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

MGR/PC/ESR/21 643

Date: 19.09.2021

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

Subject: Environmental Statement Report for the year FY 2021-2022 of Cement Plant Line-1 of M/s J.K. Cement Works Mangrol, Tehsil: Nimbahera, Dist: Chittorgarh (Rajasthan).

Ref.: F (Tech) / Chittorgarh (Nimbahera)/ 1(1)/ 2008 – 2009 /9890-9892 Order No. 2017 – 2018 / CPM / 5102 dated 07.03.2018 & amended letter no. F(Tech)/RPCB/CPM/C-1970/1100, Dated 22/10/2018.

Dear Sir,

Kindly refer to above subject matter, please find enclosed herewith Environment Statement Report of Cement Plant Line-1 of J.K. Cement Works, Mangrol for the FY 2021-2022 for your reference and record. We trust you will find the same in order.

Thanking You.

Yours Faithfully
For J.K. Cement Works, Mangrol

R. B. M. Tripathi
President (Operations)

Encl: as above.

Copy:

The Regional Officer, Rajasthan State Pollution Control Board, Near FCI Godown, Chanderiya, Distt. - CHITTORGARH (RAJ)-312021

ENVIRONMENTAL STATEMENT

FORM - V

Environmental Statement for the financial year 2021-22, ending the 31st March 2022

PART-A

i. Name an address of the owner/occupier of the industry operation or process	**J.K. Cement Works, Mangrol Cement Plant (Unit-I)** C/o Kailash Nagar, Nimbahera Tehsil: Nimbahera, Chittorgarh (Rajasthan) PIN- 312617
ii. Industry category **Primary - (STC Code)** **Secondary - (STC Code)**	Primary
iii. Production capacity	Clinker : 0.75 MMTPA Cement : 0.95 MMTPA
iv. Year of establishment- (UNITWISE)	Grinding & packing unit started in the year 1995 & Clinker production started in Dec-2001
v. Date of last environmental statement submitted	17th September 2021

PART-B

WATER AND RAW MATERIAL CONSUMPTION

i. WATER CONSUMPTION in m3/day

Process	: -	NIL	
Cooling	: -	140	m3/day
Domestic	: -	35	m3/day

Name of products	Process water consumption per unit of products (For cooling & domestic)	
	During the previous financial year (2020-21) (KL/MT)	During the current financial year (2021-22) (KL/MT)
1. CEMENT	0.044	0.057*

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

ii. **RAW MATERIAL CONSUMPTION**

Name of raw material	Name of products	Consumption of raw material per unit of output (in MT)	
		During the previous financial year (2020-21)	During the current financial year (2021-22)
Limestone	Clinker	1.362	0.714
Laterite / Red ocher		0.120	0.085
Coal		0.0166	0.0069
Petcoke		0.0851	0.0884
Alternative Fuel Replacement & Alternative Raw Material*		0.0251	0.0567*
Gypsum**	Cement	0.0525*	0.0622
Fly ash% of PPC*		0.3029*	0.3016
Alternative Raw Material & Performance improver*		0.0484*	0.077

* AFR & Alternative Raw Material consumption for clinker production is combined for Unit-1, 2 & 3.

*Gypsum, Fly ash & PI consumption for Cement Production is combined for Unit-1& Unit-3

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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 plant is being operated on dry process technology, hence no liquid effluent is generated. Domestic waste water generated from the office toilet and canteen is being treated in STP and treated water used in plantation & horticulture purpose within the premises.		
(b) Air	**Stack Emission (yearly average)**		
PM	**0.030**	**10.62**	**-64.60%**
SO2	**0.044**	**15.92**	**-84.08%**
NOx	**0.981**	**315.97**	**-60.50%**

Ambient Air Quality (yearly average) in µg/m³

Location	Parameters				
	PM10	PM2.5	SO2	NOx	CO (in mg/m³)
Near Time Office	44.8	30.2	15.8	22.2	669.9
Near Thermal Power Plant	46.2	31.6	18.4	23.9	721.1
Near Factory Gate	48.9	31.8	17.5	21.5	709.5
Near Colony Gate	40.1	28.8	15.3	22.5	683.2

STP treated water quality data

STP treated water Quality		
Parameters	**Standards**	**Average results of YTD**
pH	Between 5.5 to 9.0	7.32
Total Suspended solids	Not to exceed 100 mg/l	17.58
Biological Oxygen Demand (3 days at 27 Degree C)	Not to exceed 30 mg/l	9.76
Chemical Oxygen Demand	Not to exceed 250 mg/l	55.50
Oil & Grease	Not to exceed 10 mg/l	4
Ammonical Nitrogen (as N)	Not to exceed 50 mg/l	13.43
Sulphide (as S)	Not to exceed 2.0 mg/l	<0.13
Total Residual Chlorine	Not to exceed 1.0 mg/l	<0.11

Noise level monitoring data

Month	Noise Monitoring Report FY 2021-22							
	Near Time office		Near Thermal Power Plant		Near Raw material Gate		Near Packing Plant Gate	
	Day	Night	Day	Night	Day	Night	Day	Night
Apr-21	64.7	48.1	65.2	52.6	68.8	57.1	66.9	51.5
May-21	62.8	47.3	63.1	49.4	65.7	52	64.4	50.8
Jun-21	67.3	55.7	68.4	56.3	70.1	59.9	70.6	61.2
Jul-21	65.1	54.6	66.7	53.3	67.9	55.1	62.1	49.9
Aug-21	64.2	53.9	67.1	53.1	66.2	52.7	63.9	48.6
Sep-21	61.8	50.1	62.1	48.3	64.7	51.4	60.6	47.1
Oct-21	60.3	49.7	61.4	47.4	63.9	51.1	58.3	45.6
Nov-21	62.2	50.7	63.4	48.7	61.4	50.3	61.7	46.8
Dec-21	59.8	45.1	61.7	50.6	60.8	49.7	57.6	43.2
Jan-22	63.8	46.6	64.1	51.3	69.2	53.4	65.7	52.9
Feb-22	56.8	42.3	58.4	49.1	62.6	49.9	62.8	50.6
Mar-22	59.7	45.1	56.7	46.8	66.8	53.7	61.3	49.2
YTD	62.38	49.10	63.19	50.58	65.68	53.03	62.99	49.78

PART-D

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

Hazardous waste	Total Quantity	
	During previous financial year (2020-21) (KL)	During current financial year (2021-22) (KL)
(a) From process	Used oil (5.1)- 34.80 * Waste oil (5.2)- NIL	Used oil (5.1)- 5.0* Waste oil (5.2)- 31.6*
(b) From pollution Control facilities	Not applicable	Not applicable

*including Cement Plant Line-1, Line-2, & Line-3, CPP, WHRS, Mines & Colony. Hazardous waste generated are being sold through authorized recycler by CPCB.

PART-E

SOLID WASTE

		Total Quantity	
		During previous financial year (2020-21) (MT/Year)	**During current financial year (2021-22) (MT/Year)**
(a)	**From process**	**Nil**	**Nil**
(b)	**From pollution control facility**	Dust collected in ESP, bag house and bag filters are recycled to the system	Dust collected in ESP, bag house and bag filters are recycled to the system
(c)	**Quantity reutilized with in the unit**	100%	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 manufacturing is a dry process technology, hence no effluent generated from process. Which is cost effective and environmentally clean technology. The advantage of dry process is also in fuel economy. The stack emissions from the plant are controlled by equipment like ESPs and Bag filters installed at various material transfer points to arrest the fugitive emissions. The particulate matter collected from the pollution control equipment is recycled in process and optimizing the cost of operation of pollution control equipment, conserving natural raw material and hence 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 mentioned in consent to operate.
2) 4 nos. of Continuous Ambient Air Quality Monitoring Systems (CAAQMS) has been installed a 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) Total 155401 nos. of tree planted till 2020-21 in area of 41.89 Ha. Apart from this we have planted 11425 nos. of tree sapling in FY 2021-22 in Cement.
16) Oxygen generation plant installed to catch the requirement of Oxygen during Covid-19.

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