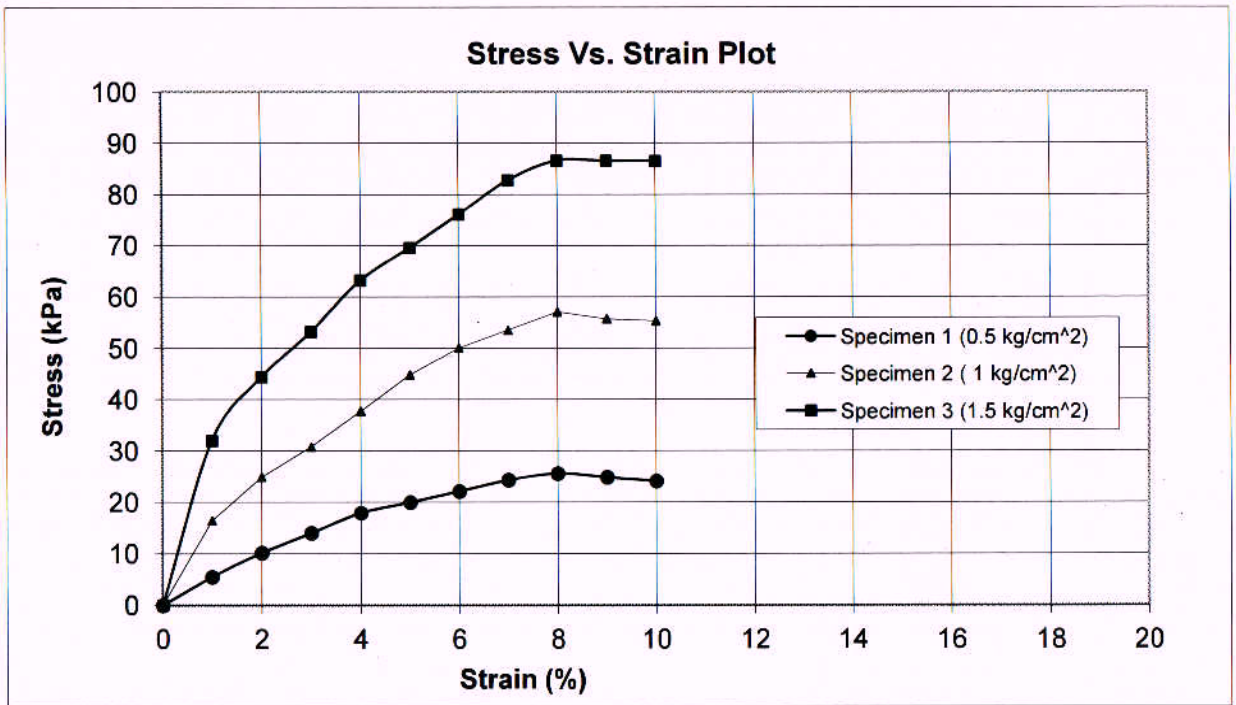
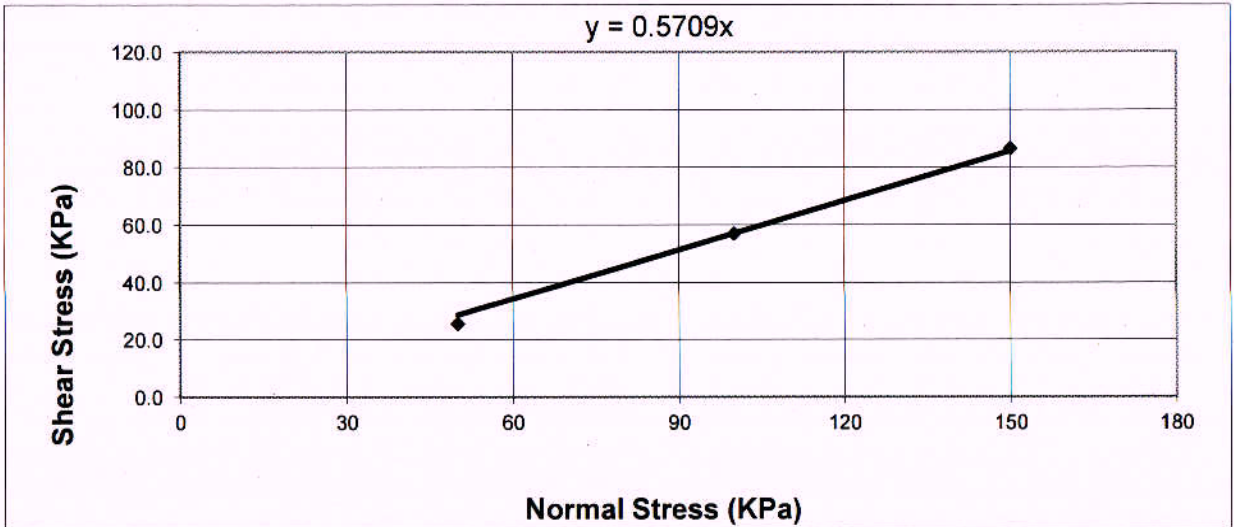
Tested by: *Prin Singh*

Checked by: *Ran*
Date: *18/8/15*

Authorised Signatory: *[Signature]*
Date: *18/8/15*

Date: *29/5/15*

DIRECT SHEAR TEST RESULT
I.S.: 2720 : PART XIII



Sample Details

Dry-density, (mg/m³) = 1.81
Brownish Sandy SILT (ML)

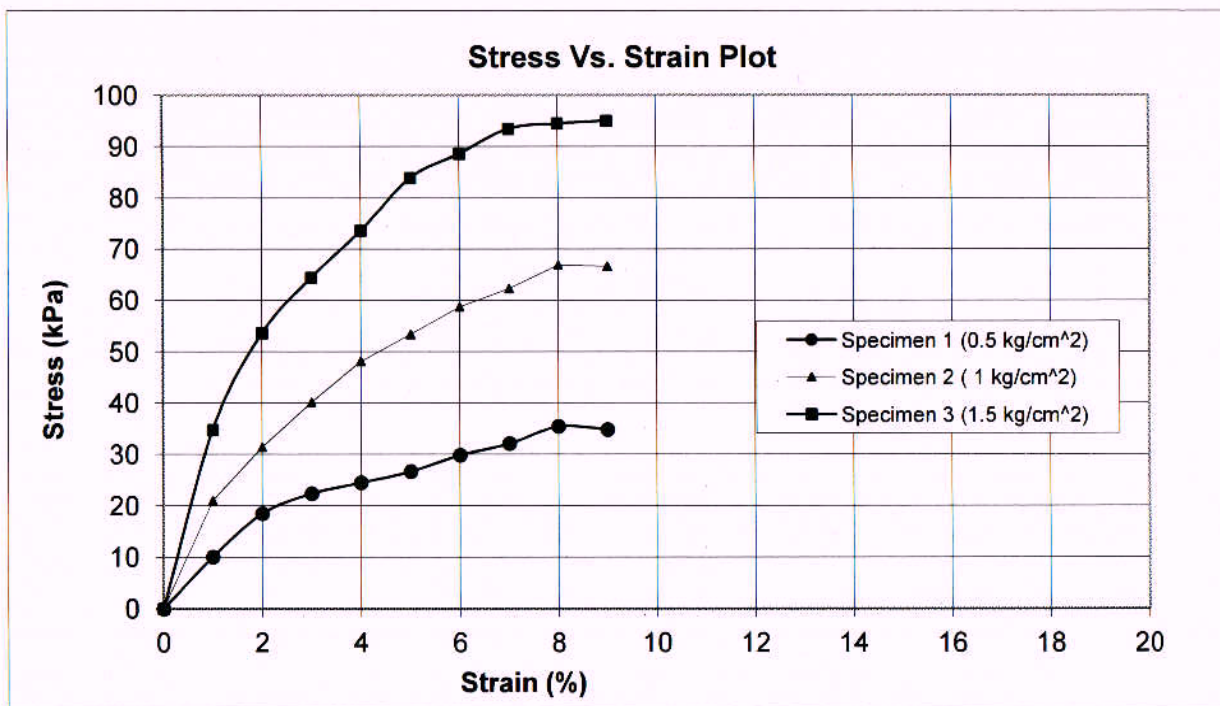
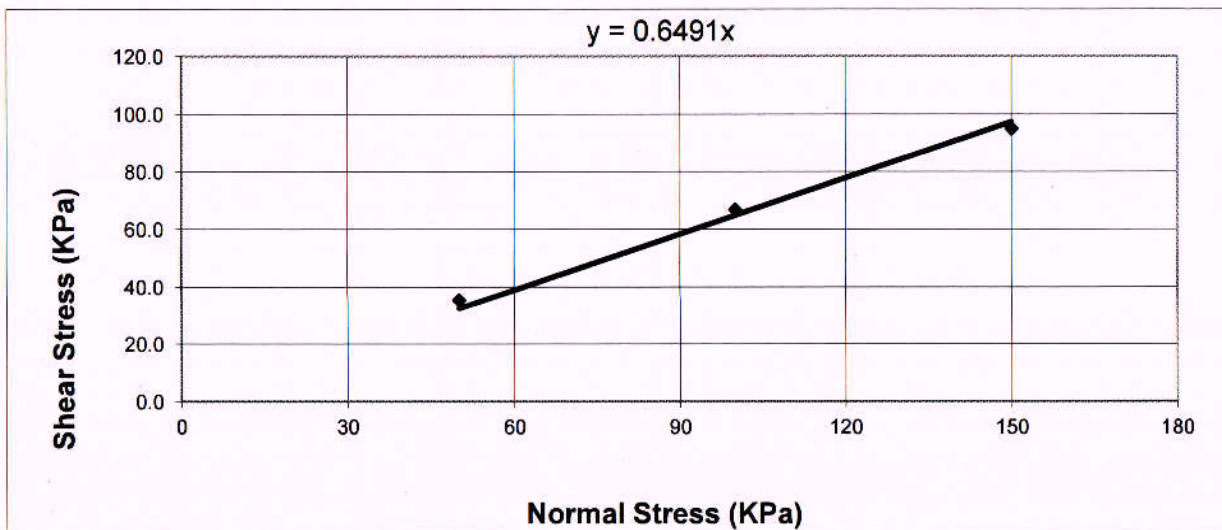
Test Result

$c = 0.0$ kPa
 $\phi = 29.7^\circ$

BH No: 1	Chainage 27290	Sample No.: SPT-6	Depth (m): 9.00
Site Ref: Meerut	Job No: 1342		Test Report No: XPL/2015-16/02

Tested by: <i>Prakash Singh</i>	Checked by:	Authorised Signatory: <i>[Signature]</i>
Date: <i>29/8/15</i>	Date: <i>18/8/15</i>	Date: <i>18/8/15</i>

DIRECT SHEAR TEST RESULT
I.S.: 2720 : PART XIII



Sample Details

Dry-density, (mg/m³) = 2.02
Poorly Graded SAND (SP-SM)

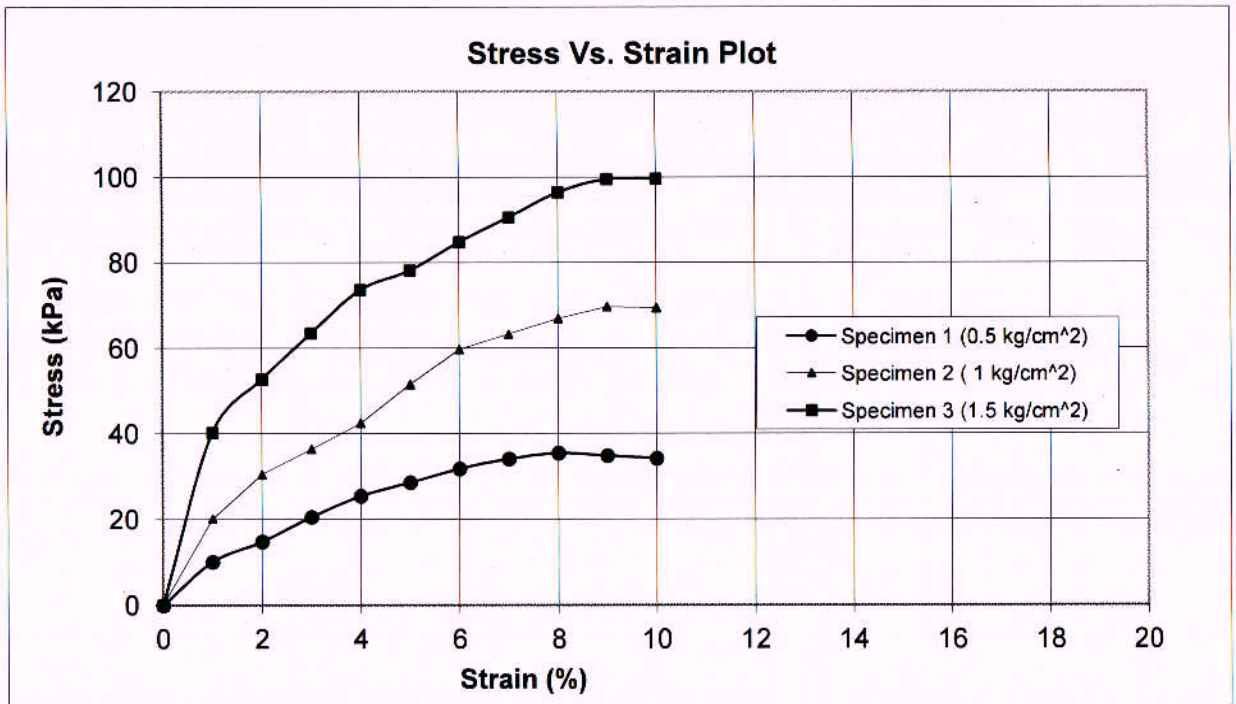
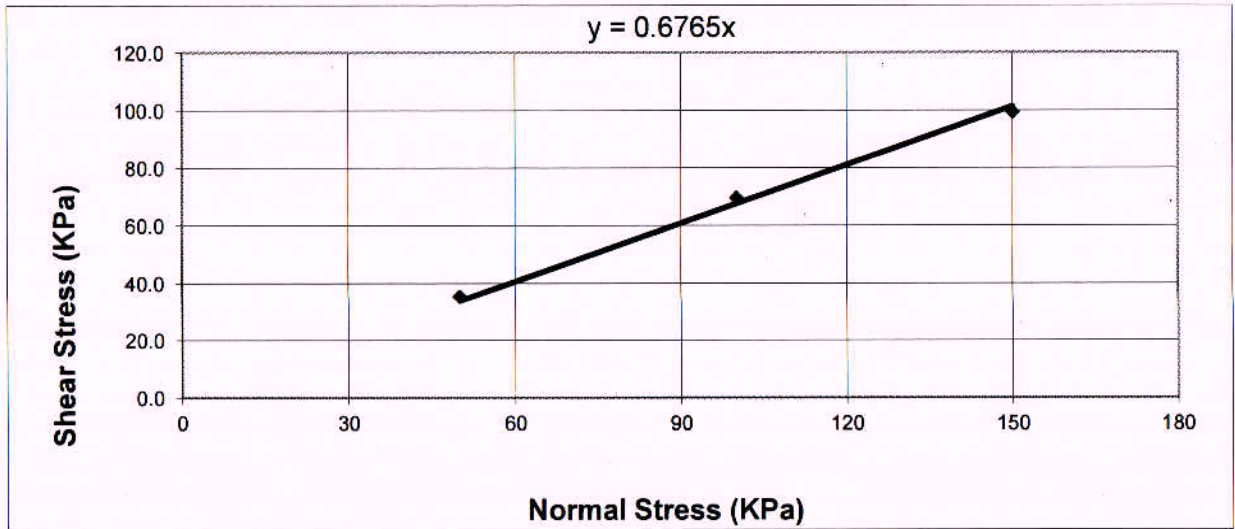
Test Result

c = 0.0 kPa
 $\phi = 33.0^\circ$

BH No: 1	Chainage 27290	Sample No.: SPT-11	Depth (m): 18.00
Site Ref: Meerut	Job No: 1342		Test Report No: XPL/2015-16/02

Tested by: *Beingsingh* Checked by: *RM* Authorised Signatory: *[Signature]*
Date: 29/5/15 Date: 18/8/15 Date: 18/8/15

DIRECT SHEAR TEST RESULT
I.S.: 2720 : PART XIII



Sample Details

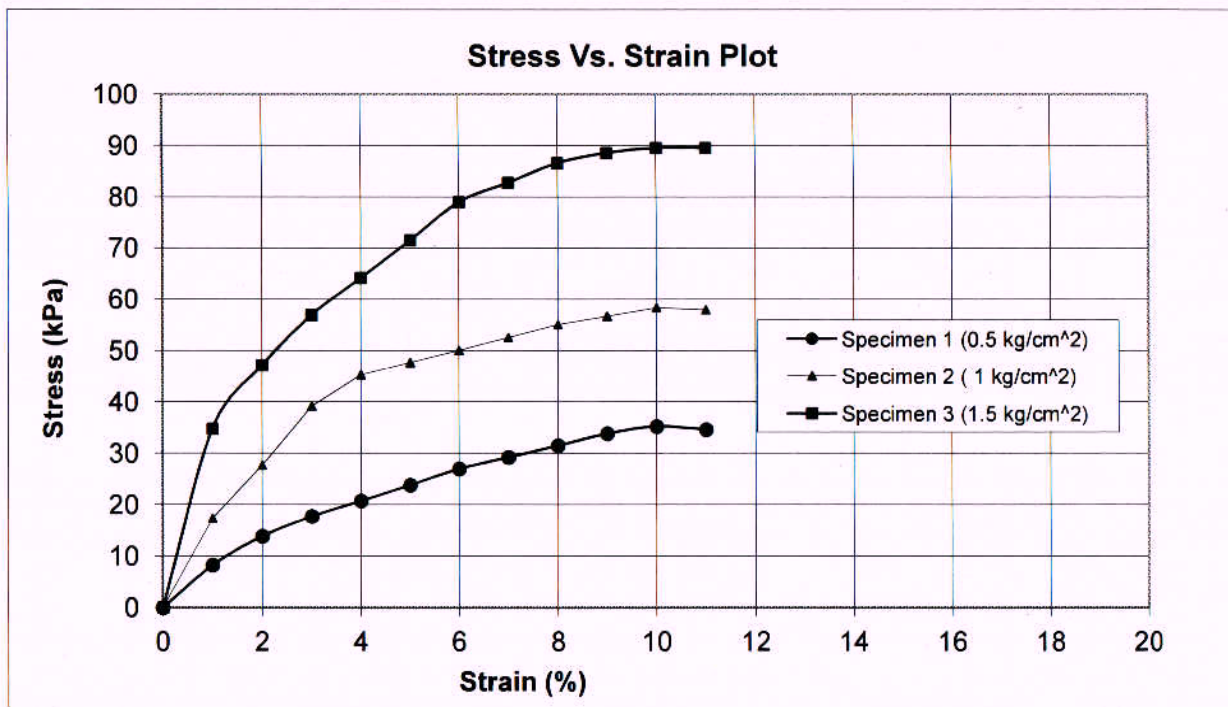
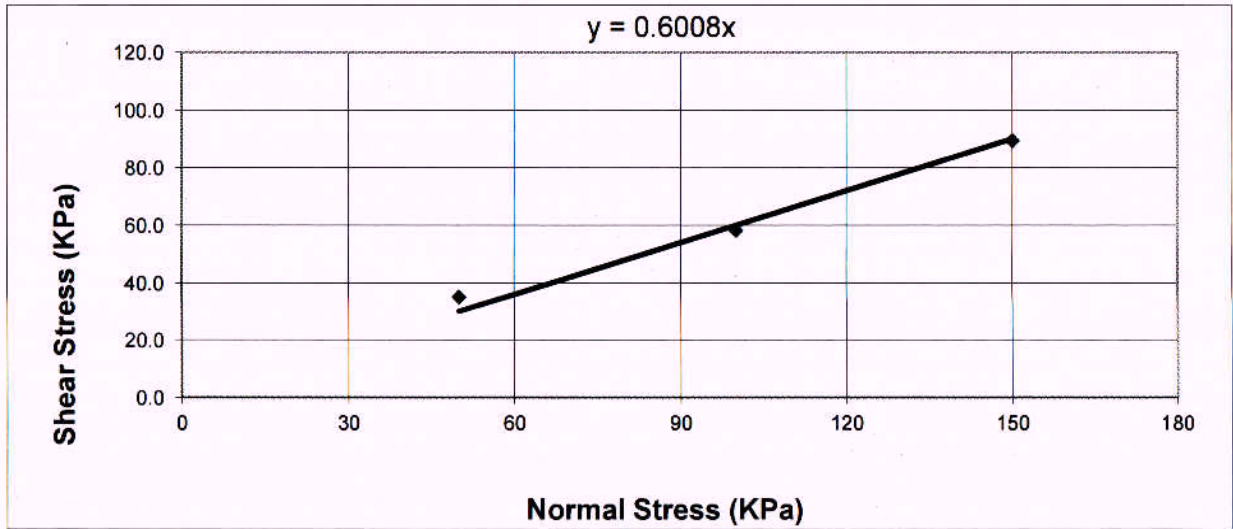
Dry-density, (mg/m³) = 2.04
Poorly Graded SAND (SP-SM)

Test Result

$c = 0.0$ kPa
 $\phi = 34.0^\circ$

BH No: 1	Chainage 27290	Sample No.: SPT-16	Depth (m): 25.50
Site Ref: Meerut	Job No: 1342		Test Report No: XPL/2015-16/02

Tested by: <i>Rainishan</i>	Checked by: <i>AM</i>	Authorised Signatory: <i>[Signature]</i>
Date: 30/5/15	Date: 18/8/15	Date: 18/8/15



Sample Details

Dry-density, (mg/m³) = 1.46
Brownish Silty SAND(SM)

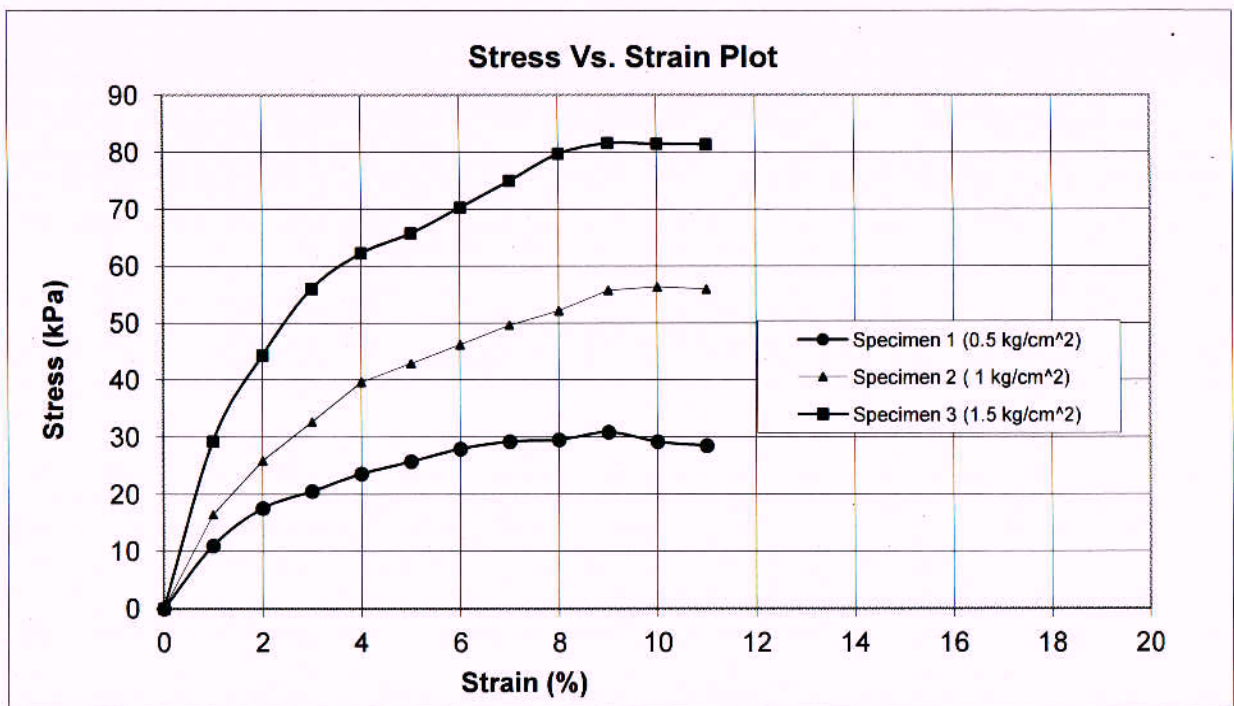
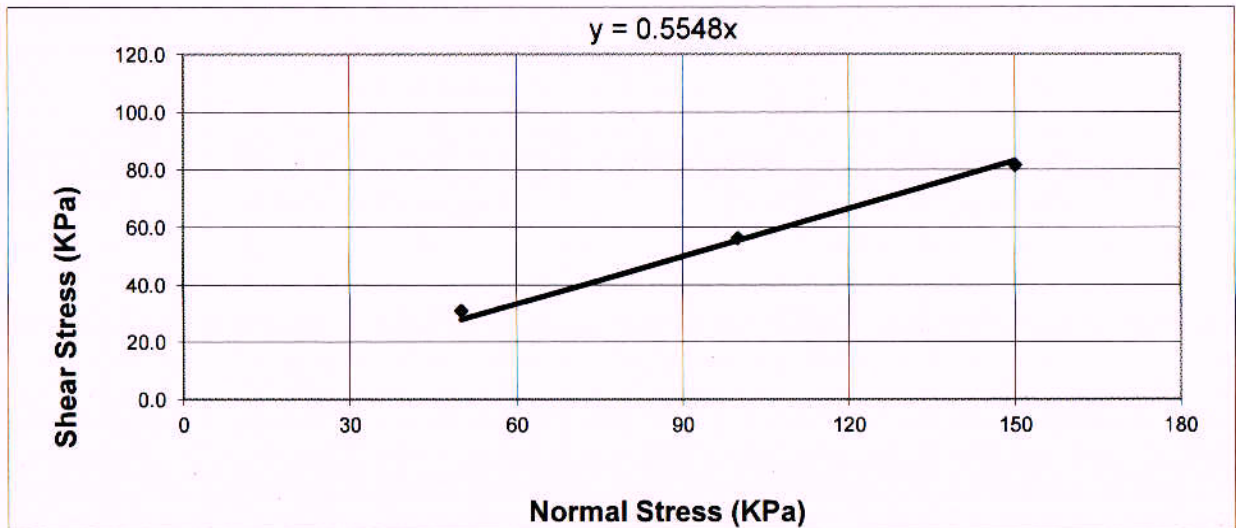
Test Result

$c = 0.0$ kPa
 $\phi = 31.0^\circ$

BH No: 1	Chainage 27290	Sample No.: UDS-1	Depth (m): 2.50
Site Ref: Meerut	Job No: 1342		Test Report No: XPL/2015-16/02

Tested by: *Revan Singh* Checked by: *[Signature]* Authorised Signatory: *[Signature]*
Date: 30/5/15 Date: 18/8/15 Date: 18/8/15

DIRECT SHEAR TEST RESULT
I.S.: 2720 : PART XIII



Sample Details

Dry-density, (mg/m³) = 1.70
Brownish Sandy SILT (ML)

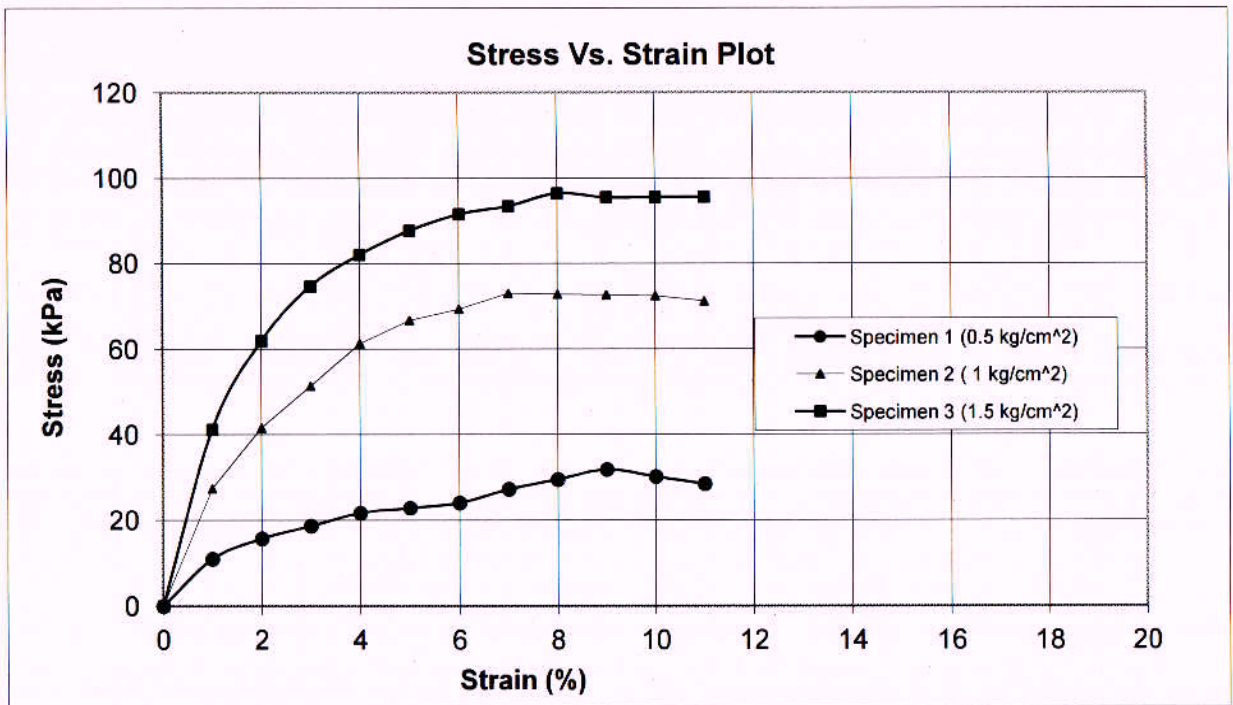
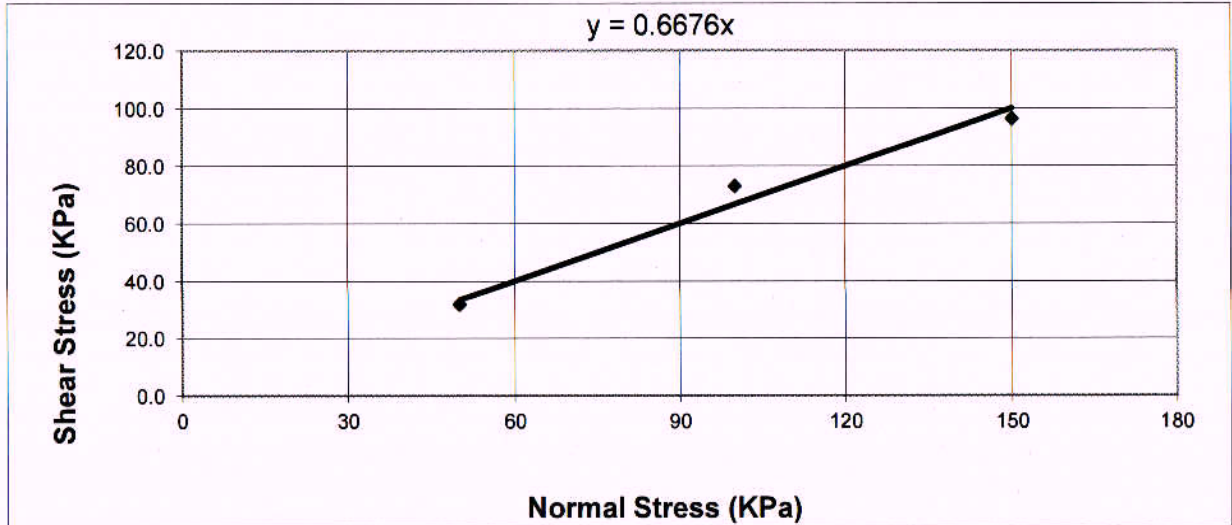
Test Result

$c = 0.0$ kPa
 $\phi = 29.0^\circ$

BH No: 2	Chainage 27290	Sample No.: SPT-2	Depth (m): 3.00
Site Ref: Meerut	Job No: 1342		Test Report No: XPL/2015-16/02

Tested by: *Rajan Singh* Checked by: *AN* Authorised Signatory: *[Signature]*
Date: 30/5/15 Date: 18/8/15 Date: 18/8/15

DIRECT SHEAR TEST RESULT
I.S.: 2720 : PART XIII



Sample Details

Dry-density, (mg/m³) = 2.08
Brownish Silty SAND(SM)

Test Result

$c = 0.0$ kPa
 $\phi = 33.7^\circ$

BH No: 2	Chainage 27290	Sample No.: SPT-11	Depth (m): 16.50
Site Ref: Meerut	Job No: 1342		Test Report No: XPL/2015-16/02

Tested by: *Rajran Singh*

Checked by: *RM*
18/8/15

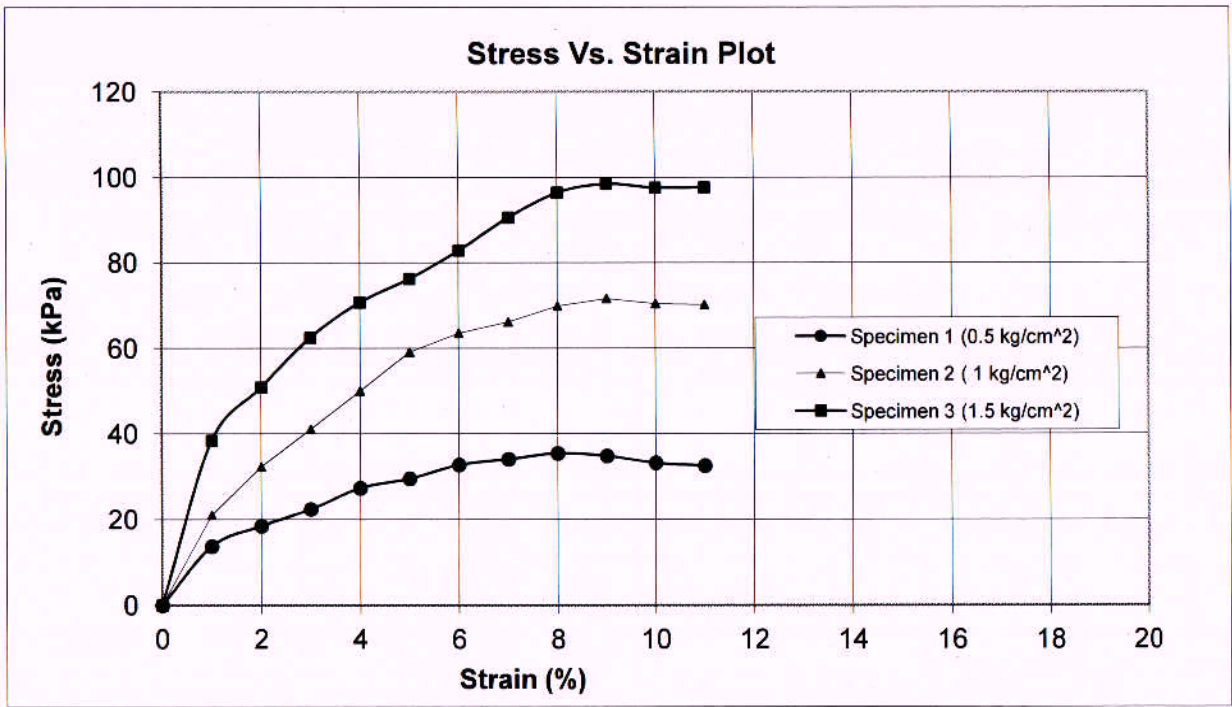
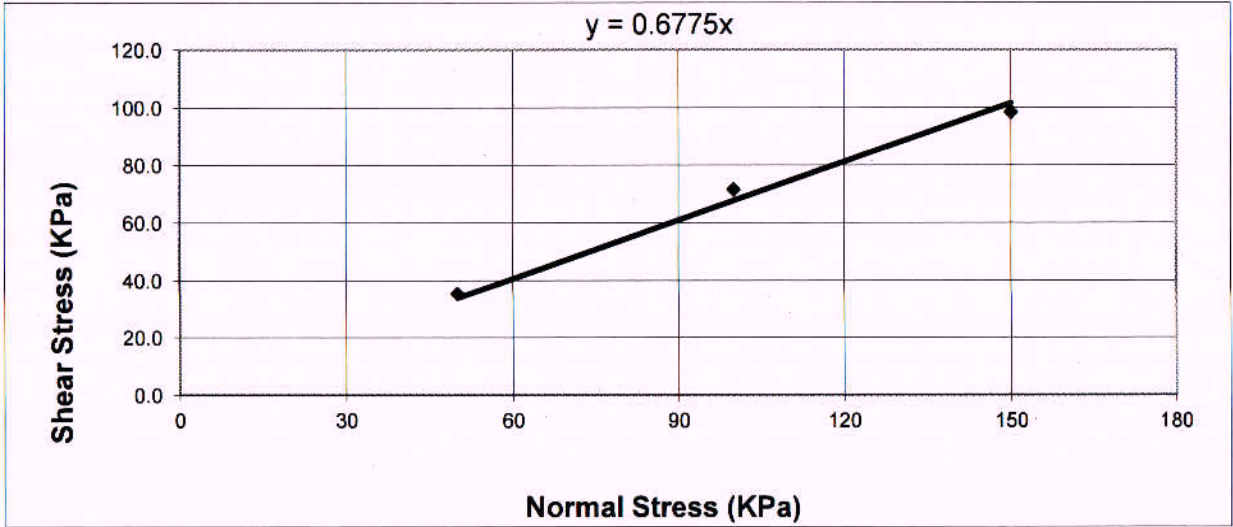
Authorised Signatory: *[Signature]*
Date: *18/8/15*

Date: *30/8/15*

Date:

Date:

DIRECT SHEAR TEST RESULT
I.S.: 2720 : PART XIII



Sample Details

Dry-density, (mg/m³) = 1.62
Poorly Graded SAND (SP-SM)

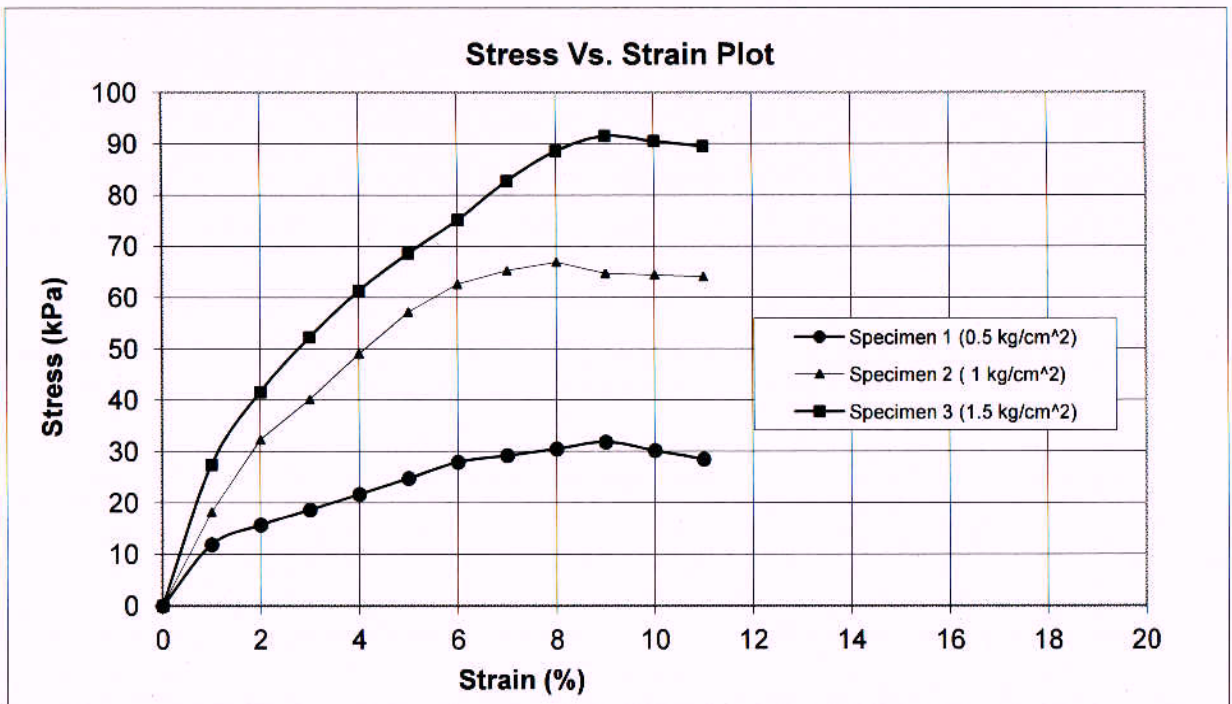
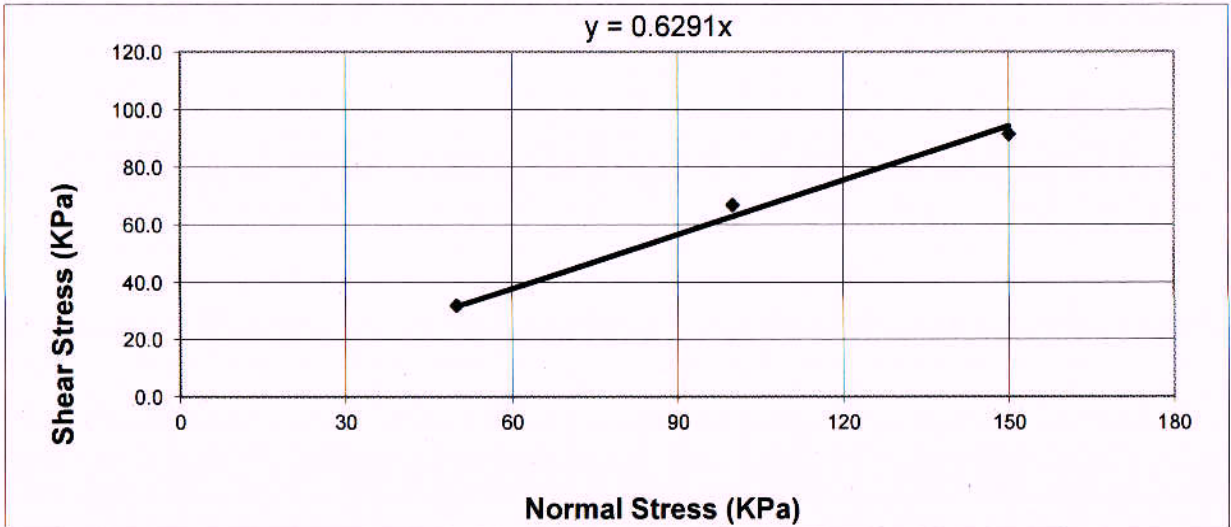
Test Result

$c = 0.0$ kPa
 $\phi = 34.1^\circ$

BH No: 2	Chainage 27290	Sample No.: SPT-19	Depth (m): 28.50
Site Ref: Meerut	Job No: 1342		Test Report No: XPL/2015-16/02

Tested by: <i>Rajan Singh</i>	Checked by: <i>RM</i>	Authorised Signatory: <i>[Signature]</i>
Date: <i>30/8/15</i>	Date: <i>18/8/15</i>	Date: <i>18/8/15</i>

DIRECT SHEAR TEST RESULT
I.S.: 2720 : PART XIII



Sample Details

Dry-density, (mg/m³) = 1.95
Brownish Silty SAND(SM)

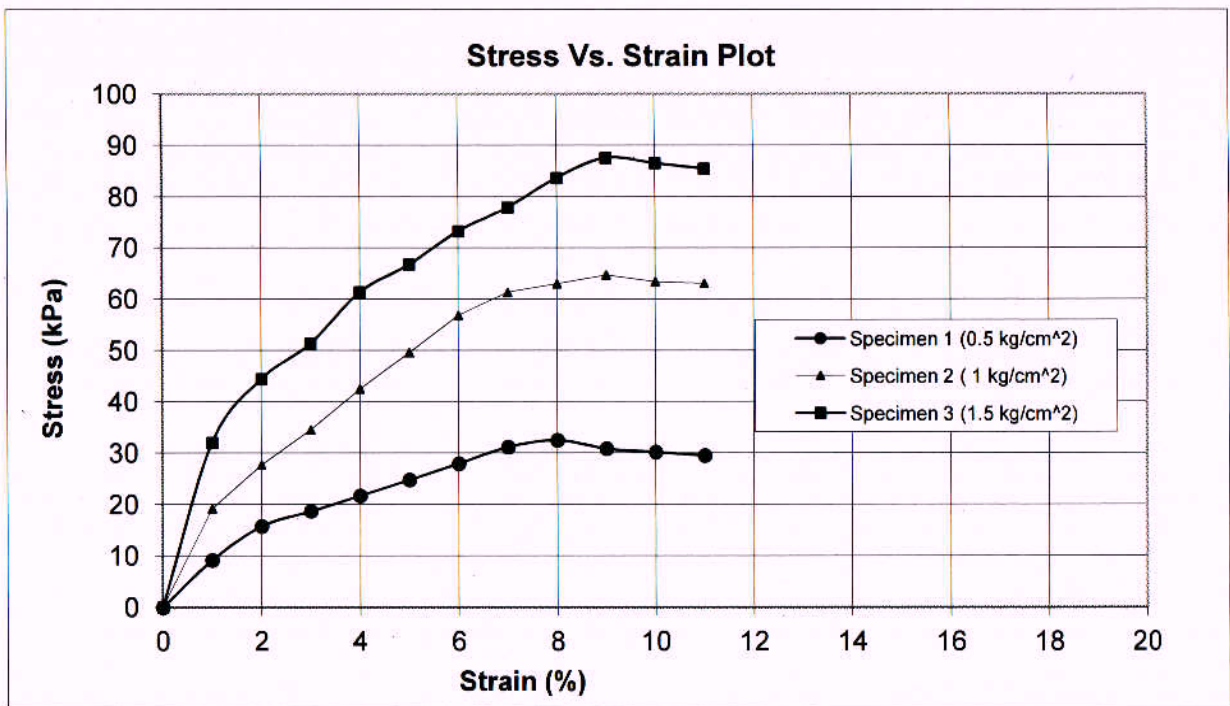
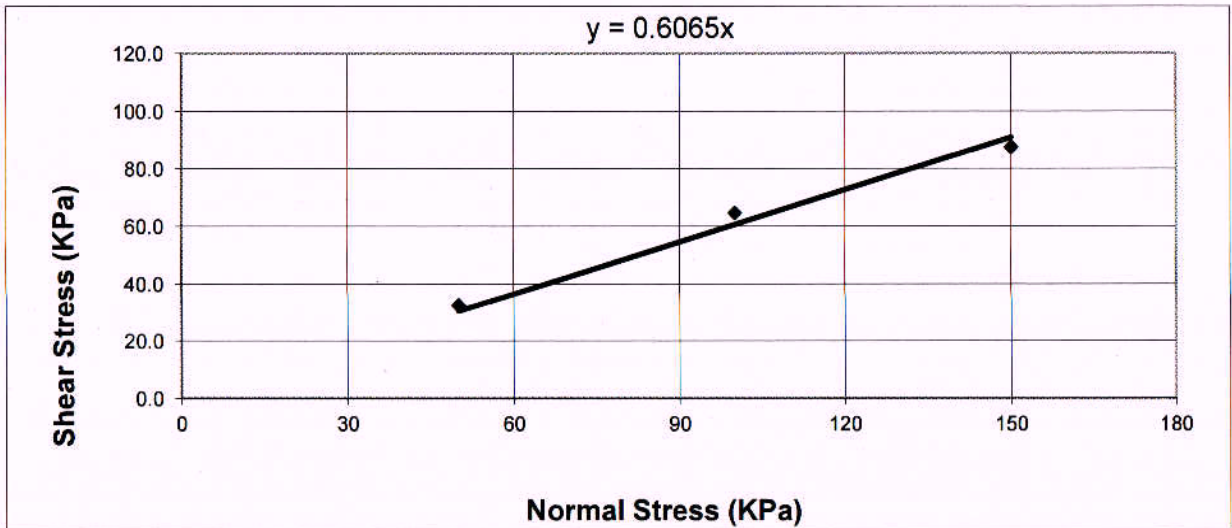
Test Result

$c = 0.0$ kPa
 $\phi = 32.2^\circ$

BH No: 2	Chainage 27290	Sample No.: SPT-15	Depth (m): 22.50
Site Ref: Meerut	Job No: 1342		Test Report No: XPL/2015-16/02

Tested by: <i>Rajesh Singh</i>	Checked by: <i>ADL</i>	Authorised Signatory: <i>[Signature]</i>
Date: <i>30/5/15</i>	Date: <i>18/8/15</i>	Date: <i>18/8/15</i>

DIRECT SHEAR TEST RESULT
I.S.: 2720 : PART XIII



Sample Details

Dry-density, (mg/m³) = 1.78
Brownish Sandy SILT (ML)

Test Result

$c = 0.0$ kPa
 $\phi = 31.2^\circ$

BH No: 1	Chainage 27820	Sample No.: SPT-5	Depth (m): 7.50
Site Ref: Meerut	Job No : 1342		Test Report No: XPL/2015-16/02

Tested by: *Rajam Singh* Checked by: *RS* Authorised Signatory: *[Signature]*
Date: 20/5/15 Date: 18/8/15 Date: 18/8/15