

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

IKCW/MGR/PC/ESR/21/22-23

Reg

Date: 23/09/2023

To.

The Member Secretary

Rajasthan State Pollution Control Board 4, Industrial Area Ihalana 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, 25MW CPP of Cement Plant, in Mangrol Village, Tehsil Nimbahera, Chittorgarh and Rajasthan-312601.

Ref.:

- 1. F (Tech)/Chittorgarh (Nimbahera)/1(1)/2008-2009/1521-1523 Order No 2017- 2018/CPM/4862, Dated 30/05/2017.
- 2. F (Tech)/Chittorgarh (Nimbahera)/11(1)/2018-19/5985-5987 Order No 2020-21/CPM/5687 Gated 19/03/2021.

Dear Sir,

With reference to the above cited subject, we M/s. J.K. Cement Works, Mangrol ,25 MW Captive Thermal Power Plant 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, CTO 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.



 Prism Tower, 6th Floor, Ninaniya Estate, Gwal Pahari, Gurugram - 122102, Haryana



www.jkcement.com





Manufacturing Units at : Nimbahera, Mangrol, Gotan (Rajasthan) | Muddapur (Karnataka) Jharli (Haryana) | Katni (M.P.) | Aligarh (U.P.) | Balasinor (Gujarat)





ENVIRONMENTAL STATEMENT FORM - V

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

PART-A

i. Name an address of the owner/occupier	Sh. R.B.M.Tripathi					
of the industry operation or process	Unit Head & President (Operations)					
	J.K. Cement Works, Mangrol					
	25 MW Captive Power Plant					
	Village Mangrol, Tehsil-Nimbahera					
	District- Chittorgarh ,Rajasthan , Pin code- 312617					
ii. Industry category	Red Category					
Primary - (STC Code),	Electric Power Generation from 25MW CPP					
Secondary - (STC						
Code)						
iii. Production capacity	25 MW Power Generation					
iv. Year of establishment-	Year 2014					
v. Date of last environmental statement	19 th September 2022					
submitted						

PART-B

WATER AND RAW MATERIAL CONSUMPTION

i. <u>WATER CONSUMPTION</u> in m³/day

- Process :- Nil
- Cooling :- 300 m³/day
- Domestic :- 5 m³/day

	Process water consumption per unit of products						
Name of products	During the previous financial	During the current financial year					
	year (2021-22) (KL/MWh)	(2022-23) (KL/MWh)					
1. POWER	0.40	0.93					

ii. <u>RAW MATERIAL CONSUMPTION</u>

Name of raw	Name of products	Consumption of raw material per unit of output								
material		During the previous	During the current							
		financial year (2021-22)	financial year (2022-							
		(MT/MWh)	23)(MT/MWh)							
Coal	Power (Electricity)	0.821	0.930							

Water Consumption for the FY 2022-2023

Month & Year	Water Consumption M3	Electric Power in MW	Specific Water Consumption per MW
Apr-22	2,854	2521.67	0.884
May-22	2,135	1756.73	0.823
Jun-22	2,350	0	0.000
Jul-22	490	0	0.000
Aug-22	364	0	0.000
Sep-22	467	0	0.000
Oct-22	480	0	0.000
Nov-22	374	0	0.000
Dec-22	483	1379.684	2.856
Jan-23	2,463	6222.772	2.527
Feb-23	1,237	1507.467	1.219
Mar-23	698	0	0.000
TOTAL	14,395	13388.32	0.930

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	Effluent waste water generated from blow down of cooling tower and DM plant waste water treated in neutralization pit as prescribed by Rajasthan State Pollution Control Board and treated water is being utilized in cement plant in cooling purpose hence maintaining Zero Liquid Discharge unit							
(b)Air	S	tack Emission (yearly a	verage)					
Boiler ESP Stack- PM	0.00052	22.53	-55%					
Boiler ESP Stack - SO2	0.00499	209.02	-65%					
Boiler ESP Stack - NOx	0.00231	111.20	-75%					

*** CPP run for 3 months only hence 3 months calculated data is mentioned above.

Stack emissions in tonne	per year in the financial	vear 2022-2023
		, •••• = • = = = • = •

Month & Year	Boiler ESP Stack (Tons/Year)								
	РМ	SO2	NOX						
Apr-22		Not in operation							
May-22	1.237	13.607	4.681						
Jun-22									
Jul-22									
Aug-22									
Sep-22		Not in operation							
Oct-22									
Nov-22									
Dec-22									
Jan-23	4.781	45.953	19.839						
Feb-23	0.960	7.269	6.448						
Mar-23		Not in operation							
Total	6.978	66.829	30.968						

Percentage of Variation with respect to Standard

Month & Year	Boiler ESP Stack PM mg/Nm ³	Percentage of Variation with Standard 50 mg/Nm ³	Boiler ESP Stack SO ₂ mg/Nm ³	Percentage of Variation with Standard 600mg/Nm ³	Boiler ESP Stack NOx mg/Nm ³	Percentage of Variation with Standard 450mg/Nm ³					
Apr-22	Not in operation										
May-22	17.80 -64% 195.7 -67% 67.36 -85										
Jun-22											
Jul-22											
Aug-22											
Sep-22			Not	in operation							
Oct-22											
Nov-22											
Dec-22											
Jan-23	26.60	-47%	255.67	-57%	110.38	-75%					
Feb-23	23.20	-54%	175.69	-71%	155.85	-65%					
Mar-23			Not	in operation							
3months Avg	22.53	-55%	209.02	-65%	111.20	-75%					

*** CPP run for 3 months only hence 3 months average is considered.

	Ambient Air Quality Monitoring Results for the financial year 2022-2023																			
Month/ Year	NEAR TIME OFFICE (Up Wind) NEAR THERMAL POWER PL/ Wind)					R PLAN'	C(Cross NEAR FACTORY GATE (Down Wind)				NEAR COLONY GATE (Cross Wind)									
	PM10	PM _{2.5}	SO ₂	NOx	со	PM10	PM _{2.5}	SO ₂	NOx	со	PM10	PM _{2.5}	SO ₂	NOx	со	PM10	PM _{2.5}	SO ₂	NOx	СО
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	-24%	-70.3%	-71%	-49%	CO 1 Hr	-17%	-66.4%	-69%	-43%	CO 1 Hr	-27%	-71.1%	-73%	-53%	CO 1 Hr
NAAQMS Yearly Avg Standard Limit	AQMS arly vg PM10=60 μg/M3 μg/M ³		P	M _{2.5} = 40	μg/M	3	Standa rd is 4000 µg/M ³		SO ₂ =50	µg/M3		Standa rd is 4000 μg/M ³		NOx=40	μg/M3	3	Standa rd is 4000 µg/M ³			

STP treated water quality data

STP treated water Quality								
Parameters	Standards	Average results of YTD						
рН	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						

TREATED WATER QUALITY OF NEUTRALIZATION PIT DATA

Treated water quality of Neutralization pit						
Parameters	Average of YTD					
Total Suspended Solids	Not to exceed 100 mg/L	23.16				
Oil & Grease	Not to exceed 10 mg/L	<0.4				
Biochemical Oxygen Demand (3 days at 27º C)	Not to exceed 30 mg/l	7.768				
Free available Chlorine	Not to exceed 0.5 mg/l	<0.1				
РН	Between 6.5 to 8.5	7.59				
Temperature	Shall not exceed 5° C above the receiving water temperature	4ºC Higher than the intake water				
Copper (as Cu)	Not to exceed 1.0 mg/l	<0.02				
Zinc (as Zn)	Not to exceed 1.0 mg/l	<0.03				
Total Chromium (as Cr)	Not to exceed 0.2 mg/l	0.07				
Iron (as Fe)	Not to exceed 1.0 mg/l	<0.40				
Chemical Oxygen Demand	Not to exceed 250 mg/l	39.24				
Phosphate (as P)	Not to exceed 5.0 mg/l	0.43				

	Noise Monitoring Report FY 2022-23											
Month & Year	Near Tin	ne office	Near The Pl	rmal Power ant	Near Ra	aw 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				
		Amb	oient Noise S	tandard			75dBA	70 dBA				

NOISE LEVEL MONITORING DATA

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*	Used oil (5.1)- * 7.6KL	
	Waste oil (5.2)- 31.6*	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.

<u>PART-E</u> solid waste

		Total Quantity	
		During previous financial year (2021-22) (MT/Year)	During current financial year (2022-23) (MT/Year)
(a)	From process (Bed Ash)	5505.89	799.34
(b)	From pollution control	49608.52	4425.4
	facility (Fly Ash)		
(c)	Quantity reutilized with in	98.42%	100%
	the unit		

Fly ash collected in pollution control equipment (ESP) is utilized for PPC grade cement manufacturing in own cement plant within the premises & bed ash generated from process in also utilized for cement manufacturing and coal dust collected from bag filters is recycled into the system.

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 recycler approved by Central Pollution Control Board.
- 2) Fly ash collected in pollution control equipment (ESP) is utilized for PPC grade cement manufacturing in own cement plant within the premises & bed ash generated from process in also utilized for cement manufacturing and coal dust collected from bag filters is recycled into the system.

PART-G

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

Industry has installed electrostatic precipitator (ESP) at boiler for stack and bag filters at transfer points to control the particulate matter and fugitive emission. The particulate matter collected from ESP in the form of fly ash is completely utilized in PPC cement production.

PART-H

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

Installed new technology NOx and SO2 analyzer to provide real time emission data and same is being transferred to RSPCB and CPCB web portal.

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 the Boiler ESP stack and real time data transfer to RSPCB & CPCB.

- 4) Bag filters have been installed at various material transfer points to control fugitive emission.
- 5) Effluent generated from the cooling tower blow down and DM plant waste water is being treated through neutralization and used in cement plant for cooling purpose, hence maintaining Zero Liquid Discharge Unit (ZLD). PTZ Camera is installed.
- 6) Air cooled condenser installed.
- 7) Fly ash generated from CPP, convey through pneumatic system and stored in silo, and utilized in own cement plant for PPC cement production.
- 8) Apart from this fly ash purchased from nearby thermal power plant and use for cement production.
- 9) Proper Housekeeping and cleaning is being done with the help of four road sweeping machines.
- 10) Domestic waste water generated is being treated in sewage treatment plant (STP). Treated water is utilized for plantation / horticulture development.
- 11)Cover shed Constructed to store the coal, to avoid fugitive emission.
- 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.
