



GLOBAL TECH ENVIRO EXPERTS PVT. LTD.

(FORMERLY GLOBAL EXPERTS)

An ISO 9001:2005 Certified Company

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STACK MONITORING RESULT

Name of Industry & Address	M/s SHIVA CEMENT LIMITED: Teleghana, Kutra, Sundargarh
Date of Monitoring	21-12-17
Date of Analysis	24-12-17
Reference No	Stk-05/12/17

Sl. No.	Parameters	(Result)					Protocols
		Cement Mill 1	Kiln	Coal Mill	Raw Material Mill	Cement Mill 2	
1	Particulate Matter (PM) in mg/Nm ³	27.2	28.6	26.2	26.7	28.2	IS:11255 (Pt 1)
2	Flue Gas Temperature (°C) T _s	28.2	146.1	28.2	28.3	28.2	IS:11255 (Pt 3)
3	Flue Gas Velocity (m/s)	4.2	5.2	4.6	4.8	4.8	IS:11255 (Pt 3)
4	Ambient Temperature °C (T _a)	22.1	22.4	22.6	22.8	22.4	-
5	Height of H ₂ O Column in mm	2.12	2.10	2.16	2.12	2.14	-
6	Carbon Monoxide (CO) in ppm	-	342	-	-	-	IS:13270/GC
7	Carbon Dioxide (CO ₂) in %	-	-	-	-	-	IS:13270/GC
8	Oxygen (O ₂) in %	-	14.4	-	-	-	Orsat Apparatus
9	Sulfur Dioxide (SO ₂) in ppm	-	66	-	-	-	IS:11255 (Pt 2)
10	Oxides of Nitrogen (NO _x) in ppm	-	102	-	-	-	IS:11255 (Pt 7)

Sampling Instrument : Stack Monitoring Kit VSS-I & Flue Gas Analyzer (Quintox)
Permissible Standard for PM: 30 mg/ Nm³.

For Global Tech Enviro Experts Pvt. Ltd.

(Authorised Signatory)

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AMBIENT AIR QUALITY RESULTS

Name of Industry & Address	:	M/s SHIVA CEMENT LIMITED Teleghana, Kutra, Sundargarh
Date of Monitoring	:	21-12-17
Date of Analysis	:	24-12-17
Reference No.	:	Air-03/12/17

Pollutant	Concentration in Ambient Air			NAAQS 2009 In $\mu\text{g}/\text{m}^3$	Protocol	Instrument used and Method of Measurement
	Main Gate	Office Building	Kiln Site			
	1	2	3			
Particulate Matter (PM_{10})	67.2	69.4	70.4	100	IS : 5182(Pt 23)	Fine Particulate Sampler SLE/FPS 105 and Gravimetric
Particulate Matter ($\text{PM}_{2.5}$)	27.6	29.4	32.8	60	EPA Guideline	Fine Particulate Sampler SLE/FPS 105 and Gravimetric
Sulfur Dioxide (SO_2)	9.2	9.6	15.2	80	IS : 5182(Pt 2)	Spectropho- tometric Analysis (West- Gaeke Method)
Oxides of Nitrogen (NO_x)	12.6	14.2	21.2	80	IS : 5182(Pt 6)	Jacob & Hochheiser Modified(Na-Arsenite) Method
Carbon Monoxide(CO)	388	412	445	4000	NDIR	Non dispersive Infrared Spectrometry

For Global Tech Enviro Experts Pvt. Ltd.

(Authorised Signatory)



GROUND WATER MONITORING REPORT (PLANT SITE)

Name of Industry & Address	:	M/s SHIVA CEMENT LIMITED Teleghana, Kutra, Sundargarh
Date of Monitoring	:	24-12-17
Date of Analysis	:	26-12-17
Reference No.	:	N-35 /12/17

Sl. No.	Parameters	Unit	Desirable Limits as per IS:10500 (Max)	Permissible	Result	Protocol
1.	pH	-	6.5 - 8.5	No Relax	7.6	IS3025:PART11:1983
2.	Colour	Hazen	5	25	2.2	IS3025:PART04:1983
3.	Odour	Un Objectionable	UO	Un objectionable	UO	IS3025:PART05:1983
4.	Taste		Agreeable	-	Agreeable	IS3025:PART 7&8:1984
5.	Turbidity	NTU	5	10	2.1	IS3025:PART10:1984
6.	Total Dissolved Solid	mg/l	500	2000	72	IS3025:PART16:1984
7.	Alkalinity (as CaCO ₃)	mg/l	200	600	55	IS3025:PART23:1986
8.	Total Hardness as CaCO ₃	mg/l	300	1000	108	IS3025:PART21:1983
9.	Iron as Fe	mg/l	0.03	1.0	0.001	IS3025:PART53:2003
10.	Chloride as Cl	mg/l	250	1000	30.1	IS3025:PART32:1988
11.	Residual Chlorine	mg/l	0.2	-	ND	IS3025:PART26:1986
12.	Calcium as Ca	mg/l	75	200	34.8	IS3025:PART40:1991
13.	Magnesium as Mg	mg/l	30	100	12.2	IS3025:PART46:1994
14.	Copper as Cu	mg/l	0.05	1.5	ND	IS3025:PART42:1992
15.	Manganese as Mn	mg/l	0.1	0.3	<0.001	IS3025:PART35:1964
16.	Sulphate as SO ₄	mg/l	200	400	4.8	IS3025:PART24:1986
17.	Nitrate as NO ₃ -N	mg/l	45	No Relax	3.0	IS3025:PART34:1988
18.	Fluoride as F	mg/l	1	1.5	0.16	IS3025:PART23:1964
19.	Phenolic Compound C ₆ H ₅ OH	mg/l	0.001	0.002	ND	IS3025:PART54:1964



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20.	Mercury as Hg	mg/l	0.001	No Relax	<0.001	IS3025:PART48:1994
21.	Cadmium as Cd	mg/l	0.01	No Relax	0.001	IS3025:PART41:1992
22.	Selenium as Se	mg/l	0.01	No Relax	ND	IS3025:PART56:2003
23.	Arsenic as As	mg/l	0.01	No Relax	ND	IS3025:PART37:1988
24.	Cyanide as CN	mg/l	0.05	No Relax	ND	IS3025:PART27:1986
25.	Lead as Pb	mg/l	0.05	No Relax	0.004	IS3025:PART47:1994
26.	Zinc as Zn	mg/l	5	15	0.001	IS3025:PART49:1991
27.	Anionic Detergent as MBAS	mg/l	0.2	1	ND	Annex K of IS 13428:2005
28.	Chromium as Cr ⁶⁺	mg/l	0.05	No Relax	<0.001	IS3025:PART52:2003
29.	Mineral Oil	mg/l	0.01	0.03	ND	IS3025:PART39:2003
30.	Polynuclear Aromatic hydrocarbon	mg/l	-	-	ND	APHA 6440
31.	Aluminium as Al	mg/l	0.03	0.2	0.002	IS3025:PART55:2003
32.	Boron as B	mg/l	1	5	0.001	Annex H of IS13428: 2005
33.	Total Coliforms	MPN/100ml	-	10/100ml	Absent	IS 1622:1981(Reaff 2003)
34.	E.Coli	MPN/100ml	-	Abs/ 100 ml	Absent	IS 1622:1981(Reaff 2003)
35.	Faecal Coliforms	MPN/100ml	-	Abs/ 100 ml	Absent	IS 1622:1981(Reaff 2003)

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