JK Cement Works, Mangrol
A unit of JK Cement Ltd.
CIN: L17229UP1994PLC017199
C/o. Kailash Nagar - 312617, Nimbahera Distt., Chittorgarh (Raj.) INDIA
+91-1477-220098, 220087 jkc.mgrl@jkcement.com
www.jkcement.com

JKCW/MGR/PC/ESR/21/22-23 Reg Date: 23/09/2023

To,
The Member Secretary
Rajasthan State Pollution Control Board
4, Industrial Area
Jhalana Doongri
Jaipur – 302004 (Raj)

Sub: Submission of Environmental Statement Report in Form-V for Financial Year 2022-2023 by M/s JK Cement Works, Mangrol, **Cement Plant Line-III**, in Mangrol Village, Tehsil Nimbahera, Chittorgarh and Rajasthan-312601.

Ref.:
1. F (CPM)/Chittorgarh (Nimbahera)/11(1)/2018-2019/2188-2190, Order No: 2019- 2020/CPM/5515, Dated 27/09/2019.
2. F (CPM)/Chittorgarh (Nimbahera)/11(1)/2018-2019/3535-3538, Order No: 2019- 2020/CPM/5588, Dated 03/01/2020.

Dear Sir,
With reference to the above cited subject, we M/s. J.K. Cement Works, Mangrol, Cement Plant Line-III hereby submitting the Environmental Statement Report in Form-V for Financial Year 2022-2023 as per, Rule No 14 of The Environment (Protection) Rules, 1986, EC order.
This is for your information please.

Thanking You
Yours Faithfully
For J.K. Cement Works, Mangrol

R. B. M. Tripathi
Unit Head & President (Operations).

Encl: Form-V Environment Statement report.
Copy: The Regional Officer, Rajasthan State Pollution Control Board, Near FCI Godown, Chanderiya, Dist. - Chittorgarh (Raj)-312021.

ENVIRONMENTAL STATEMENT

FORM - V

Environmental Statement for the financial year 2022-23, ending the 31st March 2023

PART-A

i. Name an address of the owner/occupier of the industry operation or process	Sh. R.B.M.Tripathi Unit Head & President (Operations) J.K. Cement Works, Mangrol Cement Plant (Unit-III), Village Mangrol, Tehsil-Nimbahera District- Chittorgarh ,Rajasthan , Pin code- 312617
ii. Industry category **Primary - (STC Code)** **Secondary - (STC Code)**	Red Category Clinker Manufacturing Cement Manufacturing
iii. Production capacity	Clinker : 2.75 MMTPA Cement : 3.60 MMTPA
iv. Year of establishment	Plant commissioned on dated 29/09/2019
v. Date of last environmental statement submitted	19th September 2022

PART-B

WATER AND RAW MATERIAL CONSUMPTION

i. WATER CONSUMPTION in m3/day

Process: : - NIL

Cooling : - 990 m3/day

Domestic : - 10 m3/day

Name of products	Process water consumption per unit of products (For cooling & domestic)	
	During the previous financial year (2021-22) (KL/MT)	During the current financial year (2022-23) (KL/MT)
1. CEMENT	0.057	0.046

***** Specific water consumption for cement production is combined for Unit-1, Unit-2 & Unit-3

Month & Year	Water Consumption M3	Cement Production In MT	Specific Water Consumption per MW
Apr-22	16,658	2,82,434	0.059
May-22	16,415	2,97,884	0.055
Jun-22	15,242	2,88,666	0.053
Jul-22	18,487	2,56,367	0.072
Aug-22	15,571	2,07,815	0.075
Sep-22	10,122	2,87,886	0.035
Oct-22	11,516	2,52,539	0.046
Nov-22	7,461	2,75,104	0.027
Dec-22	9,464	3,14,246	0.030
Jan-23	13,130	2,79,590	0.047
Feb-23	7,965	3,07,997	0.026
Mar-23	10,696	2,89,113	0.037
TOTAL	**1,52,726**	**33,39,641**	0.046

ii. RAW MATERIAL CONSUMPTION

Name of the Raw Material	Name of the Product	Consumption of raw material per unit of output (in MT)	
		During FY 2021-2022	During FY 2022-203
Limestone	Clinker	1.4203	1.3826
Lime Sludge		0.0000	0.0000
Red Ochre		0.0648	0.0453
Bauxite		0.0000	0.0033
Alumina Dust		0.0000	0.0000
Laterite		0.0182	0.0287
Lead Zinc Slag		0.0000	0.0001
Iron Sludge		0.0000	0.0000
Red Mud		0.0245	0.0175
Coal		0.0534	0.0209
Pet coke		0.0388	0.0691
Alternative Fuel Replacement		0.0392	0.0582
Gypsum**	Cement	0.058	0.094
Fly ash% of PPC*		31.67 %	29.81 %
Alternative Raw Material & Performance improver*		0.0744	0.030

***The raw material consumption for Cement productions is combined for Line-1, 2 &3

Name of the Raw Material	Raw Material Consumption for Line-I for the financial Year 2022-2023 For Clinker Production= 2484903 MT for the Financial year 2022-2023													
	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Total	Specific Consumption
Limestone	162590	285122	311301	306774	189041	300401	318532	305448	332778	309910	285491	328246	3435634	1.3826
Lime Sludge	00	0	0	0	0	0	0	0	0	0	0	0	0	0
Red Ochre	4036	10906	12471	11141	4665	7461	10327	8825	16087	10094	9424	7230	112667	0.0453
Bauxite	0	0	0	0	283	0	0	0	592	1920	2172	3160	8127	0.0033
Alumina Dust	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Laterite	4199	5364	6955	7813	4263	7122	6375	5981	2992	6915	5926	7328	71233	0.0287
Lead Zn slag	0	0	299	0	0	0	0	0	0	0	0	0	299	0.0001
Iron Sludge	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Red Mud	754	2187	1831	3388	2249	5696	7099	7107	2377	3259	2731	4917	43595	0.0175
Coal	5481	7226	5288	1269	4945	3101	2215	1033	760	799	9347	10528	51992	0.0209
Pet coke	6442	12266	14862	17143	8845	16411	19224	17094	19459	18695	9465	11746	171653	0.0691
Alternative Fuel Replacement	5226	9926	10986	13095	7097	13896	13722	15747	15220	12101	12244	15285	144544	0.0582

Raw Material Consumption for Line-I for the financial Year 2021-2022 Clinker Production is 605745 for the financial Year 2021-2022		
Name of the Raw Material	Line-III	Specific Consumption
Limestone	3444993	1.4203
Lime Sludge	0	0.0000
Red Ochre	157143	0.0648
Bauxite	0	0.0000
Alumina Dust	0	0.0000
Laterite	44145	0.0182
Lead Zn slag	0	0.0000
Iron Sludge	0	0.0000
Red Mud	59392	0.0245
Coal	129421	0.0534
Pet coke	94071	0.0388
Alternative Fuel Replacement & Alternative Raw material	95184	0.0392

Cement Manufacturing													
Name of the Raw Material	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Total
Gypsum	23966	27177	30161	26911	21552	31091	25897	25209	27782	24861	25369	24442	314418
Fly ash% in Cement	32.9	30.0	30.4	29.3	30.3	27.6	29.2	29.8	29.1	30.0	29.3	28.6	29.8
Alternative Raw Material & Performance improver	7667	7590	7320	9072	7213	9070	7236	8478	9274	7927	9082	9062	98991
Name of the Product	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Total
Cement Production	282434	297884	288666	256367	207815	287886	252539	275104	314246	279590	307997	289113	3339641

AFR Consumption for the Financial Year 20222-2023 Annexure-1

Annual report (FY 2022-23) of various hazardous waste co- processed in our J.K. Cement works, Mangrol plant

S.No.	Hazardous waste	Authorization No.	Category		Opening Stock FY 2021-22	Material Received within State	Material Received Outside State	Consumption (MT)													Closing Stock FY 2022-23
			Schedule	Code				Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	YTD	
1	Plastic Waste+Laminate waste+PU parts waste	F(HSW)/Chittorgarh(Nimbahera)/8(1)/2015-2016/1534-1536 dated 16.07.2019 and F 16 (65) RSPCB/SWMC/HAZ/2469-72 dated 26.09.2014	III	OW	40.685	0	129.946	0	83.04	37.515	11.109	7.807	0	0	0	0	31.155	0	0	170.626	0.005
2	Waste Mix liquid	F(HSW)/Chittorgarh(Nimbahera)/8(1)/2015-2016/1598-1600 dated 29.06.2020	III	OW	244.66	10258.5	57159.58	6093.95	6929.11	6564	4672.51	5532.25	6559.80	5908.77	5962.87	3426.78	5427.54	5231.64	4758.22	67067.35	595.390
3	Waste mix Solid	F(HSW)/Chittorgarh(Nimbahera)/8(1)/2015-2016/5819-5821 dated 08.01.2019	I	-	193.695	218.59	10470.00	999	1466	766	697	515	1002	882.84	800	754.9	725	1218	859	10684.74	197.540
4	Waste mix Solid & Liquid	F(HSW)/Chittorgarh(Nimbahera)/8(1)/2015-2016/7521-7523 dated 02.02.2016	I	-	0	0	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	Lead Zinc Slag	F(HSW)/Chittorgarh(Nimbahera)/8(1)/2015-2016/3157-3158 dated 16.10.2020	I	OW	735.95	0	0.00	93	165	477.85	0	0	0	0	0	0	0	0	0	735.85	0.1
6	Agro waste/Bio mass & Tyre chips / Carbon Black	F 16 (65) RSPCB/SWMC/HAZ/2283 dated 09.09.2014	III	B3040	4225.61	116075.21	9738.46	7920.76	8283.82	9401.04	10373	7909	12148	15266.48	12825.1	13244	11074.58	10395	11113.4	129954.18	85.10
7	Chemical Gypsum	F(HSW)/Chittorgarh(Nimbahera)/8(1)/2015-2016/9606-9608 dated 20.02.2018	I	26.1	0.464	79.46	23806.35	0	2011.49	692	164	327	1289.364	1528	1963	2691	3449	3234.431	5505.146	22854.431	1031.8383
8	Waste liquid blend and waste solid blend (Iron sludge)	F(HSW)/Chittorgarh(Nimbahera)/8(1)/2015-2016/8764-8766 dated 16.01.2018	I	26.1	0	0	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	Plastic & Resin waste	F(HSW)/Chittorgarh(Nimbahera)/8(1)/2015-2016/8684-8686 dated 11.01.2018	III	-	49.47	0	1325.30	99	24.83	95	200.940	122.66	60	87.08	70	229	91.56	24	270.7	1374.77	0
10	Jarosite	F(HSW)/Chittorgarh(Nimbahera)/8(1)/2015-2016/9864-9866 dated 06.03.2018	III	OW	1306.831	24,380.02	0.00	1,573.00	2243	2524	358	0	1003	1901	2332	2743	2590	2529	2565	22361	3325.854
11	RDF (Sorted MSW)	F(HSW)/Chittorgarh(Nimbahera)/8(1)/2015-2016/2071-2073 dated 05.07.2018 (Total 59 type of Waste Permitted) & F(HSW)/Chittorgarh(Nimbahera)/8(1)/2015-2016/7728-7730	III	OW	963.761	921.39	15482.38	0	0	1508.581	1547	2396	2162	1254	2368.905	1698	1894	198	1382.67	16409.156	958.37
12	Tyre Fiber	F(HSW)/Chittorgarh(Nimbahera)/8(1)/2015-2016/2071-2073 dated 05.07.2018 (Total 59 type of Waste Permitted)	III	B3040	0	0	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	FMCG+BAD GOODS		III	OW	8.505	0	712.06	17.93	90.635	58	24.903	9.92	72	84	98	55	94.345	5	85	694.733	25.83
14	Contaminated Plastic waste		I	21.1	0	0	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0.000
15	Off Specification Products		I	28.4	0	0	7.99	0	0	0	0	0	0	0	0	0	7.99	0	0	7.99	0
16	Waste/ Residue FRP (23.1)		I	23.1	0	0	74.83	0	0	13	11.65	22.5	13.05	14.63	0	0	0	0	0	74.83	0
17	Cotton Waste/Fibre/Cloth		III	B3030	0	0	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
18	Spent Solvent (ammonium acetate) 20.2		I	20.2	0	0	249.43	0	117.45	0	131.98	0	0	0	0	0	0	0	0	249.43	0
19	Distillation Residue		I	20.3	0	0	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	Process wates ,Residues and Sludge-21.1	59, TYPES OF WASTE.	I	21.1	30.325	411.28	536.33	0	162.415	125.72	80	42	270.86	128	46.75	0	0	0	0	855.745	122.19
21	Process Residue-29.1		I	29.1	0	35.04	98.22	0	0	0	0	98.9	34.36	0	0	0	0	0	0	133.26	0
22	ETP SLUDGE	F(HSW)/CHITTORGARH(NIMBAHERA)/8(1)/2015-2016/3145-3147	I	35.3	137.04	15344.202	3418.45	970.92	1795	1239.732	1061	1085	1697	1441.95	2080	1009	1461	2330	2354	18524.602	375.09
23	WET SCRUBBER SLUDGE(RUBBER DUST)	F(HSW)/Chittorgarh(Nimbahera)/8(1)/2015-2016/4250-4252	I	37.1	0	11.28	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	11.28
24	Process Residue& Waste Solid 28.1	F(HSW)/Chittorgarh(Nimbahera)/8(1)/2015-16/1598-1600	I	28.1	0	0	73.90	0	0	0	0	7.26	35	23.75	7.89	0	0	0	0	73.9	0
25	Waste Residue Contaning oil	F(HSW)/Chittorgarh(Nimbahera)/8(1)/2015-16/2071-2073	I	5.2	0	0	843.755	0	0	109.67	29	0	328	140	38.41	0	70	20	98.925	834.005	9.75
26	Filter Medium-36.2	F(HSW)/Chittorgarh(Nimbahera)/8(1)/2015-16/1598-1600	I	36.2	0	0	528.38	0	148.1	55	19.52	24.12	26.18	0	77	26	0	0	70	445.92	82.46
27	Carbide lime sludge	F(HSW)/Chittorgarh(Nimbahera)/8(1)/2015-16/2071-2073	III	OW	0	4758.967	0	0	0	0	0	0	0	0	0	517.09	123	0	0	640.09	4118.877
28	Cargo Residue & Sludge-3.1	F(HSW)/Chittorgarh(Nimbahera)/8(1)/2015-2016/4250-4252	I	3.1	26.85		58.81	0	0	78	0	7.66	0	0	0	0	0	0	0	85.66	0
29	Distillation Residue-20.3(Solid)	F(HSW)/Chittorgarh(Nimbahera)/8(1)/2015-16/1598-1600	I	20.3	0	0	55.558	0	0	0	0	0	0	0	55.558	0	0	0	0	55.558	0
29	ION EXCHANGE RESIN -35.2	F(HSW)/Chittorgarh(Nimbahera)/8(1)/2015-16/1598-1600	I	35.2	0	0	10.73	0	0	0	10.73	0	0	0	0	0	0	0	0	10.73	0
30	ASH FROM INCINERATOR 37.2	F(HSW)/Chittorgarh(Nimbahera)/8(1)/2015-2016/2071-2073 dated 05.07.2018 (Total 59 type of Waste Permitted)	I	37.2	0	0	34.08	0	0	0	0	0	24.29	8.16	0	0	0	0	1.63	34.08	0
31	PHOSPHATE SLUDGE 12.5	F(HSW)/Chittorgarh(Nimbahera)/8(1)/2015-2016/4250-4252	I	12.5	0	0	77.38	0	0	0	0	0	18	59.38	0	0	0	0	0	77.38	0
32	BARREL/LINNER CHEM WAST(33.1)	F(HSW)/Chittorgarh(Nimbahera)/8(1)/2015-2016/4250-4253	I	33.1	0	0	43.88	0	0	0	0	0	0	0	44.38	0	0	0	0	44.38	-0.5
33	RDF-EPR	F(HSW)/Chittorgarh(Nimbahera)/8(1)/2015-2016/2071-2073 dated 05.07.2018 (Total 59 type of Waste Permitted) & F(HSW)/Chittorgarh(Nimbahera)/8(1)/2015-2016/7728-7730, CK-08-RAJ-07-DATPS1402N-22	III	OW	0	119.175	26557.661	0	0	0	0	0	1127	2239	2661	4558	2947	5009	6516.285	25057.285	1619.551
34	Spent Solvent (Organic Solvent) 28.6	F(HSW)/Chittorgarh(Nimbahera)/8(1)/2015-2016/2071-2073 dated 05.07.2018 (Total 59 type of Waste Permitted)	I	OW	0	0	23.96	0	0	0	0	0	0	0	0	0	0	0	23.96	23.96	0
35	RED MUD	F(HSW)/Chittorgarh(Nimbahera)/8(1)/2015-	III	OW	1163.706	0	99428.94	3897	7345	5413	4852	5759	10899	13207	13179	6031	6877	7413	9311	94183	6409.646

*Combined AFR Consumption sheet for Line-1, Line-2 & Line-3 is provided here.

PART-C

POLLUTION DISCHARGE TO ENVIRONMENT / UNIT OF OUTPUT

Pollutants	Quantity of pollutants discharged (kg/ ton of Clinker)	Concentration of pollutants in discharge (mg/Nm3)	Percentage of variation from prescribed standards with reasons
(a) Water	Cement production is a dry process technology, so no waste liquid is produced. Domestic wastewater generated from office toilets and Canteen is treated at a sewage treatment plant, and the treated water is used for horticulture.		
(b) Air	**Stack Emission (yearly average)**		
Kiln Stack- PM	0.0179	**12.28**	**-59.07**
Kiln Stack- SO2	0.0310	**22.45**	**-77.55**
Kiln Stack- NOx	0.5096	**333.077**	**-58.37**
Cooler Stack- PM	0.0144	**35.89**	**-57.40**

***As per the MOEFCC, The Gazette of India Notification No: G.S.R. 497 (E) in S.NO "10A Cement Plants (with co-processing) Rotary kiln based plants (Particulate Matter from raw mill, kiln and precalciner system put together is 0.125 kg/ tonne of clinker.".

The Particulate Matter of the combined Kiln Stack & Cooler stack is 0.0323Kg/Ton of Clinker output production which is less than the 0.125 kg/ tonne of clinker standard issued by MOEFCC.

Stack emissions in tonne per year in the financial year 2022-2023

Month & Year	Kiln Stack (Tons/Year)			Cooler (Tons/Year)	Coal Mill (Tons/Year)	Cement Mill-4 (Tons/Year)
	PM	SO2	NOX	PM	PM	PM
Apr-22	1.74	5.30	27.88	2.14	0.51	1.49
May-22	3.57	9.67	52.07	4.08	0.85	1.14
Jun-22	3.88	13.73	84.58	3.71	0.84	1.58
Jul-22	3.02	16.50	121.55	3.13	0.77	1.43
Aug-22	1.48	2.34	38.71	1.52	0.39	1.00
Sep-22	3.17	5.12	117.90	3.01	1.01	1.85
Oct-22	3.51	8.85	143.83	3.61	0.87	1.37
Nov-22	3.46	10.75	142.92	3.73	0.79	1.19
Dec-22	3.28	4.81	129.37	3.45	0.89	1.39
Jan-23	6.33	0.00	148.81	2.41	1.20	0.54
Feb-23	6.13	0.00	133.59	2.82	1.03	0.59
Mar-23	5.00	0.03	125.20	2.27	1.01	0.59
Total	44.56	77.10	1266.41	35.89	**10.18**	**14.16**

Percentage of Variation with respect to Standard

Month & Year	Kiln Stack PM mg/Nm³	Percentage of Variation with Standard 30 mg/Nm³	Kiln Stack SO_2 mg/Nm³	Percentage of Variation with Standard 100mg/Nm³	Kiln Stack NO_x mg/Nm³	Percentage of Variation with Standard 800mg/Nm³
Apr-22	13.6	-54.67	41.5	-58.50	218.4	-72.70
May-22	15.2	-49.33	41.1	-58.90	221.4	-72.33
Jun-22	11.7	-61.00	41.4	-58.60	255	-68.13
Jul-22	8.9	-70.33	48.59	-51.41	358.004	-55.25
Aug-22	7.1	-76.33	11.24	-88.76	185.72	-76.79
Sep-22	9.4	-68.67	15.2	-84.80	350	-56.25
Oct-22	10.2	-66.00	25.7	-74.30	417.6	-47.80
Nov-22	10	-66.67	31.1	-68.90	413.4	-48.33
Dec-22	9.2	-69.33	13.5	-86.50	363.2	-54.60
Jan-23	18.1	-39.67	0	-100.00	425.5	-46.81
Feb-23	18.6	-38.00	0	-100.00	405.6	-49.30
Mar-23	15.3	-49.00	0.1	-99.90	383.1	-52.11
Total	**12.28**	**-59.07**	**22.45**	**-77.55**	**333.077**	**-58.37**

Percentage of Variation with respect to Standard

Month & Year	Cooler Stack PM mg/Nm³	Percentage of Variation with Standard 30 mg/Nm³	Coal Mill Stack PM mg/Nm³	Percentage of Variation with Standard 30mg/Nm³	Cement Mill Stack-2 PM mg/Nm³	Percentage of Variation with Standard 30mg/Nm³
Apr-22	14.6	-51.33	11.1	-63.00	12.7	-57.67
May-22	16.7	-44.33	12.3	-59.00	9.9	-67.00
Jun-22	12.8	-57.33	11.2	-62.67	12.3	-59.00
Jul-22	9.9	-67.00	10.2	-66.00	12.2	-59.33
Aug-22	8.2	-72.67	7.9	-73.67	13.4	-55.33
Sep-22	10.4	-65.33	13.6	-54.67	11.7	-61.00
Oct-22	11.8	-60.67	11.2	-62.67	10.9	-63.67
Nov-22	11.7	-61.00	11.3	-62.33	11.5	-61.67
Dec-22	10.1	-66.33	10.9	-63.67	10.4	-65.33
Jan-23	15.3	-49.00	14.2	-52.67	5.5	-81.67
Feb-23	17.4	-42.00	14.5	-51.67	6.3	-79.00
Mar-23	14.5	-51.67	13.8	-54.00	4.9	-83.67
Avg	**12.78**	**-57.40**	**11.85**	**-60.50**	**10.14**	**-66.20**

Month/ Year	Ambient Air Quality Monitoring Results for the financial year 2022-2023																			
	NEAR TIME OFFICE (Up Wind)					NEAR THERMAL POWER PLANT (Cross Wind)					NEAR FACTORY GATE (Down Wind)					NEAR COLONY GATE (Cross Wind)				
	PM_{10}	$PM_{2.5}$	SO_2	NO_x	CO	PM_{10}	$PM_{2.5}$	SO_2	NO_x	CO	PM_{10}	$PM_{2.5}$	SO_2	NO_x	CO	PM_{10}	$PM_{2.5}$	SO_2	NO_x	CO
Apr-22	42.5	30.9	11.1	14.8	599.2	39.9	28.6	9.9	11.6	533.1	45.8	34.8	13.1	17.6	617.0	40.6	31.6	10.7	13.8	646.3
May-22	46.3	34.2	14.4	18.4	624.7	42.0	31.6	12.3	15.2	581.4	51.1	38.7	16.0	23.7	647.6	43.3	33.1	13.2	16.2	670.5
Jun-22	48.4	37.6	16.2	20.1	638.7	40.7	29.5	11.5	13.5	608.1	56.2	42.3	17.8	27.3	657.7	45.1	36.5	12.2	15.9	683.2
Jul-22	41.0	28.7	13.2	17.9	618.3	37.8	25.7	10.9	12.9	597.9	52.3	40.1	15.6	22.3	633.6	39.0	28.9	11.2	14.7	622.1
Aug-22	31.3	22.6	9.8	12.8	582.7	26.5	19.6	8.0	10.8	524.2	43.9	31.0	12.3	18.4	614.5	28.7	17.8	10.1	14.8	657.7
Sep-22	40.2	29.3	14.0	28.0	694.6	43.7	30.5	18.0	23.2	664.1	50.4	32.8	13.1	24.1	760.8	45.3	31.5	12.6	25.0	709.9
Oct-22	50.4	35.5	14.8	26.1	702.3	50.7	32.1	19.9	28.1	723.9	52.1	32.9	18.1	26.5	760.8	47.6	27.1	16.7	25.4	653.9
Nov-22	43.7	23.4	17.1	21.9	694.6	44.6	26.1	17.7	31.5	715.0	38.7	27.9	11.5	22.6	603.0	41.2	31.1	10.7	19.1	746.8
Dec-22	43.9	31.2	20.2	21.3	638.7	46.6	30.8	22.7	23.4	713.7	34.7	23.6	20.7	20.7	638.7	35.6	24.7	22.7	23.3	698.5
Jan-23	50.9	30.6	12.3	23.6	656.9	56.4	42.3	12.3	19.8	654.1	61.9	31.2	12.5	21.0	656.9	54.1	31.4	15.0	17.8	692.7
Feb-23	55.2	21.6	12.5	20.7	632.6	57.5	26.7	15.0	28.0	568.0	51.5	33.0	13.9	21.8	635.6	53.4	27.7	16.5	24.6	579.0
Mar-23	58.0	31.9	16.2	26.1	438.0	60.3	32.7	17.5	25.3	455.1	60.5	35.5	19.1	26.1	476.6	54.2	26.0	11.3	14.7	373.6
Yearly AVG	**46.0**	**29.8**	**14.3**	**21.0**	**626.8**	**45.6**	**29.7**	**14.6**	**20.3**	**611.6**	**49.9**	**33.6**	**15.3**	**22.7**	**641.9**	**44.0**	**28.9**	**13.6**	**18.8**	**644.5**
% of Deviation wrt standard	**-23%**	**-70.2%**	**-71%**	**-48%**	**CO 1 Hr Standard is 4000 µg/M³**	**-24%**	**-70.3%**	**-71%**	**-49%**	**CO 1 Hr Standard is 4000 µg/M³**	**-17%**	**-66.4%**	**-69%**	**-43%**	**CO 1 Hr Standard is 4000 µg/M³**	**-27%**	**-71.1%**	**-73%**	**-53%**	**CO 1 Hr Standard is 4000 µg/M³**
NAAQMS Yearly Avg Standard Limit	**PM_{10}=60 µg/M3**					**$PM_{2.5}$= 40 µg/M3**					**SO_2=50 µg/M3**					**NOx=40 µg/M3**				

STP treated water quality data for the financial year 2022-2023

STP treated water Quality		
Parameters	**Standards**	**Average results of YTD**
pH	Between 5.5 to 9.0	7.89
Total Suspended solids	Not to exceed 100 mg/l	27.33
Biological Oxygen Demand (3 days at 27 Degree C)	Not to exceed 30 mg/l	9.84
Chemical Oxygen Demand	Not to exceed 250 mg/l	50.79
Oil & Grease	Not to exceed 10 mg/l	1.49
Ammonical Nitrogen (as N)	Not to exceed 50 mg/l	7.38
Sulphide (as S)	Not to exceed 2.0 mg/l	<0.1
Total Residual Chlorine	Not to exceed 1.0 mg/l	<0.1

Noise level monitoring data

Month & Year	Noise Monitoring Report FY 2022-23							
	Near Time office		Near Thermal Power Plant		Near Raw Material Gate		Near Packing Plant Gate	
	Day	Night	Day	Night	Day	Night	Day	Night
Apr-22	61.5	52.3	58.3	47.1	63.2	55.8	65.3	58.9
May-22	59.7	45.1	56.7	46.8	66.8	53.7	61.3	49.2
Jun-22	64.2	53.9	67.1	53.1	66.2	52.7	63.9	48.6
Jul-22	62.3	48.7	60.4	45.7	64.5	50.4	67.8	59.7
Aug-22	63.2	49.1	59.7	42.9	65.3	51.7	68.2	60.8
Sep-22	63.9	50.5	61.1	46.8	66.4	53.4	64.7	56.3
Oct-22	61.6	49.3	60.2	46.5	65.7	52.6	61.4	44.8
Nov-22	61.3	49.6	59.7	46.3	64.9	52.4	60.2	43.1
Dec-22	60.7	48.8	59.5	46.1	64.4	52.2	60.1	43.3
Jan-23	69.5	52.3	62.6	52.1	68.8	50.8	61.2	48.6
Feb-23	65.2	55.3	69.1	50.1	67.3	54.5	65.4	53.3
Mar-23	65.4	51.8	64.3	52.1	68.9	53.1	60.1	45.01
Avg	63.21	50.56	61.56	47.97	66.03	52.78	63.3	50.97
Ambient Noise Standard							75dBA	70 dBA

PART-D

(As specified under Hazardous & Other Waste Management Rules-2016)

Hazardous waste	Total Quantity	
	During previous financial year (2021-22) (KL)	**During current financial year (2022-23) (KL)**
(a) From process	Used oil (5.1)- 5.0* Waste oil (5.2)- 31.6*	Used oil (5.1)- * 7.6KL Waste oil (5.2)- *4.4 KL
(b) From pollution Control facilities	Not applicable	Not applicable

***The hazardous wastes generated are used/waste oil from lines 1, 2, and 3 of cement plants, CPP, WHRS, limestone mines, etc. The hazardous waste generated is sold through CPCB certified recyclers.

PART-E

SOLID WASTE

		Total Quantity	
		During previous financial year (2021-22) (MT/Year)	**During current financial year (2022-23) (MT/Year)**
(a)	**From process**	**Nil**	
(b)	**From pollution control facility**	Dust collected in ESP, bag house and auxiliary bag filters are recycled to the system	
(c)	**Quantity reutilized with in the unit**	100%	

PART-F

PLEASE SPECIFY THE CHARACTERISATIONS (IN TERMS OF COMPOSITION AND QUANTUM) OF HAZARDOUS AS WELL AS WASTES AND INDICATE DISPOSAL PRACTICE ADOPTED FOR BOTH THESE CATEGORIES OF WASTES.

1) Hazardous waste generated in the form of used Oil / spent oil, waste / residue containing oil, which is stored in barrels at safe & dedicated area and sold to authorized recycler approved by Central Pollution Control Board.
2) Dust collected from pollution control equipment's (i.e. from ESP, Bag house and Bag filter) is totally recycled in the process.

PART-G

IMPACT OF THE POLLUTION ABATEMENT MEASURES TAKEN ON CONSERVATION OF NATURAL RESOURCES AND ON THE COST OF PRODUCTION.

Cement kiln co-processing is considered an environmentally sustainable option for managing various types of waste, including hazardous and other wastes. Processing these wastes together not only destroys them at high temperatures of up to 1400 °C to 1500 °C and long residence times, but also during which the inorganic components of the waste combine with the clinker, which in addition to the use of energy content to remove some of the cement waste and leave no residue behind. However, if incinerated, the remaining ash must be disposed of as hazardous waste. Additionally, acid gases generated during co-processing are neutralized in the broadly alkaline environment within the kiln system.

Various hazardous waste co-processed are Textile ETP Sludge, Plastic Waste residue, Waste mix liquid, Waste mix Solid, Oily rags ,paint sludge, process waste, waste residue, chemical sludge, Process Sludge, Phosphate sludge, Chemical Sludge from ETP, Insulation Waste, Mixed Salt, Organic residue, Liquid Organic Residue,etc. This phenomenon also reduces the non-renewable resources requirement such as coal. Thus, the utilization of wastes in cement kilns through co-processing provides a win–win option of waste disposal.

The facility's exhaust gases & dust emissions are controlled by equipment such as ESP and Reverse Air Bag House bag filters and Bag Houses at designated locations, and additional auxiliary bag filters are installed at various material transfer points to control fugitive emissions. The dust collected by the pollution control devices are recycled in the process, optimizing the operating costs of the pollution control device, thus preserving natural raw materials and having no impact on the environment.

PART-H

ADDITIONAL MEASURES / INVESTMENT PROPOSALS FOR ENVIRONMENTAL PROTECTION INCLUDING ABATEMENT POLLUTION, PREVENTION OF POLLUTION.

1) Conducted 3rd party monitoring of leachate testing for soil contamination in AFR storage yard.

2) SNCR system installed to control the NOx emission.

PART-I

ANY OTHER PARTICULARS FOR IMPROVING THE QUALITY OF ENVIRONMENT

1) Monitoring of stack emission and ambient air and water quality is being done regularly as mentioned in consent to operate.
2) 4 nos. of Continuous Ambient Air Quality Monitoring Systems (CAAQMS) has been installed at periphery of the plant.
3) Continuous Emission Monitoring Systems (CEMS) for PM, SO2 & NOx have been installed at stack of Kiln section and for monitoring of PM emission CEMS has installed at stack coal mill, cooler & cement mill and real time data transfer to RSPCB & CPCB.
4) Bag filters have been installed at various material transfer points to control fugitive emission.

5) Cement being manufacturing in dry process and there is no any effluent generated from the process hence maintaining Zero Effluent Discharge unit.
6) Apart from this fly ash purchased from nearby thermal power plant and use for cement production.
7) To utilization of waste heat, Waste heat recovery system has been installed to generate green power.
8) Proper Housekeeping and cleaning is being done with the help of four road sweeping machines.
9) Domestic waste water generated is being treated in sewage treatment plant (STP). Treated water is utilized for plantation / horticulture development.
10) Cover shed Constructed to store the raw material, to avoid fugitive emission. Finish product stored in closed silo.
11) All Belt Conveyor belt are fully covered & also installed Bag filter at all material transfer points
12) 16 Rain water harvesting structures have been constructed in plant and colony area to recharge ground water.
13) Cemented road constructed to avoid fugitive dust generation during the movement of vehicle.
14) Telemetry system installed for online ground water level monitoring.
15) 10,723 plants were planted in this plant and a colony of which 4,745 plants will be located at the Miyawaki Plantation in FY 2022-2023.
16) Oxygen generation plant installed to catch the requirement of Oxygen during Covid-19.

****