



# Marshal Geo Test Laboratory

For Testing of Civil Engineering Materials



**Certified By :**  
Standardisation Testing  
& Quality Certification  
Directorate  
UDYAM-CG-14-0000899

## TEST - REPORT

T.R. No. / MGTL / TRR / R-1001227/001

Date:- 13/01/2022

To,  
The Executive Engineer ( Civil )  
Civil Division, C.S.P.T.C.L  
Raipur (C.G.)

Subject :- Test result of Soil Sample for the proposed construction work at 132/33 KV Sub-Station, Metal Park, Rawabhata, Dist.- Raipur (C.G.).

Your Ref.:- Letter No.:- E.C./Civil Division/1573 Raipur, Dt.:- 04/01/2022  
Sample ID Mark :- Pit No. -1, Control Room, Depth- 3.00 m.

Dear Sir,  
Vide subject and reference cited above, the test results report is as follows: -

**Mechanical Testing**  
**Soil and Rock - Clays & Soils**

### PARTICULAR OF SAMPLE (S)

Nature:- Undisturbed Soil Sample  
Sample No.(S) Details:- One Sample  
Dt. of Receipt in the Lab :-10/01/2022

Testing Dt. :- 11/01/2022

LAB JOB NO. :- R-2201107/001		TEST RESULT	
S. No.	Parameters	Test Method	Result Unit
1	Type of Soil	As per IS 2720 Part XI (RA-2016) ( Unconsolidated - Undrained ) Triaxial Test	Brownish Sandy Clay
2	Depth of Collection of Sample		3.00 m.
3	Bulk Density		2.03 t/m <sup>3</sup>
4	Safe Bearing Capacity		14.55 t/m <sup>2</sup>

Remark:-  
1. SBC is calculated based on Shear Failure Criteria.  
2. Soil is susceptible Variation of GWT.  
3. SBC has been computed taking 1m x 1m footing size.  
4. Soil is expansive in nature.

Verified by  
Himanshu R Varma  
( Geotechnical Engineer )

Authorised Signatory  
Arun Bhawe  
( C.E.O. )

Note:-  
1 Samples Drawn by us, unless otherwise mentioned.  
2 Samples may be destroyed / Removed away from Laboratory after Testing, unless otherwise particular request is made.  
3 This report in full or part may not be reproduced, published or used for any legal action unless prior permission is secured from C.E.O. MGTL Raipur. Subject to Raipur Jurisdiction.  
4 Although Site name has been mentioned, MGTL is not responsible for the actual site conditions.  
5 This report pertains to only sample submitted by client & Tested at Raipur Laboratory.

\*\*\*\*\*END OF REPORT\*\*\*\*\*

P.S. City Road, Near Kushalpur Chowk,  
Changorabhata, Ring Road No. -01,  
Raipur 492013 (C.G.) , Ph. : 7879798900  
E-mail : raipur\_marshall@yahoo.co.in  
raipur\_marshall@gmail.com  
Website : marshalgeoraipur.com





# Marshal Geo Test Laboratory

For Testing of Civil Engineering Materials

ISO 9001:2015



Certified By :  
Standardisation Testing  
& Quality Certification  
Directorate  
UDYAM-CG-14-0000899

## TEST - REPORT

T.R. No. / MGTL / TRR / R-1001227/003

Date:- 13/01/2022

To,  
The Executive Engineer ( Civil )  
Civil Division, C.S.P.T.C.L  
Raipur ( C.G.)

Subject :- Test result of Soil Sample for the proposed construction work at 132/33 KV Sub-Station, Metal Park, Rawabhata, Dist.-  
Raipur ( C.G.).

Your Ref.:- Letter No.:- E.C./Civil Division/1573 Raipur, Dt.:- 04/01/2022  
Sample ID Mark :- Pit No. -2, Transformer, Depth- 2.00 m.

Dear Sir,  
Vide subject and reference cited above, the test results report is as follows: -

**Mechanical Testing**  
**Soil and Rock - Clays & Soils**

### PARTICULAR OF SAMPLE (S)

Nature:- Undisturbed Soil Sample  
Sample No.(S) Details:- One Sample  
Dt. of Receipt in the Lab :-10/01/2022

Testing Dt. :- 11/01/2022

LAB JOB NO. :- R-2201107/003		TEST RESULT		
S. No.	Parameters	Test Method	Result	Unit
1	Type of Soil	As per IS 2720 Part XI (RA-2016) ( Unconsolidated - Undrained ) Triaxial Test	Greyish Clay	
2	Depth of Collection of Sample		2.00 m.	
3	Bulk Density		2.01	t/m <sup>3</sup>
4	Safe Bearing Capacity		10.47	t/m <sup>2</sup>

Remark:-  
1. SBC is calculated based on Shear Failure Criteria.  
2. Soil is susceptible Variation of GWT.  
3. SBC has been computed taking 1m x 1m footing size.  
4. Soil is expansive in nature.

Verified by  
Himanshu R Varma  
( Geotechnical Engineer )

Authorised Signatory  
Arun Bhawe  
( C.E.O. )

Note:-  
1 Samples Drawn by us, unless otherwise mentioned.  
2 Samples may be destroyed / Removed away from Laboratory after Testing, unless otherwise particular request is made.  
3 This report in full or part may not be reproduced, published or used for any legal action unless prior permission is secured from C.E.O. MGTL Raipur. Subject to Raipur Jurisdiction.  
4 Although Site name has been mentioned, MGTL is not responsible for the actual site conditions.  
5 This report pertains to only sample submitted by client & Tested at Raipur Laboratory.

\*\*\*\*\*END OF REPORT\*\*\*\*\*

PS. City Road, Near Kushalpur Chowk,  
Changorabhata, Ring Road No. -01,  
Raipur 492013 (C.G.) , Ph. : 7879798900  
E-mail : raipur\_marshall@yahoo.co.in  
raipur\_marshall@gmail.com  
Website : marshalgeoraipur.com





# Marshal Geo Test Laboratory

For Testing of Civil Engineering Materials

ISO 9001:2015



Certified By :  
Standardisation Testing  
& Quality Certification  
Directorate  
UDYAM-CG-14-0000899

## TEST - REPORT

Date:- 13/01/2022

T.R. No. / MGTL / TRR / R-1001227/005

To,  
The Executive Engineer ( Civil )  
Civil Division, C.S.P.T.C.L  
Raipur (C.G.)

Subject :- Test result of Soil Sample for the proposed construction work at 132/33 KV Sub-Station, Metal Park, Rawabhata, Dist.-  
Raipur (C.G.).

Your Ref.:- Letter No.:- E.C./Civil Division/1573 Raipur, Dt.:- 04/01/2022  
Sample ID Mark :- Pit No. -3, Gantry, Depth- 1.00 m.

Dear Sir,  
Vide subject and reference cited above, the test results report is as follows: -  
**Mechanical Testing**  
**Soil and Rock - Clays & Soils**

### PARTICULAR OF SAMPLE (S)

Nature:- Undisturbed Soil Sample  
Sample No (S) Details:- One Sample  
Dt. of Receipt in the Lab :-10/01/2022

Testing Dt. :- 11/01/2022

LAB JOB NO. :- R-2201107/005		TEST RESULT		
S. No.	Parameters	Test Method	Result	Unit
1	Type of Soil	As per IS 2720 Part XI (RA-2016) ( Unconsolidated - Undrained ) Triaxial Test	Greyish Clay	
2	Depth of Collection of Sample		1.00 m.	
3	Bulk Density		2.10	t/m <sup>3</sup>
4	Safe Bearing Capacity		8.21	t/m <sup>2</sup>

Remark:-  
1. SBC is calculated based on Shear Failure Criteria.  
2. Soil is susceptible Variation of GWT.  
3. SBC has been computed taking 1m x 1m footing size.  
4. Soil is expansive in nature.

Verified by  
Himanshu R Varma  
( Geotechnical Engineer )

Authorised Signatory  
Arun Bhawe  
( C.E.O. )

Note:-

- 1 Samples Drawn by us, unless otherwise mentioned.
- 2 Samples may be destroyed / Removed away from Laboratory after Testing, unless otherwise particular request is made.
- 3 This report in full or part may not be reproduced, published or used for any legal action unless prior permission is secured from C.E.O. MGTL Raipur. Subject to Raipur Jurisdiction.
- 4 Although Site name has been mentioned, MGTL is not responsible for the actual site conditions.
- 5 This report pertains to only sample submitted by client & Tested at Raipur Laboratory.

\*\*\*\*\*END OF REPORT\*\*\*\*\*

P.S. City Road, Near Kushalpur Chowk,  
Changorabhata, Ring Road No. -01,  
Raipur 492013 (C.G.) , Ph. : 7879798900  
E-mail : raipur\_marshall@yahoo.co.in  
raipur\_marshall@gmail.com  
Website : marshalgeoraipur.com





# Marshal Geo Test Laboratory

For Testing of Civil Engineering Materials

ISO 9001:2015



Certified By :

Standardisation Testing & Quality Certification

Directorate

UDYAM-CG-14-0000899

SHEET 1 OF 2

Date:-14/01/2022

T. R. No. / MGTL / TRR / R-1001227/002

To,  
The Executive Engineer ( Civil )  
Civil Division, C.S.P.T.C.L  
Raipur (C.G.)

Subject :- Test result of Soil Sample for the proposed construction work at 132/33 KV Sub-Station, Metal Park, Rawabhata, Dist- Raipur (C.G.).

Your Ref.: Letter No.:- E.C./Civil Division/1573 Raipur, Dt.:- 04/01/2022

Sample ID Mark :- Pit No.-1, Control Room, Depth - 3.00 m.

Dear Sir,

Vide subject and reference cited above, the test results report is as follows: -

**Mechanical Testing**

**Soil and Rock - Clays & Soils**

**PARTICULAR OF SAMPLES (S) :-**

Nature:- Soil Sample ( UDS )

Sample No (S) Details:- One Sample

Packing/Container :- Poly Bags

Dt. of Receipt in the Lab:- 10/01/2022

Testing Dt. :- 14/01/2022

LAB JOB NO.- R-2201107/002		TEST RESULTS		
S. No.	Name of Test	Test Method	Results	Unit
A)	<u>Soil Sample ( UDS )</u>			
1	LL, PL & PI	As per IS : 2720 ( Part V )- 1985 (RA-2015)	As per Table 1 Below	%
2	Soil Classification	As per IS : 1498-1970 (RA-2016)	As per Table 1 Below	
3	Grain Size Analysis	As per IS : 2720 (Part IV )-1985 (RA-2015)	As per table 2 below	%

Table -1

LAB JOB NO.- R-2201107/002		TEST RESULTS			
Sr. No.	% of Fines	Soil Classification	LL	PL	PI
			%	%	%
1	84.80	CI	48.00	20.70	27.30

P.S. City Road, Near Kushalpur Chowk,  
Changorabhata, Ring Road No. -01,  
Raipur 492013 (C.G.) , Ph. : 7879798900  
E-mail : raipur\_marshall@yahoo.co.in  
raipur\_marshall@gmail.com  
Website : marshalgeoraipur.com





# Marshal Geo Test Laboratory

For Testing of Civil Engineering Materials

ISO 9001:2015

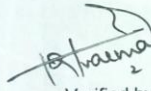



Certified By :  
Standardisation Testing  
& Quality Certification  
Directorate  
UDYAM-CG-14-0000899

## SHEET 2 OF 2

Table -2

LAB JOB NO. - R-2201107/002				TEST RESULTS	
Sr. No.	SIEVE SIZE (MM)	WT. RET.	% OF WT.RET	CUM.WT. RET.	PERCENTAGE FINER (%)
1	10	0.0	0.00	0.00	100.00
2	4.75	13.0	2.60	2.60	97.40
3	2	6.0	1.20	3.80	96.20
4	0.6	12.0	2.40	6.20	93.80
5	0.425	2.0	0.40	6.60	93.40
6	0.75	43.0	8.60	15.20	84.80
<b>Gravel</b>		<b>Coarse Sand</b>		<b>Medium Sand</b>	
2.60		1.20		2.80	
				<b>Fine Sand</b>	
				8.60	
				<b>Silt &amp; Clay</b>	
				84.80	

  
Verified by  
Himanshu R. Varma  
( Geotechnical Engineer )

  
Authorised Signatory  
Arun Bhawe  
( C.E.O. )

Note:-

- 1 Samples Drawn by us, unless otherwise mentioned.
- 2 Samples may be destroyed / Removed away from Laboratory after Testing, unless otherwise particular request is made.
- 3 This report in full or part may not be reproduced, published or used for any legal action unless prior permission is secured from C.E.O. MGTL Raipur. Subject to Raipur Jurisdiction.
- 4 Although Site Name has been mentioned, MGTL is not responsible for the actual site conditions.
- 5 This report pertains to only sample submitted by client & tested at Raipur Laboratory.

\*\*\*\*\*END OF REPORT\*\*\*\*\*

P.S. City Road, Near Kushalpur Chowk,  
Changorabhata, Ring Road No. -01,  
Raipur 492013 (C.G.) , Ph. : 7879798900  
E-mail : raipur\_marshall@yahoo.co.in  
raipur\_marshall@gmail.com





# Marshal Geo Test Laboratory

For Testing of Civil Engineering Materials

ISO 9001:2015



Certified By :  
Standardisation Testing  
& Quality Certification  
Directorate  
UDYAM-CG-14-0000899

SHEET 1 OF 2

Date:-14/01/2022

T. R. No. / MGTL / TRR / R-1001227/004

To,  
The Executive Engineer ( Civil )  
Civil Division, C.S.P.T.C.L  
Raipur (C.G.)

Subject :- Test result of Soil Sample for the proposed construction work at 132/33 KV Sub-Station, Metal Park, Rawabhata, Dist.-  
Raipur (C.G.)

Your Ref.: Letter No.:- E.C./Civil Division/1573 Raipur, Dt.:- 04/01/2022  
Sample ID Mark :- Pit No.-2, Transformer, Depth - 2.00 m.

Dear Sir,  
Vide subject and reference cited above, the test results report is as follows: -

**Mechanical Testing**  
**Soil and Rock - Clays & Soils**

**PARTICULAR OF SAMPLES (S) :-**

Nature:- Soil Sample ( UDS )  
Sample No.(S) Details:- One Sample  
Packing/Container :- Poly Bags  
Dt. of Receipt in the Lab:- 10/01/2022

Testing Dt. :- 14/01/2022

LAB JOB NO.- R-2201107/004		TEST RESULTS		
S. No.	Name of Test	Test Method	Results	Unit
A)	<b>Soil Sample ( UDS )</b>			
1	LL, PL & PI	As per IS : 2720 ( Part V )- 1985 (RA-2015)	As per Table 1 Below	%
2	Soil Classification	As per IS : 1498-1970 (RA-2016)	As per Table 1 Below	
3	Grain Size Analysis	As per IS : 2720 (Part IV )-1985 (RA-2015)	As per table 2 below	%

Table -1

LAB JOB NO.- R-2201107/004		TEST RESULTS			
Sr. No.	% of Fines	Soil Classification	LL	PL	PI
			%	%	%
1	81.60	CI-CH	50.00	20.60	29.40

P.S. City Road, Near Kushalpur Chowk,  
Changorabhata, Ring Road No. -01,  
Raipur 492013 (C.G.), Ph. : 7879798900  
E-mail : raipur\_marshall@yahoo.co.in  
raipur\_marshall@gmail.com  
Website : marshalgeoraipur.com





# Marshal Geo Test Laboratory

For Testing of Civil Engineering Materials

ISO 9001:2015



Certified By :

Standardisation Testing & Quality Certification

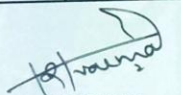
Directorate

UDYAM-CG-14-0000899

## SHEET 2 OF 2

Table -2  
LAB JOB NO.- R-2201107/004

TEST RESULTS					
Sr. No.	SIEVE SIZE (MM)	WT. RET.	% OF WT.RET	CUM.WT. RET.	PERCENTAGE FINER (%)
1	10	0.0	0.00	0.00	100.00
2	4.75	30.0	6.00	6.00	94.00
3	2	10.0	2.00	8.00	92.00
4	0.6	12.0	2.40	10.40	89.60
5	0.425	2.0	0.40	10.80	89.20
6	0.75	38.0	7.60	18.40	81.60
<b>Gravel</b>		<b>Coarse Sand</b>		<b>Fine Sand</b>	
6.00		2.00		7.60	
			<b>Medium Sand</b>		<b>Silt &amp; Clay</b>
			2.80		81.60

  
Verified by  
Himanshu R. Varma  
( Geotechnical Engineer )

  
Authorised Signatory  
Arun Bhawe  
( C.E.O. )

Note:-

- 1 Samples Drawn by us, unless otherwise mentioned.
- 2 Samples may be destroyed / Removed away from Laboratory after Testing, unless otherwise particular request is made.
- 3 This report in full or part may not be reproduced, published or used for any legal action unless prior permission is secured from C.E.O. MGTL Raipur. Subject to Raipur Jurisdiction.
- 4 Although Site Name has been mentioned, MGTL is not responsible for the actual site conditions.
- 5 This report pertains to only sample submitted by client & tested at Raipur Laboratory.

\*\*\*\*\*END OF REPORT\*\*\*\*\*

P.S. City Road, Near Kushalpur Chowk,  
Changorabhata, Ring Road No. -01,  
Raipur 492013 (C.G.) , Ph. : 7879798900  
E-mail : raipur\_marshall@yahoo.co.in  
raipur\_marshall@gmail.com  
Website : marshalgeoraipur.com





# Marshal Geo Test Laboratory

For Testing of Civil Engineering Materials

ISO 9001:2015



Certified By :

Standardisation Testing  
& Quality Certification

Directorate

UDYAM-CG-14-0000899

SHEET 1 OF 2

Date:-14/01/2022

T. R. No. / MGTL / TRR / R-1001227/006

To,  
The Executive Engineer ( Civil )  
Civil Division, C.S.P.T.C.L  
Raipur (C.G.)

Subject :- Test result of Soil Sample for the proposed construction work at 132/33 KV Sub-Station, Metal Park, Rawabhata, Dist.-  
Raipur (C.G.).

Your Ref.: Letter No.:- E.C./Civil Division/1573 Raipur, Dt.:- 04/01/2022

Sample ID Mark :- Pit No.-3, Gantry, Depth - 1.00 m.

Dear Sir,

Vide subject and reference cited above, the test results report is as follows :-

**Mechanical Testing**

**Soil and Rock - Clays & Soils**

**PARTICULAR OF SAMPLES (S) :-**

Nature:- Soil Sample ( UDS )

Sample No.(S) Details:- One Sample

Packing/Container :- Poly Bags

Dt. of Receipt in the Lab.- 10/01/2022

Testing Dt. :- 14/01/2022

LAB JOB NO.- R-2201107/006			TEST RESULTS	
S. No.	Name of Test	Test Method	Results	Unit
A)	<b>Soil Sample ( UDS )</b>			
1	LL, PL & PI	As per IS : 2720 ( Part V )- 1985 (RA-2015)	As per Table 1 Below	%
2	Soil Classification	As per IS : 1498-1970 (RA-2016)	As per Table 1 Below	%
3	Grain Size Analysis	As per IS : 2720 (Part IV )-1985 (RA-2015)	As per table 2 below	%

Table -1

LAB JOB NO.- R-2201107/006			TEST RESULTS			
Sr. No.	% of Fines	Soil Classification	LL	PL	PI	
			%	%	%	
1	81.40	CI	48.00	19.92	28.08	

P.S. City Road, Near Kushalpur Chowk,  
Changorabhata, Ring Road No. -01,  
Raipur 492013 (C.G.) , Ph. : 7879798900  
E-mail : raipur\_marshall@yahoo.co.in  
raipur\_marshall@gmail.com  
Website : marshalgeoraipur.com







# Marshal Geo Test Laboratory

For Testing of Civil Engineering Materials

ISO 9001:2015

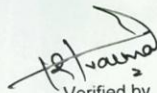



Certified By :  
Standardisation Testing  
& Quality Certification  
Directorate  
UDYAM-CG-14-0000899

## SHEET 2 OF 2

Table -2

LAB JOB NO.- R-2201107/006				TEST RESULTS	
Sr. No.	SIEVE SIZE (MM)	WT. RET.	% OF WT.RET	CUM.WT. RET.	PERCENTAGE FINER (%)
1	10	0.0	0.00	0.00	100.00
2	4.75	8.0	1.60	1.60	98.40
3	2	9.0	1.80	3.40	96.60
4	0.6	17.0	3.40	6.80	93.20
5	0.425	3.0	0.60	7.40	92.60
6	0.75	56.0	11.20	18.60	81.40
<b>Gravel</b>		<b>Coarse Sand</b>		<b>Medium Sand</b>	
1.60		1.80		4.00	
				<b>Fine Sand</b>	
				11.20	
				<b>Silt &amp; Clay</b>	
				81.40	

  
Verified by  
Himanshu R. Varma  
(Geotechnical Engineer)

  
Authorised Signatory  
Arun Bhawe  
(C.E.O.)

Note:-

- 1 Samples Drawn by us, unless otherwise mentioned.
- 2 Samples may be destroyed / Removed away from Laboratory after Testing, unless otherwise particular request is made.
- 3 This report in full or part may not be reproduced, published or used for any legal action unless prior permission is secured from C.E.O. MGTL Raipur. Subject to Raipur Jurisdiction.
- 4 Although Site Name has been mentioned, MGTL is not responsible for the actual site conditions.
- 5 This report pertains to only sample submitted by client & tested at Raipur Laboratory.

\*\*\*\*\*END OF REPORT\*\*\*\*\*

P.S. City Road, Near Kushalpur Chowk,  
Changorabhata, Ring Road No. -01,  
Raipur 492013 (C.G.), Ph. : 7879798900  
E-mail : raipur\_marshall@yahoo.co.in  
raipur\_marshall@gmail.com  
Website : marshalgeoraipur.com

