



# Cleenviron Private Limited

Consultant and Engineers in Environmental Pollution Control & Monitoring with NABL Accredited Laboratory.



## TEST REPORT FOR AMBIENT AIR QUALITY MONITORING

FORMAT NO: CPLFMST

ULR - TC68162200002188E  
REPORT NO: CPL/IAAQ/SEPT-22/30

REPORT ISSUE DATE: 03.09.2022

SAMPLE DRAWN BY CLEENVIRON PRIVATE LIMITED

Name of the Customer : **M/s SHIVA CEMENT LIMITED**  
 Address of the Customer : KHATKURBAHAL LIMESTONE & DOLOMITE MINES, SUNDARGARH, ODISHA  
 Sampling Method : IS: 5182 (Part - 2) & (Part - 6), EN12341  
 Location of Monitoring : **Near Mines Office Area**  
 Monitoring Station Code : **A1**

Environmental Conditions During Monitoring	Min Temp.:20.5°C	Max Temp.:33.5°C	Min RH:58%	Max RH:100%
Sample ID No	CPL/AAQ/AUG-22/254		CPL/AAQ/AUG-22/409	
Date of Sampling	18.08.2022 - 19.08.2022		29.08.2022 - 30.08.2022	
Sampling Period	1026 - 0842 Hrs		0900 - 0800 Hrs	
Time of Sampling	23.14 Hrs		23.00 Hrs	
Sample Received on	19.08.2022		30.08.2022	
Date of Test	20.08.2022		31.08.2022	

Sl. No	Sample ID	Parameters			
		PM <sub>2.5</sub>	PM <sub>10</sub>	SO <sub>2</sub>	NO <sub>2</sub>
Units		µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>
Method of Analysis		CPL/SOP/01/PM2.5, Issue No: 01, dt: 23.10.2017	EN 12341, 1998 Low Volume Sampler	IS:5182 (Part - 2) 2001, RA 2017	IS: 5182 (Part - 6) 2004, RA 2017
1.	CPL/AAQ/AUG-22/254	23	66	10	32
2.	CPL/AAQ/AUG-22/409	11	40	04	15
National Ambient Air Quality Standards, CPCB Notification New Delhi, 15 <sup>th</sup> November, 2009 for Industrial, Residential, Rural & Other Area		60 (24 Hours Average)	100 (24 Hours Average)	80 (24 Hours Average)	80 (24 Hours Average)

*P. Sareni*  
Test Done By

*[Signature]*  
Verified By



*[Signature]*  
Authorized Signatory  
Subhanga Praharaj  
Managing Director

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

Page 1 of 1

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# Cleenviron Private Limited

Consultant and Engineers in Environmental Pollution Control & Monitoring with NABL Accredited Laboratory.



## TEST REPORT FOR AMBIENT AIR QUALITY MONITORING

FORMAT NO: CPL/FA07

ULR - TC681622000002187F

REPORT NO: CPL/AAQ/SEPT-22/31

SAMPLE DRAWN BY CLEENVIIRON PRIVATE LIMITED

REPORT ISSUE DATE: 03.09.2022

Name of the Customer : **M/s SHIVA CEMENT LIMITED**  
 Address of the Customer : KHATKURBAHAL LIMESTONE & DOLOMITE MINES, SUNDARGARH, ODISHA  
 Sampling Method : IS: 5182 (Part - 2) & (Part - 6), EN12341  
 Location of Monitoring : **Near Mine Main Gate**  
 Monitoring Station Code : A2

Environmental Conditions During Monitoring	Min Temp.:20.5°C	Max Temp.:33.5°C	Min RH:58%	Max RH:100%
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Sample ID No	CPL/AAQ/AUG-22/253	CPL/AAQ/AUG-22/410
Date of Sampling	18.08.2022 - 19.08.2022	29.08.2022 - 30.08.2022
Sampling Period	1015 - 0845 Hrs	0911 - 0815 Hrs
Time of Sampling	22.30 Hrs	23.04 Hrs
Sample Received on	19.08.2022	30.08.2022
Date of Test	20.08.2022	31.08.2022

Sl No	Sample ID	Parameters			
		PM <sub>2.5</sub>	PM <sub>10</sub>	SO <sub>2</sub>	NO <sub>2</sub>
Units		µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>
Method of Analysis		CPLSDP01PM2.5, Issue No: 04, dat: 23.10.2017	EN 12341, 1995 Low Volume Sampler	IS 5182 (Part - 2) 2001, RA 1017	IS: 5182 (Part - 6) 2006, RA 1017
1.	CPL/AAQ/AUG-22/253	18	58	08	35
2.	CPL/AAQ/AUG-22/410	19	56	06	24
National Ambient Air Quality Standards, CPCB Notification New Delhi, 18 <sup>th</sup> November, 2009 for Industrial, Residential, Rural & Other Area		60 (24 Hours Average)	100 (24 Hours Average)	80 (24 Hours Average)	80 (24 Hours Average)

*P. Saseeni*  
 Test Done By

*[Signature]*  
 Verified By



*[Signature]*  
 Authorized Signatory  
 Subhanga Praharaj  
 Managing Director

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

Page 1 of 1

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Registered Office: D/318, KOELNAGAR, ROURKELA - 769014, Dist: SUNDARGARH, ODISHA

Branch Office & Laboratory: D/124, KOELNAGAR, ROURKELA - 769014, Dist: SUNDARGARH, ODISHA

Tel: Fax: 0661 - 2473746, email: cleenviron@gmail.com





# Cleenviron Private Limited

Consultant and Engineers in Environmental Pollution Control & Monitoring with NABL Accredited Laboratory.



## TEST REPORT FOR AMBIENT AIR QUALITY MONITORING

FORMAT NO: CPL/PM5

ULR - TC681622000002188F

REPORT NO: CPL/RAAQ/SEPT-22/32

SAMPLE DRAWN BY CLEENVIRO PRIVATE LIMITED

REPORT ISSUE DATE: 03.09.2022

Name of the Customer : **M/s SHIVA CEMENT LIMITED**  
 Address of the Customer : **KHATKURBAHAL LIMESTONE & DOLOMITE MINES, SUNDARGARH, ODISHA**  
 Sampling Method : **IS: 5182 (Part - 2) & (Part - 6), EN12341**  
 Location of Monitoring : **Near Mine Pit - 1**  
 Monitoring Station Code : **A3**

Environmental Conditions During Monitoring	:	Min Temp.:20.5°C	Max Temp.:33.5°C	Min RH:58%	Max RH:100%
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Sample ID No	:	CPL/AAQ/AUG-22/255	CPL/AAQ/AUG-22/414
Date of Sampling	:	21.08.2022 - 22.08.2022	30.08.2022 - 31.08.2022
Sampling Period	:	1105 - 1016 Hrs	0815 - 0730 Hrs
Time of Sampling	:	06.11 Hrs	23.15 Hrs
Sample Received on	:	22.08.2022	31.08.2022
Date of Test	:	23.08.2022	01.09.2022

Sl No	Sample ID	Parameters			
		PM <sub>2.5</sub>	PM <sub>10</sub>	SO <sub>2</sub>	NO <sub>2</sub>
Units		µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>
Method of Analysis		CPL/SOP/01/PM2.5, Issue No: 04, dtd: 23.12.2017	EN 12341, 1999 Low Volume Sampler	IS 5182 (Part - 2) 2001, RA 2017	IS: 5182 (Part - 6) 2006, RA 2017
1.	CPL/AAQ/AUG-22/255	15	44	04	21
2.	CPL/AAQ/AUG-22/414	24	59	06	20
National Ambient Air Quality Standards, CPCB Notification New Delhi, 18 <sup>th</sup> November, 2009 for Industrial, Residential, Rural & Other Area		60 (24 Hours Average)	100 (24 Hours Average)	80 (24 Hours Average)	80 (24 Hours Average)

*P. Sareni*  
Test Done By

*[Signature]*  
Verified By



*[Signature]*  
Authorized Signatory  
Subhanga Praharaj  
Managing Director

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

Page 1 of 1

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# Cleenviron Private Limited

Consultant and Engineers in Environmental Pollution Control & Monitoring with NABL Accredited Laboratory.



## TEST REPORT FOR AMBIENT AIR QUALITY MONITORING

FORMAT NO: CPL/PM17

ULR - TC681622000002189F

REPORT NO: CPL/IAAQ/SEPT-22/33

SAMPLE DRAWN BY CLEENVIRON PRIVATE LIMITED

REPORT ISSUE DATE: 03.09.2022

Name of the Customer : **M/s SHIVA CEMENT LIMITED**  
 Address of the Customer : KHATKURBAHAL LIMESTONE & DOLOMITE MINES, SUNDARGARH, ODISHA  
 Sampling Method : IS: 5182 (Part - 2) & (Part - 6), EN12341  
 Location of Monitoring : **Near Mine Pit - 2**  
 Monitoring Station Code : A4

Environmental Conditions During Monitoring	Min Temp.:20.5°C	Max Temp.:33.5°C	Min RH:58%	Max RH:100%
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Sample ID No	CPL/AAQ/AUG-22/256	CPL/AAQ/AUG-22/411
Date of Sampling	21.08.2022 - 22.08.2022	29.08.2022 - 30.08.2022
Sampling Period	1028 - 0945 Hrs	0958 - 0930 Hrs
Time of Sampling	23.17 Hrs	23.32 Hrs
Sample Received on	22.08.2022	30.08.2022
Date of Test	23.08.2022	31.08.2022

Sl No	Sample ID	Parameters			
		PM <sub>2.5</sub>	PM <sub>10</sub>	SO <sub>2</sub>	NO <sub>2</sub>
Units		µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>
Method of Analysis		CPL/ISO/10112/PM2.5, Issue No: 04, dt: 23.10.2017	EN 12341, 1998 Low Volume Sampler	IS:5182 (Part - 2) 2001, RA 2017	IS: 5182 (Part - 6) 2006, RA 2017
1.	CPL/AAQ/AUG-22/256	12	40	04	15
2.	CPL/AAQ/AUG-22/411	13	37	04	18
National Ambient Air Quality Standards, CPCB Notification New Delhi, 18 <sup>th</sup> November, 2009 for Industrial, Residential, Rural & Other Area		60 (24 Hours Average)	100 (24 Hours Average)	80 (24 Hours Average)	80 (24 Hours Average)

*P. Sareni*  
Test Done By

*[Signature]*  
Verified By



*[Signature]*  
Authorized Signatory  
Subhanga Praharaj  
Managing Director

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

Page 1 of 1

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# Cleenviron Private Limited

Consultant and Engineers in Environmental Pollution Control & Monitoring with NABL Accredited Laboratory.



## TEST REPORT FOR AMBIENT AIR QUALITY MONITORING

FORMAT NO: CPL/MS7

ULR – TC681622000002190F

REPORT NO: CPL/R/AAQ/SEPT-22/34

SAMPLE DRAWS BY CLEENVIIRON PRIVATE LIMITED

REPORT ISSUE DATE: 03.09.2022

Name of the Customer : **M/s SHIVA CEMENT LIMITED**  
 Address of the Customer : KHATKURBAHAL LIMESTONE & DOLOMITE MINES, SUNDARGARH, ODISHA  
 Sampling Method : IS: 5182 (Part – 2) & (Part – 6), EN12341  
 Location of Monitoring : **Khatkurbahal Village Area (Buffer Zone)**  
 Monitoring Station Code : A5

Environmental Conditions During Monitoring	: Min Temp.:20.5°C	Max Temp.:33.5°C	Min RH:58%	Max RH:100%
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Sample ID No	: CPL/AAQ/AUG-22/257	CPL/AAQ/AUG-22/413
Date of Sampling	: 21.08.2022 – 22.08.2022	30.08.2022 – 31.08.2022
Sampling Period	: 1135 – 1034 Hrs	0800 – 0715 Hrs
Time of Sampling	: 22.59 Hrs	23.15 Hrs
Sample Received on	: 22.08.2022	31.08.2022
Date of Test	: 23.08.2022	01.09.2022

Sl No	Sample ID	Parameters			
		PM <sub>2.5</sub>	PM <sub>10</sub>	SO <sub>2</sub>	NO <sub>2</sub>
Units		µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>
Method of Analysis		CPL/SOP/SPM2.5, Issue No: 04. JUNE 23.10.2017	EN 12341, 1998 Low Volume Sampler	IS:5182 (Part – 2) 2001, RA 2017	IS: 5182 (Part – 6) 2008, RA 2017
1.	CPL/AAQ/AUG-22/257	16	55	14	49
2.	CPL/AAQ/AUG-22/413	13	45	03	25
National Ambient Air Quality Standards, CPCB Notification New Delhi, 18 <sup>th</sup> November, 2009 for Industrial, Residential, Rural & Other Area		60 (24 Hours Average)	100 (24 Hours Average)	80 (24 Hours Average)	80 (24 Hours Average)

P. Saseni  
Test Done By

Verified By



Authorized Signatory  
Subhanga Praharaj  
Managing Director

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

Page 1 of 1

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# Cleenviron Private Limited

Consultant and Engineers in Environmental Pollution Control & Monitoring with NABL Accredited Laboratory.



## TEST REPORT FOR WATER QUALITY ANALYSIS

FORMAT NO: CPL/WMO

ULR - TC681622000002194F  
REPORT NO: CPL/R/W/SEPT-22/16

REPORT ISSUE DATE: 03.09.2022

SAMPLE DRAWN BY CLEENVIIRON PRIVATE LIMITED

Name of the Customer : **M/s SHIVA CEMENT LIMITED**  
 Address of the Customer : **KHATKURBAHAL LIMESTONE & DOLOMITE MINES, SUNDARGARH, ODISHA**  
 Sample ID No : **CPL/W/AUG-22/34**  
 Date of Sampling : **22.08.2022**  
 Sample Description : **Ground Water**  
 Location of Sampling : **Bore well Near Mines Office**  
 Sampling Method : **APHA 23<sup>rd</sup> Edition, 1060**  
 Sampling Deviation (if any) : **Nil**  
 Condition of Sample while receipt : **Sealed**  
 Appearance of Sample while receipt : **Clear**  
 Type of Container used for sampling : **Wide mouth Plastic Bottles**  
 Sample Received on : **22.08.2022**  
 Date of Test : **22.08.2022 - 29.08.2022**

Sl No	Parameter	Method of Analysis	Results Obtained	Unit	Acceptable Limit as per IS 11501: 2012
1	Turbidity	APHA 23 <sup>rd</sup> Edition, 2130 B	0.10	NTU	1.0
2	pH Value	APHA 23 <sup>rd</sup> Edition, 4500 H+B	6.69	-	6.5 - 8.5
3	Total Hardness (as CaCO <sub>3</sub> )	APHA 23 <sup>rd</sup> Edition, 2340 C	197.57	mg/l	200
4	Iron (as Fe)	APHA 23 <sup>rd</sup> Edition, 3500 Fe B	< 0.01	mg/l	0.3
5	Chlorides (as Cl)	APHA 23 <sup>rd</sup> Edition, 4500 Cl B	51.98	mg/l	250
6	Total Dissolved Solids	APHA 23 <sup>rd</sup> Edition, 2540 B	284	mg/l	500
7	Electrical Conductivity	APHA 23 <sup>rd</sup> Edition, 2510 B	458	µS/cm	-
8	Calcium (as Ca)	APHA 23 <sup>rd</sup> Edition, 3500 Ca B	50.09	mg/l	75
9	Magnesium (as Mg)	APHA 23 <sup>rd</sup> Edition, 3500 Mg B	17.64	mg/l	30
10	Copper (as Cu)	APHA 23 <sup>rd</sup> Edition, 3111 B	< 0.10	mg/l	0.05
11	Manganese (as Mn)	APHA 23 <sup>rd</sup> Edition, 3500 Mn B	< 0.05	mg/l	0.1
12	Sulfate (as SO <sub>4</sub> )	APHA 23 <sup>rd</sup> Edition, 4500 SO <sub>4</sub> <sup>2-</sup> E	7.31	mg/l	200
13	Total Nitrate (as NO <sub>3</sub> )	APHA 23 <sup>rd</sup> Edition, 4500 NO <sub>3</sub> B	4.23	mg/l	45
14	Total Alkalinity (as CaCO <sub>3</sub> )	APHA 23 <sup>rd</sup> Edition, 2320 B	156	mg/l	200
15	Acidity	APHA 23 <sup>rd</sup> Edition, 2310 B	< 01	mg/l	-
16	Sulphide (as H <sub>2</sub> S)	APHA 23 <sup>rd</sup> Edition, 4500 S <sup>2-</sup> D	< 0.02	mg/l	0.05
17	Sodium (as Na)	APHA 23 <sup>rd</sup> Edition, 3500 Na B	19.26	mg/l	-
18	Potassium (as K)	APHA 23 <sup>rd</sup> Edition, 3500 K B	5.24	mg/l	-
19	Fluoride (as F)	APHA 23 <sup>rd</sup> Edition, 4500 F D	0.40	mg/l	1.0

Test Done By

Verified By



Authorized Signatory  
Subhanga Praharaj  
Managing Director

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# Cleenviron Private Limited

Consultant and Engineers in Environmental Pollution Control & Monitoring with NABL Accredited Laboratory.



## TEST REPORT FOR WATER QUALITY ANALYSIS

FORMAT NO: CPL/PMX

ULR - TC68162200002194F  
REPORT NO: CPL/RW/SEPT-22/16

REPORT ISSUE DATE: 03.09.2022

SAMPLE DRAWN BY CLEENVIRON PRIVATE LIMITED

Name of the Customer : **M/s SHIVA CEMENT LIMITED**  
 Address of the Customer : KHATKURBAHAL LIMESTONE & DOLOMITE MINES, SUNDARGARH, ODISHA  
 Sample ID No : **CPLW/AUG-22/34**  
 Date of Sampling : 22.08.2022  
 Sample Description : Ground Water  
 Location of Sampling : Bore well Near Mines Office  
 Sampling Method : APHA 23<sup>rd</sup> Edition, 1060  
 Sampling Deviation (if any) : Nil  
 Condition of Sample while receipt : Sealed  
 Appearance of Sample while receipt : Clear  
 Type of Container used for sampling : Wide mouth Plastic Bottles  
 Sample Received on : 22.08.2022  
 Date of Test : 22.08.2022 - 29.08.2022

Sl No	Parameter	Method of Analysis	Results Obtained	Unit	Acceptable Limit as per IS 15506: 2012
20	Cadmium (as Cd)	APHA 23 <sup>rd</sup> Edition, 3111 B	ND	mg/l	0.003
21	Lead (as Pb)	APHA 23 <sup>rd</sup> Edition, 3111 B	ND	mg/l	0.01
22	Arsenic (as As)	APHA 23 <sup>rd</sup> Edition, 3114 B	ND	mg/l	0.01
23	Mercury (as Hg)	APHA 23 <sup>rd</sup> Edition, 3112 B	ND	mg/l	0.001
24	Selenium (as Se)	APHA 23 <sup>rd</sup> Edition, 3114 C	ND	mg/l	0.01
25	Nickel (as Ni)	APHA 23 <sup>rd</sup> Edition, 3111 B	ND	mg/l	0.02
26	Zinc (as Zn)	APHA 23 <sup>rd</sup> Edition, 3111 B	ND	mg/l	5.0
27	Total Chromium (as Cr)	APHA 23 <sup>rd</sup> Edition, 3111 B	ND	mg/l	0.05

ND: Non Detectable.

Test Done By

Verified By



Authorized Signatory  
Subhanga Praharaj  
Managing Director

\*\*\*\* End of Test Report \*\*\*\*

Page 2 of 2

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# Cleenviron Private Limited

Consultant and Engineers in Environmental Pollution Control & Monitoring with Laboratory Facility.

## TEST REPORT FOR WATER QUALITY ANALYSIS

FORMAT NO: CPL/REG

REPORT NO: CPL/RW/SEPT-22/16N

REPORT ISSUE DATE: 03.09.2022

SAMPLE DRAWN BY CLEENVIRO PRIVATE LIMITED

Name of the Customer : **M/s SHIVA CEMENT LIMITED**  
 Address of the Customer : KHATKURBAHAL LIMESTONE & DOLOMITE MINES, SUNDARGARH, ODISHA  
 Sample ID No : **CPL/W/AUG-22/34**  
 Date of Sampling : 22.08.2022  
 Sample Description : Ground Water  
 Location of Sampling : Bore well Near Mines Office  
 Sampling Method : APHA 23<sup>rd</sup> Edition, 1060  
 Sampling Deviation (if any) : Nil  
 Condition of Sample while receipt : Sealed  
 Appearance of Sample while receipt : Clear  
 Type of Container used for sampling : Wide mouth Plastic Bottles  
 Sample Received on : 22.08.2022  
 Date of Test : 22.08.2022 – 29.08.2022

Sl No	Parameter	Method of Analysis	Results Obtained	Unit	Acceptable Limit as per IS 10500: 2012
1	Colour	APHA 23 <sup>rd</sup> Edition, 2120 B	< 5	Hazen	5
2	Odour	APHA 23 <sup>rd</sup> Edition, 2150 B	Agreeable	-	Agreeable
3	Taste	APHA 23 <sup>rd</sup> Edition, 2160 B	Agreeable	-	Agreeable
4	Temperature	APHA 23 <sup>rd</sup> Edition, 2550 B	27.4	°C	-
5	Residual Free Chlorine	MERCK	0.13	mg/l	0.2 (min)
6	Total Bacterial Count	RAKIRO	Absent	Nos/100ml	Absent
7	E coli	RAKIRO	Absent	Nos/100ml	Absent

Test Done By

Verified By



Authorized Signatory  
Subhanga Praharaj  
Managing Director

\*\*\*\*\* End of Test Report \*\*\*\*\*

Page 1 of 1

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# Cleenviron Private Limited

Consultant and Engineers in Environmental Pollution Control & Monitoring with NABL Accredited Laboratory.



## TEST REPORT FOR WATER QUALITY ANALYSIS

FORMAT NO: CPL/FM/90

ULR - TC681622000002195F  
REPORT NO: CPL/R/W/SEPT-22/17

REPORT ISSUE DATE: 03.09.2022

SAMPLE DRAWN BY CLEENVIRON PRIVATE LIMITED

Name of the Customer : **M/s SHIVA CEMENT LIMITED**  
 Address of the Customer : **KHATKURBAHAL LIMESTONE & DOLOMITE MINES, SUNDARGARH, ODISHA**  
 Sample ID No : **CPL/W/AUG-22/35**  
 Date of Sampling : **22.08.2022**  
 Sample Description : **Ground Water**  
 Location of Sampling : **Tube well Village Khatkurbahal**  
 Sampling Method : **APHA 23<sup>rd</sup> Edition, 1060**  
 Sampling Deviation (if any) : **Nil**  
 Condition of Sample while receipt : **Sealed**  
 Appearance of Sample while receipt : **Clear**  
 Type of Container used for sampling : **Wide mouth Plastic Bottles**  
 Sample Received on : **22.08.2022**  
 Date of Test : **22.08.2022 - 29.08.2022**

Sl No	Parameter	Method of Analysis	Results Obtained	Unit	Acceptable Limit as per IS 10500: 2012
1	Turbidity	APHA 23 <sup>rd</sup> Edition, 2130 B	0.20	NTU	1.0
2	pH Value	APHA 23 <sup>rd</sup> Edition, 4500 H+B	7.22	-	6.5 - 8.5
3	Total Hardness (as CaCO <sub>3</sub> )	APHA 23 <sup>rd</sup> Edition, 2340 C	185.47	mg/l	200
4	Iron (as Fe)	APHA 23 <sup>rd</sup> Edition, 3500 Fe B	< 0.01	mg/l	0.3
5	Chlorides (as Cl)	APHA 23 <sup>rd</sup> Edition, 4500 Cl B	58.98	mg/l	250
6	Total Dissolved Solids	APHA 23 <sup>rd</sup> Edition, 2540 B	368	mg/l	500
7	Electrical Conductivity	APHA 23 <sup>rd</sup> Edition, 2510 B	600	µS/cm	-
8	Calcium (as Ca)	APHA 23 <sup>rd</sup> Edition, 3500 Ca B	46.88	mg/l	75
9	Magnesium (as Mg)	APHA 23 <sup>rd</sup> Edition, 3500 Mg B	16.66	mg/l	30
10	Copper (as Cu)	APHA 23 <sup>rd</sup> Edition, 3111 B	< 0.10	mg/l	0.05
11	Manganese (as Mn)	APHA 23 <sup>rd</sup> Edition, 3500 Mn B	< 0.05	mg/l	0.1
12	Sulfate (as SO <sub>4</sub> )	APHA 23 <sup>rd</sup> Edition, 4500 SO <sub>4</sub> <sup>2-</sup> E	33.21	mg/l	200
13	Total Nitrate (as NO <sub>3</sub> )	APHA 23 <sup>rd</sup> Edition, 4500 NO <sub>3</sub> B	6.31	mg/l	45
14	Total Alkalinity (as CaCO <sub>3</sub> )	APHA 23 <sup>rd</sup> Edition, 2320 B	144	mg/l	200
15	Acidity	APHA 23 <sup>rd</sup> Edition, 2310 B	02	mg/l	-
16	Sulphide (as H <sub>2</sub> S)	APHA 23 <sup>rd</sup> Edition, 4500 S <sup>2-</sup> D	< 0.02	mg/l	0.05
17	Sodium (as Na)	APHA 23 <sup>rd</sup> Edition, 3500 Na B	54.11	mg/l	-
18	Potassium (as K)	APHA 23 <sup>rd</sup> Edition, 3500 K B	16.80	mg/l	-
19	Fluoride (as F)	APHA 23 <sup>rd</sup> Edition, 4500 F D	0.30	mg/l	1.0

Test Done By

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Authorized Signatory  
Subhanga Praharaj  
Managing Director

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## TEST REPORT FOR WATER QUALITY ANALYSIS

FORMAT NO: CPL/PMR

ULR - TC681622000002195F  
REPORT NO: CPL/RW/SEPT-22/17

REPORT ISSUE DATE: 03.09.2022

SAMPLE DRAWN BY CLEENVIRO PRIVATE LIMITED

Name of the Customer : **M/s SHIVA CEMENT LIMITED**  
 Address of the Customer : KHATKURBAHAL LIMESTONE & DOLOMITE MINES, SUNDARGARH, ODISHA  
 Sample ID No : **CPLW/AUG-22/35**  
 Date of Sampling : 22.08.2022  
 Sample Description : Ground Water  
 Location of Sampling : Bore well Near Mines Office  
 Sampling Method : APHA 23<sup>rd</sup> Edition, 1060  
 Sampling Deviation (if any) : Nil  
 Condition of Sample while receipt : Sealed  
 Appearance of Sample while receipt : Clear  
 Type of Container used for sampling : Wide mouth Plastic Bottles  
 Sample Received on : 22.08.2022  
 Date of Test : 22.08.2022 - 29.08.2022

Sl No	Parameter	Method of Analysis	Results Obtained	Unit	Acceptable Limit as per IS 11506: 2012
20	Cadmium (as Cd)	APHA 23 <sup>rd</sup> Edition, 3111 B	ND	mg/l	0.003
21	Lead (as Pb)	APHA 23 <sup>rd</sup> Edition, 3111 B	ND	mg/l	0.01
22	Arsenic (as As)	APHA 23 <sup>rd</sup> Edition, 3114 B	ND	mg/l	0.01
23	Mercury (as Hg)	APHA 23 <sup>rd</sup> Edition, 3112 B	ND	mg/l	0.001
24	Selenium (as Se)	APHA 23 <sup>rd</sup> Edition, 3114 C	ND	mg/l	0.01
25	Nickel (as Ni)	APHA 23 <sup>rd</sup> Edition, 3111 B	ND	mg/l	0.02
26	Zinc (as Zn)	APHA 23 <sup>rd</sup> Edition, 3111 B	ND	mg/l	5.0
27	Total Chromium (as Cr)	APHA 23 <sup>rd</sup> Edition, 3111 B	ND	mg/l	0.05

ND: Non Detectable.

Test Done By

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Subhanga Praharaj  
Managing Director

\*\*\*\* End of Test Report \*\*\*\*

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## TEST REPORT FOR WATER QUALITY ANALYSIS

FORMAT NO: CPLFRM01

REPORT NO: CPL/R/W/SEPT-22/17N

REPORT ISSUE DATE: 03.09.2022

SAMPLE DRAWN BY CLEENVIRO PRIVATE LIMITED

Name of the Customer : **M/s SHIVA CEMENT LIMITED**  
 Address of the Customer : KHATKURBAHAL LIMESTONE & DOLOMITE MINES, SUNDARGARH, ODISHA  
 Sample ID No : **CPL/W/AUG-22/35**  
 Date of Sampling : 22.08.2022  
 Sample Description : Ground Water  
 Location of Sampling : Bore well Near Mines Office  
 Sampling Method : APHA 23<sup>rd</sup> Edition, 1060  
 Sampling Deviation (if any) : Nil  
 Condition of Sample while receipt : Sealed  
 Appearance of Sample while receipt : Clear  
 Type of Container used for sampling : Wide mouth Plastic Bottles  
 Sample Received on : 22.08.2022  
 Date of Test : 22.08.2022 – 29.08.2022

Sl No	Parameter	Method of Analysis	Results Obtained	Unit	Acceptable Limit as per IS 13504: 2012
1	Colour	APHA 23 <sup>rd</sup> Edition, 2120 B	< 5	Hazen	5
2	Odour	APHA 23 <sup>rd</sup> Edition, 2150 B	Agreeable	-	Agreeable
3	Taste	APHA 23 <sup>rd</sup> Edition, 2160 B	Agreeable	-	Agreeable
4	Temperature	APHA 23 <sup>rd</sup> Edition, 2550 B	27.3	°C	-
5	Residual Free Chlorine	MERCK	0.21	mg/l	0.2 (min)
6	Total Bacterial Count	RAKIRO	Absent	Nos/100ml	Absent
7	E coli	RAKIRO	Absent	Nos/100ml	Absent

Test Done By

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Managing Director

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## TEST REPORT FOR WATER QUALITY ANALYSIS

FORMAT NO: CPL/WR

ULR - TC681622000002196F  
REPORT NO: CPL/R/W/SEPT-22/18

REPORT ISSUE DATE: 03.09.2022

SAMPLE DRAWN BY CLEENVIRON PRIVATE LIMITED

Name of the Customer : **M/s SHIVA CEMENT LIMITED**  
 Address of the Customer : KHATKURBAHAL LIMESTONE & DOLOMITE MINES, SUNDARGARH, ODISHA  
 Sample ID No : **CPL/W/AUG-22/36**  
 Date of Sampling : 22.08.2022  
 Sample Description : Ground Water  
 Location of Sampling : Tube well Village Kullen Bahal  
 Sampling Method : APHA 23<sup>rd</sup> Edition, 1060  
 Sampling Deviation (if any) : Nil  
 Condition of Sample while receipt : Sealed  
 Appearance of Sample while receipt : Clear  
 Type of Container used for sampling : Wide mouth Plastic Bottles  
 Sample Received on : 22.08.2022  
 Date of Test : 22.08.2022 - 29.08.2022

Sl No	Parameter	Method of Analysis	Results Obtained	Unit	Acceptable Limit as per IS 10500: 2012
1	Turbidity	APHA 23 <sup>rd</sup> Edition, 2130 B	0.30	NTU	1.0
2	pH Value	APHA 23 <sup>rd</sup> Edition, 4500 H+B	7.51	-	6.5 - 8.5
3	Total Hardness (as CaCO <sub>3</sub> )	APHA 23 <sup>rd</sup> Edition, 2340 C	181.44	mg/l	200
4	Iron (as Fe)	APHA 23 <sup>rd</sup> Edition, 3500 Fe B	< 0.01	mg/l	0.3
5	Chlorides (as Cl)	APHA 23 <sup>rd</sup> Edition, 4500 Cl B	22.99	mg/l	250
6	Total Dissolved Solids	APHA 23 <sup>rd</sup> Edition, 2540 B	298	mg/l	500
7	Electrical Conductivity	APHA 23 <sup>rd</sup> Edition, 2510 B	480	µS/cm	-
8	Calcium (as Ca)	APHA 23 <sup>rd</sup> Edition, 3500 Ca B	27.47	mg/l	75
9	Magnesium (as Mg)	APHA 23 <sup>rd</sup> Edition, 3500 Mg B	27.43	mg/l	30
10	Copper (as Cu)	APHA 23 <sup>rd</sup> Edition, 3111 B	< 0.10	mg/l	0.05
11	Manganese (as Mn)	APHA 23 <sup>rd</sup> Edition, 3500 Mn B	< 0.05	mg/l	0.1
12	Sulfate (as SO <sub>4</sub> )	APHA 23 <sup>rd</sup> Edition, 4500 SO <sub>4</sub> <sup>2-</sup> E	20.13	mg/l	200
13	Total Nitrate (as NO <sub>3</sub> )	APHA 23 <sup>rd</sup> Edition, 4500 NO <sub>3</sub> B	< 2.20	mg/l	45
14	Total Alkalinity (as CaCO <sub>3</sub> )	APHA 23 <sup>rd</sup> Edition, 2320 B	164	mg/l	200
15	Acidity	APHA 23 <sup>rd</sup> Edition, 2310 B	< 01	mg/l	-
16	Sulphide (as H <sub>2</sub> S)	APHA 23 <sup>rd</sup> Edition, 4500 S <sup>2-</sup> D	< 0.02	mg/l	0.05
17	Sodium (as Na)	APHA 23 <sup>rd</sup> Edition, 3500 Na B	40.12	mg/l	-
18	Potassium (as K)	APHA 23 <sup>rd</sup> Edition, 3500 K B	20.46	mg/l	-
19	Fluoride (as F)	APHA 23 <sup>rd</sup> Edition, 4500 F D	0.60	mg/l	1.0

Test Done By

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Authorized Signatory  
Subhanga Praharaj  
Managing Director

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## TEST REPORT FOR WATER QUALITY ANALYSIS

FORMAT NO: CPL/TKR

ULR - TC681622000002196F  
REPORT NO: CPL/R/W/SEPT-22/18

REPORT ISSUE DATE: 03.09.2022

SAMPLE DRAWN BY CLEENVIRON PRIVATE LIMITED

Name of the Customer : **M/s SHIVA CEMENT LIMITED**  
 Address of the Customer : **KHATKURBAHAL LIMESTONE & DOLOMITE MINES, SUNDARGARH, ODISHA**  
 Sample ID No : **CPL/W/AUG-22/36**  
 Date of Sampling : **22.08.2022**  
 Sample Description : **Ground Water**  
 Location of Sampling : **Tube well Village Kullen Bahal**  
 Sampling Method : **APHA 23<sup>rd</sup> Edition, 1060**  
 Sampling Deviation (if any) : **Nil**  
 Condition of Sample while receipt : **Sealed**  
 Appearance of Sample while receipt : **Clear**  
 Type of Container used for sampling : **Wide mouth Plastic Bottles**  
 Sample Received on : **22.08.2022**  
 Date of Test : **22.08.2022 - 29.08.2022**

Sl No	Parameter	Method of Analysis	Results Obtained	Unit	Acceptable Limit as per IS 10500: 2012
20	Cadmium (as Cd)	APHA 23 <sup>rd</sup> Edition, 3111 B	ND	mg/l	0.003
21	Lead (as Pb)	APHA 23 <sup>rd</sup> Edition, 3111 B	ND	mg/l	0.01
22	Arsenic (as As)	APHA 23 <sup>rd</sup> Edition, 3114 B	ND	mg/l	0.01
23	Mercury (as Hg)	APHA 23 <sup>rd</sup> Edition, 3112 B	ND	mg/l	0.001
24	Selenium (as Se)	APHA 23 <sup>rd</sup> Edition, 3114 C	ND	mg/l	0.01
25	Nickel (as Ni)	APHA 23 <sup>rd</sup> Edition, 3111 B	ND	mg/l	0.02
26	Zinc (as Zn)	APHA 23 <sup>rd</sup> Edition, 3111 B	ND	mg/l	5.0
27	Total Chromium (as Cr)	APHA 23 <sup>rd</sup> Edition, 3111 B	ND	mg/l	0.05

ND: Non Detectable.

Test Done By

Verified By



Authorized Signatory  
Subhanga Praharaj  
Managing Director

\*\*\*\* End of Test Report \*\*\*\*

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## TEST REPORT FOR WATER QUALITY ANALYSIS

FORMAT NO: CPL/FWS

REPORT NO: CPL/R/W/SEPT-22/18N

REPORT ISSUE DATE: 03.09.2022

SAMPLE DRAWN BY CLEENVIRON PRIVATE LIMITED

Name of the Customer : **M/s SHIVA CEMENT LIMITED**  
 Address of the Customer : KHATKURBAHAL LIMESTONE & DOLOMITE MINES, SUNDARGARH, ODISHA  
 Sample ID No : **CPL/W/AUG-22/36**  
 Date of Sampling : 22.08.2022  
 Sample Description : Ground Water  
 Location of Sampling : Tube well Village Kullen Bahal  
 Sampling Method : APHA 23<sup>rd</sup> Edition, 1060  
 Sampling Deviation (if any) : Nil  
 Condition of Sample while receipt : Sealed  
 Appearance of Sample while receipt : Clear  
 Type of Container used for sampling: Wide mouth Plastic Bottles  
 Sample Received on : 22.08.2022  
 Date of Test : 22.08.2022 – 29.08.2022

Sl No	Parameter	Method of Analysis	Results Obtained	Unit	Acceptable Limit as per IS 10500: 2012
1	Colour	APHA 23 <sup>rd</sup> Edition, 2120 B	< 5	Hazen	5
2	Odour	APHA 23 <sup>rd</sup> Edition, 2150 B	Agreeable	-	Agreeable
3	Taste	APHA 23 <sup>rd</sup> Edition, 2160 B	Agreeable	-	Agreeable
4	Temperature	APHA 23 <sup>rd</sup> Edition, 2550 B	27.6	°C	-
5	Residual Free Chlorine	MERCK	0.06	mg/l	0.2 (min)
6	Total Bacterial Count	RAKIRO	Absent	Nos/100ml	Absent
7	E coli	RAKIRO	Absent	Nos/100ml	Absent

Test Done By

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Subhanga Praharaj  
Managing Director

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## TEST REPORT FOR WATER QUALITY ANALYSIS

FORMAT NO: CPL/MS

ULR - TC66162200002191F  
REPORT NO: CPL/R/W/SEPT-22/13

REPORT ISSUE DATE: 03.09.2022

SAMPLE DRAWN BY CLEENVIRON PRIVATE LIMITED

Name of the Customer : **M/s SHIVA CEMENT LIMITED**  
 Address of the Customer : **KHATKURBAHAL LIMESTONE & DOLOMITE MINES, SUNDARGARH, ODISHA**  
 Sample ID No : **CPL/W/AUG-22/37**  
 Sample Description : **Surface Water**  
 Date of Sampling : **22.08.2022**  
 Location of Sampling : **Jharia Nala After ML Area**  
 Sampling Method : **APHA 23<sup>rd</sup> Edition, 1060**  
 Sampling Deviation (if any) : **Nil**  
 Condition of Sample while receipt : **Sealed**  
 Appearance of Sample while receipt : **Turbid**  
 Type of Container used for sampling : **Wide Mouth Plastic Bottles**  
 Sample Received on : **22.08.2022**  
 Date of Test : **22.08.2022 - 29.08.2022**

Sl No	Parameters	Method of Analysis	Results Obtained	Unit	Surface Water Quality Standard as per IS: 2296 (Class C)
1.	pH Value	APHA 23 <sup>rd</sup> Edition, 4500 H+B	7.41	-	6.5 - 8.5
2.	Electrical Conductivity	APHA 23 <sup>rd</sup> Edition, 2510 B	154.1	µS/cm	-
3.	Total Dissolved Solids	APHA 23 <sup>rd</sup> Edition, 2540 B	92	mg/l	1500
4.	Total Hardness (as CaCO <sub>3</sub> )	APHA 23 <sup>rd</sup> Edition, 2340 C	68.54	mg/l	-
5.	Chlorides (as Cl)	APHA 23 <sup>rd</sup> Edition, 4500 Cl B	3.99	mg/l	600
6.	Sulfate (as SO <sub>4</sub> )	APHA 23 <sup>rd</sup> Edition, 4500 SO <sub>4</sub> <sup>2-</sup> E	5.69	mg/l	400
7.	Total Nitrate (as NO <sub>3</sub> )	APHA 23 <sup>rd</sup> Edition, 4500 NO <sub>3</sub> B	2.21	mg/l	50
8.	Fluoride (as F)	APHA 23 <sup>rd</sup> Edition, 4500 F D	0.40	mg/l	1.5
9.	Calcium (as Ca)	APHA 23 <sup>rd</sup> Edition, 3500 Ca B	21.01	mg/l	-
10.	Magnesium (as Mg)	APHA 23 <sup>rd</sup> Edition, 3500 Mg B	3.92	mg/l	-
11.	Copper (as Cu)	APHA 23 <sup>rd</sup> Edition, 3111 B	< 0.10	mg/l	1.5
12.	Iron (as Fe)	APHA 23 <sup>rd</sup> Edition, 3500 Fe B	4.07	mg/l	50
13.	Manganese (as Mn)	APHA 23 <sup>rd</sup> Edition, 3500 Mn B	< 0.05	mg/l	-
14.	Zinc (as Zn)	APHA 23 <sup>rd</sup> Edition, 3111 B	< 0.02	mg/l	15
15.	Total Arsenic (as As)	APHA 23 <sup>rd</sup> Edition, 3114 B	< 0.002	mg/l	0.2
16.	Mercury (as Hg)	APHA 23 <sup>rd</sup> Edition, 3112 B	< 0.01	mg/l	-
17.	Lead (as Pb)	APHA 23 <sup>rd</sup> Edition, 3111 B	< 0.10	mg/l	0.1
18.	Cadmium (as Cd)	APHA 23 <sup>rd</sup> Edition, 3111 B	< 0.05	mg/l	0.01
19.	Hex. Chromium (as Cr <sup>6+</sup> )	APHA 23 <sup>rd</sup> Edition, 3500 Cr B	< 0.01	mg/l	0.05
20.	Selenium (as Se)	APHA 23 <sup>rd</sup> Edition, 3114 C	< 0.01	mg/l	0.05

Test Done By

Verified By

\*\*\*\*End of Test Report\*\*\*\*  
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Authorized Signatory  
Subhanga Prabhara  
Managing Director

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Consultant and Engineers in Environmental Pollution Control & Monitoring with Laboratory Facility.

## TEST REPORT FOR WATER QUALITY ANALYSIS

FORMAT NO: CPLFM90

REPORT NO: CPL/R/W/SEPT-22/13N

REPORT ISSUE DATE: 03.09.2022

SAMPLE DRAWN BY CLEENVIRON PRIVATE LIMITED

Name of the Customer : **M/s SHIVA CEMENT LIMITED**  
 Address of the Customer : **KHATKURBAHAL LIMESTONE & DOLOMITE MINES, SUNDARGARH, ODISHA**  
 Sample ID No : **CPL/W/AUG-22/37**  
 Sample Description : **Surface Water**  
 Date of Sampling : **22.08.2022**  
 Location of Sampling : **Jharia Nala After ML Area**  
 Sampling Method : **APHA 23<sup>rd</sup> Edition, 1060**  
 Sampling Deviation (if any) : **Nil**  
 Condition of Sample while receipt : **Sealed**  
 Appearance of Sample while receipt : **Turbid**  
 Type of Container used for sampling : **Wide Mouth Plastic Bottles**  
 Sample Received on : **22.08.2022**  
 Date of Test : **22.08.2022 – 29.08.2022**

Sl No	Parameters	Method of Analysis	Results Obtained	Unit	Surface Water Quality Standard as per IS: 2296 (Class C)
1.	Colour	APHA 23 <sup>rd</sup> Edition, 2120 B	< 5	Hazen	300
2.	Odour	APHA 23 <sup>rd</sup> Edition, 2150 B	Agreeable	-	-
3.	Taste	APHA 23 <sup>rd</sup> Edition, 2160 B	Agreeable	-	-
4.	Dissolved Oxygen (Min.)	IS: 3025 (Part 38) 1989, RA 2019	6.4	mg/l	4
5.	BOD 5 days at 20°C	APHA 23 <sup>rd</sup> Edition, 5210 D	< 01	mg/l	3
6.	Oil & Grease	IS: 3025 (Part 39) 1991, RA 2019	< 0.10	mg/l	0.1
7.	Free Carbon Dioxide (as CO <sub>2</sub> )	APHA 23 <sup>rd</sup> Edition, 4500 CO <sub>2</sub> C	1.76	mg/l	-
8.	Free Ammonia (as NH <sub>3</sub> )	MERCK	< 0.012	mg/l	-
9.	Cyanide (as CN)	MERCK	< 0.002	mg/l	0.05
10.	Phenolic Compounds (as C <sub>6</sub> H <sub>5</sub> OH)	MERCK	< 0.002	mg/l	0.005
11.	Anionic Detergents (as MBAS)	MERCK	< 0.05	mg/l	1.0
12.	Total Coliforms	RAKIRO	10 <sup>3</sup>	Nosi/100ml	5000

Test Done By

Verified By

Authorized Signatory  
Subhange Praharaj  
Managing Director



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## TEST REPORT FOR WATER QUALITY ANALYSIS

FORMAT NO: CPL/RW/01

ULR - TC68162200002192F  
REPORT NO: CPL/RW/SEPT-22/14

REPORT ISSUE DATE: 03.09.2022

SAMPLE DRAWN BY CLEENVIRON PRIVATE LIMITED

Name of the Customer : **M/s SHIVA CEMENT LIMITED**  
 Address of the Customer : **KHATKURBAHAL LIMESTONE & DOLOMITE MINES, SUNDARGARH, ODISHA**  
 Sample ID No : **CPL/W/AUG-22/38**  
 Sample Description : **Surface Water**  
 Date of Sampling : **22.08.2022**  
 Location of Sampling : **Tambu Nala After ML Area**  
 Sampling Method : **APHA 23<sup>rd</sup> Edition, 1060**  
 Sampling Deviation (if any) : **Nil**  
 Condition of Sample while receipt : **Sealed**  
 Appearance of Sample while receipt : **Turbid**  
 Type of Container used for sampling : **Wide Mouth Plastic Bottles**  
 Sample Received on : **22.08.2022**  
 Date of Test : **22.08.2022 - 29.08.2022**

Sl No	Parameters	Method of Analysis	Results Obtained	Unit	Surface Water Quality Standard as per IS: 2296 (Class C)
1.	pH Value	APHA 23 <sup>rd</sup> Edition, 4500 H+B	7.24	-	6.5 - 8.5
2.	Electrical Conductivity	APHA 23 <sup>rd</sup> Edition, 2510 B	120.7	µS/cm	-
3.	Total Dissolved Solids	APHA 23 <sup>rd</sup> Edition, 2540 B	72	mg/l	1500
4.	Total Hardness (as CaCO <sub>3</sub> )	APHA 23 <sup>rd</sup> Edition, 2340 C	48.38	mg/l	-
5.	Chlorides (as Cl)	APHA 23 <sup>rd</sup> Edition, 4500 Cl B	5.99	mg/l	600
6.	Sulfate (as SO <sub>4</sub> )	APHA 23 <sup>rd</sup> Edition, 4500 SO <sub>4</sub> <sup>2-</sup> E	9.04	mg/l	400
7.	Total Nitrate (as NO <sub>3</sub> )	APHA 23 <sup>rd</sup> Edition, 4500 NO <sub>3</sub> B	4.06	mg/l	50
8.	Fluoride (as F)	APHA 23 <sup>rd</sup> Edition, 4500 F D	0.30	mg/l	1.5
9.	Calcium (as Ca)	APHA 23 <sup>rd</sup> Edition, 3500 Ca B	16.16	mg/l	-
10.	Magnesium (as Mg)	APHA 23 <sup>rd</sup> Edition, 3500 Mg B	1.95	mg/l	-
11.	Copper (as Cu)	APHA 23 <sup>rd</sup> Edition, 3111 B	< 0.10	mg/l	1.5
12.	Iron (as Fe)	APHA 23 <sup>rd</sup> Edition, 3500 Fe B	5.14	mg/l	50
13.	Manganese (as Mn)	APHA 23 <sup>rd</sup> Edition, 3500 Mn B	< 0.05	mg/l	-
14.	Zinc (as Zn)	APHA 23 <sup>rd</sup> Edition, 3111 B	< 0.02	mg/l	15
15.	Total Arsenic (as As)	APHA 23 <sup>rd</sup> Edition, 3114 B	< 0.002	mg/l	0.2
16.	Mercury (as Hg)	APHA 23 <sup>rd</sup> Edition, 3112 B	< 0.01	mg/l	-
17.	Lead (as Pb)	APHA 23 <sup>rd</sup> Edition, 3111 B	< 0.10	mg/l	0.1
18.	Cadmium (as Cd)	APHA 23 <sup>rd</sup> Edition, 3111 B	< 0.05	mg/l	0.01
19.	Hex. Chromium (as Cr <sup>6+</sup> )	APHA 23 <sup>rd</sup> Edition, 3500 Cr B	< 0.01	mg/l	0.05
20.	Selenium (as Se)	APHA 23 <sup>rd</sup> Edition, 3114 C	< 0.01	mg/l	0.05

*[Signature]*  
Test Done By

*[Signature]*  
Verified By

*[Signature]*  
Authorized Signatory  
Subhanga Prharaj  
Managing Director

\*\*\*\*End of Test Report\*\*\*\*  
Page 1 of 1

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Consultant and Engineers in Environmental Pollution Control & Monitoring with Laboratory Facility.

## TEST REPORT FOR WATER QUALITY ANALYSIS

FORMAT NO: CPLFW99

REPORT NO: CPL/R/W/SEPT-22/14N

REPORT ISSUE DATE: 03.09.2022

SAMPLE DRAWN BY CLEENVIIRON PRIVATE LIMITED

Name of the Customer : **M/s SHIVA CEMENT LIMITED**  
 Address of the Customer : **KHATKURBAHAL LIMESTONE & DOLOMITE MINES, SUNDARGARH, ODISHA**  
 Sample ID No : **CPL/W/AUG-22/38**  
 Sample Description : **Surface Water**  
 Date of Sampling : **22.08.2022**  
 Location of Sampling : **Tambu Nala After ML Area**  
 Sampling Method : **APHA 23<sup>rd</sup> Edition, 1060**  
 Sampling Deviation (if any) : **Nil**  
 Condition of Sample while receipt : **Sealed**  
 Appearance of Sample while receipt: **Turbid**  
 Type of Container used for sampling: **Wide Mouth Plastic Bottles**  
 Sample Received on : **22.08.2022**  
 Date of Test : **22.08.2022 – 29.08.2022**

Sl No	Parameters	Method of Analysis	Results Obtained	Unit	Surface Water Quality Standard as per IS: 2296 (Class C)
1.	Colour	APHA 23 <sup>rd</sup> Edition, 2120 B	< 5	Hazen	300
2.	Odour	APHA 23 <sup>rd</sup> Edition, 2150 B	Agreeable	-	-
3.	Taste	APHA 23 <sup>rd</sup> Edition, 2160 B	Agreeable	-	-
4.	Dissolved Oxygen (Min.)	IS: 3025 (Part 38) 1989, RA 2019	6.2	mg/l	4
5.	BOD 5 days at 20°C	APHA 23 <sup>rd</sup> Edition, 5210 D	< 01	mg/l	3
6.	Oil & Grease	IS: 3025 (Part 39) 1991, RA 2019	< 0.10	mg/l	0.1
7.	Free Carbon Dioxide (as CO <sub>2</sub> )	APHA 23 <sup>rd</sup> Edition, 4500 CO <sub>2</sub> C	3.52	mg/l	-
8.	Free Ammonia (as NH <sub>3</sub> )	MERCK	< 0.012	mg/l	-
9.	Cyanide (as CN)	MERCK	< 0.002	mg/l	0.05
10.	Phenolic Compounds(as C <sub>6</sub> H <sub>5</sub> OH)	MERCK	< 0.002	mg/l	0.005
11.	Anionic Detergents (as MBAS)	MERCK	< 0.05	mg/l	1.0
12.	Total Coliforms	RAKIRO	10 <sup>2</sup>	Nos/100ml	5000

Test Done By

Verified By



Authorized Signatory  
Subhanga Praharaj  
Managing Director

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Page 1 of 1

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Consultant and Engineers in Environmental Pollution Control & Monitoring with NABL Accredited Laboratory.



## TEST REPORT FOR WATER QUALITY ANALYSIS

FORMAT NO: CPL/FMS0

ULR - TC681622000002193F

REPORT NO: CPL/R/W/SEPT-22/15

REPORT ISSUE DATE: 03.09.2022

SAMPLE DRAWN BY CLEENVIRON PRIVATE LIMITED

Name of the Customer : **M/s SHIVA CEMENT LIMITED**  
 Address of the Customer : **KHATKURBAHAL LIMESTONE & DOLOMITE MINES, SUNDARGARH, ODISHA**  
 Sample ID No : **CPL/W/AUG-22/39**  
 Sample Description : **Surface Water**  
 Date of Sampling : **22.08.2022**  
 Location of Sampling : **Sankh River After ML Area**  
 Sampling Method : **APHA 23<sup>rd</sup> Edition, 1060**  
 Sampling Deviation (if any) : **Nil**  
 Condition of Sample while receipt : **Sealed**  
 Appearance of Sample while receipt : **Turbid**  
 Type of Container used for sampling : **Wide Mouth Plastic Bottles**  
 Sample Received on : **22.08.2022**  
 Date of Test : **22.08.2022 - 29.08.2022**

Sl No	Parameters	Method of Analysis	Results Obtained	Unit	Surface Water Quality Standard as per IS: 2296 (Class C)
1.	pH Value	APHA 23 <sup>rd</sup> Edition, 4500 H+B	6.77	-	6.5 - 8.5
2.	Electrical Conductivity	APHA 23 <sup>rd</sup> Edition, 2510 B	83.1	µS/cm	-
3.	Total Dissolved Solids	APHA 23 <sup>rd</sup> Edition, 2540 B	49	mg/l	1500
4.	Total Hardness (as CaCO <sub>3</sub> )	APHA 23 <sup>rd</sup> Edition, 2340 C	36.29	mg/l	-
5.	Chlorides (as Cl)	APHA 23 <sup>rd</sup> Edition, 4500 Cl B	4.99	mg/l	600
6.	Sulfate (as SO <sub>4</sub> )	APHA 23 <sup>rd</sup> Edition, 4500 SO <sub>4</sub> 2-E	4.78	mg/l	400
7.	Total Nitrate (as NO <sub>3</sub> )	APHA 23 <sup>rd</sup> Edition, 4500 NO <sub>3</sub> B	2.96	mg/l	50
8.	Fluoride (as F)	APHA 23 <sup>rd</sup> Edition, 4500 F D	0.30	mg/l	1.5
9.	Calcium (as Ca)	APHA 23 <sup>rd</sup> Edition, 3500 Ca B	9.69	mg/l	-
10.	Magnesium (as Mg)	APHA 23 <sup>rd</sup> Edition, 3500 Mg B	2.94	mg/l	-
11.	Copper (as Cu)	APHA 23 <sup>rd</sup> Edition, 3111 B	< 0.10	mg/l	1.5
12.	Iron (as Fe)	APHA 23 <sup>rd</sup> Edition, 3500 Fe B	6.72	mg/l	50
13.	Manganese (as Mn)	APHA 23 <sup>rd</sup> Edition, 3500 Mn B	< 0.05	mg/l	-
14.	Zinc (as Zn)	APHA 23 <sup>rd</sup> Edition, 3111 B	< 0.02	mg/l	15
15.	Total Arsenic (as As)	APHA 23 <sup>rd</sup> Edition, 3114 B	< 0.002	mg/l	0.2
16.	Mercury (as Hg)	APHA 23 <sup>rd</sup> Edition, 3112 B	< 0.01	mg/l	-
17.	Lead (as Pb)	APHA 23 <sup>rd</sup> Edition, 3111 B	< 0.10	mg/l	0.1
18.	Cadmium (as Cd)	APHA 23 <sup>rd</sup> Edition, 3111 B	< 0.05	mg/l	0.01
19.	Hex. Chromium (as Cr <sup>6+</sup> )	APHA 23 <sup>rd</sup> Edition, 3500 Cr B	< 0.01	mg/l	0.05
20.	Selenium (as Se)	APHA 23 <sup>rd</sup> Edition, 3114 C	< 0.01	mg/l	0.05

Test Done By



Authorized Signatory  
Subhanga Prharaj  
Managing Director

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Consultant and Engineers in Environmental Pollution Control & Monitoring with Laboratory Facility.

## TEST REPORT FOR WATER QUALITY ANALYSIS

FORMAT NO: CPL/WMO

REPORT NO: CPL/R/W/SEPT-22/15N

REPORT ISSUE DATE: 03.09.2022

SAMPLE DRAWN BY CLEENVIRON PRIVATE LIMITED

Name of the Customer : **M/s SHIVA CEMENT LIMITED**  
 Address of the Customer : **KHATKURBAHAL LIMESTONE & DOLOMITE MINES, SUNDARGARH, ODISHA**  
 Sample ID No : **CPL/W/AUG-22/39**  
 Sample Description : **Surface Water**  
 Date of Sampling : **22.08.2022**  
 Location of Sampling : **Sankh River After ML Area**  
 Sampling Method : **APHA 23<sup>rd</sup> Edition, 1060**  
 Sampling Deviation (if any) : **Nil**  
 Condition of Sample while receipt : **Sealed**  
 Appearance of Sample while receipt : **Turbid**  
 Type of Container used for sampling : **Wide Mouth Plastic Bottles**  
 Sample Received on : **22.08.2022**  
 Date of Test : **22.08.2022 – 29.08.2022**

Sl No	Parameters	Method of Analysis	Results Obtained	Unit	Surface Water Quality Standard as per IS: 2296 (Class C)
1.	Colour	APHA 23 <sup>rd</sup> Edition, 2120 B	< 5	Hazen	300
2.	Odour	APHA 23 <sup>rd</sup> Edition, 2150 B	Agreeable	-	-
3.	Taste	APHA 23 <sup>rd</sup> Edition, 2160 B	Agreeable	-	-
4.	Dissolved Oxygen (Min.)	IS: 3025 (Part 38) 1989, RA 2019	6.4	mg/l	4
5.	BOD 5 days at 20°C	APHA 23 <sup>rd</sup> Edition, 5210 D	< 01	mg/l	3
6.	Oil & Grease	IS: 3025 (Part 39) 1991, RA 2019	< 0.10	mg/l	0.1
7.	Free Carbon Dioxide (as CO <sub>2</sub> )	APHA 23 <sup>rd</sup> Edition, 4500 CO <sub>2</sub> C	1.76	mg/l	-
8.	Free Ammonia (as NH <sub>3</sub> )	MERCK	< 0.012	mg/l	-
9.	Cyanide (as CN)	MERCK	< 0.002	mg/l	0.05
10.	Phenolic Compounds(as C <sub>6</sub> H <sub>5</sub> OH)	MERCK	< 0.002	mg/l	0.005
11.	Anionic Detergents (as MBAS)	MERCK	< 0.05	mg/l	1.0
12.	Total Coliforms	RAKIRO	Absent	Nos/100ml	5000

Test Done By

Verified By



Authorized Signatory  
Subhanga Praharaj  
Managing Director

\*\*\*\*End of Test Report\*\*\*\*

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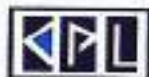
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Consultant and Engineers in Environmental Pollution Control & Monitoring with NABL Accredited Laboratory.



## TEST REPORT FOR WATER QUALITY ANALYSIS

FORMAT NO: CPL/FMS0

ULR - TC681622000002183F  
REPORT NO: CPL/R/W/SEPT-22/10

REPORT ISSUE DATE: 03.09.2022

SAMPLE DRAWN BY CLEENVIRON PRIVATE LIMITED

Name of the Customer : **M/s SHIVA CEMENT LIMITED**  
 Address of the Customer : **KHATKURBAHAL LIMESTONE & DOLOMITE MINES, SUNDARGARH, ODISHA**  
 Sample ID No : **CPL/W/AUG-22/30**  
 Sample Description : **Surface Water**  
 Date of Sampling : **19.08.2022**  
 Location of Sampling : **Kanti Jharia Nala After ML Area**  
 Sampling Method : **APHA 23<sup>rd</sup> Edition, 1060**  
 Sampling Deviation (if any) : **Nil**  
 Condition of Sample while receipt : **Sealed**  
 Appearance of Sample while receipt : **Turbid**  
 Type of Container used for sampling : **Wide Mouth Plastic Bottles**  
 Sample Received on : **19.08.2022**  
 Date of Test : **19.08.2022 - 26.08.2022**

Sl No	Parameters	Method of Analysis	Results Obtained	Unit	Surface Water Quality Standard as per IS: 2296 (Class C)
1.	pH Value	APHA 23 <sup>rd</sup> Edition, 4500 H+B	7.52	-	6.5 - 8.5
2.	Electrical Conductivity	APHA 23 <sup>rd</sup> Edition, 2510 B	200	µS/cm	-
3.	Total Dissolved Solids	APHA 23 <sup>rd</sup> Edition, 2540 B	120	mg/l	1500
4.	Total Hardness (as CaCO <sub>3</sub> )	APHA 23 <sup>rd</sup> Edition, 2340 C	104.83	mg/l	-
5.	Chlorides (as Cl)	APHA 23 <sup>rd</sup> Edition, 4500 Cl B	7.99	mg/l	600
6.	Sulfate (as SO <sub>4</sub> )	APHA 23 <sup>rd</sup> Edition, 4500 SO <sub>4</sub> <sup>2-</sup> E	29.88	mg/l	400
7.	Total Nitrate (as NO <sub>3</sub> )	APHA 23 <sup>rd</sup> Edition, 4500 NO <sub>3</sub> B	3.27	mg/l	50
8.	Fluoride (as F)	APHA 23 <sup>rd</sup> Edition, 4500 F D	< 0.05	mg/l	1.5
9.	Calcium (as Ca)	APHA 23 <sup>rd</sup> Edition, 3500 Ca B	25.86	mg/l	-
10.	Magnesium (as Mg)	APHA 23 <sup>rd</sup> Edition, 3500 Mg B	3.59	mg/l	-
11.	Copper (as Cu)	APHA 23 <sup>rd</sup> Edition, 3111 B	< 0.10	mg/l	1.5
12.	Iron (as Fe)	APHA 23 <sup>rd</sup> Edition, 3500 Fe B	3.59	mg/l	50
13.	Manganese (as Mn)	APHA 23 <sup>rd</sup> Edition, 3500 Mn B	< 0.05	mg/l	-
14.	Zinc (as Zn)	APHA 23 <sup>rd</sup> Edition, 3111 B	< 0.02	mg/l	15
15.	Total Arsenic (as As)	APHA 23 <sup>rd</sup> Edition, 3114 B	< 0.002	mg/l	0.2
16.	Mercury (as Hg)	APHA 23 <sup>rd</sup> Edition, 3112 B	< 0.01	mg/l	-
17.	Lead (as Pb)	APHA 23 <sup>rd</sup> Edition, 3111 B	< 0.10	mg/l	0.1
18.	Cadmium (as Cd)	APHA 23 <sup>rd</sup> Edition, 3111 B	< 0.05	mg/l	0.01
19.	Hex. Chromium (as Cr <sup>6+</sup> )	APHA 23 <sup>rd</sup> Edition, 3500 Cr B	< 0.01	mg/l	0.05
20.	Selenium (as Se)	APHA 23 <sup>rd</sup> Edition, 3114 C	< 0.01	mg/l	0.05

Test Done By

Verified By

\*\*\*\*End of Test Report\*\*\*\*  
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Authorized Signatory  
Subhanga Praharaj  
Managing Director

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Consultant and Engineers in Environmental Pollution Control & Monitoring with Laboratory Facility.

## TEST REPORT FOR WATER QUALITY ANALYSIS

FORMAT NO: CPL/R/W

REPORT NO: CPL/R/W/SEPT-22/10N

REPORT ISSUE DATE: 03.09.2022

SAMPLE DRAWN BY CLEENVIRON PRIVATE LIMITED

Name of the Customer : **M/s SHIVA CEMENT LIMITED**  
 Address of the Customer : **KHATKURBAHAL LIMESTONE & DOLOMITE MINES, SUNDARGARH, ODISHA**  
 Sample ID No : **CPL/W/AUG-22/30**  
 Sample Description : **Surface Water**  
 Date of Sampling : **19.08.2022**  
 Location of Sampling : **Kanti Jharia Nala After ML Area**  
 Sampling Method : **APHA 23<sup>rd</sup> Edition, 1060**  
 Sampling Deviation (if any) : **Nil**  
 Condition of Sample while receipt : **Sealed**  
 Appearance of Sample while receipt : **Turbid**  
 Type of Container used for sampling : **Wide Mouth Plastic Bottles**  
 Sample Received on : **19.08.2022**  
 Date of Test : **19.08.2022 – 26.08.2022**

Sl No	Parameters	Method of Analysis	Results Obtained	Unit	Surface Water Quality Standard as per IS: 2296 (Class C)
1.	Colour	APHA 23 <sup>rd</sup> Edition, 2120 B	< 5	Hazen	300
2.	Odour	APHA 23 <sup>rd</sup> Edition, 2150 B	Agreeable	-	-
3.	Taste	APHA 23 <sup>rd</sup> Edition, 2160 B	Agreeable	-	-
4.	Dissolved Oxygen (Min.)	IS: 3025 (Part 38) 1989, RA 2019	6.2	mg/l	4
5.	BCD 5 days at 20°C	APHA 23 <sup>rd</sup> Edition, 5210 D	01	mg/l	3
6.	Oil & Grease	IS: 3025 (Part 39) 1991, RA 2019	< 0.10	mg/l	0.1
7.	Free Carbon Dioxide (as CO <sub>2</sub> )	APHA 23 <sup>rd</sup> Edition, 4500 CO <sub>2</sub> C	5.28	mg/l	-
8.	Free Ammonia (as NH <sub>3</sub> )	MERCK	< 0.012	mg/l	-
9.	Cyanide (as CN)	MERCK	< 0.002	mg/l	0.05
10.	Phenolic Compounds(as C <sub>6</sub> H <sub>5</sub> OH)	MERCK	< 0.002	mg/l	0.005
11.	Anionic Detergents (as MBAS)	MERCK	< 0.05	mg/l	1.0
12.	Total Coliforms	RAKIRO	10 <sup>2</sup>	Nos/100ml	5000

Test Done By



Authorized Signatory  
Subhanga Praharaj  
Managing Director

\*\*\*\*End of Test Report\*\*\*\*

Page 1 of 1

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# Cleenviron Private Limited

Consultant and Engineers in Environmental Pollution Control & Monitoring with NABL Accredited Laboratory.



## TEST REPORT FOR WATER QUALITY ANALYSIS

FORMAT NO: CPL/FM66

ULR - TC681622000002185F

REPORT NO: CPL/R/W/SEPT-22/12

REPORT ISSUE DATE: 03.09.2022

SAMPLE DRAWN BY CLEENVIRON PRIVATE LIMITED

Name of the Customer : **M/s SHIVA CEMENT LIMITED**  
 Address of the Customer : **KHATKURBAHAL LIMESTONE & DOLOMITE MINES, SUNDARGARH, ODISHA**  
 Sample ID No : **CPL/W/AUG-22/32**  
 Sample Description : **Surface Water**  
 Date of Sampling : **19.08.2022**  
 Location of Sampling : **Nakti Jor Nala After ML Area**  
 Sampling Method : **APHA 23<sup>rd</sup> Edition, 1060**  
 Sampling Deviation (if any) : **Nil**  
 Condition of Sample while receipt : **Sealed**  
 Appearance of Sample while receipt : **Turbid**  
 Type of Container used for sampling : **Wide Mouth Plastic Bottles**  
 Sample Received on : **19.08.2022**  
 Date of Test : **19.08.2022 - 26.08.2022**

Sl No	Parameters	Method of Analysis	Results Obtained	Unit	Surface Water Quality Standard as per IS: 2296 (Class C)
1.	pH Value	APHA 23 <sup>rd</sup> Edition, 4500 H+B	7.32	-	6.5 - 8.5
2.	Electrical Conductivity	APHA 23 <sup>rd</sup> Edition, 2510 B	191	µS/cm	-
3.	Total Dissolved Solids	APHA 23 <sup>rd</sup> Edition, 2540 B	115	mg/l	1500
4.	Total Hardness (as CaCO <sub>3</sub> )	APHA 23 <sup>rd</sup> Edition, 2340 C	92.74	mg/l	-
5.	Chlorides (as Cl)	APHA 23 <sup>rd</sup> Edition, 4500 Cl B	7.99	mg/l	600
6.	Sulfate (as SO <sub>4</sub> )	APHA 23 <sup>rd</sup> Edition, 4500 SO <sub>4</sub> <sup>2-</sup> E	40.80	mg/l	400
7.	Total Nitrate (as NO <sub>3</sub> )	APHA 23 <sup>rd</sup> Edition, 4500 NO <sub>3</sub> B	4.15	mg/l	50
8.	Fluoride (as F)	APHA 23 <sup>rd</sup> Edition, 4500 F D	< 0.05	mg/l	1.5
9.	Calcium (as Ca)	APHA 23 <sup>rd</sup> Edition, 3500 Ca B	22.62	mg/l	-
10.	Magnesium (as Mg)	APHA 23 <sup>rd</sup> Edition, 3500 Mg B	8.82	mg/l	-
11.	Copper (as Cu)	APHA 23 <sup>rd</sup> Edition, 3111 B	< 0.10	mg/l	1.5
12.	Iron (as Fe)	APHA 23 <sup>rd</sup> Edition, 3500 Fe B	6.20	mg/l	50
13.	Manganese (as Mn)	APHA 23 <sup>rd</sup> Edition, 3500 Mn B	< 0.05	mg/l	-
14.	Zinc (as Zn)	APHA 23 <sup>rd</sup> Edition, 3111 B	< 0.02	mg/l	15
15.	Total Arsenic (as As)	APHA 23 <sup>rd</sup> Edition, 3114 B	< 0.002	mg/l	0.2
16.	Mercury (as Hg)	APHA 23 <sup>rd</sup> Edition, 3112 B	< 0.01	mg/l	-
17.	Lead (as Pb)	APHA 23 <sup>rd</sup> Edition, 3111 B	< 0.10	mg/l	0.1
18.	Cadmium (as Cd)	APHA 23 <sup>rd</sup> Edition, 3111 B	< 0.05	mg/l	0.01
19.	Hex. Chromium (as Cr <sup>6+</sup> )	APHA 23 <sup>rd</sup> Edition, 3500 Cr B	< 0.01	mg/l	0.05
20.	Selenium (as Se)	APHA 23 <sup>rd</sup> Edition, 3114 C	< 0.01	mg/l	0.05

Test Done By

Verified By

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Subhanga Praharaj  
Managing Director

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# Cleenviron Private Limited

Consultant and Engineers in Environmental Pollution Control & Monitoring with Laboratory Facility.

## TEST REPORT FOR WATER QUALITY ANALYSIS

FORMAT NO: CPL/R/WE

REPORT NO: CPL/R/W/SEPT-22/12N

REPORT ISSUE DATE: 03.09.2022

SAMPLE DRAWN BY CLEENVIRON PRIVATE LIMITED

Name of the Customer : **M/s SHIVA CEMENT LIMITED**  
 Address of the Customer : **KHATKURBAHAL LIMESTONE & DOLOMITE MINES, SUNDARGARH, ODISHA**  
 Sample ID No : **CPL/W/AUG-22/32**  
 Sample Description : **Surface Water**  
 Date of Sampling : **19.08.2022**  
 Location of Sampling : **Nakti Jor Nala After ML Area**  
 Sampling Method : **APHA 23<sup>rd</sup> Edition, 1060**  
 Sampling Deviation (if any) : **Nil**  
 Condition of Sample while receipt : **Sealed**  
 Appearance of Sample while receipt : **Turbid**  
 Type of Container used for sampling : **Wide Mouth Plastic Bottles**  
 Sample Received on : **19.08.2022**  
 Date of Test : **19.08.2022 – 26.08.2022**

Sl No	Parameters	Method of Analysis	Results Obtained	Unit	Surface Water Quality Standard as per IS: 2296 (Class C)
1.	Colour	APHA 23 <sup>rd</sup> Edition, 2120 B	< 5	Hazen	300
2.	Odour	APHA 23 <sup>rd</sup> Edition, 2150 B	Agreeable	-	-
3.	Taste	APHA 23 <sup>rd</sup> Edition, 2160 B	Agreeable	-	-
4.	Dissolved Oxygen (Min.)	IS: 3025 (Part 38) 1989, RA 2019	6.4	mg/l	4
5.	BOD 5 days at 20°C	APHA 23 <sup>rd</sup> Edition, 5210 D	< 01	mg/l	3
6.	Oil & Grease	IS: 3025 (Part 39) 1991, RA 2019	< 0.10	mg/l	0.1
7.	Free Carbon Dioxide (as CO <sub>2</sub> )	APHA 23 <sup>rd</sup> Edition, 4500 CO <sub>2</sub> C	5.28	mg/l	-
8.	Free Ammonia (as NH <sub>3</sub> )	MERCK	< 0.012	mg/l	-
9.	Cyanide (as CN)	MERCK	< 0.002	mg/l	0.05
10.	Phenolic Compounds(as C <sub>6</sub> H <sub>5</sub> OH)	MERCK	< 0.002	mg/l	0.005
11.	Anionic Detergents (as MBAS)	MERCK	< 0.05	mg/l	1.0
12.	Total Coliforms	RAKIRO	10 <sup>2</sup>	Nos/100ml	5000

Test Done By

Verified By



Authorized Signatory  
Subhanga Praharaj  
Managing Director

\*\*\*\*\*End of Test Report\*\*\*\*\*

Page 1 of 1

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# Cleenviron Private Limited

Consultant and Engineers in Environmental Pollution Control & Monitoring with NABL Accredited Laboratory.



## TEST REPORT FOR WATER QUALITY ANALYSIS

FORMAT NO: CPL/RW/99

ULR - TC68162200002197F  
REPORT NO: CPL/RW/SEPT-22/19

REPORT ISSUE DATE: 03.09.2022

SAMPLE DRAWN BY CLEENVIRON PRIVATE LIMITED

Name of the Customer : **M/s SHIVA CEMENT LIMITED**  
 Address of the Customer : **KHATKURBAHAL LIMESTONE & DOLOMITE MINES, SUNDARGARH, ODISHA**  
 Sample ID No : **CPL/W/AUG-22/40**  
 Sample Description : **Surface Water**  
 Date of Sampling : **22.08.2022**  
 Location of Sampling : **Mine Pit - 1**  
 Sampling Method : **APHA 23<sup>rd</sup> Edition, 1060**  
 Sampling Deviation (if any) : **Nil**  
 Condition of Sample while receipt : **Sealed**  
 Appearance of Sample while receipt : **Clear**  
 Type of Container used for sampling : **Wide Mouth Plastic Bottles**  
 Sample Received on : **22.08.2022**  
 Date of Test : **22.08.2022 - 29.08.2022**

Sl No	Parameters	Method of Analysis	Results Obtained	Unit	Surface Water Quality Standard as per IS: 2296 (Class C)
1.	pH Value	APHA 23 <sup>rd</sup> Edition, 4500 H+B	7.92	-	6.5 - 8.5
2.	Electrical Conductivity	APHA 23 <sup>rd</sup> Edition, 2510 B	329	µS/cm	-
3.	Total Dissolved Solids	APHA 23 <sup>rd</sup> Edition, 2540 B	197	mg/l	1500
4.	Total Hardness (as CaCO <sub>3</sub> )	APHA 23 <sup>rd</sup> Edition, 2340 C	145.15	mg/l	-
5.	Chlorides (as Cl)	APHA 23 <sup>rd</sup> Edition, 4500 Cl B	20.99	mg/l	600
6.	Sulfate (as SO <sub>4</sub> )	APHA 23 <sup>rd</sup> Edition, 4500 SO <sub>4</sub> <sup>2-</sup> E	17.80	mg/l	400
7.	Total Nitrate (as NO <sub>3</sub> )	APHA 23 <sup>rd</sup> Edition, 4500 NO <sub>3</sub> B	2.24	mg/l	50
8.	Fluoride (as F)	APHA 23 <sup>rd</sup> Edition, 4500 F D	0.70	mg/l	1.5
9.	Calcium (as Ca)	APHA 23 <sup>rd</sup> Edition, 3500 Ca B	42.02	mg/l	-
10.	Magnesium (as Mg)	APHA 23 <sup>rd</sup> Edition, 3500 Mg B	9.79	mg/l	-
11.	Copper (as Cu)	APHA 23 <sup>rd</sup> Edition, 3111 B	< 0.10	mg/l	1.5
12.	Iron (as Fe)	APHA 23 <sup>rd</sup> Edition, 3500 Fe B	0.41	mg/l	50
13.	Manganese (as Mn)	APHA 23 <sup>rd</sup> Edition, 3500 Mn B	< 0.05	mg/l	-
14.	Zinc (as Zn)	APHA 23 <sup>rd</sup> Edition, 3111 B	< 0.02	mg/l	15
15.	Total Arsenic (as As)	APHA 23 <sup>rd</sup> Edition, 3114 B	< 0.002	mg/l	0.2
16.	Mercury (as Hg)	APHA 23 <sup>rd</sup> Edition, 3112 B	< 0.01	mg/l	-
17.	Lead (as Pb)	APHA 23 <sup>rd</sup> Edition, 3111 B	< 0.10	mg/l	0.1
18.	Cadmium (as Cd)	APHA 23 <sup>rd</sup> Edition, 3111 B	< 0.05	mg/l	0.01
19.	Hex. Chromium (as Cr <sup>6+</sup> )	APHA 23 <sup>rd</sup> Edition, 3500 Cr B	< 0.01	mg/l	0.05
20.	Selenium (as Se)	APHA 23 <sup>rd</sup> Edition, 3114 C	< 0.01	mg/l	0.05
21.	Total Suspended Solids	APHA 23 <sup>rd</sup> Edition, 2540 D	< 2.5	mg/l	-

Test Done By



Verified By

\*\*\*\*\*End of Test Report\*\*\*\*\*  
Page 1 of 1

Authorized Signatory  
Subhanga Praharaj  
Managing Director

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Consultant and Engineers in Environmental Pollution Control & Monitoring with Laboratory Facility.

## TEST REPORT FOR WATER QUALITY ANALYSIS

FORMAT NO: CPL/PW99

REPORT NO: CPL/R/W/SEPT-22/19N

REPORT ISSUE DATE: 03.09.2022

SAMPLE DRAWN BY CLEENVIRON PRIVATE LIMITED

Name of the Customer : **M/s SHIVA CEMENT LIMITED**  
 Address of the Customer : **KHATKURBAHAL LIMESTONE & DOLOMITE MINES, SUNDARGARH, ODISHA**  
 Sample ID No : **CPL/W/AUG-22/40**  
 Sample Description : **Surface Water**  
 Date of Sampling : **22.08.2022**  
 Location of Sampling : **Mine Pit - 1**  
 Sampling Method : **APHA 23<sup>rd</sup> Edition, 1060**  
 Sampling Deviation (if any) : **Nil**  
 Condition of Sample while receipt : **Sealed**  
 Appearance of Sample while receipt : **Clear**  
 Type of Container used for sampling : **Wide Mouth Plastic Bottles**  
 Sample Received on : **22.08.2022**  
 Date of Test : **22.08.2022 - 29.08.2022**

Sl No	Parameters	Method of Analysis	Results Obtained	Unit	Surface Water Quality Standard as per IS: 2296 (Class C)
1.	Colour	APHA 23 <sup>rd</sup> Edition, 2120 B	< 5	Hazen	300
2.	Odour	APHA 23 <sup>rd</sup> Edition, 2150 B	Agreeable	-	-
3.	Taste	APHA 23 <sup>rd</sup> Edition, 2160 B	Agreeable	-	-
4.	Dissolved Oxygen (Min.)	IS: 3025 (Part 38) 1989, RA 2019	6.2	mg/l	4
5.	BOD 5 days at 20°C	APHA 23 <sup>rd</sup> Edition, 5210 D	< 01	mg/l	3
6.	Oil & Grease	IS: 3025 (Part 39) 1991, RA 2019	< 0.10	mg/l	0.1
7.	Free Carbon Dioxide (as CO <sub>2</sub> )	APHA 23 <sup>rd</sup> Edition, 4500 CO <sub>2</sub> C	1.76	mg/l	-
8.	Free Ammonia (as NH <sub>3</sub> )	MERCK	< 0.012	mg/l	-
9.	Cyanide (as CN)	MERCK	< 0.002	mg/l	0.05
10.	Phenolic Compounds(as C <sub>6</sub> H <sub>5</sub> CH)	MERCK	< 0.002	mg/l	0.005
11.	Anionic Detergents (as MBAS)	MERCK	< 0.05	mg/l	1.0
12.	Total Coliforms	RAKIRO	10	Nos/100ml	5000

Test Done By



Verified By

Authorized Signatory  
Subhanga Prharaj  
Managing Director

\*\*\*\*End of Test Report\*\*\*\*

Page 1 of 1

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## TEST REPORT FOR WATER QUALITY ANALYSIS

FORMAT NO: CPL/MS

ULR - TC68162200002198F

REPORT NO: CPL/R/W/SEPT-22/20

REPORT ISSUE DATE: 03.09.2022

SAMPLE DRAWN BY CLEENVIRON PRIVATE LIMITED

Name of the Customer : **M/s SHIVA CEMENT LIMITED**  
 Address of the Customer : **KHATKURBAHAL LIMESTONE & DOLOMITE MINES, SUNDARGARH, ODISHA**  
 Sample ID No : **CPL/W/AUG-22/41**  
 Sample Description : **Surface Water**  
 Date of Sampling : **22.08.2022**  
 Location of Sampling : **Mine Pit - 2**  
 Sampling Method : **APHA 23<sup>rd</sup> Edition, 1060**  
 Sampling Deviation (if any) : **Nil**  
 Condition of Sample while receipt : **Sealed**  
 Appearance of Sample while receipt : **Clear**  
 Type of Container used for sampling : **Wide Mouth Plastic Bottles**  
 Sample Received on : **22.08.2022**  
 Date of Test : **22.08.2022 - 29.08.2022**

Sl No	Parameters	Method of Analysis	Results Obtained	Unit	Surface Water Quality Standard as per IS: 2296 (Class C)
1.	pH Value	APHA 23 <sup>rd</sup> Edition, 4500 H+B	8.02	-	6.5 - 8.5
2.	Electrical Conductivity	APHA 23 <sup>rd</sup> Edition, 2510 B	291	μS/cm	-
3.	Total Dissolved Solids	APHA 23 <sup>rd</sup> Edition, 2540 B	174	mg/l	1500
4.	Total Hardness (as CaCO <sub>3</sub> )	APHA 23 <sup>rd</sup> Edition, 2340 C	145.15	mg/l	-
5.	Chlorides (as Cl)	APHA 23 <sup>rd</sup> Edition, 4500 Cl B	13.99	mg/l	600
6.	Sulfate (as SO <sub>4</sub> )	APHA 23 <sup>rd</sup> Edition, 4500 SO <sub>4</sub> 2-E	7.47	mg/l	400
7.	Total Nitrate (as NO <sub>3</sub> )	APHA 23 <sup>rd</sup> Edition, 4500 NO <sub>3</sub> B	2.34	mg/l	50
8.	Fluoride (as F)	APHA 23 <sup>rd</sup> Edition, 4500 F D	1.0	mg/l	1.5
9.	Calcium (as Ca)	APHA 23 <sup>rd</sup> Edition, 3500 Ca B	37.17	mg/l	-
10.	Magnesium (as Mg)	APHA 23 <sup>rd</sup> Edition, 3500 Mg B	12.74	mg/l	-
11.	Copper (as Cu)	APHA 23 <sup>rd</sup> Edition, 3111 B	< 0.10	mg/l	1.5
12.	Iron (as Fe)	APHA 23 <sup>rd</sup> Edition, 3500 Fe B	1.16	mg/l	50
13.	Manganese (as Mn)	APHA 23 <sup>rd</sup> Edition, 3500 Mn B	< 0.05	mg/l	-
14.	Zinc (as Zn)	APHA 23 <sup>rd</sup> Edition, 3111 B	< 0.02	mg/l	15
15.	Total Arsenic (as As)	APHA 23 <sup>rd</sup> Edition, 3114 B	< 0.002	mg/l	0.2
16.	Mercury (as Hg)	APHA 23 <sup>rd</sup> Edition, 3112 B	< 0.01	mg/l	-
17.	Lead (as Pb)	APHA 23 <sup>rd</sup> Edition, 3111 B	< 0.10	mg/l	0.1
18.	Cadmium (as Cd)	APHA 23 <sup>rd</sup> Edition, 3111 B	< 0.05	mg/l	0.01
19.	Hex. Chromium (as Cr <sup>6+</sup> )	APHA 23 <sup>rd</sup> Edition, 3500 Cr B	< 0.01	mg/l	0.05
20.	Selenium (as Se)	APHA 23 <sup>rd</sup> Edition, 3114 C	< 0.01	mg/l	0.05
21.	Total Suspended Solids	APHA 23 <sup>rd</sup> Edition, 2540 D	< 2.5	mg/l	-

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\*\*\*\*End of Test Report\*\*\*\*  
Page 1 of 1

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Subhanga Praharaj  
Managing Director

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Consultant and Engineers in Environmental Pollution Control & Monitoring with Laboratory Facility.

## TEST REPORT FOR WATER QUALITY ANALYSIS

FORMAT NO: CPLFM99

REPORT NO: CPL/RW/SEPT-22/20N

REPORT ISSUE DATE: 03.09.2022

SAMPLE DRAWN BY CLEENVIIRON PRIVATE LIMITED

Name of the Customer : **M/s SHIVA CEMENT LIMITED**  
 Address of the Customer : **KHATKURBAHAL LIMESTONE & DOLOMITE MINES, SUNDARGARH, ODISHA**  
 Sample ID No : **CPL/W/AUG-22/41**  
 Sample Description : **Surface Water**  
 Date of Sampling : **22.08.2022**  
 Location of Sampling : **Mine Pit - 2**  
 Sampling Method : **APHA 23<sup>rd</sup> Edition, 1060**  
 Sampling Deviation (if any) : **Nil**  
 Condition of Sample while receipt : **Sealed**  
 Appearance of Sample while receipt : **Clear**  
 Type of Container used for sampling : **Wide Mouth Plastic Bottles**  
 Sample Received on : **22.08.2022**  
 Date of Test : **22.08.2022 - 29.08.2022**

Sl No	Parameters	Method of Analysis	Results Obtained	Unit	Surface Water Quality Standard as per IS: 2296 (Class C)
1.	Colour	APHA 23 <sup>rd</sup> Edition, 2120 B	< 5	Hazen	300
2.	Odour	APHA 23 <sup>rd</sup> Edition, 2150 B	Agreeable	-	-
3.	Taste	APHA 23 <sup>rd</sup> Edition, 2160 B	Agreeable	-	-
4.	Dissolved Oxygen (Min.)	IS: 3025 (Part 38) 1989, RA 2019	6.2	mg/l	4
5.	BCD 5 days at 20°C	APHA 23 <sup>rd</sup> Edition, 5210 D	01	mg/l	3
6.	Oil & Grease	IS: 3025 (Part 39) 1991, RA 2019	< 0.10	mg/l	0.1
7.	Free Carbon Dioxide (as CO <sub>2</sub> )	APHA 23 <sup>rd</sup> Edition, 4500 CO <sub>2</sub> C	1.76	mg/l	-
8.	Free Ammonia (as NH <sub>3</sub> )	MERCK	< 0.012	mg/l	-
9.	Cyanide (as CN)	MERCK	< 0.002	mg/l	0.05
10.	Phenolic Compounds(as C <sub>6</sub> H <sub>5</sub> OH)	MERCK	< 0.002	mg/l	0.005
11.	Anionic Detergents (as MBAS)	MERCK	< 0.05	mg/l	1.0
12.	Total Coliforms	RAKIRO	10	Nos/100ml	5000

Test Done By



Verified By

Authorized Signatory  
Subhanga Praharaj  
Managing Director

\*\*\*\*End of Test Report\*\*\*\*

Page 1 of 1

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# Cleenviron Private Limited

Consultant and Engineers in Environmental Pollution Control & Monitoring with NABL Accredited Laboratory.



## TEST REPORT FOR NOISE LEVEL MONITORING

FORMAT NO: CPL/MS2

ULR - TC68162200002213F

REPORT NO: CPL/R/N/SEPT-22/13

REPORT ISSUE DATE: 03.09.2022

MONITORING DONE BY CLEENVIRON PRIVATE LIMITED

Name of the Customer : **M/s SHIVA CEMENT LIMITED**  
 Address of the Customer : **KHATKURBAHAL LIMESTONE & DOLOMITE MINES, SUNDARGARH, ODISHA**  
 Instrument Used : **Sound Level Meter (LUTRON: SL 4001)**

Station No	N1	N2
Sample ID	CPL/N/AUG-22/87	CPL/N/AUG-22/88
Date of Monitoring	22.08.2022	22.08.2022
Location of Monitoring	NEAR MINES MAIN GATE	NEAR MINES OFFICE AREA

SL NO	STATION NO	$L_{eq}$ dB(A)	$L_{max}$ dB(A)	$L_{min}$ dB(A)
1.	N1	54.1	61.0	47.9
2.	N2	55.8	62.2	48.8

Station No	N3	N4	N5
Sample ID	CPL/N/AUG-22/89	CPL/N/AUG-22/90	CPL/N/AUG-22/91
Date of Monitoring	22.08.2022	22.08.2022	22.08.2022
Location of Monitoring	NEAR MINES PIT-1	NEAR MINES PIT-2	KHATKURBAHAL VILLAGE AREA

SL NO	STATION NO	$L_{eq}$ dB(A)	$L_{max}$ dB(A)	$L_{min}$ dB(A)
3.	N3	69.5	73.0	65.3
4.	N4	54.7	60.4	48.7
5.	N5	51.6	55.2	46.4

Test Done By



Authorized Signatory  
 Subhanga Praharaj  
 Managing Director

### AMBIENT AIR QUALITY STANDARDS IN RESPECT OF NOISE AS PER CPCB

Area Code	Category of Area/Zone	Limits in dB (A) Leq.	
		Day Time	Night Time
A	Industrial Area	75	70
B	Commercial Area	65	55
C	Residential Area	55	45
D	Silence Zone	50	40

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

Page 1 of 1

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