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J.K. Cement Works
Kailash Nagar - 312617, Nimbahera
Distt. Chittorgarh (Raj.) INDIA

CIN : L17229UP1994PLC017199

ISO 9001:2015 | ISO 14001:2015 | ISO 45001:2018 | ISO 50001:2011 CERTIFIED COMPANY

NBH/PC/11B/C11/

Regd. AD

Date: 26.11.2020

To,
The Director,
Indira Paryavaran Bhavan,
JOR Bagh Road,
Near JOR bagh Metro station
New Delhi 110003

Sub: Compliance of Environmental Clearance for Expansion of Integrated Cement Plant (Clinker 2.8 MTPA to 5.0 MTPA) Cement 3.6 MTPA to 6.5 MTPA) CPP (22.0 MW to 47 MW) & WHRB (13.2 MW to 15.0 MW) M/s J.K. Cement Works, Nimbahera, located at Kailash Nagar Tehsil: Nimbahera, District- Chittorgarh, Rajasthan.

Ref.: EC letter no. - J-11011/243/2016-1A (II) (I) dated 23.07.2018

Dear Sir,

Kindly refer to the above subject matter and refer EC letter no., please find attached herewith compliance of EC for the period of **April'2020 to September'2020**.

As per MoEF & CC notification no. S.O. 5845 (E) 26.11.2018 the soft copy of same has been sent through email to roc.z.lko-mef@nic.in, moef@nic.in, menv@rediffmail.com, ccb.cpcb@nic.in, member-secretary@rpcb.nic.in, cpcb.bhopal@gmail.com monitoring-ec@nic.in.

We hope that the compliance is in order. Thanking you.

Yours Faithfully
For J.K. Cement Works, Nimbahera

Anil Kumar Jain
Sr. General Manager- Environment

Enclosed: as above

Copy to:

1. The Director, Ministry of Environment, Forests & Climate Change, Regional office (Central Region), Kendriya Bhawan, 5th Floor, Sector 'H', Aliganj, lucknow-226020 (U.P.)
2. The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-CUM office complex, East Arjun Nagar, Maharaja Surajmal Marg, Vishwas Nagar Extension, Viswas nagar Shahdara- Behind Karkarduma high court New Delhi-11032
3. Member Secretary, Rajasthan State Pollution Control Board, 4, Institutional Area, Jhalana Doongri, Jaipur - 302004 (RAJASTHAN)

Corporate & Registered Office : Kamla Tower, Kanpur-208001, (U. P.) INDIA
Phone : +91-512-2371478 to 81 Fax : 2399854 E-mail : ho.grey@jkcement.com



J. K. Cement Works, Nimbahera
J. K. Cement Works Mangrol
J. K. Cement Works, Gotan
J. K. Cement Works, Jharli

J. K. Power, Bamania
J. K. Cement Works, Muddapur
J. K. White Cement Works, Gotan
J. K. White, Katni





JK Cement LTD.

**HALF YEARLY COMPLIANCE REPORT
OF
ENVIRONMENTAL CLEARANCE LETTER NO.**

J-11011/243/2016-IA. II (I) Dated 23/07/2018

Period: April-20 to September-20

**For
Integrated Cement Project:
Clinker (2.80 MMTPA to 5.00 MMTPA) and Cement (3.60 MMTPA
to 6.50 MMTPA), Captive Power Plant from 22 MW to 47 MW, and
WHRB from 13.2 MW to 15 MW**

**Submitted to:
MoEF& CC, New Delhi & Central Regional Office, Lucknow (UP)
Central Pollution Control Board, New Delhi & Bhopal
Rajasthan State Pollution Control Board, Jaipur**

**Submitted by:
M/s J.K.CEMENT WORKS, NIMBAHERA,
Kailash Nagar, Tehsil: Nimbahera, District: Chittorgarh (Raj)**



Validity of the statutory approvals obtained in compliance of EC:

- Environmental Clearance has been issued vide letter no -. J-11011/243/2016-IA-II(I)] dated 23rd July ' 2018.
- CTO for existing production of Cement (3.6MMTPA) and Clinker (2.80 MMTPA) was issued vide letter no. F (Tech)/ Chittorgarh (Nimbahera)/ 5(1)/ 2010 - 2011/ 8039-8041 dated 20.12.2017 valid up to 31.05.2022.
- Amendment in CTO issued on 25.01.2018 & 22.10.2018 to cement plant.
- CTO for 22 MW Captive Thermal Power Plant vide letter no. F (Tech)/ Chittorgarh (Nimbahera)/ 5(1)/ 2010 - 2011/ 1721-1723 dated 29/07/2019 which is valid upto 31.03.2024.
- CTO for 13.20 MW Waste Heat Recovery Plant vide letter no. F (Tech)/ Chittorgarh (Nimbahera)/ 5(1)/ 2010 - 2011/ 4732-4734 dated 29.10.2018 which is valid upto 31.07.2023.
- CTO for 1.30 MTPA Clinker grinding plant (Hydraulic Roller press) vide letter no. G (CPM) / 1000 / 4000 (1) / 2019-2020 / 1718-1720 which is valid upto 31.03.2024.

COMPLIANCE REPORT OF CONDITIONS LAID DOWN IN ENVIRONMENT CLEARANCE OF J.K.CEMENT WORKS, NIMBAHERA
(Period April'2020 to September'2020) Dated 30.11.2020

S. No.	Condition	Status													
	(A) Specific Conditions														
1	The project proponent shall implement the conservation plan for schedule-I species (Pea fowl and Leopard) in consultation with the local forest department with the fund provisions of Rs. 82.80 Lakhs in addition to the existing fund provision of 8.90 Lakhs.	Conservation plan is forwarded to Divisional Chief conservator of Forest Udaipur, vide letter no. F() survey/UVS/2020-21/6048 dated 23.09.20 by Deputy Conservator of forest , Chittorgrah and same forwarded by Udaipur office to Additional Principal Chief conservator of Forest Jaipur , vide letter no. F 5 V SU/MU V S/2020-21/5002 dated 24.09.2020.													
2	The project proponent shall adopt the slip power recovery system for proposed line no.4 equipped with Bag House Fan (Raw Mill, Kiln PH Fan-1, Separator Fan for Cement Mill Polycom, Separator fan for Raw Mill Polycom).	• In Cement Grinding (HRP) mill VVFD has been installed to recover the slip power. • Line 4 yet to be installed with facility of Slip Power Recovery System.													
3	The project proponent shall utilize the alternate fuels to the maximum extent possible	Hazardous and non-hazardous wastes are being used as AFR & alternative raw material in cement plant. Total quantity utilized in FY 2020-21 was 7913.22 MT.													
4	The treated water from the STP shall be recycled and reused to conserve the water.	STP treated water is utilized in plantation/greenbelt purpose.													
B	General Conditions:														
1	An amount of Rs 4.22 Crores proposed towards Corporate Environment Responsibility (CER) shall be utilized as capital expenditure in project mode. The project shall be completed in concurrence with the implementation of the expansion and estimated on the basis of Scheduled Rates	The CER initiative has been taken and details of amount expenditure are given below: <table><tr><th rowspan="2">S N</th><th rowspan="2">Activities</th><th colspan="3">Expenses incurred</th></tr><tr><th>2017-18</th><th>2018-19</th><th>2019-20</th></tr><tr><td>1.</td><td>Women training</td><td>-</td><td>1554767</td><td>633217</td></tr></table>	S N	Activities	Expenses incurred			2017-18	2018-19	2019-20	1.	Women training	-	1554767	633217
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		2017-18	2018-19	2019-20											
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COMPLIANCE REPORT OF CONDITIONS LAID DOWN IN ENVIRONMENT CLEARANCE OF J.K.CEMENT WORKS, NIMBAHERA
(Period April'2020 to September'2020) Dated 30.11.2020

2.	Community centre	-	19437342	517440
3.	Medical & health	-	2095081	162108
4.	Water supply line	-	-	-
5.	School/Education	-	4433705	-
6.	Livelihood promotion/ Job creation & skill generation	3651855	-	1498587
7.	Infrastructure Work	2485559 (cumulative)		
8.	Drinking water	941045	1196907	1220990

The green belt has been developed in the area of 59.97 ha. which is almost 35 % of total land, the details are given below:				
SN	Year	Name of Species	No. of plants	Area (Ha.)
1.	Up to March' 2017	Neem, Sheesham, Jamun, KesiaSamiya, Kachnar, Karej, Peepal, Banyan, Amla, Custard Apple, Ashok, Kadam, Guyava, Lemon, Mango, Banana etc.	183891	52.02
2.	2017-18	Neem, Sheesham, Jamun, Kachnar, Boganvolla, Amaltas, Kajurana	5080	2.00
3.	2018-19		6483	2.60
4.	2019-20		5382	2.85

2	Green belt shall be developed in 72.77 Ha with a native tree species in accordance with CPCB guidelines. The greenbelt shall inter alia cover the entire periphery of the plant
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COMPLIANCE REPORT OF CONDITIONS LAID DOWN IN ENVIRONMENT CLEARANCE OF J.K.CEMENT WORKS, NIMBAHERA
(Period April'2020 to September'2020) Dated 30.11.2020

5.	2020-21 (upto Sept'20)	Neem, Jamun, Kajurana, Peepal, Banyan, Amla, Kachnar, Boganvolla,	1166	0.50																							
Total			201702	59.97																							
- The funds allocated towards environmental protection measures is/will not be diverted for any other purpose. The amount of Rs. 21.96 Cr had expended towards implementation of environmental protection measures in the existing plant - The plant is in construction phase in phase manner, partial increase in cement production for line 4. After commissioning earmarked fund of Rs. 14.84 Cr will be utilized. - Against the estimated environmental protection cost Rs. 3,39,09,247/- has been incurred towards the installation bag filter and bag filter fan for roller press with cement mill and rest of the cost will be under line-4 clinkerisation process unit.																											
<table><tr><th rowspan="2">Description of Item</th><th colspan="2">Existing</th></tr><tr><th>Capital Cost (In Lacs)</th><th>Recurring Cost (In Lacs)</th></tr><tr><td>Air Pollution Control/ Noise</td><td>1804</td><td>180.0</td></tr><tr><td>Water Pollution Control</td><td>55.0</td><td>8.0</td></tr><tr><td>Environmental Monitoring and Management</td><td>100.0</td><td>14.04</td></tr><tr><td>Green Belt Development</td><td>175.0</td><td>17.5</td></tr><tr><td>Occupational Health</td><td>62.0</td><td>6.804</td></tr><tr><td>Total</td><td>2196.0</td><td>226.344</td></tr></table>					Description of Item	Existing		Capital Cost (In Lacs)	Recurring Cost (In Lacs)	Air Pollution Control/ Noise	1804	180.0	Water Pollution Control	55.0	8.0	Environmental Monitoring and Management	100.0	14.04	Green Belt Development	175.0	17.5	Occupational Health	62.0	6.804	Total	2196.0	226.344
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3	The Capital cost Rs. 36.80 Crores (21.96 Crores for Existing+14.84 Crores for expansion) and annual recurring cost Rs 4.08 Crores per annum (Rs. 2.87 Crores for existing + 1.21 Crores for expansion) towards the environmental protection measures shall be earmarked separately. The funds so provided shall not be diverted for any other purpose.			
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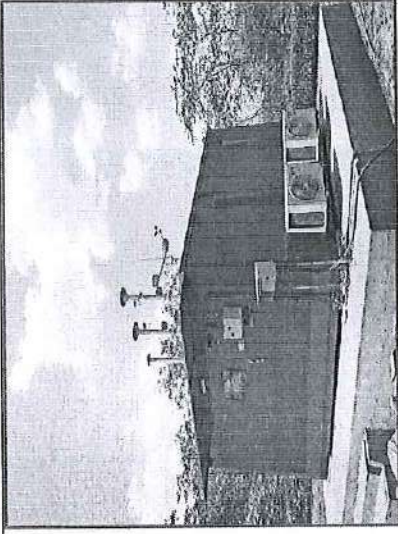
COMPLIANCE REPORT OF CONDITIONS LAID DOWN IN ENVIRONMENT CLEARANCE OF J.K.CEMENT WORKS, NIMBAHERA
(Period April'2020 to September'2020) Dated 30.11.2020

The funds allocated for the proposed line 4 which is in progress is Rs. 14.84 crores with recurring amount of 1.21 crores. The action plan for the same is as follows:																								
	<table><tr><th rowspan="2">Description of Item</th><th colspan="2">Proposed</th></tr><tr><th>Capital Cost (In Lacs)</th><th>Recurring Cost (In Lacs)</th></tr><tr><td>Air Pollution Control/ Noise</td><td>1288.65</td><td>99.5</td></tr><tr><td>Water Pollution Control</td><td>20.0</td><td>0.60</td></tr><tr><td>Environmental Monitoring and Management</td><td>124.5</td><td>12.38</td></tr><tr><td>Green Belt Development</td><td>46.5</td><td>6.50</td></tr><tr><td>Occupational Health</td><td>5.0</td><td>2.5</td></tr><tr><td>Total</td><td>1484.65</td><td>121.48</td></tr></table>	Description of Item	Proposed		Capital Cost (In Lacs)	Recurring Cost (In Lacs)	Air Pollution Control/ Noise	1288.65	99.5	Water Pollution Control	20.0	0.60	Environmental Monitoring and Management	124.5	12.38	Green Belt Development	46.5	6.50	Occupational Health	5.0	2.5	Total	1484.65	121.48
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	Environmental Monitoring and Management	124.5	12.38																					
	Green Belt Development	46.5	6.50																					
	Occupational Health	5.0	2.5																					
Total	1484.65	121.48																						
4	The project proponent shall (Air Quality Monitoring):																							
a	Install 24x7 continuous emission monitoring system at process stacks to monitor stack emission with respect to standards prescribed in Environment (Protection) Rules 1986 (G.S.R. No. 612 (E) dated 25th August, 2014 (Cement) and subsequent amendment dated 9th May, 2016 (Cement) and 10th May, 2016 (Co-processing Cement); S.O. 3305 (E) dated 7th December 2015 (Thermal Power Plants) as amended from time to time and connected to SPCB and CPCB online servers and calibrate these system from time to time according to equipment supplier specification through labs recognised under Environment (Protection) Act, 1986 or NABL accredited laboratories. - Continuous emission monitoring system has installed for monitoring of PM, SO₂ and NO_x at the stack of all Kilns, Boilers and real time continuous monitoring system has connected with 24x7 to SPCB and CPCB online servers. Opacity meters have been installed for continuous monitoring of PM at the stack of coal mill, cement mill and clinker cooler & connected 24x7 with the RSPCB & CPCB servers. - The stack of Raw Mill Kiln, Clinker Cooler, Coal Mill, Cement mill of all units are complying with PM< 30 mg/Nm³. All the stacks are installed with emissions control devices like bag house and ESPs. PM emission levels are < 50 mg/Nm³ for CPP stack. Complying with SO₂ <100 mg/Nm³ for kiln. De-NO_x system have been installed at kiln. CEMS Remote calibration done by CPCB and periodical calibration by OEM. - The same practiced will be continued after installation of line -4 also.																							

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(Period April'2020 to September'2020) Dated 30.11.2020

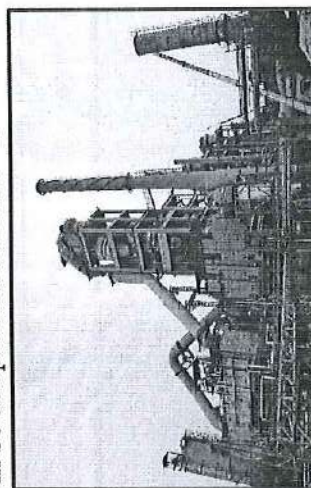
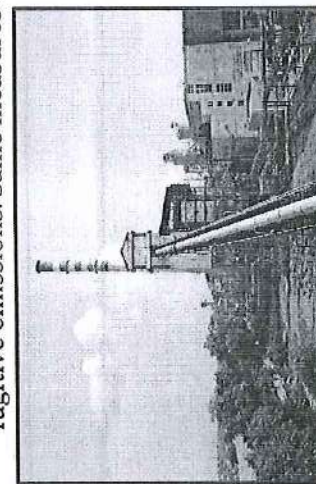
b	Monitor fugitive emissions in the plant premises at least once in every quarter through laboratories recognised under Environment (Protection) Act, 1986 or NABL accredited laboratories.	The fugitive emission monitoring is being done regularly in our existing plant and bag filters has been installed at material discharge point and water spraying are been done in coal yard regularly & other raw material yard. Guideline / Code of practice issued by the CPCB in this regard are being followed and same will be followed for line -4 also Following measures have been taken for the control of fugitive emissions: • Covered vehicle used for cement and clinker transportation. • Closed containers and bulkers for fly ash transportation. • Rail along with road used for raw material/finished product transportation. • All vehicle movement area is concreted. • Silos for the storage of Clinker and fly ash. • All unloading hoppers are covered and provided with bag filters. • Bag dust collectors have been provided at all material transfer points. • Water spray system has been provided with reclaimers and limestone unloading points. • Vacuum sweeping machines are being used for better housekeeping. • Green Belt all around the plant premises. • Fugitive emissions are within limit. Fugitive dust monitoring results are enclosed as Annexure-1
c	Install system carryout Continuous Ambient Air Quality monitoring for common/criterion parameters relevant to the main pollutants released (e.g. PM10 and PM2.5 in reference to PM emission, and SO2 and NOx in reference to SO2 and NOx emissions) within and outside the plant area at least at four locations (one within and three outside the plant area at an angle of 120° each), covering upwind and downwind directions;	• Ambient air quality is being monitored at four locations considering one upwind and downwind direction. Results of the monitoring report indicate that all the parameters are within the permissible limits. • Online CAAQMS system already installed at 4 locations in periphery of plant within plant area and 24x7 connected to RPCB/CPCB web portal.

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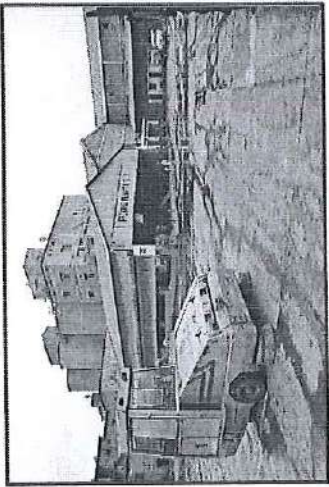
			
d	Submit monthly summary report of continuous stack emission and air quality monitoring and results of manual stack monitoring and manual monitoring of air quality /fugitive emission to Regional Office of MoEF&CC, Zonal office of CPCB and Regional Office of SPCB along with six-monthly monitoring report.	Ambient air quality & Stack monitoring please refer Annexure-2.	
5	The project proponent shall (Water Quality Monitoring):		
A	install 24x7 continuous effluent monitoring system with respect to standards prescribed in Environment (Protection) Rules 1986 vide G.S.R. No. 612 (E) dated 25th August, 2014 (Cement) and subsequent amendment dated 9th May, 2016 (Cement) and 10th May, 2016 (in case of Co-processing Cement) as amended from time to time; S.O. 3305 (E) dated 7th December 2015 (Thermal Power Plants) as amended from time to time) and connected to SPCB and CPCB online servers and calibrate these system from time to time according to equipment supplier specification	• Not applicable for cement plant. • Camera & flow meter are installed for neutralization pit at CPP & WHR for monitoring of treated effluent. The same practice will be continued in proposed expanded capacity also.	

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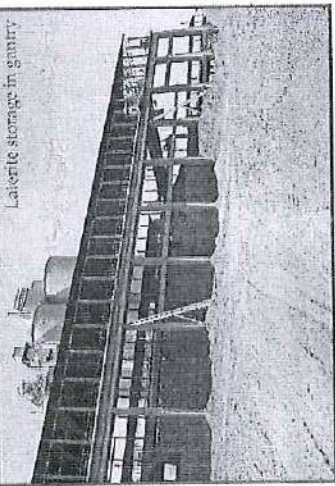
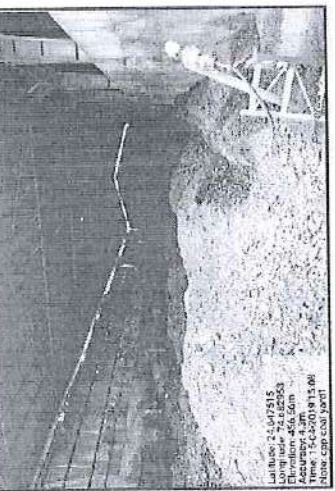
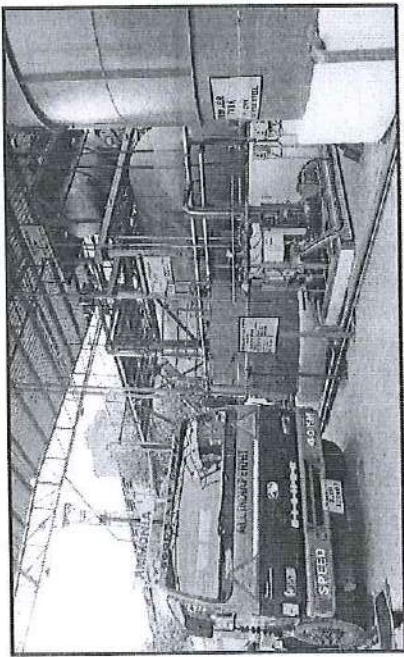
	through labs recognised under Environment (Protection) Act, 1986 or NABL accredited laboratories.	
b	Monitor regularly ground water quality at least twice a year (pre and post monsoon) at sufficient numbers of piezometers/sampling wells in the plant and adjacent areas through labs recognised under Environment (Protection) Act, 1986 and NABL accredited laboratories; and	Ground water quality is being monitored regularly (pre and post monsoon) through labs recognised under Environment (Protection) Act, 1986 and NABL accredited laboratories. We have already submitted Pre monsoon and monsoon Ground water quality report as a compliance to general condition No. B (XII) of EC. (Copy of letters are enclosed as Annexure-3)
c	Submit monthly summary report of continuous effluent monitoring and results of manual effluent testing and manual monitoring of ground water quality to Regional Office of MoEF&CC, Zonal office of CPCB and Regional Office of SPCB along with six-monthly monitoring report.	Point noted and being complied - Ground water quality is being monitored regularly. Results of the monitoring report indicate that all the parameters are within the permissible limits. - Results of ground water quality monitoring (refer annexure-3) and for effluent monitoring please refer Annexure-4. - Six monthly compliance reports are submitted on regular basis to the RO of the MOEF, CPCB and RPCB through e-mail.
6		
a	Provide appropriate Air Pollution Control (APC) system for all the dust generating points including fugitive dust from all vulnerable sources, so as to comply prescribed stack emission and fugitive emission standards.	For the existing plant, Bag house has been installed at raw mill, kiln, Coal mill & Cement mill. ESP has installed at cooler stack to control emissions and fugitive emissions. Same measures will be adopted for unit line -4.



COMPLIANCE REPORT OF CONDITIONS LAID DOWN IN ENVIRONMENT CLEARANCE OF J.K.CEMENT WORKS, NIMBAHERA
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b	Provide leakage detection and mechanised bag cleaning facilities for better maintenance of bags;	Mechanized bag cleaning facilities for better maintenance of bags has been provided and same practiced will be followed after expansion also;
c	Provide pollution control system in the cement plant as per the CREP Guidelines of CPCB;	- Point noted and complying - For the existing plant, Bag house has been installed at raw mill, kiln, Coal mill & Cement mill. ESP has installed at cooler to control stack emissions and fugitive emissions. Same measures will be adopted for unit line -4.
d	Provide sufficient number of mobile or stationary vacuum cleaners to clean plant roads, shop floors, roofs regularly;	Three nos. of mobile vacuum cleaner are facilitated to clean plant roads, shop floor & roofs regularly in existing plant and same practice will be maintained in proposed plant.  
e	Recycle and reuse lime fines, coal fines and such other fines collected in the pollution control devices and vacuum cleaning devices in the process after agglomeration;	Dust generated from raw mill dust, coal dust, clinker dust and cement dust from Pollution control equipment like Bag house / ESP are being recycled and reused in the cement manufacturing process in our existing plant. The same practice will be followed for line-4 after commencement
f	Ensure covered transportation and conveying of ore, coal and other raw material to prevent spillage and dust generation; Use closed bulkers for carrying fly ash;	All raw material transportation in covered dumper. The separate truck parking area facility is provided in the existing plant. The same practice will be adopted for line-4 unit.
g	Provide wind shelter fence and chemical spraying on the raw material stock piles;	Covered shed are provided for storage of raw materials & also developed dense plantation around the plant hence, wind shelter fence is not required.

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(Period April'2020 to September'2020) Dated 30.11.2020

			
h	Provide Low NOx burners as primary measures and SCR /NSCR technologies as secondary measure to control NOx emissions. Have separate truck parking area and monitor vehicular emissions at regular interval	• Low NOx burners have been installed in kiln -3 & SNCR system for SLC to control NOx emissions and advance technology with ILC plant for line - 4 will be install to that meet the NOx emission well within norm. • Separate truck parking area has been provided and only PUC certified vehicles are allowed. The SNCR photographs is as below:	
			7

COMPLIANCE REPORT OF CONDITIONS LAID DOWN IN ENVIRONMENT CLEARANCE OF J.K.CEMENT WORKS, NIMBAHERA
(Period April'2020 to September'2020) Dated 30.11.2020

a	Adhere to 'zero liquid discharge';	Zero' liquid discharge are being maintained.																																
b	Provide Sewage Treatment Plant for domestic wastewater; and	STP of capacity: 500KLD; based on Activated Sludge Process (ASP) technology has been provided for domestic waste water treatment and treated water is being utilised for plantation.																																
c	Provide garland drains and collection pits for each stock pile to arrest the run-off in the event of heavy rains and to check the water pollution due to surface run off.	The garland drains and collection pits for each stock pile to arrest the run-off in the event of heavy rains has been provided.																																
8																																		
a	Practice rainwater harvesting to maximum possible extent;	- Existing Rainwater Harvesting Structures: 18 Nos has been constructed. - After expansion the daily water requirement will be 2,747 Cu. Day = 9, 06,510 Cu. m/ annum. Photographs are enclosed as Annexure-5 <table><tr><th>Detail</th><th>Area (Sq. m)</th><th>R. C.</th><th>E. R. (Cu. m/ Annum)</th></tr><tr><td>Rooftop</td><td>3,24,910</td><td>85</td><td>2,22,595</td></tr><tr><td>Paved</td><td>7,23,370</td><td>70</td><td>4,08,125</td></tr><tr><td>Natural recharge through water used in green belt development</td><td>370</td><td>30</td><td>36,630</td></tr><tr><td>Open Area Plant (Natural Recharge)</td><td>2,79,919</td><td>4</td><td>9,025</td></tr><tr><td>Open Area Mine (Natural Recharge)</td><td>71,23,875</td><td>4</td><td>2,29,674</td></tr><tr><td>Recharge through check bund and injection well south of mine area.</td><td>87,00,000</td><td>20</td><td>11,21,952</td></tr><tr><td colspan="3">Total</td><td>20,28,001</td></tr></table>	Detail	Area (Sq. m)	R. C.	E. R. (Cu. m/ Annum)	Rooftop	3,24,910	85	2,22,595	Paved	7,23,370	70	4,08,125	Natural recharge through water used in green belt development	370	30	36,630	Open Area Plant (Natural Recharge)	2,79,919	4	9,025	Open Area Mine (Natural Recharge)	71,23,875	4	2,29,674	Recharge through check bund and injection well south of mine area.	87,00,000	20	11,21,952	Total			20,28,001
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Total			20,28,001																															
b	Provide water meters at the inlet to all unit processes in the cement plants; and	Water meters at all strategic locations has been provided in the existing plant.																																

COMPLIANCE REPORT OF CONDITIONS LAID DOWN IN ENVIRONMENT CLEARANCE OF J.K.CEMENT WORKS, NIMBAHERA
(Period April'2020 to September'2020) Dated 30.11.2020

c	Make efforts to minimise water consumption in the cement plant complex by segregation of used water, practicing cascade use and by recycling treated water.	• Cement manufacturing process is based on dry process technology. • Air cooled condensers in captive power plant is installed • Treated waste water from CPP is being reused in coal yard for dust suppression • WHR treated waste water is being recycle in cement plant for machineries cooling purpose only. • Domestic sewage generated is being treated at STP and the treated water is used for plantation and greenbelt development. • 'Zero' liquid discharge are being maintained.
9		
a	Provide Waste heat recovery system for kiln and cooler;	Waste heat recovery system has provided in the existing kiln and cooler to generate power. The existing power generation through WHRB is 13.2 MW. Same will be explore in line -4.
b	Make efforts to achieve power consumption less than 65 units/tonne for Portland Pozzolona Cement (PPC) and 85 units/tonne for Ordinary Portland Cement (OPC) production and thermal energy consumption of 670 Kcal/Kg of clinker;	All suitable measures like VVFD, high efficient motors have been adopted to reduce power consumption.
c	Provide solar power generation on roof tops of buildings, for solar light system for all common areas, street lights, parking around project area and maintain the same regularly;	Solar power is installed at JK ITI building for street light, open area, parking area and water heater etc.
d	Provide the project proponent for LED lights in their offices and residential areas;	LED lights provided in office & residential township.
e	maximize utilization of fly ash, slag and sweetener in cement blend as per BIS standards; and	Complying with, Fly ash generated from own power plant 100% utilized in manufacturing of PPC cement. Sweetener is being used in limestone to achieve desire LSF.

COMPLIANCE REPORT OF CONDITIONS LAID DOWN IN ENVIRONMENT CLEARANCE OF J.K.CEMENT WORKS, NIMBAHERA
(Period April'2020 to September'2020) Dated 30.11.2020

f	Maximize utilization of alternate fuels and Co-processing to achieve best practice norms	The details of alternate fuels are being utilised in the existing plant is given in specific condition point no -3
10	Efforts shall be made to reduce impact of the transport of the raw materials and end products on the surrounding environment including agricultural land by the use of covered conveyor belts/railways as a mode of transport	Point noted and being complied All precautions to reduce impact of transport of raw material etc. Fly ash is transported by pneumatic system and all type of materials are transported by covered truck, provide paved roads & regular sprinkling of water on roads. There are separate parking areas for trucks with green belt on the periphery and End product also transporting through rail to reduce the road transport.
11	Used refractories shall be recycled as far as possible.	Used refractories is sold and partially recycled in existing plant and same practice will be adopted in proposed plant
12	The project proponent shall prepare GHG emissions inventory for the plant and shall submit the programme for reduction of the same including carbon sequestration including plantation.	GHG emission inventory report is attached as Annexure-6
13	Emergency preparedness plan based on the Hazard identification and Risk Assessment (HIRA) and Disaster Management Plan shall be implemented.	Emergency preparedness plan based on the Hazard identification and Risk Assessment (HIRA) and Disaster Management Plan are implemented.
14	The PP shall carry out heat stress analysis for the workmen who work in high temperature work zone and provide Personal Protection Equipment (PPE) as per the norms of Factory Act	There is no any activity is carried out in high temperature work zone however during shutdown we start working after cooling of equipment and same practice will be followed in proposed unit. Personal protective equipment is being provided to respective worker.
15	The PP shall adhere to the corporate environmental policy and system of the reporting of any infringements/ non-compliance of EC conditions at least once in a year to the Board of Directors and the copy of the board resolution shall be submitted to the MoEF&CC as a part of six-monthly report.	Agreed and under our company policy.

COMPLIANCE REPORT OF CONDITIONS LAID DOWN IN ENVIRONMENT CLEARANCE OF J.K.CEMENT WORKS, NIMBAHERA
(Period April'2020 to September'2020) Dated 30.11.2020

16	All the recommendations made in the Charter on Corporate Responsibility for Environment Protection (CREP) for the cement plants shall be implemented.	All CREP recommendations have been implemented.
17	A dedicated environmental cell with qualified personnel shall be established. The head of the environment cell shall report directly to the head of the organization.	A separate environmental management cell with qualified personnel is already established & has sufficient monitoring equipment in environmental laboratory.
18	Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, Safe drinking water, medical health care, crèche etc shall be provided for construction worker within the site. The housing shall be removed after the completion of the project.	Point noted and agreed All necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, Safe drinking water, medical health care, crèche etc shall be provided for construction worker within the site. The housing shall be removed after the completion of the project.
19	The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.	The stipulations made by the State Pollution Control Board and the State Government are being/ will be strictly complied.
20	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change (MoEF&CC).	Point noted and agreed
21	The waste oil, grease and other hazardous shall be disposed of as per the Hazardous & Other waste (Management & Transboundary Movement) Rules, 2016.	Being followed - Hazardous waste generated from our existing plant i.e. Used Oil (5.1) and Waste oil (5.2) are being sold out to authorized recyclers of RPCB/CPCB. - Used Batteries is sold to CPCB, RSPCB, authorized vendors. - Authorization has been obtained from SPCB as per the Hazardous & Other waste (Management & Transboundary Movement) Rules, 2016.
22	The storage of NH3 and other hazardous chemicals at the site shall be as per the provisions of Manufacture, Storage and	NH ₃ use in SNCR is approx. 25 % aqueous solution which is being supplied by manufacturing company. All safety measures inter locked in storage & handling of

COMPLIANCE REPORT OF CONDITIONS LAID DOWN IN ENVIRONMENT CLEARANCE OF J.K.CEMENT WORKS, NIMBAHERA
(Period April'2020 to September'2020) Dated 30.11.2020

	Import of Hazardous Chemical Rules, 1989 as amended from time to time	NH3 & others chemical are being followed as per provisions of Manufacture, Storage and Import of Hazardous Chemical Rules, 1989 as amended.
23	The ambient noise levels should conform to the standards prescribed under E(P)A Rules, 1986 viz. 75 dB(A) during day time and 70 dB(A) during night time.	The ambient noise levels are being regularly monitored and monitoring results indicates that the noise levels with the plant at all locations are well within the standards prescribed under E(P)A Rules, 1986 (For Monitoring results please refer Annexure- 2)
24	Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.	All Occupational health and safety measures are being taken by the management. Health Record of the workers is being maintained. The company has dispensary and sufficient medical staff for the existing unit to monitor the health of the employees/ workers.
25	The project proponent shall also comply with all the environmental protection measures and safeguards recommended in the EIA/EMP report.	Agreed
26	Ventilation system shall be designed for adequate air changes as per ACGIH document for all tunnels, motor houses, Cement bagging plants.	Installed and is in operation
27	Sufficient number of colour coded waste collection bins shall be constructed at shop floors in each shop to systematically segregate and store waste materials generated at the shop floors (other than Process waste) in designated coloured bins for value addition by promoting reuse of such wastes and for good housekeeping.	Agree & Implemented. Colour coded waste collection bins at shop floor to systematically segregate and store waste materials generated at the shop floors (other than Process waste) in designated colour bins and same practice will be adopted in proposed plant.
28	Kitchen waste shall be composted or converted to biogas for further use.(to be decided on case to case basis depending on type and size of plant)	The kitchen waste after segregation & collection of dry and wet garbage is being / will be sent to Nimbahera Nagar Palika for proper disposal.

COMPLIANCE REPORT OF CONDITIONS LAID DOWN IN ENVIRONMENT CLEARANCE OF J.K.CEMENT WORKS, NIMBAHERA
(Period April'2020 to September'2020) Dated 30.11.2020

29			Implemented.
a	send a copy of environmental clearance letter to the heads of Local Bodies, Panchayat, Municipal bodies and relevant offices of the Government;		
b	Put on the clearance letter on the web site of the company for access to the public.	Complied	
c	Inform the public through advertisement within seven days from the date of issue of the clearance letter, at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the SPCB and may also be seen at Website of the Ministry of Environment, Forests and Climate Change (MoEF&CC) at http://envfor.nic.in .	Implemented & the necessary information already sent to the concerned authority.	
d	Upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same periodically;	The status of compliance of the stipulated environment clearance conditions, including results of monitored data is being uploaded regularly on website.	
e	Monitor the criteria pollutants level namely; PM10, SO2, NOx (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the projects and display the same at a convenient location for disclosure to the public and put on the website of the company;	Regular monitoring of PM10, SO2, NOx (ambient levels as well as stack emissions) or critical sectoral parameters are being monitored. Data on PM, SOx and NOx are continuously displayed outside the premises of plant and uploaded on the website of the company;	
f	Submit six monthly reports on the status of the compliance of the stipulated environmental conditions including results of monitored data (both in hard copies as well as by e-mail) to the	Agreed. Six monthly reports are being regularly submitting to concern offices as given in time frame, previous clearance letter. Last Six-Monthly Monitoring report was sent on 30.05.2020 through e-mail.	

COMPLIANCE REPORT OF CONDITIONS LAID DOWN IN ENVIRONMENT CLEARANCE OF J.K.CEMENT WORKS, NIMBAHERA
(Period April'2020 to September'2020) Dated 30.11.2020

	Regional Office of MoEF&CC, the respective Zonal Office of CPCB and the SPCB;	
g	Submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company;	Complying with, The Environment statement i.e. Form V is being submitted regularly of each financial year of existing plant. FY 2019-20 ESR Nimbahera cement plant, 22 MW CPP and 13.2 MW WHR has submitted at RSPCB office vide letter no. NBH-PC-ESR-21- 539,v 542 & 541 respectively, dated 15.09.2020
h	Inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of commencing the land development work.	Point noted and will be complied
30	The Ministry of Environment, Forest and Climate Change has considered the application based on the recommendations of the Expert Appraisal Committee (Industry-I) and hereby decided to grant environmental clearance for the proposed expansion of Integrated Cement Plant.	Noted
31	The ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory	Noted
32	The ministry reserves the right to stipulate additional conditions if found necessary. The company in a time bound manner shall implement these conditions	Noted
33	The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report and that during their presentation of EAC. The commitment made by the project proponent to issue raised during public hearing shall be implemented by the proponent	Noted and Agreed

COMPLIANCE REPORT OF CONDITIONS LAID DOWN IN ENVIRONMENT CLEARANCE OF J.K.CEMENT WORKS, NIMBAHERA
(Period April'2020 to September'2020) Dated 30.11.2020

34	The above conditions shall be enforced, inter-alia under the provisions of the water (Prevention and control of pollution)Act 1974 , the Air (Prevention & control of pollution)Act,1981, the Environment (Protection)Act,1986, Hazardous and other waste (Management and Transboundary Movement)Rules 2016 and the Public Liability Insurance Act 1991 along with their amendments and rules	Noted and Agreed
35	Any appeal against this EC shall lie with NGT ,if preferred within a period of 30 days as prescribed under Section 16 of NGT Act ,2010	Noted and Agreed

J.K. Cement Works, Nimbahera
Fugitive Emission Monitoring Report
April '2020 - September '2020

S.No.	Month/Year	SPM ($\mu\text{g}/\text{m}^3$)			
		NEAR COAL YARD-1	NEAR LIMESTONE CRUSHING SITE-1	NEAR STACKER RECLAIMER-1	NEAR GYPSUM YARD-1
1	Apr-20	Plants was not in operation due to Covid-19 lockdown			
2	May-20				
3	Jun-20	1049.5	2282.5	2189.2	2044.3
4	Jul-20	1098.5	2232.6	2010.1	2171.4
5	Aug-20	980.2	2192.5	1837.3	2258.6
6	Sep-20	863.6	1371.3	1601.6	1485.2

J.K. Cement WORKS, Nimbahera (RAJ)
22 MW CPP Fugitive Emission Monitoring Report
April '2020 - September '2020
 (ALL VALUES IN MICROGRAMS / CUBIC METER)

Month/Year	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20
NEAR COAL YARD OF 22 MW CPP	Plants was not in operation due to Covid-19 lockdown		1209.1	1284.80	987.10	936.40

April'20								
STOP	KILN No. 2 (Bag house)	Plant not in Operation						
	KILN No. 2 (Bag house)							
	KILN No. 2 (Bag house)							
	KILN No. 2 (Bag house)							
May'20								
STOP	KILN No. 2 (Bag house)	Plant not in Operation						
	KILN No. 2 (Bag house)							
	KILN No. 2 (Bag house)							
	KILN No. 2 (Bag house)							
June'20								
STOP	KILN No. 2 (Bag house)	Plant not in Operation						
	KILN No. 2 (Bag house)							
	KILN No. 2 (Bag house)							
	KILN No. 2 (Bag house)							
July'20								
STOP	KILN No. 2 (Bag house)	Plant not in Operation						
	KILN No. 2 (Bag house)							
	KILN No. 2 (Bag house)							
	KILN No. 2 (Bag house)							
August'20								
STOP	KILN No. 2 (Bag house)	Plant not in Operation						
	KILN No. 2 (Bag house)							
	KILN No. 2 (Bag house)							
	KILN No. 2 (Bag house)							
September'20								
STOP	KILN No. 2 (Bag house)	STOP						
	KILN No. 2 (Bag house)							
18.09.2020	KILN No. 2 (Bag house)	3.80	142	415.00	16.97	11.4	10.9	0.046
25.09.2020	KILN No. 2 (Bag house)	3.80	134	407.00	15.77	10.3		0.039

April'20								
STOP	KILN No. 3 (Bag house)	Plant not in Operation						
	KILN No. 3 (Bag house)							
	KILN No. 3 (Bag house)							
	KILN No. 3 (Bag house)							
May'20								
STOP	KILN No. 3 (Bag house)	Plant not in Operation						
	KILN No. 3 (Bag house)							
	KILN No. 3 (Bag house)							
	KILN No. 3 (Bag house)							
June'20								
06.06.2020	KILN No. 3 (Bag House)	3.80	410	16.64	45.96	14.5	11.7	0.058
10.06.2020	KILN No. 3 (Bag House)	3.80	425	16.65	44.36	10.4		0.040
16.06.2020	KILN No. 3 (Bag House)	3.80	422	18.23	48.92	11.5		0.049
23.06.2020	KILN No. 3 (Bag House)	3.80	424	17.96	47.97	10.4		0.043
July'20								
02.07.2020	KILN No. 3 (Bag House)	3.80	414	15.79	43.19	11.6	10.9	0.043
10.07.2020	KILN No. 3 (Bag House)	3.80	402	14.64	41.24	10.8		0.038
17.07.2020	KILN No. 3 (Bag House)	3.80	410	17.07	47.15	10.7		0.044
23.07.2020	KILN No. 3 (Bag House)	3.80	421	15.56	41.85	10.5		0.038
August'20								
04.08.2020	KILN No. 3 (Bag House)	3.80	416	15.42	41.98	13.90	12.3	0.050
11.08.2020	KILN No. 3 (Bag House)	3.80	411	14.74	40.61	12.40		0.044
18.08.2020	KILN No. 3 (Bag House)	3.80	402	16.29	45.89	11.6		0.046
26.08.2020	KILN No. 3 (Bag House)	3.80	421	15.72	42.28	11.4		0.042
September'20								
03.09.2020	KILN No. 3 (Bag House)	3.80	424	15.30	40.86	9.9	11.1	0.035
10.09.2020	KILN No. 3 (Bag House)	3.80	420	15.96	43.03	12.8		0.048
17.09.2020	KILN No. 3 (Bag House)	0.38	411	14.31	39.43	10.6		0.036
STOP	KILN No. 3 (Bag House)	STOP						STOP

April'20								
STOP	PRE-CALCINER (Bag House)	Plant not in Operation						
	PRE-CALCINER (Bag House)							
	PRE-CALCINER (Bag House)							
	PRE-CALCINER (Bag House)							
May'20								
STOP	PRE-CALCINER (Bag House)	Plant not in Operation						
	PRE-CALCINER (Bag House)							
	PRE-CALCINER (Bag House)							
	PRE-CALCINER (Bag House)							
June'20								
06.06.2020	PRE-CALCINER (Bag House)	7.79	434	17.65	94.41	13.1	12.3	0.107
11.06.2020	PRE-CALCINER (Bag House)	7.79	431	18.83	141.92	14.0		0.172
17.06.2020	PRE-CALCINER (Bag House)	7.79	422	16.74	126.58	11.7		0.128
23.06.2020	PRE-CALCINER (Bag House)	7.79	430	16.75	127.07	10.5		0.115
July'20								
02.07.2020	PRE-CALCINER (Bag House)	7.79	436	16.82	89.56	11.9	11.7	0.092
10.07.2020	PRE-CALCINER (Bag House)	7.79	430	17.62	135.89	12.8		0.150
17.07.2020	PRE-CALCINER (Bag House)	7.79	422	16.93	130.14	10.3		0.116
21.07.2020	PRE-CALCINER (Bag House)	7.79	425	17.70	135.16	11.6		0.135
August'20								
03.08.2020	PRE-CALCINER (Bag House)	7.79	431	17.02	91.67	11.1	10.1	0.088
10.08.2020	PRE-CALCINER (Bag House)	7.79	422	16.30	123.66	9.7		0.104
17.08.2020	PRE-CALCINER (Bag House)	7.79	424	17.36	132.13	11.0		0.126
26.08.2020	PRE-CALCINER (Bag House)	7.79	420	17.04	130.55	8.4		0.095
September'20								
03.09.2020	PRE-CALCINER (Bag House)	7.79	431	15.69	84.51	12.2	11.8	0.089
10.09.2020	PRE-CALCINER (Bag House)	7.79	422	16.50	126.83	13.7		0.150
17.09.2020	PRE-CALCINER (Bag House)	7.79	436	17.12	130.30	9.7		0.109
STOP	PRE-CALCINER (Bag House)	STOP						
April'20								
STOP	FOLAX COOLER (E.S.P)	Plant not in Operation						
	FOLAX COOLER (E.S.P)							
	FOLAX COOLER (E.S.P)							
	FOLAX COOLER (E.S.P)							
May'20								
STOP	FOLAX COOLER (E.S.P)	Plant not in Operation						
	FOLAX COOLER (E.S.P)							
	FOLAX COOLER (E.S.P)							
	FOLAX COOLER (E.S.P)							
June'20								
05.06.2020	FOLAX COOLER (E.S.P)	12.56	430	15.73	149.10	21.8	21.8	0.300
11.06.2020	FOLAX COOLER (E.S.P)	12.56	422	14.94	143.54	20.2		0.280
17.06.2020	FOLAX COOLER (E.S.P)	12.56	434	15.91	137.65	23.1		0.260
24.06.2020	FOLAX COOLER (E.S.P)	12.56	424	16.39	136.22	22.2		0.278
July'20								
02.07.2020	FOLAX COOLER (E.S.P)	12.56	427	16.14	149.10	23.2	23.2	0.300
10.07.2020	FOLAX COOLER (E.S.P)	12.56	442	14.84	143.54	23.1		0.280
16.07.2020	FOLAX COOLER (E.S.P)	12.56	423	14.96	137.65	25.2		0.260
21.07.2020	FOLAX COOLER (E.S.P)	12.56	416	15.73	136.22	21.3		0.278
August'20								
04.08.2020	FOLAX COOLER (E.S.P)	12.56	424.00	16.29	149.10	24.20	24.4	0.300
11.08.2020	FOLAX COOLER (E.S.P)	12.56	438	15.82	143.54	26.4		0.280
18.08.2020	FOLAX COOLER (E.S.P)	12.56	427	15.78	137.65	23.8		0.260
26.08.2020	FOLAX COOLER (E.S.P)	12.56	421	15.98	136.22	23.0		0.278
September'20								
05.09.2020	FOLAX COOLER (E.S.P)	12.56	426	17.54	149.10	21.2	19.7	0.300
12.09.2020	FOLAX COOLER (E.S.P)	12.56	434	16.98	143.54	19.2		0.280
17.09.2020	FOLAX COOLER (E.S.P)	12.56	423	15.86	137.65	18.7		0.260
STOP	FOLAX COOLER (E.S.P)	STOP						

April'20									
STOP	COAL MILL - 1 (B.F.)		Mill not in Operation						
	COAL MILL - 1 (B.F.)								
	COAL MILL - 1 (B.F.)								
	COAL MILL - 1 (B.F.)								
May'20									
STOP	COAL MILL - 1 (B.F.)		Mill not in Operation						
	COAL MILL - 1 (B.F.)								
	COAL MILL - 1 (B.F.)								
	COAL MILL - 1 (B.F.)								
June'20									
STOP	COAL MILL - 1 (B.F.)		Mill not in Operation						
	COAL MILL - 1 (B.F.)								
	COAL MILL - 1 (B.F.)								
	COAL MILL - 1 (B.F.)								
July '20									
STOP	COAL MILL - 1 (B.F.)		Mill not in Operation						
	COAL MILL - 1 (B.F.)								
	COAL MILL - 1 (B.F.)								
	COAL MILL - 1 (B.F.)								
August '20									
STOP	COAL MILL - 1 (B.F.)		Mill not in Operation						
	COAL MILL - 1 (B.F.)								
	COAL MILL - 1 (B.F.)								
	COAL MILL - 1 (B.F.)								
September '20									
STOP	COAL MILL - 1 (B.F.)		Mill not in Operation						
	COAL MILL - 1 (B.F.)								
	COAL MILL - 1 (B.F.)								
	COAL MILL - 1 (B.F.)								
April'20									
STOP	COAL MILL - 2 (B.F.)		Mill not in Operation						
	COAL MILL - 2 (B.F.)								
	COAL MILL - 2 (B.F.)								
	COAL MILL - 2 (B.F.)								
May'20									
STOP	COAL MILL - 2 (B.F.)		Mill not in Operation						
	COAL MILL - 2 (B.F.)								
	COAL MILL - 2 (B.F.)								
	COAL MILL - 2 (B.F.)								
June'20									
STOP	COAL MILL - 2 (B.F.)		Mill not in Operation						
	COAL MILL - 2 (B.F.)								
	COAL MILL - 2 (B.F.)								
	COAL MILL - 2 (B.F.)								
July '20									
STOP	COAL MILL - 2 (B.F.)		Mill not in Operation						
	COAL MILL - 2 (B.F.)								
	COAL MILL - 2 (B.F.)								
	COAL MILL - 2 (B.F.)								
August '20									
STOP	COAL MILL - 2 (B.F.)		Mill not in Operation						
	COAL MILL - 2 (B.F.)								
	COAL MILL - 2 (B.F.)								
	COAL MILL - 2 (B.F.)								
September '20									
STOP	COAL MILL - 2 (B.F.)		STOP						
	COAL MILL - 2 (B.F.)								
18.09.2020	COAL MILL - 2 (B.F.)		0.38	351	12.18	4.52	15.8	13.5	0.006
26.09.2020	COAL MILL - 2 (B.F.)		0.38	344	12.94	4.84	11.1		0.005

April'20								
STOP	COAL MILL - 3 (B.F.)	Mill not in Operation						
	COAL MILL - 3 (B.F.)							
	COAL MILL - 3 (B.F.)							
	COAL MILL - 3 (B.F.)							
May'20								
STOP	COAL MILL - 3 (B.F.)	Mill not in Operation						
	COAL MILL - 3 (B.F.)							
	COAL MILL - 3 (B.F.)							
	COAL MILL - 3 (B.F.)							
June'20								
05.06.2020	COAL MILL - 3 (B.F.)	0.38	360	15.11	5.68	13.2	13.2	0.006
10.06.2020	COAL MILL - 3 (B.F.)	0.38	365	14.55	5.42	14.1		0.007
16.06.2020	COAL MILL - 3 (B.F.)	0.38	351	14.55	5.37	13.7		0.006
24.06.2020	COAL MILL - 3 (B.F.)	0.38	354	13.88	5.14	11.9		0.005
July'20								
04.07.2020	COAL MILL - 3 (B.F.)	0.38	364	14.72	5.48	10.6	12.3	0.005
09.07.2020	COAL MILL - 3 (B.F.)	0.38	360	15.21	5.68	15.5		0.008
15.07.2020	COAL MILL - 3 (B.F.)	0.38	352	14.19	5.34	10.7		0.005
23.07.2020	COAL MILL - 3 (B.F.)	0.38	362	14.14	5.36	12.5		0.006
August'20								
05.08.2020	COAL MILL - 3 (B.F.)	0.38	366	14.57	5.46	13.3	11.7	0.006
12.08.2020	COAL MILL - 3 (B.F.)	0.38	360	14.74	5.49	12.1		0.006
18.08.2020	COAL MILL - 3 (B.F.)	0.38	354	13.88	5.19	10.2		0.005
25.08.2020	COAL MILL - 3 (B.F.)	0.38	357	13.74	5.10	11.1		0.005
September'20								
01.09.2020	COAL MILL - 3 (B.F.)	0.38	348	13.26	4.96	11.2	11.6	0.005
08.09.2020	COAL MILL - 3 (B.F.)	0.38	354	14.28	5.30	13.0		0.006
15.09.2020	COAL MILL - 3 (B.F.)	0.38	352	13.79	5.17	10.5		0.005
STOP	COAL MILL - 3 (B.F.)	STOP						
April'20								
STOP	COAL MILL - 4 (BAG FILTER)	Mill not in Operation						
	COAL MILL - 4 (BAG FILTER)							
	COAL MILL - 4 (BAG FILTER)							
	COAL MILL - 4 (BAG FILTER)							
May'20								
STOP	COAL MILL - 4 (BAG FILTER)	Mill not in Operation						
	COAL MILL - 4 (BAG FILTER)							
	COAL MILL - 4 (BAG FILTER)							
	COAL MILL - 4 (BAG FILTER)							
June'20								
05.06.2020	COAL MILL - 4 (BAG FILTER)	1.13	347	13.39	14.78	10.2	11.9	0.013
10.06.2020	COAL MILL - 4 (BAG FILTER)	1.13	342	14.13	15.76	12.4		0.017
16.06.2020	COAL MILL - 4 (BAG FILTER)	1.13	354	13.11	14.57	13.1		0.016
22.06.2020	COAL MILL - 4 (BAG FILTER)	1.13	352	12.75	14.12	11.9		0.015
July'20								
01.07.2020	COAL MILL - 4 (BAG FILTER)	1.13	349	13.98	15.59	10.1	10.1	0.014
08.07.2020	COAL MILL - 4 (BAG FILTER)	1.13	342	14.50	16.33	11.4		0.016
15.07.2020	COAL MILL - 4 (BAG FILTER)	1.13	354	13.88	15.43	10.4		0.014
23.07.2020	COAL MILL - 4 (BAG FILTER)	1.13	351	14.26	15.80	8.5		0.012
August'20								
05.08.2020	COAL MILL - 4 (BAG FILTER)	1.13	352	14.66	16.24	13.3	12.2	0.019
12.08.2020	COAL MILL - 4 (BAG FILTER)	1.13	340	14.04	15.50	11.0		0.015
18.08.2020	COAL MILL - 4 (BAG FILTER)	1.13	353	13.81	15.40	12.4		0.016
25.08.2020	COAL MILL - 4 (BAG FILTER)	1.13	351	14.46	16.02	12.2		0.017
September'20								
01.09.2020	COAL MILL - 4 (BAG FILTER)	1.13	345	13.51	14.96	13.1	12.6	0.017
08.09.2020	COAL MILL - 4 (BAG FILTER)	1.13	342	13.09	14.55	14.7		0.018
15.09.2020	COAL MILL - 4 (BAG FILTER)	1.13	355	14.30	15.94	9.9		0.014
STOP	COAL MILL - 4 (BAG FILTER)	STOP						

April'20								
STOP	CEMENT MILL - 1 (BAG FILTER)	Mill not in Operation						
	CEMENT MILL - 1 (BAG FILTER)							
	CEMENT MILL - 1 (BAG FILTER)							
	CEMENT MILL - 1 (BAG FILTER)							
May'20								
STOP	CEMENT MILL - 1 (BAG FILTER)	Mill not in Operation						
	CEMENT MILL - 1 (BAG FILTER)							
	CEMENT MILL - 1 (BAG FILTER)							
	CEMENT MILL - 1 (BAG FILTER)							
June'20								
STOP	CEMENT MILL - 1 (BAG FILTER)	Mill not in Operation						
	CEMENT MILL - 1 (BAG FILTER)							
	CEMENT MILL - 1 (BAG FILTER)							
	CEMENT MILL - 1 (BAG FILTER)							
July'20								
STOP	CEMENT MILL - 1 (BAG FILTER)	Mill not in Operation						
	CEMENT MILL - 1 (BAG FILTER)							
	CEMENT MILL - 1 (BAG FILTER)							
	CEMENT MILL - 1 (BAG FILTER)							
August'20								
STOP	CEMENT MILL - 1 (BAG FILTER)	Mill not in Operation						
	CEMENT MILL - 1 (BAG FILTER)							
	CEMENT MILL - 1 (BAG FILTER)							
	CEMENT MILL - 1 (BAG FILTER)							
September'20								
STOP	CEMENT MILL - 1 (BAG FILTER)	Mill not in Operation						
	CEMENT MILL - 1 (BAG FILTER)							
	CEMENT MILL - 1 (BAG FILTER)							
	CEMENT MILL - 1 (BAG FILTER)							
April'20								
STOP	CEMENT MILL - 2 (BAG FILTER)	Mill not in Operation						
	CEMENT MILL - 2 (BAG FILTER)							
	CEMENT MILL - 2 (BAG FILTER)							
	CEMENT MILL - 2 (BAG FILTER)							
May'20								
STOP	CEMENT MILL - 2 (BAG FILTER)	Mill not in Operation						
	CEMENT MILL - 2 (BAG FILTER)							
	CEMENT MILL - 2 (BAG FILTER)							
	CEMENT MILL - 2 (BAG FILTER)							
June'20								
STOP	CEMENT MILL - 2 (BAG FILTER)	STOP						
	CEMENT MILL - 2 (BAG FILTER)							
18.06.2020	CEMENT MILL - 2 (BAG FILTER)	0.61	351	15.20	9.12	18.8	17.3	0.015
25.06.2020	CEMENT MILL - 2 (BAG FILTER)	0.61	354	13.88	8.25	15.8		0.011
July'20								
03.07.2020	CEMENT MILL - 2 (BAG FILTER)	0.61	354	14.52	8.77	17.7	16.3	0.013
STOP	CEMENT MILL - 2 (BAG FILTER)	STOP						STOP
13.07.2020	CEMENT MILL - 2 (BAG FILTER)	0.61	347	14.23	8.54	15.8		0.012
29.07.2020	CEMENT MILL - 2 (BAG FILTER)	0.61	354	13.88	8.25	15.4		0.011
August'20								
STOP	CEMENT MILL - 2 (BAG FILTER)	Mill not in Operation						
	CEMENT MILL - 2 (BAG FILTER)							
	CEMENT MILL - 2 (BAG FILTER)							
	CEMENT MILL - 2 (BAG FILTER)							
September'20								
03.09.2020	CEMENT MILL - 2 (BAG FILTER)	0.61	375	16.80	5.25	13.5	14.3	0.006
09.09.2020	CEMENT MILL - 2 (BAG FILTER)	0.61	384	17.20	5.40	15.1		0.007
17.09.2020	CEMENT MILL - 2 (BAG FILTER)	0.61	384	16.20	5.12	15.5		0.007
25.09.2020	CEMENT MILL - 2 (BAG FILTER)	0.61	395	15.80	4.97	13.2		0.006

April'20								
STOP	CEMENT MILL - 3 (BAG FILTER)	Mill not in Operation						
	CEMENT MILL - 3 (BAG FILTER)							
	CEMENT MILL - 3 (BAG FILTER)							
	CEMENT MILL - 3 (BAG FILTER)							
May'20								
STOP	CEMENT MILL - 3 (BAG FILTER)	Mill not in Operation						
	CEMENT MILL - 3 (BAG FILTER)							
	CEMENT MILL - 3 (BAG FILTER)							
	CEMENT MILL - 3 (BAG FILTER)							
June'20								
06.06.2020	CEMENT MILL - 3 (BAG FILTER)	0.50	356	14.41	6.22	17.9	15.9	0.011
12.06.2020	CEMENT MILL - 3 (BAG FILTER)	0.50	354	13.54	5.82	13.8		0.008
STOP	CEMENT MILL - 3 (BAG FILTER)	STOP						
STOP	CEMENT MILL - 3 (BAG FILTER)							
July'20								
01.07.2020	CEMENT MILL - 3 (BAG FILTER)	0.50	356	13.77	6.78	17.0	14.8	0.010
08.07.2020	CEMENT MILL - 3 (BAG FILTER)	0.50	354	14.37	7.10	15.1		0.009
17.07.2020	CEMENT MILL - 3 (BAG FILTER)	0.50	356	13.77	6.83	15.0		0.009
20.07.2020	CEMENT MILL - 3 (BAG FILTER)	0.50	354	14.37	7.17	11.9		0.007
August'20								
01.08.2020	CEMENT MILL - 3 (BAG FILTER)	0.50	351	13.32	6.60	17.3	17.1	0.010
08.08.2020	CEMENT MILL - 3 (BAG FILTER)	0.50	357	14.09	6.96	18.4		0.011
14.08.2020	CEMENT MILL - 3 (BAG FILTER)	0.50	360	14.45	7.09	18.3		0.011
26.08.2020	CEMENT MILL - 3 (BAG FILTER)	0.50	364	14.82	7.23	14.4		0.009
September'20								
01.09.2020	CEMENT MILL - 3 (BAG FILTER)	0.50	347	13.89	6.89	13.6	15.2	0.008
09.09.2020	CEMENT MILL - 3 (BAG FILTER)	0.50	354	14.94	7.36	14.1		0.009
17.09.2020	CEMENT MILL - 3 (BAG FILTER)	0.50	359	13.88	6.86	16.5		0.010
25.09.2020	CEMENT MILL - 3 (BAG FILTER)	0.50	352	14.28	7.10	16.4		0.010
April'20								
STOP	CEMENT MILL - 4 (BAG FILTER)	Mill not in Operation						
	CEMENT MILL - 4 (BAG FILTER)							
	CEMENT MILL - 4 (BAG FILTER)							
	CEMENT MILL - 4 (BAG FILTER)							
May'20								
STOP	CEMENT MILL - 4 (BAG FILTER)	Mill not in Operation						
	CEMENT MILL - 4 (BAG FILTER)							
	CEMENT MILL - 4 (BAG FILTER)							
	CEMENT MILL - 4 (BAG FILTER)							
June'20								
05.06.2020	CEMENT MILL - 4 (BAG FILTER)	0.63	362	13.58	8.44	19.1	16.1	0.014
12.06.2020	CEMENT MILL - 4 (BAG FILTER)	0.63	350	14.24	8.71	14.8		0.011
19.06.2020	CEMENT MILL - 4 (BAG FILTER)	0.63	354	13.11	8.04	17.1		0.012
26.06.2020	CEMENT MILL - 4 (BAG FILTER)	0.63	351	14.69	9.10	13.5		0.011
July'20								
03.07.2020	CEMENT MILL - 4 (BAG FILTER)	0.63	354	13.53	8.44	17.1	15.6	0.012
11.07.2020	CEMENT MILL - 4 (BAG FILTER)	0.63	356	14.27	8.93	14.5		0.011
17.07.2020	CEMENT MILL - 4 (BAG FILTER)	0.63	351	13.32	8.25	15.5		0.011
27.07.2020	CEMENT MILL - 4 (BAG FILTER)	0.63	362	14.24	8.85	15.1		0.012
August'20								
08.08.2020	CEMENT MILL - 4 (BAG FILTER)	0.63	352	13.64	8.42	16.4	16.1	0.012
14.08.2020	CEMENT MILL - 4 (BAG FILTER)	0.63	348	13.26	8.27	15.6		0.011
19.08.2020	CEMENT MILL - 4 (BAG FILTER)	0.63	354	13.48	8.35	17.1		0.012
27.08.2020	CEMENT MILL - 4 (BAG FILTER)	0.63	362	14.24	8.85	15.1		0.012
September'20								
05.09.2020	CEMENT MILL - 4 (BAG FILTER)	0.63	342	15.57	9.58	16.5	14.9	0.014
12.09.2020	CEMENT MILL - 4 (BAG FILTER)	0.63	348	15.09	9.35	13.1		0.011
16.09.2020	CEMENT MILL - 4 (BAG FILTER)	0.63	356	14.36	8.99	15.3		0.012
22.09.2020	CEMENT MILL - 4 (BAG FILTER)	0.63	360	14.64	9.10	14.5		0.011

J.K. Cement WORKS, Nimbahera (RAJ)

22 MW THERMAL POWER PLANT

Stack monitoring results (April '2020 - September '2020)

S.No.	Location/Month	SPM (Mg/Nm3)					
		Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20
1	Stack attached with Boiler	Plant not in operation due to Covid-19 lockdown					
2	Stack attached with Coal Handling system						
3	Stack attached with Coal transfer point						
				27.2	34.0	25.8	28.0
				11.0	14.2	15.1	14.7
				13.9	16.2	13.6	15.0

J.K. Cement WORKS, NIMBAHERA (RAJ)
AMBIENT AIR QUALITY AVERAGE SPM RESULTS
 (ALL VALUES IN MICROGRAMS / CUBIC METER)
HALF YEARLY REPORT (April - Sept '20)
FY (2020-21)

F1 (2020-21)							
S.No.	LOCATION	Month					
			PM10	PM2.5	SO2	NOx	CO
1	NEAR MAIN SECURITY GATE	Apr-20	Plant was closed due to Covid-19 lockdown				
2		May-20					
3		Jun-20	75.76	49.61	12.95	24.67	805
4		Jul-20	37.20	23.97	10.18	21.28	453
5		Aug-20	30.40	21.10	8.44	18.74	461
6		Sep-20	31.39	21.35	10.65	21.20	471
Half Yearly Average			43.7	29.0	10.6	21.5	547
1	NEAR NEW J.K. FACTORY GATE	Apr-20	Plant was closed due to Covid-19 lockdown				
2		May-20					
3		Jun-20	67.53	41.22	12.07	23.10	729
4		Jul-20	46.47	31.90	12.09	21.12	623
5		Aug-20	38.36	22.17	11.10	22.81	536
6		Sep-20	37.42	25.44	11.10	20.55	505
Half Yearly Average			47.4	30.2	11.6	21.9	598
1	NEAR MINE GATE	Apr-20	Plant was closed due to Covid-19 lockdown				
2		May-20					
3		Jun-20	72.00	43.63	13.09	25.05	775
4		Jul-20	52.13	35.88	11.27	23.80	775
5		Aug-20	46.44	26.98	13.16	20.56	666
6		Sep-20	42.65	27.19	12.58	21.52	634
Half Yearly Average			53.3	33.4	12.5	22.7	712
1	NEAR THERMAL POWER PLANT GATE	Apr-20	Plant was closed due to Covid-19 lockdown				
2		May-20					
3		Jun-20	57.55	38.25	11.97	24.16	667
4		Jul-20	58.29	37.54	13.43	23.94	629
5		Aug-20	50.03	30.25	15.01	22.06	508
6		Sep-20	45.83	29.51	15.27	22.44	508
Half Yearly Average			52.9	33.9	13.9	23.2	578

Mitra S.K. Private Limited

Shrachi Center (5th Floor)
74B, Acharya Jagadish Chandra Bose Road
Kolkata - 700 016, West Bengal India
CIN: U51909WB1956PTC023037



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TEST REPORT

Name & Address of the Customer :

J.K.Cement Works, Nimbahera
Distt. Chittorgarh (Raj.)

Report No. : MSK/UDR/2020-21/238

Date : 06.07.2020

Sample No. : MSKGL/ED/2020-21/06/01176

Sample Description : Stack Emission

Date & Time of Sampling: 22.06.2020 at 09.00 A.M

Sampling Location : Kiln- 03

Reference No.& Date : e-mail dtd: 23.04.2019

ANALYSIS RESULT

A. General information about stack

- | | |
|---|-----------------------------------|
| 1. Stack connected to | : Kiln-03 |
| 2. Emission due to | : Burning of Limestone & additive |
| 3. Material of construction of Stack | : Mild Steel |
| 4. Shape of Stack | : Circular |
| 5. Whether Stack is provided with permanent platform & ladder | : Yes |

B. Physical characteristics of stack

- | | |
|--|-----------------------|
| 1. Height of the stack from ground level | : 65.50 m |
| 2. Diameter of the Stack at sampling point | : 2.20 m |
| 3. Area of Stack | : 3.80 m ² |

C. Results of sampling & analysis of gaseous emission

- | | Result | Method |
|---|---------|------------|
| 1. Temperature of emission (°C) | : 142 | EPA Part 2 |
| 2. Barometric pressure (mm of Hg) | : 735 | EPA Part 2 |
| 3. Velocity of gas (m/sec) | : 15.8 | EPA Part 2 |
| 4. Concentration of Sulphur di oxide (mg/Nm ³) | : 23.0 | EPA Part-6 |
| 5. Concentration of Nitrogen di oxide (mg/Nm ³) | : 562.0 | EPA Part-7 |
| 6. Concentration of Particulate Matters (mg/Nm ³) | : 11.0 | EPA Part-5 |

D. Pollution control device

Details of pollution control devices attached with the stack : Bag House

E. Remarks : NIL.

Report Prepared by :

For Mitra S.K. Private Limited



Authorized Signatory

Mitra S.K. Private Limited

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TEST REPORT

Name & Address of the Customer :

J.K.Cement Works, Nimbahera
Distt. Chittorgarh (Raj.)

Report No. : MSK/UDR/2020-21/239

Date : 06.07.2020

Sample No. : MSKGL/ED/2020-21/06/01177

Sample Description : Stack Emission

Date & Time of Sampling: 22.06.2020 at 10.30 P.M

Sampling Location : Pre-calcliner

Reference No.& Date : e-mail dtd: 23.04.2019

ANALYSIS RESULT

A. General information about stack

- | | |
|---|---|
| 1. Stack connected to | : Pre-calcliner |
| 2. Emission due to | : Pre-calcination of lime Stone & additives |
| 3. Material of construction of Stack | : Mild Steel |
| 4. Shape of Stack | : Circular |
| 5. Whether Stack is provided with permanent platform & ladder | : Yes |

B. Physical characteristics of stack

- | | |
|--|-----------------------|
| 1. Height of the stack from ground level | : 87.90 m |
| 2. Diameter of the Stack at sampling point | : 3.15 m |
| 3. Area of Stack | : 7.79 m ² |

C. Results of sampling & analysis of gaseous emission

	Result	Method
1. Temperature of emission (°C)	: 98	EPA Part 2
2. Barometric pressure (mm of Hg)	: 735	EPA Part 2
3. Velocity of gas (m/sec)	: 13.6	EPA Part 2
4. Concentration of Sulphur di oxide (mg/Nm ³)	: 13.0	EPA Part-6
5. Concentration of Nitrogen di oxide (mg/Nm ³)	: 850.0	EPA Part-7
6. Concentration of Particulate Matters (mg/Nm ³)	: 12.0	EPA Part-5

D. Pollution control device

Details of pollution control devices attached with the stack : Bag House

E. Remarks : NIL

Report Prepared by:

For Mitra S.K. Private Limited



Mitra S.K. Private Limited

Shrachi Center (5th Floor)
74B, Acharya Jagadish Chandra Bose Road
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TEST REPORT

Name & Address of the Customer :

J.K.Cement Works, Nimbahera
Distt. Chittorgarh (Raj.)

Report No. : MSK/UDR/2020-21/242

Date : 06.07.2020

Sample No. : MSKGL/ED/2020-21/06/01180

Sample Description : Stack Emission

Date & Time of Sampling: 22.06.2020 at 12.30 P.M

Sampling Location : Clinker Cooler

Reference No.& Date : e-mail dtd: 23.04.2019

ANALYSIS RESULT

A. General information about stack

- | | |
|---|------------------|
| 1. Stack connected to | : Clinker cooler |
| 2. Emission due to | : Clinker cooler |
| 3. Material of construction of Stack | : Mild Steel |
| 4. Shape of Stack | : Circular |
| 5. Whether Stack is provided with permanent platform & ladder | : Yes |

B. Physical characteristics of stack

- | | |
|--|------------------------|
| 1. Height of the stack from ground level | : 40.90 m |
| 2. Diameter of the Stack at sampling point | : 4.0 m |
| 3. Area of Stack | : 12.57 m ² |

C. Results of sampling & analysis of gaseous emission

- | | Result | Method |
|---|--------|------------|
| 1. Temperature of emission (°C) | : 97 | EPA Part 2 |
| 2. Barometric pressure (mm of Hg) | : 735 | EPA Part 2 |
| 3. Velocity of gas (m/sec) | : 8.0 | EPA Part 2 |
| 4. Concentration of Particulate Matters (mg/Nm ³) | : 15.0 | EPA Part-5 |

D. Pollution control device

Details of pollution control devices attached with the stack : Electrostatic Precipitator

E. Remarks : NIL

Report Prepared by :

For Mitra S.K. Private Limited

Authorised Signatory



Mitra S.K. Private Limited

Shrachi Center (5th Floor)
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TEST REPORT

Name & Address of the Customer :

J.K. Cement Works, Nimbahera
Distt. Chittorgarh (Raj.)

Report No. : MSK/UDR/2020-21/243

Date : 06.07.2020

Sample No. : MSKGL/ED/2020-21/06/01181

Sample Description : Stack Emission

Date & Time of Sampling: 22.06.2020 at 02.00 p.m

Sampling Location : Coal Mill - 3

Reference No.& Date : e-mail dtd: 23.04.2019

ANALYSIS RESULT

A. <u>General information about stack</u>		
1. Stack connected to	: Coal mill	
2. Emission due to	: Grinding of coal	
3. Material of construction of Stack	: Mild Steel	
4. Shape of Stack	: Circular	
5. Whether Stack is provided with permanent platform & ladder	: Yes	
B. <u>Physical characteristics of stack</u>		
1. Height of the stack from ground level	: 43.50 m	
2. Diameter of the Stack at sampling point	: 0.70 m	
3. Area of Stack	: 0.385 m ²	
C. <u>Results of sampling & analysis of gaseous emission</u>	<u>Result</u>	<u>Method</u>
1. Temperature of emission (°C)	: 75	EPA Part 2
2. Barometric pressure (mm of Hg)	: 735	EPA Part 2
3. Velocity of gas (m/sec)	: 14.0	EPA Part 2
4. Concentration of Particulate Matters (mg/Nm ³)	: 15.0	EPA Part-5
D. <u>Pollution control device</u>		
Details of pollution control devices attached with the stack	: Bag filter	
E. Remarks : NIL		

Report prepared by :

For Mitra S.K. Private Limited



Mitra S.K. Private Limited

Shrachi Center (5th Floor)
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TEST REPORT

Name & Address of the Customer :

J.K.Cement Works, Nimbahera
Distt. Chittorgarh (Raj.)

Report No. : MSK/UDR/2020-21/244

Date : 06.07.2020

Sample No. : MSKGL/ED/2020-21/06/01182

Sample Description : Stack Emission

Date & Time of Sampling: 22.06.2020 at 4.30 P.M

Sampling Location : Coal Mill - 4

Reference No.& Date : e-mail dtd: 23.04.2019

ANALYSIS RESULT

A. General information about stack

- | | |
|---|--------------------|
| 1. Stack connected to | : Coal mill |
| 2. Emission due to | : Grinding of coal |
| 3. Material of construction of Stack | : Mild Steel |
| 4. Shape of Stack | : Circular |
| 5. Whether Stack is provided with permanent platform & ladder | : Yes |

B. Physical characteristics of stack

- | | |
|--|-----------------------|
| 1. Height of the stack from ground level | : 30.50 m |
| 2. Diameter of the Stack at sampling point | : 1.20 m |
| 3. Area of Stack | : 1.13 m ² |

C. Results of sampling & analysis of gaseous emission

	Result	Method
1. Temperature of emission (°C)	: 76	EPA Part 2
2. Barometric pressure (mm of Hg)	: 735	EPA Part 2
3. Velocity of gas (m/sec)	: 14.8	EPA Part 2
4. Concentration of Particulate Matters (mg/Nm ³)	: 17.0	EPA Part-5

D. Pollution control device

Details of pollution control devices attached with the stack : Bag filter

E. Remarks : NIL

Report prepared by :



Mitra S.K. Private Limited

Shrachi Center (5th Floor)
74B, Acharya Jagadish Chandra Bose Road
Kolkata - 700 016, West Bengal India
CIN: U61909WB1956PTC023037



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TEST REPORT

Name & Address of the Customer :

J.K.Cement Works, Nimbahera
Distt. Chittorgarh (Raj.)

Report No. : MSK/UDR/2020-21/245

Date : 06.07.2020

Sample No. : MSKGL/ED/2020-21/06/01183

Sample Description : Stack Emission

Date & Time of Sampling: 21.06.2020 at 11.30 A.M

Sampling Location : Cement Mill No. 02

Reference No.& Date : e-mail dtd: 23.04.2019

ANALYSIS RESULT

A. General information about stack		
1. Stack connected to	: Cement Mill	
2. Emission due to	: Grinding of clinker	
3. Material of construction of Stack	: Mild Steel	
4. Shape of Stack	: Circular	
5. Whether Stack is provided with permanent platform & ladder	: Yes	
B. Physical characteristics of stack		
1. Height of the stack from ground level	: 30.0 m	
2. Diameter of the Stack at sampling point	: 0.75 m	
3. Area of Stack	: 0.44 m ²	
C. Results of sampling & analysis of gaseous emission		
	Result	Method
1. Temperature of emission (°C)	: 90	EPA Part 2
2. Barometric pressure (mm of Hg)	: 735	EPA Part 2
3. Velocity of gas (m/sec)	: 12.6	EPA Part 2
4. Concentration of Particulate Matters (mg/Nm ³)	: 16.0	EPA Part-5
D. Pollution control device		
Details of pollution control devices attached with the stack	: Bag Filter	
E. Remarks : NIL		

Report Prepared by :

For Mitra S.K. Private Limited

Authorised Signatory

Mitra S.K. Private Limited

Shrachi Center (5th Floor)
74B, Acharya Jagadish Chandra Bose Road
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TEST REPORT

Name & Address of the Customer :

J.K.Cement Works, Nimbahera
Distt. Chittorgarh (Raj.)

Report No. : MSK/UDR/2020-21/246

Date : 06.07.2020

Sample No. : MSKGL/ED/2020-21/06/01184

Sample Description : Stack Emission

Date & Time of Sampling: 21.06.2020 at 01.30 P.M

Sampling Location : Cement Mill No. 3

Reference No.& Date : e-mail did: 23.04.2019

ANALYSIS RESULT

A. General information about stack

- | | |
|---|-----------------------|
| 1. Stack connected to | : Cement Mill |
| 2. Emission due to | : Grinding of clinker |
| 3. Material of construction of Stack | : Mild Steel |
| 4. Shape of Stack | : Circular |
| 5. Whether Stack is provided with permanent platform & ladder | : Yes |

B. Physical characteristics of stack

- | | |
|--|-----------------------|
| 1. Height of the stack from ground level | : 30.0 m |
| 2. Diameter of the Stack at sampling point | : 0.75 m |
| 3. Area of Stack | : 0.44 m ² |

C. Results of sampling & analysis of gaseous emission

- | | <u>Result</u> | <u>Method</u> |
|---|---------------|---------------|
| 1. Temperature of emission (°C) | : 92 | EPA Part 2 |
| 2. Barometric pressure (mm of Hg) | : 735 | EPA Part 2 |
| 3. Velocity of gas (m/sec) | : 12.0 | EPA Part 2 |
| 4. Concentration of Particulate Matters (mg/Nm ³) | : 14.0 | EPA Part-5 |

D. Pollution control device

Details of pollution control devices attached with the stack : Bag Filter

E. Remarks : NIL

Report prepared by :

For Mitra S.K. Private Limited



Mitra S.K. Private Limited

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TEST REPORT

Name & Address of the Customer :

J.K.Cement Works, Nimbahera
Distt. Chittorgarh (Raj.)

Report No. : MSK/UDR/2020-21/247

Date : 06.07.2020

Sample No. : MSKGI/ED/2020-21/06/01185

Sample Description : Stack Emission

Date & Time of Sampling: 21.06.2020 at 03.30 P.M

Sampling Location : Cement Mill No. 04

Reference No.& Date : e-mail dtd: 23.04.2019

ANALYSIS RESULT

A. General information about stack		
1. Stack connected to	: Cement Mill	
2. Emission due to	: Grinding of clinker	
3. Material of construction of Stack	: Mild Steel	
4. Shape of Stack	: Circular	
5. Whether Stack is provided with permanent platform & ladder	: Yes	
B. Physical characteristics of stack		
1. Height of the stack from ground level	: 30.0 m	
2. Diameter of the Stack at sampling point	: 0.75 m	
3. Area of Stack	: 0.44 m ²	
C. Results of sampling & analysis of gaseous emission		
	Result	Method
1. Temperature of emission (°C)	: 92	EPA Part 2
2. Barometric pressure (mm of Hg)	: 735	EPA Part 2
3. Velocity of gas (m/sec)	: 11.60	EPA Part 2
4. Concentration of Particulate Matters (mg/Nm ³)	: 17.0	EPA Part-5
D. Pollution control device		
Details of pollution control devices attached with the stack	: Bag Filter	
E. Remarks : NIL.		

Report prepared by :

For Mitra S.K. Private Limited
Authorised Signatory

Mitra S.K. Private Limited

Shrachi Center (5th Floor)
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TEST REPORT

Name & Address of the Customer :

J.K.Cement Works, Nimbahera
Distt. Chittorgarh (Raj.)

Report No. : MSK/UDR/2020-21/247

Date : 06.07.2020

Sample No. : MSKGL/ED/2020-21/06/01185

Sample Description : Stack Emission

Date & Time of Sampling: 21.06.2020 at 03.30 P.M

Sampling Location : Cement Mill No. 04

Reference No.& Date : e-mail dtd: 23.04.2019

ANALYSIS RESULT

A. <u>General information about stack</u>		
1. Stack connected to	:	Cement Mill
2. Emission due to	:	Grinding of clinker
3. Material of construction of Stack	:	Mild Steel
4. Shape of Stack	:	Circular
5. Whether Stack is provided with permanent platform & ladder	:	Yes
B. <u>Physical characteristics of stack</u>		
1. Height of the stack from ground level	:	30.0 m
2. Diameter of the Stack at sampling point	:	0.75 m
3. Area of Stack	:	0.44 m ²
C. <u>Results of sampling & analysis of gaseous emission</u>	<u>Result</u>	<u>Method</u>
1. Temperature of emission (°C)	: 92	EPA Part 2
2. Barometric pressure (mm of Hg)	: 735	EPA Part 2
3. Velocity of gas (m/sec)	: 11.60	EPA Part 2
4. Concentration of Particulate Matters (mg/Nm ³)	: 17.0	EPA Part-5
D. <u>Pollution control device</u>		
Details of pollution control devices attached with the stack	:	Bag Filter
E. Remarks : NIL.		

Report prepared by :

For Mitra S.K. Private Limited
Authorised Signatory

Mitra S.K. Private Limited

Shrachi Center (5th Floor)
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TEST REPORT

Name & Address of the Customer :

J.K.Cement Works, Nimbahera
Distt. Chittorgarh (Raj.)

Report No. : MSK/UDR/2020-21/247

Date : 06.07.2020

Sample No. : MSKGL/ED/2020-21/06/01185

Sample Description : Stack Emission

Date & Time of Sampling: 21.06.2020 at 03.30 P.M

Sampling Location : Cement Mill No. 04

Reference No.& Date : e-mail dtd: 23.04.2019

ANALYSIS RESULT

<u>A. General information about stack</u>		
1. Stack connected to	:	Cement Mill
2. Emission due to	:	Grinding of clinker
3. Material of construction of Stack	:	Mild Steel
4. Shape of Stack	:	Circular
5. Whether Stack is provided with permanent platform & ladder	:	Yes
<u>B. Physical characteristics of stack</u>		
1. Height of the stack from ground level	:	30.0 m
2. Diameter of the Stack at sampling point	:	0.75 m
3. Area of Stack	:	0.44 m ²
<u>C. Results of sampling & analysis of gaseous emission</u>	<u>Result</u>	<u>Method</u>
1. Temperature of emission (°C)	: 92	EPA Part 2
2. Barometric pressure (mm of Hg)	: 735	EPA Part 2
3. Velocity of gas (m/sec)	: 11.60	EPA Part 2
4. Concentration of Particulate Matters (mg/Nm ³)	: 17.0	EPA Part-5
<u>D. Pollution control device</u>		
Details of pollution control devices attached with the stack	:	Bag Filter
E. Remarks : NIL.		

Report Prepared by :

For Mitra S.K. Private Limited
Authorised Signatory

Mitra S.K. Private Limited

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TEST REPORT

Name & Address of the Customer :

J.K. Cement Works Nimbahera
Distt. Chittorgarh (Raj.)

Report No. : MSK/UDR/2020-21/248

Date : 06.07.2020

Sample No. : MSKGL/ED/2020-21/06/01186

Sample Description : Stack Emission

Date & Time of Sampling: 21.06.2020 at 09.20 A.M

Sampling Location : Roller Press with Ball mill

Reference No.& Date : e-mail dtd: 23.04.2019

ANALYSIS RESULT

A. General information about stack		
1. Stack connected to	: Roller Press with Ball mill	
2. Emission due to	: Grinding of Clinker & Gypsum	
3. Material of construction of Stack	: Mild Steel	
4. Shape of Stack	: Circular	
5. Whether Stack is provided with permanent platform & ladder	: Yes	
B. Physical characteristics of stack		
1. Height of the stack from ground level	: 58.0 m	
2. Diameter of the Stack at sampling point	: 3.0 m	
3. Area of Stack	: 7.07 m ²	
C. Results of sampling & analysis of gaseous emission		
	Result	Method
1. Temperature of emission (°C)	: 93	EPA Part 2
2. Barometric pressure (mm of Hg)	: 735	EPA Part 2
3. Velocity of gas (m/sec)	: 6.20	EPA Part 2
4. Concentration of Particulate Matters (mg/Nm ³)	: 12.0	EPA Part-5
D. Pollution control device		
Details of pollution control devices attached with the stack	: Bag House	
E. Remarks : NIL		

Report Prepared by :

For Mitra S.K. Private Limited

Authorized Signatory

Mitra S.K. Private Limited

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TEST REPORT

Name & Address of the Customer :

J.K.Cement Works, Nimbahera
Distt. Chittorgarh (Raj.)

Report No. : MSK/UDR/2020-21/588

Date : 15.09.2020

Sample No. : MSKGI/ED/2020-21/09/00036

Sample Description : Stack Emission

Date & Time of Sampling: 11.08.2020 at 09.30 A.M

Sampling Location : Clinker Cooler

Reference No.& Date : e-mail dtd: 23.04.2019

ANALYSIS RESULT

A. General information about stack

- | | |
|---|------------------|
| 1. Stack connected to | : Clinker cooler |
| 2. Emission due to | : Clinker cooler |
| 3. Material of construction of Stack | : Mild Steel |
| 4. Shape of Stack | : Circular |
| 5. Whether Stack is provided with permanent platform & ladder | : Yes |

B. Physical characteristics of stack

- | | |
|--|------------------------|
| 1. Height of the stack from ground level | : 40.90 m |
| 2. Diameter of the Stack at sampling point | : 4.0 m |
| 3. Area of Stack | : 12.57 m ² |

C. Results of sampling & analysis of gaseous emission

	Result	Method
1. Temperature of emission (°C)	: 99	EPA Part 2
2. Barometric pressure (mm of Hg)	: 736	EPA Part 2
3. Velocity of gas (m/sec)	: 9.37	EPA Part 2
4. Concentration of Particulate Matters (mg/Nm ³)	: 13.79	EPA Part-5

D. Pollution control device

Details of pollution control devices attached with the stack : Electrostatic Precipitator

E. Remarks : NIL

Report Prepared by :

For Mitra



Mitra S.K. Private Limited

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TEST REPORT

Name & Address of the Customer :

J.K. Cement Works, Nimbahera
Distt. Chittorgarh (Raj.)

Report No. : MSK/UDR/2020-21/589

Date : 15.09.2020

Sample No. : MSKGL/FID/2020-21/09/00037

Sample Description : Stack Emission

Date & Time of Sampling: 11.08.2020 at 10.42 A.M

Sampling Location : Coal Mill - 3

Reference No.& Date : e-mail did: 23.04.2019

ANALYSIS RESULT

A. General information about stack		
1. Stack connected to	: Coal mill	
2. Emission due to	: Grinding of coal	
3. Material of construction of Stack	: Mild Steel	
4. Shape of Stack	: Circular	
5. Whether Stack is provided with permanent platform & ladder	: Yes	
B. Physical characteristics of stack		
1. Height of the stack from ground level	: 13.50 m	
2. Diameter of the Stack at sampling point	: 0.70 m	
3. Area of Stack	: 0.385 m ²	
C. Results of sampling & analysis of gaseous emission		
	Result	Method
1. Temperature of emission (°C)	: 73	EPA Part 2
2. Barometric pressure (mm of Hg)	: 737	EPA Part 2
3. Velocity of gas (m/sec)	: 13.73	EPA Part 2
4. Concentration of Particulate Matters (mg/Nm ³)	: 13.25	EPA Part-5
D. Pollution control device		
Details of pollution control devices attached with the stack	: Bag filter	
E. Remarks : NIL		

Report Prepared by :



Mitra S.K. Private Limited

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TEST REPORT

Name & Address of the Customer :

J.K.Cement Works, Nimbahera
Distt. Chittorgarh (Raj.)

Report No. : MSK/UDR/2020-21/591

Date : 15.09.2020

Sample No. : MSKGI/ED/2020-21/09/00039

Sample Description : Stack Emission

Date & Time of Sampling: 13.08.2020 at 08.30 A.M

Sampling Location : Cement Mill No. 3

Reference No.& Date : e-mail dtd: 23.04.2019

ANALYSIS RESULT

A. General information about stack

- | | |
|---|-----------------------|
| 1. Stack connected to | : Cement Mill |
| 2. Emission due to | : Grinding of clinker |
| 3. Material of construction of Stack | : Mild Steel |
| 4. Shape of Stack | : Circular |
| 5. Whether Stack is provided with permanent platform & ladder | : Yes |

B. Physical characteristics of stack

- | | |
|--|-----------------------|
| 1. Height of the stack from ground level | : 30.0 m |
| 2. Diameter of the Stack at sampling point | : 0.75 m |
| 3. Area of Stack | : 0.44 m ² |

C. Results of sampling & analysis of gaseous emission

- | | Result | Method |
|---|---------|------------|
| 1. Temperature of emission (°C) | : 81 | EPA Part 2 |
| 2. Barometric pressure (mm of Hg) | : 735 | EPA Part 2 |
| 3. Velocity of gas (m/sec) | : 11.47 | EPA Part 2 |
| 4. Concentration of Particulate Matters (mg/Nm ³) | : 11.89 | EPA Part-5 |

D. Pollution control device

Details of pollution control devices attached with the stack : Bag Filter

E. Remarks : NIL

Report Prepared by



Mitra S.K. Private Limited

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TEST REPORT

Name & Address of the Customer :

J.K.Cement Works, Nimbahera
Distt. Chittorgarh (Raj.)

Report No. : MSK/UDR/2020-21/590

Date : 15.09.2020

Sample No. : MSKGL/ED/2020-21/09/00038

Sample Description : Stack Emission

Date & Time of Sampling: 11.08.2020 at 12.20 P.M

Sampling Location : Coal Mill - 4

Reference No.& Date : e-mail dtd: 23.04.2019

ANALYSIS RESULT

A. General information about stack

- | | |
|---|--------------------|
| 1. Stack connected to | : Coal mill |
| 2. Emission due to | : Grinding of coal |
| 3. Material of construction of Stack | : Mild Steel |
| 4. Shape of Stack | : Circular |
| 5. Whether Stack is provided with permanent platform & ladder | : Yes |

B. Physical characteristics of stack

- | | |
|--|-----------------------|
| 1. Height of the stack from ground level | : 30.50 m |
| 2. Diameter of the Stack at sampling point | : 1.20 m |
| 3. Area of Stack | : 1.13 m ² |

C. Results of sampling & analysis of gaseous emission

- | | Result | Method |
|---|---------|------------|
| 1. Temperature of emission (°C) | : 78 | EPA Part 2 |
| 2. Barometric pressure (mm of Hg) | : 737 | EPA Part 2 |
| 3. Velocity of gas (m/sec) | : 13.58 | EPA Part 2 |
| 4. Concentration of Particulate Matters (mg/Nm ³) | : 14.82 | EPA Part-5 |

D. Pollution control device

Details of pollution control devices attached with the stack : Bag filter

E. Remarks : NIL.

Report Prepared by :

For Mitra S.K. Pvt. Limited
Authorized Signatory

Mitra S.K. Private Limited

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74B, Acharya Jagadish Chandra Bose Road
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TEST REPORT

Name & Address of the Customer :

J.K.Cement Works, Nimbahera
Distt. Chittorgarh (Raj.)

Report No. : MSK/UDR/2020-21/592

Date : 15.09.2020

Sample No. : MSKGL/ED/2020-21/09/00040

Sample Description : Stack Emission

Date & Time of Sampling: 13.08.2020 at 09.20 A.M

Sampling Location : Cement Mill No. 04

Reference No.& Date : e-mail dtd: 23.04.2019

ANALYSIS RESULT

A. General information about stack

- | | |
|---|-----------------------|
| 1. Stack connected to | : Cement Mill |
| 2. Emission due to | : Grinding of clinker |
| 3. Material of construction of Stack | : Mild Steel |
| 4. Shape of Stack | : Circular |
| 5. Whether Stack is provided with permanent platform & ladder | : Yes |

B. Physical characteristics of stack

- | | |
|--|-----------------------|
| 1. Height of the stack from ground level | : 30.0 m |
| 2. Diameter of the Stack at sampling point | : 0.75 m |
| 3. Area of Stack | : 0.44 m ² |

C. Results of sampling & analysis of gaseous emission

- | | Result | Method |
|---|---------|------------|
| 1. Temperature of emission (°C) | : 83 | EPA Part 2 |
| 2. Barometric pressure (mm of Hg) | : 735 | EPA Part 2 |
| 3. Velocity of gas (m/sec) | : 11.93 | EPA Part 2 |
| 4. Concentration of Particulate Matters (mg/Nm ³) | : 13.95 | EPA Part-5 |

D. Pollution control device

Details of pollution control devices attached with the stack : Bag Filter

E. Remarks : Nil.

Report Prepared by :

For Mitra S.K. Private Limited



Mitra S.K. Private Limited

Shirachi Center (5th Floor)
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TEST REPORT

Name & Address of the Customer :

J.K.Cement Works, Nimbahera
Distt. Chittorgarh (Raj.)

Report No. : MSK/UDR/2020-21/593

Date : 15.09.2020

Sample No. : MSKGI/ED/2020-21/09/00041

Sample Description : Stack Emission

Date & Time of Sampling: 11.08.2020 at 10.00 A.M

Sampling Location : Crusher

Reference No.& Date : e-mail dtd: 23.04.2019

ANALYSIS RESULT

A. General information about stack

- | | |
|---|--------------|
| 1. Stack connected to | : Crusher |
| 2. Emission due to | : Crushing |
| 3. Material of construction of Stack | : Mild Steel |
| 4. Shape of Stack | : Circular |
| 5. Whether Stack is provided with permanent platform & ladder | : Yes |

B. Physical characteristics of stack

- | | |
|--|-------------------------|
| 1. Height of the stack from ground level | : 30.0 m |
| 2. Diameter of the Stack at sampling point | : 0.57 m |
| 3. Area of Stack | : 0.2553 m ² |

C. Results of sampling & analysis of gaseous emission

	Result	Method
1. Temperature of emission (°C)	: 39	EPA Part 2
2. Barometric pressure (mm of Hg)	: 736	EPA Part 2
3. Velocity of gas (m/sec)	: 7.94	EPA Part 2
4. Concentration of Particulate Matters (mg/Nm ³)	: 19.37	EPA Part-5

D. Pollution control device

Details of pollution control devices attached with the stack : Bag Filter

E. Remarks : NIL

Report Prepared by :



Mitra S.K. Private Limited

Shrachi Center (5th Floor)
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Kolkata - 700 016, West Bengal India
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TEST REPORT

Name & Address of the Customer :

J.K. Cement Works Nimbahera
Distt. Chittorgarh (Raj.)

Report No. : MSK/UDR/2020-21/594

Date : 15.09.2020

Sample No. : MSKGL/ED/2020-21/09/00042

Sample Description : Stack Emission

Date & Time of Sampling: 13.08.2020 at 12.15 P.M

Sampling Location : Roller Press with Ball mill

Reference No.& Date : e-mail dtd: 23.04.2019

ANALYSIS RESULT

A. General information about stack

- | | |
|---|--------------------------------|
| 1. Stack connected to | : Roller Press with Ball mill |
| 2. Emission due to | : Grinding of Clinker & Gypsum |
| 3. Material of construction of Stack | : Mild Steel |
| 4. Shape of Stack | : Circular |
| 5. Whether Stack is provided with permanent platform & ladder | : Yes |

B. Physical characteristics of stack

- | | |
|--|-----------------------|
| 1. Height of the stack from ground level | : 58.0 m |
| 2. Diameter of the Stack at sampling point | : 3.0 m |
| 3. Area of Stack | : 7.07 m ² |

C. Results of sampling & analysis of gaseous emission

- | | Result | Method |
|---|---------|------------|
| 1. Temperature of emission (°C) | : 86 | EPA Part 2 |
| 2. Barometric pressure (mm of Hg) | : 735 | EPA Part 2 |
| 3. Velocity of gas (m/sec) | : 8.60 | EPA Part 2 |
| 4. Concentration of Particulate Matters (mg/Nm ³) | : 13.98 | EPA Part-5 |

D. Pollution control device

- | | |
|--|-------------|
| Details of pollution control devices attached with the stack | : Bag House |
|--|-------------|

E. Remarks : NIL

Report Prepared by :

For Mitra S.K. Private Limited
Authorized Signatory

Mitra S.K. Private Limited

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TEST REPORT

Name & Address of the Customer :

J.K.Cement Works, Nimbahera
Distt. Chittorgarh (Raj.)

Report No. : MSK/UDR/2020-21/610

Date : 15.09.2020

Sample No. : MSKGL/ED/2020-21/09/00058

Sample Description : Stack Emission

Date & Time of Sampling: 11.08.2020 at 08.45 A.M

Sampling Location : Pre-calcliner

Reference No.& Date : e-mail dtd: 23.04.2019

ANALYSIS RESULT

A. General information about stack

- | | |
|---|---|
| 1. Stack connected to | : Pre-calcliner |
| 2. Emission due to | : Pre-calcination of lime Stone & additives |
| 3. Material of construction of Stack | : Mild Steel |
| 4. Shape of Stack | : Circular |
| 5. Whether Stack is provided with permanent platform & ladder | : Yes |

B. Physical characteristics of stack

- | | |
|--|-----------------------|
| 1. Height of the stack from ground level | : 87.90 m |
| 2. Diameter of the Stack at sampling point | : 3.15 m |
| 3. Area of Stack | : 7.79 m ² |

C. Results of sampling & analysis of gaseous emission

- | | Result | Method |
|---|---------|------------|
| 1. Temperature of emission (°C) | : 89 | EPA Part 2 |
| 2. Barometric pressure (mm of Hg) | : 735 | EPA Part 2 |
| 3. Velocity of gas (m/sec) | : 13.01 | EPA Part 2 |
| 4. Concentration of Sulphur di oxide (mg/Nm ³) | : 20.30 | EPA Part-6 |
| 5. Concentration of Nitrogen di oxide (mg/Nm ³) | : 59.1 | EPA Part-7 |
| 6. Concentration of Particulate Matters (mg/Nm ³) | : 10.00 | EPA Part-5 |

D. Pollution control device

Details of pollution control devices attached with the stack : Bag House

E. Remarks : NIL

Report Prepared by

For Mitra S.K. Private Limited

Authorized Signatory

Mitra S.K. Private Limited

Shrachi Center (5th Floor)
74B, Acharya Jagadish Chandra Bose Road
Kolkata - 700 016, West Bengal India
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TEST REPORT

Name & Address of the Customer :

J.K.Cement Works, Nimbahera
Distt. Chittorgarh (Raj.)

Report No. : MSK/UDR/2020-21/609

Date : 15.09.2020

Sample No. : MSKGL/ED/2020-21/09/00057

Sample Description : Stack Emission

Date & Time of Sampling: 11.08.2020 at 08.00 A.M

Sampling Location : Kiln- 03

Reference No.& Date : e-mail dtd: 23.04.2019

ANALYSIS RESULT

A. General information about stack

- | | |
|---|-----------------------------------|
| 1. Stack connected to | : Kiln-03 |
| 2. Emission due to | : Burning of Limestone & additive |
| 3. Material of construction of Stack | : Mild Steel |
| 4. Shape of Stack | : Circular |
| 5. Whether Stack is provided with permanent platform & ladder | : Yes |

B. Physical characteristics of stack

- | | |
|--|-----------------------|
| 1. Height of the stack from ground level | : 65.50 m |
| 2. Diameter of the Stack at sampling point | : 2.20 m |
| 3. Area of Stack | : 3.80 m ² |

C. Results of sampling & analysis of gaseous emission

- | | Result | Method |
|---|---------|------------|
| 1. Temperature of emission (°C) | : 136 | EPA Part 2 |
| 2. Barometric pressure (mm of Hg) | : 735 | EPA Part 2 |
| 3. Velocity of gas (m/sec) | : 15.61 | EPA Part 2 |
| 4. Concentration of Sulphur di oxide (mg/Nm ³) | : 22.5 | EPA Part-6 |
| 5. Concentration of Nitrogen di oxide (mg/Nm ³) | : 69.3 | EPA Part-7 |
| 6. Concentration of Particulate Matters (mg/Nm ³) | : 12.0 | EPA Part-5 |

D. Pollution control device

Details of pollution control devices attached with the stack : Bag House

E. Remarks : NIL

Report Prepared by

For Mitra S.K. Private Limited

Authorized Signatory

Mitra S.K. Private Limited

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TEST REPORT

Name & Address of the Customer :
Thermax Ltd.
C/o J.K.Cement Works, Nimbahera
Distt. Chittorgarh (Raj.)

Report No. : MSK/UDR/2020-21/293
Date : 16.07.2020
Sample No. : MSKGL/ED/2020-21/06/01199
Sample Description : Flue Gas Monitoring
Sampling Location : 22 MW Thermal Power Plant
Date & Time of Sampling : 28.06.2020 at 10.030 a.m.

Reference No.& Date : e-mail dtd: 23.04.2019

ANALYSIS RESULT

A. General information about stack		
1. Stack connected to	: Boiler	
2. Emission due to	: Power Generation	
3. Material of construction of Stack	: RCC	
4. Shape of Stack	: Circular	
5. Whether Stack is provided with permanent platform & ladder	: Yes	
6. Generation Capacity	: 22 MW	
B. Physical characteristics of stack		
1. Height of the stack from ground level	: 96.0 m	
2. Diameter of the Stack at sampling point	: 3.88 m	
3. Area of Stack	: 11.82 m ²	
C. Analysis/Characteristic of stack		
1. Fuel used	: Coal	
D. Results of sampling & analysis of gaseous emission		
	Result	Method
1. Temperature of emission (°C)	: 122	EPA Part 2
2. Barometric pressure (mm of Hg)	: 735	EPA Part 2
3. Velocity of gas (m/sec)	: 10.20	EPA Part 2
4. Concentration of Oxygen (% v/v)	: 6.4	IS 13270:1992, Reaf:2014
5. Conc. of Particulate Matters (mg/Nm ³) at 6% O ₂ on dry basis	: 18.0	EPA Part-17
E. Pollution control device		
Details of pollution control devices attached with the stack	: Electrostatic precipitator	
F. Remarks : NIL		

Report Prepared by :

For Mitra S.K. Private Limited
Authorised Signatory

Mitra S.K. Private Limited

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TEST REPORT

Name & Address of the Customer :
Thermax Ltd.
C/o J.K.Cement Works, Nimbahera
Distt. Chittorgarh (Raj.)

Report No. : MSK/UDR/2020-21/805
Date : 07.10.2020
Sample No. : MSKGL/ED/2020-21/09/01352
Sample Description : Flue Gas Monitoring
Sampling Location : 22 MW Thermal Power Plant
Date & Time of Sampling : 14.08.2020 at 11.00 a.m.

Reference No.& Date : e-mail dtd: 23.04.2019

ANALYSIS RESULT

A. General information about stack		
1. Stack connected to	: Boiler	
2. Emission due to	: Power Generation	
3. Material of construction of Stack	: RCC	
4. Shape of Stack	: Circular	
5. Whether Stack is provided with permanent platform & ladder	: Yes	
6. Generation Capacity	: 22 MW	
B. Physical characteristics of stack		
1. Height of the stack from ground level	: 96.0 m	
2. Diameter of the Stack at sampling point	: 3.88 m	
3. Area of Stack	: 11.82 m ²	
C. Analysis/Characteristic of stack		
1. Fuel used : Coal		
D. Results of sampling & analysis of gaseous emission		
	Result	Method
1. Temperature of emission (°C)	: 128	EPA Part 2
2. Barometric pressure (mm of Hg)	: 735	EPA Part 2
3. Velocity of gas (m/sec)	: 11.26	EPA Part 2
4. Concentration of Oxygen (% v/v)	: 6.0	IS 13270:1992.Reaf:2014
5. Conc. of Particulate Matters (mg/Nm ³) at 6% O ₂ on dry basis	: 22.0	EPA Part-17
E. Pollution control device		
Details of pollution control devices attached with the stack		: Electrostatic precipitator
F. Remarks : NIL.		

Report Prepared by:

For Mitra S.K. Private Limited



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TEST REPORT

Name & Address of the Customer :

J.K.Cement Works, Nimbahera
Distt. Chittorgarh (Raj.)

Report No. : MSK/UDR/2020-21/186

Date : 06.07.2020

Sample No. : MSKGL/ED/2020-21/06/01111

Sample Description : Ambient Air

Sampling Location : Near Main Security Gate

Date of Sampling : 21/22.06.2020

Reference No.& Date : e-mail dtd: 23.04.2019

AMBIENT AIR QUALITY MONITORING REPORT

SL. NO.	Pollutants	Limit	Result	Method of Test Reference
1	Particulate matter (PM ₁₀) in $\mu\text{g}/\text{m}^3$	100	81	IS: 5182:(Part-23)-2006
2	Particulate matter(PM _{2.5}) in $\mu\text{g}/\text{m}^3$	60	42	TPM/MSK/ENV(AP)/01/03
3	Sulphur dioxide(SO ₂) in $\mu\text{g}/\text{m}^3$	80	8.9	IS: 5182 (Part-2)-2001
4	Nitrogen dioxide (NO ₂) in $\mu\text{g}/\text{m}^3$	80	25.6	IS: 5182 (Part- 6)-2006
5	Carbon monoxide(CO) in mg/m^3	2	0.89	IS 5182 :(Part-10) :1999

Note : Limit as per CPCB notification, New Delhi, 18th November 2009, For Ambient air Quality

Checked By

For Mitra S.K. PVT. Ltd.
Authorized Signatory

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TEST REPORT

Name & Address of the Customer :

J.K.Cement Works, Nimbahera
Distt. Chittorgarh (Raj.)

Report No. : MSK/UDR/2020-21/187

Date : 06.07.2020

Sample No. : MSKGL/ED/2020-21/06/01112

Sample Description : Ambient Air

Sampling Location : Near Thermal Power Plant

Date of Sampling : 21/22.06.2020

Reference No.& Date : e-mail dtd: 23.04.2019

AMBIENT AIR QUALITY MONITORING REPORT

SL. NO.	Pollutants	Limit	Result	Method of Test Reference
1	Particulate matter (PM ₁₀) in $\mu\text{g}/\text{m}^3$	100	86	IS: 5182:(Part-23)-2006
2	Particulate matter(PM _{2.5}) in $\mu\text{g}/\text{m}^3$	60	45	TPM/MSK/ENV(AP)/01/03
3	Sulphur dioxide(SO ₂) in $\mu\text{g}/\text{m}^3$	80	8.4	IS: 5182 (Part-2)-2001
4	Nitrogen dioxide (NO ₂) in $\mu\text{g}/\text{m}^3$	80	29.8	IS: 5182 (Part- 6)-2006
5	Carbon monoxide(CO) in mg/m^3	2	0.88	IS 5182 :(Part-10) :1999

Note : Limit as per CPCB notification, New Delhi, 18th November 2009, For Ambient air Quality

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For Mitra S. K. Pvt. Ltd.
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TEST REPORT

Name & Address of the Customer :

J.K.Cement Works, Nimbahera
Distt. Chittorgarh (Raj.)

Report No. : MSK/UDR/2020-21/188

Date : 06.07.2020

Sample No. : MSKGL/ED/2020-21/06/01113

Sample Description : Ambient Air

Sampling Location : Near New J.K.Factory Gate

Date of Sampling : 21/22.06.2020

Reference No.& Date : e-mail dtd: 23.04.2019

AMBIENT AIR QUALITY MONITORING REPORT

SL. NO.	Pollutants	Limit	Result	Method of Test Reference
1	Particulate matter (PM ₁₀) in $\mu\text{g}/\text{m}^3$	100	87	IS: 5182:(Part-23)-2006
2	Particulate matter(PM _{2.5}) in $\mu\text{g}/\text{m}^3$	60	45	TPM/MSK/ENV(AP)/01/03
3	Sulphur dioxide(SO ₂) in $\mu\text{g}/\text{m}^3$	80	8.0	IS: 5182 (Part-2)-2001
4	Nitrogen dioxide (NO ₂) in $\mu\text{g}/\text{m}^3$	80	26.4	IS: 5182 (Part- 6)-2006
5	Carbon monoxide(CO) in mg/m^3	2	0.82	IS 5182 :(Part-10) :1999

Note : Limit as per CPCB notification, New Delhi, 18th November 2009, For Ambient air Quality

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TEST REPORT

Name & Address of the Customer :

J.K.Cement Works, Nimbahera
Distt. Chittorgarh (Raj.)

Report No. : MSK/UDR/2020-21/189

Date : 06.07.2020

Sample No. : MSKGL/ED/2020-21/06/01114

Sample Description : Ambient Air

Sampling Location : Near Mine Gate

Date of Sampling : 21/22.06.2020

Reference No.& Date : e-mail did: 23.04.2019

AMBIENT AIR QUALITY MONITORING REPORT

SL. NO.	Pollutants	Limit	Result	Method of Test Reference
1	Particulate matter (PM ₁₀) in $\mu\text{g}/\text{m}^3$	100	88	IS: 5182:(Part-23)-2006
2	Particulate matter(PM _{2.5}) in $\mu\text{g}/\text{m}^3$	60	46	TPM/MSK/ENV(AP)/01/03
3	Sulphur dioxide(SO ₂) in $\mu\text{g}/\text{m}^3$	80	7.8	IS: 5182 (Part-2)-2001
4	Nitrogen dioxide (NO ₂) in $\mu\text{g}/\text{m}^3$	80	24.8	IS: 5182 (Part- 6)-2006
5	Carbon monoxide(CO) in mg/m^3	2	0.94	IS 5182 :(Part-10) :1999

Note : Limit as per CPCB notification, New Delhi, 18th November 2009, For Ambient air Quality

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For Mitra S. K. PVT. Ltd.
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TEST REPORT

Name & Address of the Customer :

J.K.Cement Works, Nimbahera
Distt. Chittorgarh (Raj)

Report No. : MSK/UDR/2020-21/580

Date : 15.09.2020

Sample No. : MSKGL/ED/2020-21/09/00028

Sample Description : Ambient Air

Sampling Location : Near Main Security Gate

Date of Sampling : 12/13.08.2020

Reference No.& Date : e-mail dtd: 23.04.2019

AMBIENT AIR QUALITY MONITORING REPORT

SL. NO.	Pollutants	Limit	Result	Method of Test Reference
1	Particulate matter (PM ₁₀) in $\mu\text{g}/\text{m}^3$	100	59	IS: 5182:(Part-23)-2006
2	Particulate matter(PM _{2.5}) in $\mu\text{g}/\text{m}^3$	60	36	TPM/MSK/ENV(AP)/01/03
3	Sulphur dioxide(SO ₂) in $\mu\text{g}/\text{m}^3$	80	9.8	IS: 5182 (Part-2)-2001
4	Nitrogen dioxide (NO ₂) in $\mu\text{g}/\text{m}^3$	80	31.1	IS: 5182 (Part- 6)-2006
5	Carbon monoxide(CO) in mg/m^3	2	0.55	IS 5182 :(Part-10) :1999

Note : Limit as per CPCB notification, New Delhi, 18th November 2009, For Ambient air Quality

Checked by

For Mitra S.K. Pvt. Ltd.
(Authorized Signatory)

Mitra S.K. Private Limited

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TEST REPORT

Name & Address of the Customer :

J.K.Cement Works, Nimbahera
Distt. Chittorgarh (Raj.)

Report No. : MSK/UTDR/2020-21/581

Date : 15.09.2020

Sample No. : MSKGL/ED/2020-21-09/00029

Sample Description : Ambient Air

Sampling Location : Near Thermal Power Plant

Date of Sampling : 12.13.08.2020

Reference No.& Date : e-mail dtd: 23.04.2019

AMBIENT AIR QUALITY MONITORING REPORT

SL. NO.	Pollutants	Limit	Result	Method of Test Reference
1	Particulate matter (PM ₁₀) in $\mu\text{g}/\text{m}^3$	100	44.0	IS: 5182: (Part-23)-2006
2	Particulate matter (PM _{2.5}) in $\mu\text{g}/\text{m}^3$	60	27	TPM/MSK/ENV(AP)/01/03
3	Sulphur dioxide (SO ₂) in $\mu\text{g}/\text{m}^3$	80	8.5	IS: 5182 (Part-2)-2001
4	Nitrogen dioxide (NO ₂) in $\mu\text{g}/\text{m}^3$	80	28.6	IS: 5182 (Part- 6)-2006
5	Carbon monoxide (CO) in mg/m^3	2	0.15	IS 5182 (Part-10) .1999

Note : Limit as per CPCB notification, New Delhi, 18th November 2009, For Ambient air Quality

Checked By

For Mitra S.K. PVT. LTD.

(Authorized Signatory)

Mitra S.K. Private Limited

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TEST REPORT

Name & Address of the Customer :

J.K.Cement Works, Nimbaheera
Distt. Chittorgarh (Raj.)

Report No. : MSK/UDR/2020-21/582

Date : 15.09.2020

Sample No. : MSKGL/ED/2020-21/09/00030

Sample Description : Ambient Air

Sampling Location : Near New J.K.Factory Gate

Date of Sampling : 12.13.08.2020

Reference No.& Date : e-mail did: 23.04.2019

AMBIENT AIR QUALITY MONITORING REPORT

Sl. NO.	Pollutants	Limit	Result	Method of Test Reference
1	Particulate matter (PM ₁₀) in $\mu\text{g}/\text{m}^3$	100	37	IS: 5182 (Part-23)-2006
2	Particulate matter (PM _{2.5}) in $\mu\text{g}/\text{m}^3$	60	24	TPM/MSK/ENV(AP)/01/03
3	Sulphur dioxide (SO ₂) in $\mu\text{g}/\text{m}^3$	80	7.8	IS: 5182 (Part-2)-2001
4	Nitrogen dioxide (NO ₂) in $\mu\text{g}/\text{m}^3$	80	33.0	IS: 5182 (Part-6)-2006
5	Carbon monoxide (CO) in mg/m^3	2	0.52	IS 5182 (Part-10) :1999

Note : Limit as per CPCB notification, New Delhi, 18th November 2009, For Ambient air Quality

Checked By

For Mitra S.K. PVT. LTD.
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TEST REPORT

Name & Address of the Customer :

J.K.Cement Works, Nimbahera
Distt. Chittorgarh (Raj.)

Report No. : MSK/UDR 2020-21-583

Date : 15.09.2020

Sample No. : MSKGL/ED/2020-21/09/00031

Sample Description : Ambient Air

Sampling Location : Near Mine Gate

Date of Sampling : 12.13.08.2020

Reference No.& Date : e-mail dttd: 23.04.2019

AMBIENT AIR QUALITY MONITORING REPORT

SL. NO.	Pollutants	Limit	Result	Method of Test Reference
1	Particulate matter (PM ₁₀) in $\mu\text{g}/\text{m}^3$	100	66	IS: 5182 (Part-23)-2006
2	Particulate matter (PM _{2.5}) in $\mu\text{g}/\text{m}^3$	60	43.0	TPM/MSK/ENV(AP)/01/03
3	Sulphur dioxide (SO ₂) in $\mu\text{g}/\text{m}^3$	80	8.5	IS: 5182 (Part-2)-2001
4	Nitrogen dioxide (NO ₂) in $\mu\text{g}/\text{m}^3$	80	27.9	IS: 5182 (Part-6)-2006
5	Carbon monoxide (CO) in mg/m^3	2	0.41	IS 5182 (Part-10):1999

Note : Limit as per CPCB notification, New Delhi, 18th November 2009, For Ambient air Quality

Checked by



J.K. Cement WORKS, Nimbahera (RAJ)**Noise Monitoring Report****(All Values in dB)**

Month	HALF YEARLY REPORT (April - Sept '20) FY 2020-21							
	Main Security		Thermal Power		New JK Factory		Mines Office	
	Day	Night	Day	Night	Day	Night	Day	Night
Apr-20	Plant was closed due to Covid-19 lockdown							
May-20								
Jun-20	67.3	56.8	68.4	58.7	66.7	57.6	65.9	55.1
Jul-20	68.4	57.1	69.8	59.7	67.3	58.3	66.4	56.4
Aug-20	67.1	56.4	67.8	58.1	66.2	57.1	65.4	54.9
Sep-20	66.4	54.8	68.7	56.7	65.5	55.6	64.4	53.8
Average	67.3	56.3	68.7	58.3	66.4	57.2	65.5	55.1

J.K. Cement WORKS, Nimbahera (RAJ)**Noise Monitoring Report****(April-20 to Sept-20)****(ALL VALUES IN dB)**

Month	22 MW CPP		13.2 MW WHR	
	Day	Night	Day	Night
Apr-20	Plant not in operation due to Covid-19 lockdown			
May-20				
Jun-20	72.6	70.8	71.4	69.9
Jul-20	71.9	69.1	72.6	71.2
Aug-20	70.2	68.3	71.5	69.1
Sep-20	69.5	67.9	70.6	68.9

Mitra S.K. Private Limited

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TEST REPORT

Name & Address of the Customer :

J.K. Cement Works, Nimbahera

Kailash Nagar – 312617

Nimbahera – Distt. Chittorgarh (Raj.)

Report No. : MSK/UJR/2020-21/752

Date : 30.09.2020

Sample No. : MSKGL/ED/2020-21/09/00064 to 00067

Sample Description : Noise Monitoring

Reference No.& Date : e-mail dtd: 23.04.2019

ANALYSIS RESULT

Sl. No.	Sampling Date	Sampling Location	Results Leq dB(A)	
			Day Time	Night Time
1.	12.08.2020	Near Main Security Gate (Nimbahera Plant)	66.5	51.6
2.		Near Thermal Power Plant (Nimbahera Plant)	68.7	62.5
3.		Near New J.K. Factory Gate (Nimbahera Plant)	70.2	64.3
4.		Near Mine Gate (Nimbahera Plant)	69.4	62.3

Report Prepared by :

For Mitra S.K. Private Limited

Authorized Signatory

Mitra S.K. Private Limited

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F: 91 33 22650008
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TEST REPORT

Name & Address of the Customer :
J.K. Cement Works, Nimbahera
Kailash Nagar – 312617
Nimbahera – Distt. Chittorgarh (Raj.)

Report No. : MSK/UDR/2020-21/216
Date : 06.07.2020
Sample No. : MSKGL/ED/2020-21/06/01141 to 1144
Sample Description : Noise Monitoring

Reference No.& Date : e-mail dtd: 23.04.2019

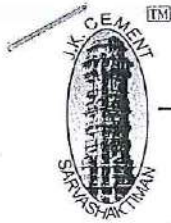
ANALYSIS RESULT

Sl. No.	Sampling Date	Sampling Location	Results Leq dB(A)	
			Day Time	Night Time
1.	21/22.06.2020	Near Main Security Gate (Nimbahera Plant)	51.2	37.6
2.		Near Thermal Power Plant (Nimbahera Plant)	56.7	43.4
3.		Near New J.K. Factory Gate (Nimbahera Plant)	58.9	41.2
4.		Near Mine Gate (Nimbahera Plant)	57.2	38.8

Report Prepared by :

For Mitra S.K. Private Limited
Authorised Signatory

P/C



JK Cement LTD.

Phone : +91-1477-220098, 220087
 Fax : +91-1477-220027, 220049
 E-mail : jkc.nbh@jkcement.com
 Web : www.jkcement.com

J.K. Cement Works
 Kailash Nagar - 312617, Nimbahera
 Distt. Chittorgarh (Raj.) INDIA

CIN : L17229UP1994PLC017199

ISO 9001:2015 | ISO 14001:2015 | ISO 45001:2018 | ISO 50001:2011 CERTIFIED COMPANY

Ref. No.: NBH/PC/14/C14/

Regd.AD.

Date: 10.06.2020

To,
 The Additional Director (M)
 Indira Paryavaran Bhavan,
 JOR Bagh Road,
 Near JOR bagh Metro station
 New Delhi 110003

Subject: Compliance to Specific condition no. A (VI) of Environmental Clearance.

Dear Sir,

Kindly refer Environmental Clearance letter no. J - 110115 /83/2004/IA.II dated. 30th May 2005 of our Nimbahera - Ahirpura Mine. We are enclosing herewith ground water level & water quality data of **Pre Monsoon (April-May' 2020)** in response to the Clearance specific Condition No. A (VI) of above referred letter for your reference & record.

Thanking you.

Yours faithfully
 For J.K. Cement Works, Nimbahera

S.K. Acharya
 S.K. Acharya
 Head (Environment & Power management)

Encl: a/a

Copy to:

The Director, Ministry of Environment and Forest,
 Regional Office (Central Region),
 Kendriya Bhawan, 5th Floor, Sector 'H', ALIGANJ,
 LUCKNOW-226020 (U.P.)

The Member Secretary,
 Central Ground Water Authority,
 Ministry of Water Resources (G.O.I.),
 16/11, Jam Nagar House, Mansingh Road
 NEW DELHI- 110011

The Regional Director,
 Central Ground Water Board (Western Region),
 Jhalana Dungri Institutional Area,
 Jaipur - 302004 (Rajasthan)

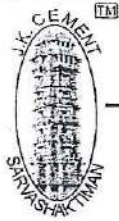
Corporate & Registered Office : Kamla Tower, Kanpur-208001, (U. P.) INDIA
 Phone : +91-512-2371478 to 81 Fax : 2399854 E-mail : ho.grey@jkcement.com



J. K. Cement Works, Nimbahera
 J. K. Cement Works Mangrol
 J. K. Cement Works, Gotan
 J. K. Cement Works, Jharli

J. K. Power, Bamania
 J. K. Cement Works, Muddapur
 J. K. White Cement Works, Gotan
 J. K. White, Katni





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CIN : L17229UP1994PLC017199

ISO 9001:2008, ISO 14001:2004 & OHSAS 18001 : 2007 CERTIFIED COMPANY

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J.K. Cement Works
Kailash Nagar - 312617, Nimbahera
Distt. Chittorgarh (Raj.) INDIA

NBH/PC/14/C14/ 643

Regd.AD.

Date: 07.10.2020

To,
The Additional Director (M)
Indira Paryavaran Bhavan,
JOR Bagh Road,
Near JOR bagh Metro station
New Delhi 110003

Subject: Compliance to Specific condition no. A (VI) of Environmental Clearance.

Dear Sir,

Kindly refer Environmental Clearance letter no. J - 110115 /83/2004/IA.II dated. 30th May 2005 of our Nimbahera - Ahirpura Limestone Mine. We are enclosing herewith ground water level & water quality data of Monsoon season (August' 2020) with respect to specific Condition No. A (VI) of above referred letter. This is for your reference & record.

Thanking you.

Yours faithfully
For J.K. Cement Works, Nimbahera

Encl: as above

Anil Kumar Jain
Sr. General Manager- Environment

Copy to:

- 1) **The Director, Ministry of Environment and Forest,**
Regional Office (Central Region),
Kendriya Bhawan, 5th Floor, Sector 'H', ALIGANJ,
LUCKNOW-226020 (U.P.)
- 2) **The Member Secretary,**
Central Ground Water Authority,
Ministry of Water Resources (G.O.I.),
16/11, Jam Nagar House, Mansingh Road
NEW DELHI- 110011
- 3) **The Regional Director,**
Central Ground Water Board (Western Region),
Jhalana Dungri Institutional Area,
Jaipur - 302004 (Rajasthan)

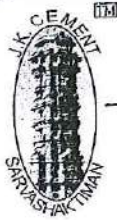
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J. K. Cement Works Mangrol
J. K. Cement Works, Gotan
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J. K. Power, Bamania
J. K. Cement Works, Muddapur
J. K. White Cement Works, Gotan
J. K. White, Katni





JK Cement LTD.

CIN : L17229UP1994PLC017199

ISO 9001:2008, ISO 14001:2004 & OHSAS 18001 : 2007 CERTIFIED COMPANY

Ref. No.: MGR/PC/14/C11/

Regd.AD.

Date: 10.06.2020

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Web : www.jkcement.com

J.K. Cement Works, Mangrol
C/o. Kailash Nagar-312617, Nimbahera
Distt. Chittorgarh (Raj.) INDIA

To,
The Additional Director (M)
Indira Paryavaran Bhavan,
JOR Bagh Road,
Near JOR bagh Metro station
New Delhi 110003

Subject: Compliance to General condition No. B (XII) of Environmental Clearance.

Dear Sir,

Kindly refer Environmental Clearance letter no. J – 11015/25/2011/IA. II (M) dated. 23rd January 2014 of our **Tilakhera Lime Stone Mine**. We are enclosing herewith ground water level & water quality data of **Pre Monsoon (April-May' 2020)** in response to the Clearance General Condition No. B (XII) of above referred letter for your reference & record.

Thanking you,

Yours Faithfully
For J.K. Cement Works, Mangrol

S.K. Acharya
S.K. Acharya
Head (Environment & Power management)

Encl: a/a

Copy to :

The Director, Ministry of Environment and Forest,
Regional Office (Central Region),
Kendriya Bhawan, 5th Floor, Sector 'H', ALIGANJ,
LUCKNOW-226020 (U.P.)

The Member Secretary,
Central Ground Water Authority,
Ministry of Water Resources (G.O.I.),
16/11, Jam Nagar House, Mansingh Road
NEW DELHI- 110011

The Regional Director,
Central Ground Water Board (Western Region),
Jhalana Dungri Institutional Area,
Jaipur – 302004 (Rajasthan)

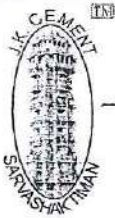
Corporate & Registered Office : Kamla Tower, Kanpur-208001, (U. P.) INDIA
Phone : +91-512-2371478 to 81 **Fax :** 2399854 **E-mail :** ho.grey@jkcement.com



J. K. Cement Works, Nimbahera
J. K. Cement Works Mangrol
J. K. Cement Works, Gotan
J. K. Cement Works, Jharli

J. K. Power, Bamania
J. K. Cement Works, Muddapur
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J.K. Cement Works, Mangrol
C/o. Kailash Nagar-312617, Nimbahera
Distt. Chittorgarh (Raj.) INDIA

CIN : L17229UP1994PLC017199

ISO 9001:2008, ISO 14001:2004 & OHSAS 18001 : 2007 CERTIFIED COMPANY
MGR/PC/14/C11/ 322 Regd.AD.

Date: 07.10.2020

To,
The Additional Director (M)
Indira Paryavaran Bhavan,
JOR Bagh Road,
Near JOR bagh Metro station
New Delhi 110003

Subject: Compliance to General condition No. B (XII) of Environmental Clearance.

Dear Sir,

Kindly refer Environmental Clearance letter no. J - 11015/25/2011/IA. II (M) dated. 23rd January 2014 of our Tilakhera LimeStone Mine. We are enclosing herewith ground water level & water quality data of Monsoon season (August' 2020) with respect to General Condition No. B (XII) of above referred letter. This is for your reference & record.

Thanking you,

Yours Faithfully
For J.K. Cement Works, Mangrol

Anil Kumar Jain
Sr. General Manager- Environment

Encl: as above

Copy :

- 1) The Director, Ministry of Environment and Forest,
Regional Office (Central Region),
Kendriya Bhawan, 5th Floor, Sector 'H', ALIGANJ,
LUCKNOW-226020 (U.P.)
- 2) The Member Secretary,
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NEW DELHI- 110011
- 3) The Regional Director,
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Corporate & Registered Office : Kamla Tower, Kanpur-208001, (U. P.) INDIA
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J. K. Power, Bamania
J. K. Cement Works, Muddapur
J. K. White Cement Works, Golan
J. K. White, Katni



Mitra S.K. Private Limited

Shrachi Center (5th Floor)
74B, Acharya Jagadish Chandra Bose Road
Kolkata - 700 016, West Bengal India
CIN: U51909WB1956PTC023037



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TEST REPORT

Name & Address of the Customer :
J.K. Cement Works, Nimbahera
C/o Kailash Nagar - 312617
Nimbahera - Distt. Chittorgarh (Raj.)

Reference No.& Date : e-mail dtd: 23.04.2019

Report No. : MSK/UDR/2020-21/712

Date : 23.09.2020

Sample No. : MSKGL/ED/2020-21/09/00005

Sample Description : Ground Water (Sharda's Tube well water sample)

Sample Mark : Ahirpura Lime Stone Mine

Date of Sampling : 14.08.2020

ANALYSIS RESULT OF WATER AS PER IS : 10500 - 2012

Sl No.	Parameter	Desirable Limit	Permissible Limit	Method	Result
1.	pH at 25°C	6.5-8.5	No Relaxation	IS 3025 (Part 11)-1983; Rfim: 2012	7.85
2.	Conductivity at 25°C in µmhos/cm	---	---	IS 3025 (Part 14)- 2013	642.0
3.	Colour in Hazen	5	15	IS 3025 (Part 4)-1983; Rfim:2002	<1.0
4.	Odour	Agreeable	Agreeable	IS 3025 (Part 5)-1983 Rfim:2012	Agreeable
5.	Turbidity in N.T.U	1	5	IS 3025 (Part 10)-1984 Rfim: 2012	3.6
6.	Total Dissolved Solids in mg/l	500	2000	IS 3025 (Part 16)-1984; Rfim:2002	372.0
7.	Total Suspended Solids in mg/l	---	---	IS 3025 (Part 24)-1986; Rfim:2009	7.4
8.	Total Hardness as CaCO ₃ in mg/l	200	600	IS 3025 (Part 21)-2013	184.0
9.	Calcium as Ca in mg/l	75	200	IS 3025 (Part 40)- 1991 Rfim: 2009	33.0
10.	Magnesium as Mg in mg/l	30	100	IS 3025 (Part 46)-1994 Rfim: 2009	24.0
11.	Total Alkalinity as CaCO ₃ in mg/l	200	600	IS 3025 (Part 23)- 1986 Rfim: 2009	274.0
12.	Chloride as Cl in mg/l	250	1000	IS 3025 (Part 32)-1988 Rfim: 2009	36.0
13.	Oil & Grease in mg/l	---	---	IS 3025(Part 39)-Rfim 2009	<1.4
14.	Fluoride as F in mg/l	1.0	1.5	IS 3025 (Part 60)- 2008 Rfim: 2013	0.44
15.	Iron as Fe in mg/l	0.3	No relaxation	IS 3025 (Part 53)-1988 Rfim: 2009	0.07

Checked-By:

For Mitra S.K. Pvt. Ltd.



Mitra S.K. Private Limited

Shrachi Center (5th Floor)
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Kolkata - 700 016, West Bengal India
CIN: U51909WB1956PTC023037



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TEST REPORT

Name & Address of the Customer :
J.K. Cement Works, Nimbahera
C/o Kailash Nagar - 312617
Nimbahera - Distt. Chittorgarh (Raj.)

Reference No. & Date : e-mail dtd: 23.04.2019

Report No. : MSK/UDR/2020-21/711

Date : 23.09.2020

Sample No. : MSKGL/ED/2020-21/09/00004

Sample Description : Ground Water from Tube well

Sample Mark : Nimbahera Plant

Date of Sampling : 14.08.2020

ANALYSIS RESULT OF WATER AS PER IS : 10500 - 2012

Sl No.	Parameter	Desirable Limit	Permissible Limit	Method	Result
1.	pH at 25°C	6.5-8.5	No Relaxation	IS 3025 (Part 11)-1983; Rfim: 2012	7.89
2.	Conductivity at 25°C in $\mu\text{mhos/cm}$	---	---	IS 3025 (Part 14)- 2013	728.0
3.	Colour in Hazen	5	15	IS 3025 (Part 4)-1983; Rfim:2002	<1.0
4.	Odour	Agreeable	Agreeable	IS 3025 (Part 5)-1983 Rfim:2012	Agreeable
5.	Turbidity in N.T.U	1	5	IS 3025 (Part 10)-1984 Rfim: 2012	<1.0
6.	Total Dissolved Solids in mg/l	500	2000	IS 3025 (Part 16)-1984; Rfim:2002	430.0
7.	Total Suspended Solids in mg/l	---	---	IS 3025 (Part 24)-1986; Rfim:2009	<2.5
8.	Total Hardness as CaCO_3 in mg/l	200	600	IS 3025 (Part 21)-2013	243.0
9.	Calcium as Ca in mg/l	75	200	IS 3025 (Part 40)- 1991 Rfim: 2009	69.0
10.	Magnesium as Mg in mg/l	30	100	IS 3025 (Part 46)-1994 Rfim: 2009	17.0
11.	Total Alkalinity as CaCO_3 in mg/l	200	600	IS 3025 (Part 23)- 1986 Rfim: 2009	156.0
12.	Chloride as Cl in mg/l	250	1000	IS 3025 (Part 32)-1988 Rfim: 2009	75.0
13.	Oil & Grease in mg/l	---	---	IS 3025(Part 39)-Rfim 2009	<1.4
14.	Fluoride as F in mg/l	1.0	1.5	IS 3025 (Part 60)- 2008 Rfim: 2013	0.75
15.	Iron as Fe in mg/l	0.3	No relaxation	IS 3025 (Part 53)-1988 Rfim: 2009	<0.05

Checked By: 

For Mitra S. K. Pvt. Ltd.



Mitra S.K. Private Limited

Shrachi Center (5th Floor)
74B, Acharya Jagadish Chandra Bose Road
Kolkata - 700 016, West Bengal India
CIN: U51909WB1956PTC023037



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TEST REPORT

Name & Address of the Customer :
J.K. Cement Works, Nimbahera
C/o Kailash Nagar - 312617
Nimbahera - Distt. Chittorgarh (Raj.)

Reference No.& Date : e-mail dtd: 23.04.2019

Report No. : MSK/UDR/2020-21/713

Date : 23.09.2020

Sample No. : MSKGL/ED/2020-21/09/00006

Sample Description : Ground Water from Hand Pump (Near Hur)

Sample Mark : Murlia Block

Date of Sampling : 14.08.2020

ANALYSIS RESULT OF WATER AS PER IS : 10500 - 2012

Sl No.	Parameter	Desirable Limit	Permissible Limit	Method	Result
1.	pH at 25°C	6.5-8.5	No Relaxation	IS 3025 (Part 11)-1983; Rflm: 2012	7.72
2.	Conductivity at 25°C in µmhos/cm	---	---	IS 3025 (Part 14)- 2013	738.0
3.	Colour in Hazen	5	15	IS 3025 (Part 4)-1983; Rflm:2002	<1.0
4.	Odour	Agreeable	Agreeable	IS 3025 (Part 5)-1983 Rflm:2012	Agreeable
5.	Turbidity in N.T.U	1	5	IS 3025 (Part 10)-1984 Rflm: 2012	<1.0
6.	Total Dissolved Solids in mg/l	500	2000	IS 3025 (Part 16)-1984; Rflm:2002	442.0
7.	Total Suspended Solids in mg/l	---	---	IS 3025 (Part 24)-1986; Rflm:2009	<2.5
8.	Total Hardness as CaCO ₃ in mg/l	200	600	IS 3025 (Part 21)-2013	270.0
9.	Calcium as Ca in mg/l	75	200	IS 3025 (Part 40)- 1991 Rflm: 2009	75.0
10.	Magnesium as Mg in mg/l	30	100	IS 3025 (Part 46)- 1994 Rflm: 2009	20.0
11.	Total Alkalinity as CaCO ₃ in mg/l	200	600	IS 3025 (Part 23)- 1986 Rflm: 2009	175.0
12.	Chloride as Cl in mg/l	250	1000	IS 3025 (Part 32)-1988 Rflm: 2009	58.0
13.	Oil & Grease in mg/l	---	---	IS 3025(Part 39)-Rflm 2009	<1.4
14.	Fluoride as F in mg/l	1.0	1.5	IS 3025 (Part 60)- 2008 Rflm: 2013	0.30
15.	Iron as Fe in mg/l	0.3	No relaxation	IS 3025 (Part 53)-1988 Rflm: 2009	<0.05

Checked By:

For Mitra S.K. Pvt. Ltd.

Authorized Signatory

J.K. Cement WORKS, NIMBAHERA (RAJ)Treated Domestic Effluent Analysis Report

For the Month :

April' 2020

Location Outlet of STP
 Date of Sampling 24.04.2020

S.No.	PARAMETER	RPCB LIMITS	RESULTS
1	pH	Between 5.5 to 9.0	7.15
2	Total Suspended Solids (TSS)	Not to exceed 100 mg/l	16.0
3	Chemical Oxygen Demand (COD)	Not to exceed 250 mg/l	32.0
4	Bio-Chemical Oxygen Demand (BOD) (3 Days at 27 ⁰ C)	Not to exceed 30 mg/l	7.20
5	Oil & Grease	Not to exceed 10 mg/l	<2.00
6	Ammonical Nitrogen (as N)	Not to exceed 50 mg/l	<0.20
7	Sulphide (as S)	Not to exceed 2.0 mg/l	<0.15
8	Chlorides	Not to exceed 1000 mg/l	165.0
9	Total Kjeldahl Nitrogen (as N)	Not to exceed 100 mg/l	0.60
10	Residual Chlorine	Not to exceed 1.0 mg/l	<0.1

J.K. Cement WORKS, NIMBAHERA (RAJ)

Treated Domestic Effluent Analysis Report

For the Month :

May' 2020

Location **Outlet of STP**

Date of Sampling **25.05.2020**

S.No.	PARAMETER	RPCB LIMITS	RESULTS
1	pH	Between 5.5 to 9.0	7.45
2	Total Suspended Solids (TSS)	Not to exceed 100 mg/l	21.0
3	Chemical Oxygen Demand (COD)	Not to exceed 250 mg/l	35.0
4	Bio-Chemical Oxygen Demand (BOD) (3 Days at 27 ⁰ C)	Not to exceed 30 mg/l	7.80
5	Oil & Grease	Not to exceed 10 mg/l	<2.00
6	Ammonical Nitrogen (as N)	Not to exceed 50 mg/l	<0.25
7	Sulphide (as S)	Not to exceed 2.0 mg/l	<0.20
8	Chlorides	Not to exceed 1000 mg/l	152.0
9	Total Kjeldahl Nitrogen (as N)	Not to exceed 100 mg/l	0.81
10	Residual Chlorine	Not to exceed 1.0 mg/l	<0.1

Mitra S.K. Private Limited

Shrachi Center (5th Floor)
74B, Acharya Jagadish Chandra Bose Road
Kolkata – 700 016, West Bengal India
CIN: U51909WB1956PTC023037



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TEST REPORT

Name & Address of the Customer :

J.K. Cement Works, Nimbahera

Kailash Nagar – 312617

Nimbahera – Distt. Chittorgarh (Raj.)

Report No. : MSK/UDR/2020-21/305

Date : 16.07.2020

Sample No. : MSKGL/ED/2020-21/06/01211

Sample Description : Domestic Waste Water

Sample Location : STP outlet Water

Date of Collection : 21.06.2020

Reference No.& Date : e-mail dtd: 23.04.2019

ANALYSIS RESULT

Sl No.	Parameter	Unit	Result
1.	pH (at 25 ^o C)	---	6.82
2.	Total Suspended solids (TSS)	mg/l	<2.5
3.	Chemical Oxygen Demand (COD)	mg/l	5.6
4.	Bio-Chemical Oxygen Demand (3 days at 27 ^o C)	mg/l	<2.0
5.	Oil & Grease	mg/l	<3.0
6.	Ammonical Nitrogen (as N)	mg/l	<0.1
7.	Sulphide (as S)	mg/l	<0.1
8.	Chloride	mg/l	63.0
9.	Total Kjeldahl Nitrogen (as N)	mg/l	0.87
10.	Total Residual Chlorine	mg/l	<0.1

Report Prepared by:

For Mitra S.K. Private Limited
Authorized Signatory

J.K. Cement WORKS, NIMBAHERA (RAJ)

Treated Domestic Effluent Analysis Report

For the Month : July' 2020

Location Outlet of STP
Date of Sampling 20.07.2020

S.No.	PARAMETER	RPCB LIMITS	RESULTS
1	pH	Between 5.5 to 9.0	7.50
2	Total Suspended Solids (TSS)	Not to exceed 100 mg/l	25.0
3	Chemical Oxygen Demand (COD)	Not to exceed 250 mg/l	41.0
4	Bio-Chemical Oxygen Demand (BOD) (3 Days at 27 ⁰ C)	Not to exceed 30 mg/l	8.40
5	Oil & Grease	Not to exceed 10 mg/l	<2.0
6	Ammonical Nitrogen (as N)	Not to exceed 50 mg/l	<0.15
7	Sulphide (as S)	Not to exceed 2.0 mg/l	<0.25
8	Chlorides	Not to exceed 1000 mg/l	159.0
9	Total Kjeldahl Nitrogen (as N)	Not to exceed 100 mg/l	0.72
10	Residual Chlorine	Not to exceed 1.0 mg/l	<0.1

Mitra S.K. Private Limited

Shrachi Center (5th Floor)
74B, Acharya Jagadish Chandra Bose Road
Kolkata - 700 016, West Bengal India
CIN: U51909WB1956PTC023037



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TEST REPORT

Name & Address of the Customer :
J.K. Cement Works, Nimbahera
Kailash Nagar - 312617
Nimbahera - Distt. Chittorgarh (Raj.)

Report No. : MSK/UDR/2020-21/727
Date : 24.09.2020
Sample No. : MSKGL/ED/2020-21/09/00016 & 00027
Sample Description : Domestic Waste Water
Sample Location : STP outlet Water (Nimbahera)
Date of Collection : 12.08.2020

Reference No.& Date : e-mail dtd: 23.04.2019

ANALYSIS RESULT

Sl No.	Parameter	Unit	Result
1.	pH (at 25 ^o C)	---	7.22
2.	Total Suspended solids (TSS)	mg/l	4.2
3.	Chemical Oxygen Demand (COD)	mg/l	27.0
4.	Bio-Chemical Oxygen Demand (3 days at 27 ^o C)	mg/l	5.6
5.	Oil & Grease	mg/l	<1.4
6.	Ammonical Nitrogen (as N)	mg/l	<0.1
7.	Sulphide (as S)	mg/l	<0.1
8.	Chloride	mg/l	113.0
9.	Total Kjeldahl Nitrogen (as N)	mg/l	0.62
10.	Total Residual Chlorine	mg/l	<0.3
11.	Faecal Coliform	MPN/100 ml	<1.8

Report Prepared by:

For Mitra S.K. Private Limited



J.K. Cement WORKS, NIMBAHERA (RAJ)

Treated Domestic Effluent Analysis Report

For the Month : September' 2020

Location Outlet of STP
Date of Sampling 12.09.2020

S.No.	PARAMETER	RPCB LIMITS	RESULTS
1	pH	Between 5.5 to 9.0	7.10
2	Total Suspended Solids (TSS)	Not to exceed 100 mg/l	15.3
3	Chemical Oxygen Demand (COD)	Not to exceed 250 mg/l	35.0
4	Bio-Chemical Oxygen Demand (BOD) (3 Days at 27 ⁰ C)	Not to exceed 30 mg/l	8.20
5	Oil & Grease	Not to exceed 10 mg/l	<2.00
6	Ammonical Nitrogen (as N)	Not to exceed 50 mg/l	<0.10
7	Sulphide (as S)	Not to exceed 2.0 mg/l	<0.30
8	Chlorides	Not to exceed 1000 mg/l	152.0
9	Total Kjeldahl Nitrogen (as N)	Not to exceed 100 mg/l	0.90
10	Residual Chlorine	Not to exceed 1.0 mg/l	<0.1

J.K. Cement WORKS, NIMBAHERA (RAJ)
13.2 MW THERMAL WASTE HEAT RECOVERY SYSTEM

Location : Outlet of Power Plant

Date of Sampling : April'2020

S.No.	PARAMETERS	RPCB Limits	RESULTS
1	pH	Between 6.5 to 8.5	Plant stopped due to Covid-19
2	Total Suspended Solids (TSS)	Not to exceed 100 mg/l	
3	Oil & Grease	Not to exceed 20 mg/l	
4	Bio-Chemical Oxygen Demand (BOD) (3 Days at 270C)	Not to exceed 30 mg/l	
5	Chemical Oxygen Demand (COD)	Not to exceed 250 mg/l	
6	Chlorides (as Cl)	Not to exceed 1000 mg/l	
7	Sulphates (as SO ₄)	Not to exceed 1000 mg/l	
8	Phosphate	Not to exceed 5 mg/l	
9	Iron (as Fe)	Not to exceed 1.0 mg/l	
10	Total Chromium (as Cr)	Not to exceed 0.2 mg/l	
11	Free Available chlorine	Not to exceed 0.5 mg/l	
12	Copper as (Cu)	Not to exceed 1.0 mg/l	
13	Zinc (Zn)	Not to exceed 1.0 mg/l	
14	Total Residual Chlorine	Not to exceed 1.0 mg/l	
15	Temperature	Not more than 5 °C higher than the intake water temperature	

J.K. Cement WORKS, NIMBAHERA (RAJ)
13.2 MW THERMAL WASTE HEAT RECOVERY SYSTEM

Location : Outlet of Power Plant

Date of Sampling : May'2020

S.No.	PARAMETERS	RPCB Limits	RESULTS
1	pH	Between 6.5 to 8.5	Plant stopped due to Covid-19
2	Total Suspended Solids (TSS)	Not to exceed 100 mg/l Not to exceed 20 mg/l	
3	Oil & Grease	Not to exceed 20 mg/l	
4	Bio-Chemical Oxygen Demand (BOD) (3 Days at 270C)	Not to exceed 30 mg/l	
5	Chemical Oxygen Demand (COD)	Not to exceed 250 mg/l	
6	Chlorides (as Cl)	Not to exceed 1000 mg/l	
7	Sulphates (as SO ₄)	Not to exceed 1000 mg/l	
8	Phosphate	Not to exceed 5 mg/l	
9	Iron (as Fe)	Not to exceed 1.0 mg/l	
10	Total Chromium (as Cr)	Not to exceed 0.2 mg/l	
11	Free Available chlorine	Not to exceed 0.5 mg/l	
12	Copper as (Cu)	Not to exceed 1.0 mg/l	
13	Zinc (Zn)	Not to exceed 1.0 mg/l	
14	Total Residual Chlorine	Not to exceed 1.0 mg/l	
15	Temperature	Not more than 5 °C higher than the intake water temperature	

Mitra S.K. Private Limited

Shrachi Center (5th Floor)
74B, Acharya Jagadish Chandra Bose Road
Kolkata - 700 016, West Bengal India
CIN: U51909WB1956PTC023037



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F: 91 33 22650008
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W: www.mitrask.com

TEST REPORT

Name & Address of the Customer :
Thermax Ltd.
C/o J.K.Cement Works, Nimbahera
Distt. Chittorgarh (Raj.)

Report No. : MSK/UDR/2020-21/308
Date : 16.07.2020
Sample No. : MSKGL/ED/2020-21/06/01214
Sample Description : Treated Effluent Water
Sample Location : 13.2 MW WHR
Date of Collection : 13.06.2020

Reference No.& Date : e-mail dtd: 23.04.2019

ANALYSIS RESULT

Sl No.	Parameter	Unit	Standard	Result
1.	pH (at 27 ⁰ C)	---	6.5 to 8.5	6.59
2.	Total Suspended solids (TSS)	mg/l	100.0	23.0
3.	Oil & Grease	mg/l	10.0	<3.0
4.	Total Residual Chlorine	mg/l	1.0	<0.1
5.	Iron (as Fe)	mg/l	1.0	0.52
6.	Chromium (Total)	mg/l	0.2	<0.01
7.	Free Available Chlorine	mg/l	0.5	<0.1
8.	Copper (as Cu)	mg/l	1.0	<0.02
9.	Zinc (as Zn)	mg/l	1.0	<0.02
10.	Temperature	⁰ C	Shall not exceed 5 ⁰ C above the receiving water temperature	4 ⁰ C higher than the intake water temperature
11.	Phosphate (as PO ₄)	mg/l	5.0	1.3
12.	Chemical Oxygen Demand (as COD)	mg/l	250.0	6.8
13.	Biological Oxygen Demand (as BOD)	mg/l	30.0	<2.0
14.	Chlorides (as Cl)	mg/l	1000.0	340.0
15.	Sulphate (as SO ₄)	mg/l	1000.0	72.0

Report Prepared by:

For Mitra S.K. Private Limited



J.K. Cement WORKS, NIMBAHERA (RAJ)
13.2 MW THERMAL WASTE HEAT RECOVERY SYSTEM

Location : Outlet of Power Plant

Date of Sampling : 12.07.2020

S.No.	PARAMETERS	RPCB Limits	RESULTS
1	pH	Between 6.5 to 8.5	7.70
2	Total Suspended Solids (TSS)	Not to exceed 100 mg/l	35
3	Oil & Grease	Not to exceed 20 mg/l	<1.6
4	Bio-Chemical Oxygen Demand (BOD) (3 Days at 270C)	Not to exceed 30 mg/l	8.65
5	Chemical Oxygen Demand (COD)	Not to exceed 250 mg/l	44.00
6	Chlorides (as Cl)	Not to exceed 1000 mg/l	230.00
7	Sulphates (as SO ₄)	Not to exceed 1000 mg/l	292.00
8	Phosphate	Not to exceed 5 mg/l	1.25
9	Iron (as Fe)	Not to exceed 1.0 mg/l	0.2
10	Total Chromium (as Cr)	Not to exceed 0.2 mg/l	0.02
11	Free Available chlorine	Not to exceed 0.5 mg/l	<0.1
12	Copper as (Cu)	Not to exceed 1.0 mg/l	<0.02
13	Zinc (Zn)	Not to exceed 1.0 mg/l	<0.02
14	Total Residual Chlorine	Not to exceed 1.0 mg/l	<0.1
15	Temperature	Not more than 5 °C higher than the intake water temperature	4°C higher than the intake water

Mitra S.K. Private Limited

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TEST REPORT

Name & Address of the Customer :
Thermax Ltd.
C/o J.K.Cement Works, Nimbahera
Distt. Chittorgarh (Raj.)

Report No. : MSK/UDR/2020-21/733
Date : 24.09.2020
Sample No. : MSKGL/ED/2020-21/09/00022
Sample Description : Treated Effluent Water
Sample Location : 13.2 MW WHR ETP (Nimbahera)
Date of Collection : 14.08.2020

Reference No.& Date : e-mail dtd: 23.04.2019

ANALYSIS RESULT

Sl No.	Parameter	Unit	Standard	Result
1.	pH (at 27 ⁰ C)	---	6.5 to 8.5	6.9
2.	Total Suspended solids (TSS)	mg/l	100.0	44.0
3.	Oil & Grease	mg/l	10.0	<1.4
4.	Total Residual Chlorine	mg/l	1.0	<0.1
5.	Iron (as Fe)	mg/l	1.0	<0.05
6.	Chromium (Total)	mg/l	0.2	<0.01
7.	Free Available Chlorine	mg/l	0.5	<0.1
8.	Copper (as Cu)	mg/l	1.0	<0.02
9.	Zinc (as Zn)	mg/l	1.0	<0.02
10.	Temperature	⁰ C	Shall not exceed 5 ⁰ C above the receiving water temperature	4 ⁰ C higher than the intake water temperature
11.	Phosphate (as PO ₄)	mg/l	5.0	0.27
12.	Chemical Oxygen Demand (as COD)	mg/l	250.0	104
13.	Biological Oxygen Demand (as BOD)	mg/l	30.0	3.7
14.	Chlorides (as Cl)	mg/l	1000.0	96
15.	Sulphate (as SO ₄)	mg/l	1000.0	114

Report Prepared by :

For Mitra S.K. Private Limited



J.K. Cement WORKS, NIMBAHERA (RAJ)
13.2 MW THERMAL WASTE HEAT RECOVERY SYSTEM

Location : Outlet of Power Plant

Date of Sampling :21.09.2020

S.No.	PARAMETERS	RPCB Limits	RESULTS
1	pH	Between 6.5 to 8.5	7.45
2	Total Suspended Solids (TSS)	Not to exceed 100 mg/l	32
3	Oil & Grease	Not to exceed 20 mg/l	<1.2
4	Bio-Chemical Oxygen Demand (BOD) (3 Days at 270C)	Not to exceed 30 mg/l	8.80
5	Chemical Oxygen Demand (COD)	Not to exceed 250 mg/l	44.00
6	Chlorides (as Cl)	Not to exceed 1000 mg/l	217.00
7	Sulphates (as SO ₄)	Not to exceed 1000 mg/l	304
8	Phosphate	Not to exceed 5 mg/l	1.4
9	Iron (as Fe)	Not to exceed 1.0 mg/l	0.02
10	Total Chromium (as Cr)	Not to exceed 0.2 mg/l	0.04
11	Free Available chlorine	Not to exceed 0.5 mg/l	<0.1
12	Copper as (Cu)	Not to exceed 1.0 mg/l	<0.02
13	Zinc (Zn)	Not to exceed 1.0 mg/l	<0.02
14	Total Residual Chlorine	Not to exceed 1.0 mg/l	<0.1
15	Temperature	Not more than 5 °C higher than the intake water temperature	4°C higher than the intake water

J.K. Cement WORKS, NIMBAHERA (RAJ)

22 MW THERMAL POWER PLANT

Location : Outlet of Power Plant

Date of Sampling : April'2020

S.No.	PARAMETERS	RPCB Limits	RESULTS
1	pH	Between 5.5 to 9.0	Plant stopped due to Covid-19
2	Total Suspended Solids (TSS)	Not to exceed 100 mg/l	
3	Bio-Chemical Oxygen Demand (BOD) (3 Days at 27 deg C)	Not to exceed 30 mg/l	
4	Chemical Oxygen Demand (COD)	Not to exceed 250 mg/l	
5	Oil & Grease	Not to exceed 10 mg/l	
6	Chlorides	Not to exceed 1000 mg/l	
7	Sulphate	Not to exceed 1000 mg/l	
8	Temperature	Not more than 5°C higher than the intake water temperature	
9	Iron (Total)	Not to exceed 1.0 mg/l	
10	Copper (total)	Not to exceed 1.0 mg/l	
11	Phosphate (as PO ₄)	Not to exceed 5.0 mg/l	
12	Zinc (as Zn)	Not to exceed 1.0 mg/l	
13	Chromium (total)	Not to exceed 0.2 mg/l	
14	Total Residual Chlorine	Not to exceed 1.0 mg/l	
15	Free available chlorine	Not to exceed 0.5 mg/l	

NT : Not Traceable

Bdl : Below detectable level

J.K. Cement WORKS, NIMBAHERA (RAJ)

22 MW THERMAL POWER PLANT

Location : Outlet of Power Plant

Date of Sampling : May'2020

S.No.	PARAMETERS	RPCB Limits	RESULTS
1	pH	Between 5.5 to 9.0	Plant stopped due to Covid-19
2	Total Suspended Solids (TSS)	Not to exceed 100 mg/l	
3	Bio-Chemical Oxygen Demand (BOD) (3 Days at 27 deg C)	Not to exceed 30 mg/l	
4	Chemical Oxygen Demand (COD)	Not to exceed 250 mg/l	
5	Oil & Grease	Not to exceed 10 mg/l	
6	Chlorides	Not to exceed 1000 mg/l	
7	Sulphate	Not to exceed 1000 mg/l	
8	Temperature	Not more than 5°C higher than the intake water temperature	
9	Iron (Total)	Not to exceed 1.0 mg/l	
10	Copper (total)	Not to exceed 1.0 mg/l	
11	Phosphate (as PO ₄)	Not to exceed 5.0 mg/l	
12	Zinc (as Zn)	Not to exceed 1.0 mg/l	
13	Chromium (total)	Not to exceed 0.2 mg/l	
14	Total Residual Chlorine	Not to exceed 1.0 mg/l	
15	Free available chlorine	Not to exceed 0.5 mg/l	

NT : Not Traceable

Bdl : Below detectable level

Mitra S.K. Private Limited

Shrachi Center (5th Floor)
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Kolkata - 700 016, West Bengal India
CIN: U51909WB1956PTC023037



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W: www.mitrask.com

TEST REPORT

Name & Address of the Customer :
Thermax Ltd.
C/o J.K.Cement Works, Nimbamera
Distt. Chittorgarh (Raj.)

Report No. : MSK/UDR/2020-21/307
Date : 16.07.2020
Sample No. : MSKGL/ED/2020-21/06/01213
Sample Description : Treated Effluent Water
Sample Location : 22 MW TPP
Date of Collection : 13.06.2020

Reference No.& Date : e-mail dtd: 23.04.2019

ANALYSIS RESULT

Sl No.	Parameter	Unit	Standard	Result
1.	pH (at 27 ^o C)	---	6.5 to 8.5	6.68
2.	Total Suspended solids (TSS)	mg/l	100.0	46.0
3.	Oil & Grease	mg/l	10.0	<3.0
4.	Total Residual Chlorine	mg/l	1.0	<0.1
5.	Iron (as Fe)	mg/l	1.0	0.57
6.	Chromium (Total)	mg/l	0.2	<0.01
7.	Free Available Chlorine	mg/l	0.5	<0.1
8.	Copper (as Cu)	mg/l	1.0	<0.02
9.	Zinc (as Zn)	mg/l	1.0	<0.02
10.	Temperature	^o C	Shall not exceed 5 ^o C above the receiving water temperature	4 ^o C higher than the intake water temperature
11.	Phosphate (as PO ₄)	mg/l	5.0	0.36
12.	Chemical Oxygen Demand (as COD)	mg/l	250.0	10.0
13.	Biological Oxygen Demand (as BOD)	mg/l	30.0	2.3
14.	Chlorides (as Cl)	mg/l	1000.0	462.0
15.	Sulphate (as SO ₄)	mg/l	1000.0	<1.0

Report Prepared by :

For Mitra S.K. Private Limited



J.K. Cement WORKS, NIMBAHERA (RAJ)

22 MW THERMAL POWER PLANT

Location : Outlet of Power Plant

Date of Sampling : 24.07.2020

S.No.	PARAMETERS	RPCB Limits	RESULTS
1	pH	Between 5.5 to 9.0	7.8
2	Total Suspended Solids (TSS)	Not to exceed 100 mg/l	24.3
3	Bio-Chemical Oxygen Demand (BOD) (3 Days at 27 deg C)	Not to exceed 30 mg/l	9.1
4	Chemical Oxygen Demand (COD)	Not to exceed 250 mg/l	44
5	Oil & Grease	Not to exceed 10 mg/l	<1.6
6	Chlorides	Not to exceed 1000 mg/l	141
7	Sulphate	Not to exceed 1000 mg/l	68
8	Temperature	Not more than 5°C higher than the intake water temperature	4°C higher than the intake water
9	Iron (Total)	Not to exceed 1.0 mg/l	0.1
10	Copper (total)	Not to exceed 1.0 mg/l	<0.01
11	Phosphate (as PO ₄)	Not to exceed 5.0 mg/l	1.25
12	Zinc (as Zn)	Not to exceed 1.0 mg/l	<0.01
13	Chromium (total)	Not to exceed 0.2 mg/l	<0.06
14	Total Residual Chlorine	Not to exceed 1.0 mg/l	<0.1
15	Free available chlorine	Not to exceed 0.5 mg/l	<0.01

NT : Not Traceable

Bdl : Below detectable level

Mitra S.K. Private Limited

Shrachi Center (5th Floor)
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Kolkata - 700 016, West Bengal India
CIN: U51909WB1956PTC023037



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TEST REPORT

Name & Address of the Customer :
Thermax Ltd.
C/o J.K.Cement Works, Nimbahera
Distt. Chittorgarh (Raj.)

Report No. : MSK/UDR/2020-21/732
Date : 24.09.2020
Sample No. : MSKGL/ED/2020-21/09/00021
Sample Description : Treated Effluent Water
Sample Location : 22 MW CPP ETP (Nimbahera)
Date of Collection : 14.08.2020

Reference No.& Date : e-mail dtd: 23.04.2019

ANALYSIS RESULT

Sl No.	Parameter	Unit	Standard	Result
1.	pH (at 27 ⁰ C)	---	6.5 to 8.5	7.50
2.	Total Suspended solids (TSS)	mg/l	100.0	9.9
3.	Oil & Grease	mg/l	10.0	<1.4
4.	Total Residual Chlorine	mg/l	1.0	<0.1
5.	Iron (as Fe)	mg/l	1.0	0.81
6.	Chromium (Total)	mg/l	0.2	<0.01
7.	Free Available Chlorine	mg/l	0.5	<0.1
8.	Copper (as Cu)	mg/l	1.0	<0.02
9.	Zinc (as Zn)	mg/l	1.0	<0.02
10.	Temperature	⁰ C	Shall not exceed 5 ⁰ C above the receiving water temperature	4 ⁰ C higher than the intake water temperature
11.	Phosphate (as PO ₄)	mg/l	5.0	<0.15
12.	Chemical Oxygen Demand (as COD)	mg/l	250.0	94
13.	Biological Oxygen Demand (as BOD)	mg/l	30.0	4.8
14.	Chlorides (as Cl)	mg/l	1000.0	407
15.	Sulphate (as SO ₄)	mg/l	1000.0	122

Report Prepared by :

For Mitra S.K. Private Limited



J.K. Cement WORKS, NIMBAHERA (RAJ)

22 MW THERMAL POWER PLANT

Location : Outlet of Power Plant

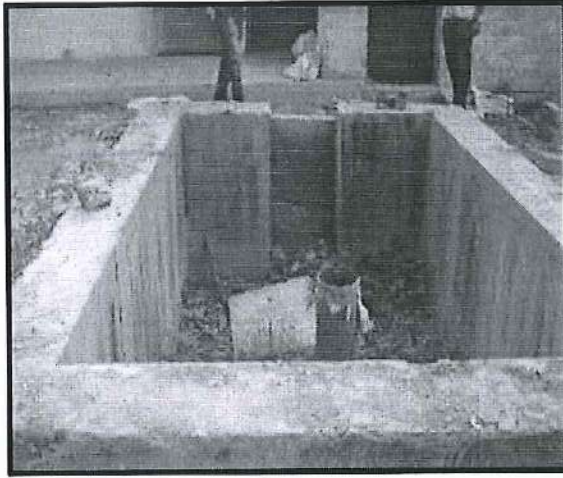
Date of Sampling : 21.09.2020

S.No.	PARAMETERS	RPCB Limits	RESULTS
1	pH	Between 5.5 to 9.0	7.65
2	Total Suspended Solids (TSS)	Not to exceed 100 mg/l	14.6
3	Bio-Chemical Oxygen Demand (BOD) (3 Days at 27 deg C)	Not to exceed 30 mg/l	7.6
4	Chemical Oxygen Demand (COD)	Not to exceed 250 mg/l	38
5	Oil & Grease	Not to exceed 10 mg/l	<1.6
6	Chlorides	Not to exceed 1000 mg/l	142
7	Sulphate	Not to exceed 1000 mg/l	81
8	Temperature	Not more than 5°C higher than the intake water	4°C higher than the intake water
9	Iron (Total)	Not to exceed 1.0 mg/l	0.01
10	Copper (total)	Not to exceed 1.0 mg/l	<0.02
11	Phosphate (as PO ₄)	Not to exceed 5.0 mg/l	1.2
12	Zinc (as Zn)	Not to exceed 1.0 mg/l	<0.01
13	Chromium (total)	Not to exceed 0.2 mg/l	<0.02
14	Total Residual Chlorine	Not to exceed 1.0 mg/l	<0.1
15	Free available chlorine	Not to exceed 0.5 mg/l	<0.01

NT : Not Traceable

Bdl : Below detectable level

Rain Water Harvesting Structure



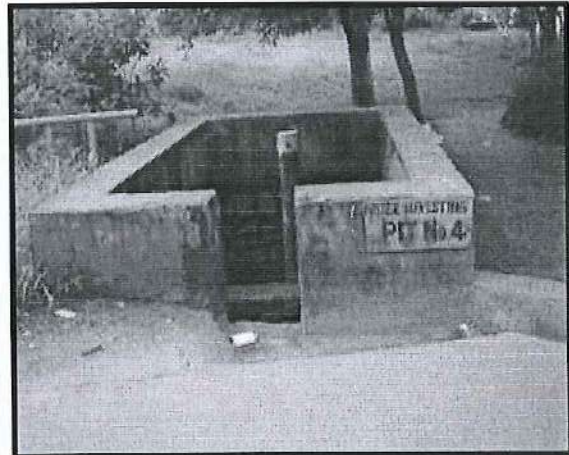
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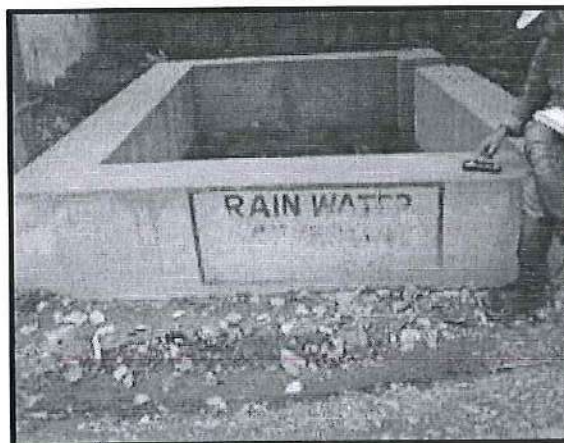
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RWH No. 3



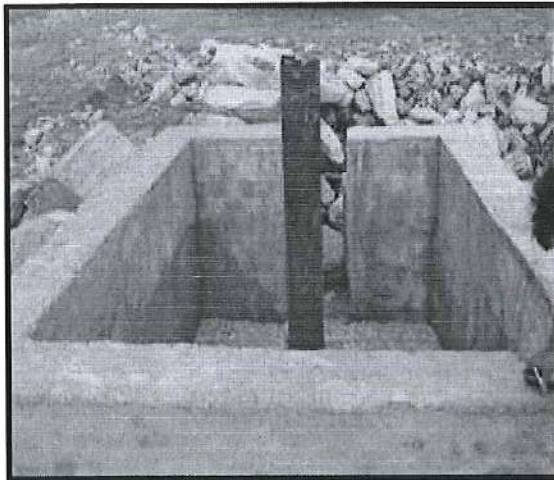
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RWH No. 5



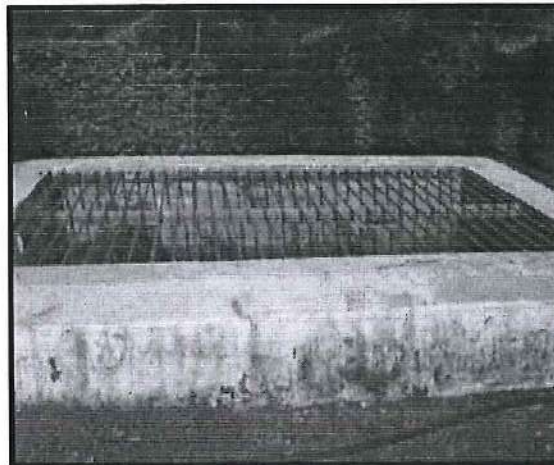
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RWH No. 7



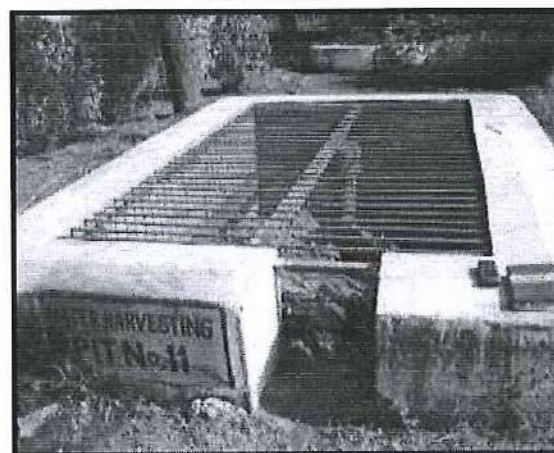
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RWH No. 9



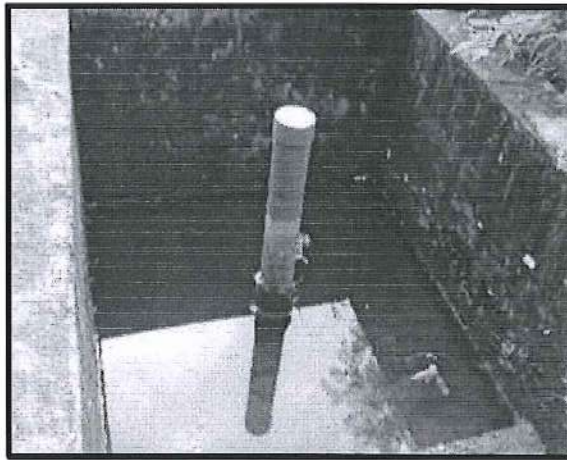
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RWH No. 11



RWH No.12

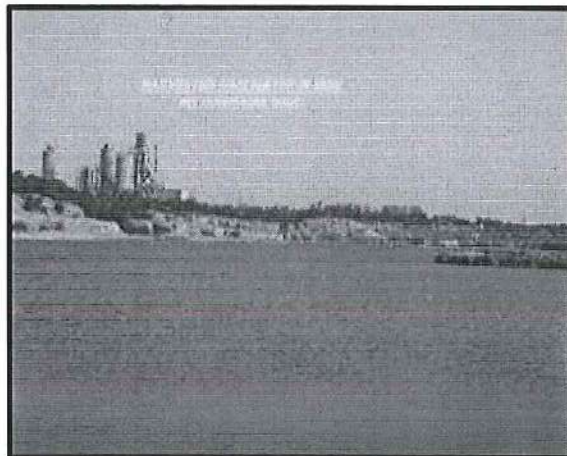


RWH No. 13

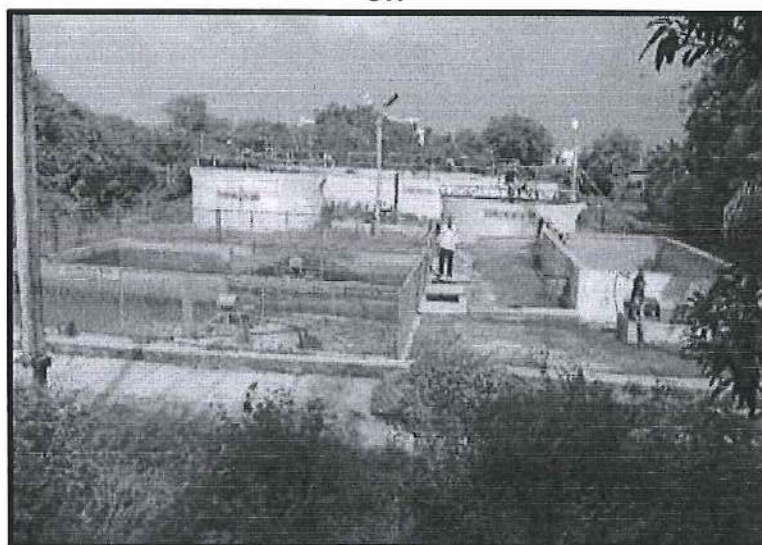


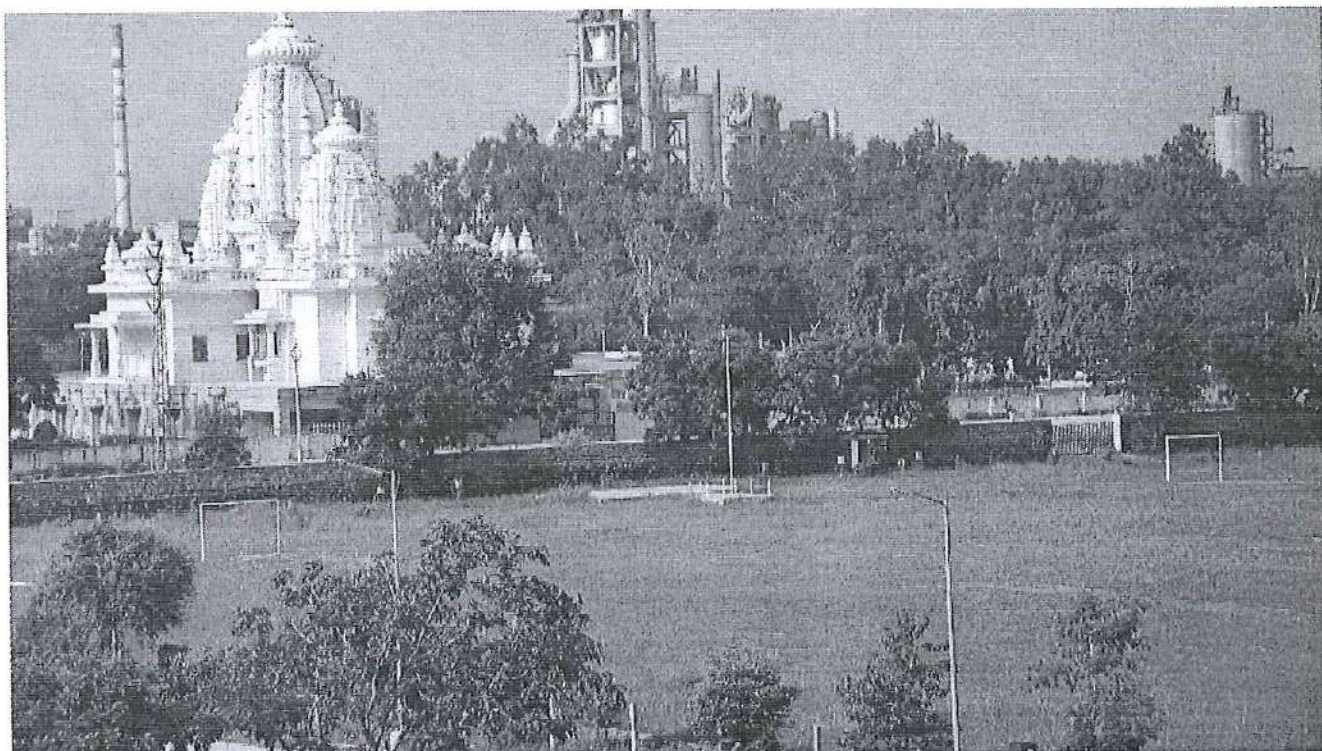
RWH No.14

Mine Pit



STP





***REPORT ON
GREEN HOUSE GAS (GHG) EMISSION INVENTORY
(Period April 2019 - March 2020)
OF
M/s J. K. CEMENT WORKS
NIMBAHERA, DIST: CHITTORGARH (RAJASTHAN)***

Prepared by:

Environment Department

DECLARATION BY J. K. WORKS

J. K. Cement Works (hereafter referred as JKCW) has undertaken Greenhouse Gas (GHG) accounting study for its integrated cement plant situated at

- JKCW, Nimbahera, Dist Chittorgarh (Rajasthan) with 2.8 MMTPA Clinker & 4.9 MMTPA Cement

The study was undertaken by industry to evaluate the greenhouse gas (GHG) emission of its integrated cement unit for the above mentioned unit for the period April 2019 to March 2020. The following methodologies and standards were used for assessment of the GHG inventory from the operations of the unit of JKCW:

1. *"Greenhouse Gases – Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals"*
International Standard ISO 14064 Part-1, 2006
2. *"GHG Protocol Corporate Accounting and Reporting Standard"*
- Greenhouse Gas Protocol
3. *"CO₂ Accounting & Reporting"*
- WBCSD Cement Sustainability Initiative Cement CO₂ and Energy Protocol Version 3.1, Emissions and Energy Inventory

The entire accounting exercise has been carried out and the GHG inventory report has been prepared in line with the ISO 14064-1:2006 and WBCSI Cement Sustainability Initiative Cement CO₂ and Energy Protocol Version 3.1, Emissions and Energy Inventory standard as mentioned above. The ISO 14064-1:2006 requires that:

"The organization should prepare a GHG report to facilitate GHG inventory verification, participation in a GHG programme, or to inform external or internal users."

Accordingly, this report has been prepared to facilitate GHG verification of the emission inventory and to enhance transparency of stakeholder communication. The compliance to ISO 14064-1:2006 in the inventory estimation and reporting exercise has been objectively demonstrated in different sections of the report. Various assumptions, inclusions and exclusions of data; and deviations from methodologies/standards, wherever applicable, have been appropriately documented with explanations in the report.

This report covers direct and indirect Carbon Dioxide (CO₂) emissions. Other GHG's i.e. Methane (CH₄), Nitrous Oxide (N₂O), Sulphur Hexafluoride (SF₆), Perfluorocarbon (PFCs), Nitrogen Trifluoride (NF₃) and Hydrofluorocarbon (HFCs) emissions have not been accounted for since the emissions of these gases do not have any material impact on the overall emissions from the operations of the above mentioned unit and are hence not considered relevant for the present study. The scope covers emissions under "Direct" and "Energy Indirect" (i.e. scope 1 & scope 2 respectively as defined in GHG protocol) categories.

Foreword

Environmental, Health and Safety Policy of J. K. Cement

We at J.K. Cement Ltd. (Grey Cement) are committed to Manufacturing and Supply of cements and cement derivative products to the satisfaction of our customers with due consideration to legal and other requirements by;

- Continually improve the effectiveness of Integrated Management System, which includes Quality Management System (QMS), Environmental Management System (EMS), Energy management System (EnMS) and Occupational Health & Safety Management System (OHSMS).
- Minimise and / or control environmental impacts, significant energy use and emphasis on elimination of hazards associated with its operations.
- Continuous Prevention and reduce pollution, resources wastage and probability of injury and ill health of Employees & interested parties.
- Inculcate a working culture with emphasis on prevention of pollution, minimizing and controlling waste generation, Safe work practices and optimize consumption of resources/energy.
- Provide necessary resources and information to achieve objectives and targets.
- Support purchase of environment friendly & energy efficient products, services & design.
- Provide effective facilities for consultation between management and worker' representatives.

The policy is made available to all employees and interested parties.

Energy Policy of J. K. Cement

We, at JK Cement Works are committed to demonstrate the excellence in Energy management in all our activities of cement manufacturing on continual basis as to make our operations environmentally sustainable.

We are improving energy efficiency & conservation by:

- We have implemented IS 9001: 50001, Energy Management System in our organization.
- Establishing a framework for setting energy objectives and targets through effective energy management cell with certified energy managers.
- Reviewing, monitoring and analyzing energy consumption and bench marking performances and set new targets.
- Conducting audits for improvement of overall energy efficiency of the plant.
- Purchasing equipment and appliances with consideration of the Bureau of Energy Efficiency Star Rating and Energy Efficiency.
- Using alternative fuels which helps the environment also directly/ indirectly to protect natural resources.
- Ensuring energy conservation, Management and Awareness throughout the organization.
- Always complying with relevant and applicable laws and regulations.
- Maximizing generation of Waste Heat Recovery Power & Solar Power in our organization.
- We have collaborated with EESL (Energy Efficiency Service Limited), Govt. of India improving energy efficiency in our organization.

To promote energy conservation & energy saving propagate awareness amongst all employee and stakeholders.

Water Management Policy of J. K. Cement

JK Cement committed toward water management & conservation that water is a key resource for continuing its business operations and the value attached to it for all its stakeholders as an integral part of business philosophy. We recognize that good quality water has strong sustainability and ecosystem service values. Protecting and conserving water resources through excellent water management practices and governance systems. Water management is not only a business imperative but also provide it with a competitive advantage in the long run.

We shall endeavor to:

- Complying with all legal and applicable rule, law, regulation and other requirement to water related.
- Minimize our impact on water resources from operations by measuring and understanding water use, management and wastewater generation
- Reduce water consumption (freshwater, groundwater) by re-use, recycling water and implementing more sustainable use of water sources.
- Implementation of rain water harvesting measure to increase water table.
- Implement a water monitoring system for water usage & consumption.
- Implementation of latest technology to reduce water consumption and ensure zero water leakages.
- Involve our employees and contract workers in water conservation initiatives.
- Engage with our stakeholders and communities to increase their awareness on the responsible use of water and involve them in protection of water resources.
- Communicate on the progress and performance of water conservation and water management efforts to stakeholders

Intended Use and Intended Users of the report

This report will further serve as the launching pad for more detailed and inclusive studies for the installations and operations of JKCW. Since GHG emission and energy /fuel costs have a direct correlation, this may serve as an ideal platform to identify GHG hotspots for any future GHG emission/fuel consumption reduction program. This report will also be the reference point for any verification of GHG inventory to be estimated in future.

Overall and specific responsibilities for preparing and producing the report:

JKCW owns the overall responsibility for preparing and producing this report, by data collection & calculation of GHG emissions as per applicable standards. The responsibility of ascertaining calculation methods in line with ISO 14064-1:2006 was entrusted by JKCW.

Frequency and base year selection

JKCW envisages assessing its GHG performance on an annual basis. Hence Inventerization of GHG emissions will be taken up on an annual frequency. The present study period includes data from 1st April 2019 to 31st March 2020, both days inclusive. As this is the first year of evaluation, hence the base year for the present GHG Inventerization Study has been selected as 2019-20.

Format & Contents

The report is organized in 3 chapters excluding the Executive Summary. The first section provides the background & scope of the GHG estimation study including the corporate EHS, Energy policy and Water management Policy of JKCW and relevance of the study, Objectives and Scope of the exercise. The second chapter deals with the approach for calculation of emissions including description of operational boundary and quantification methodology. The third and final section provides the detailed organization-wise, unit-wise and GHG-wise break-up of the emissions and results.

Executive Summary

Statement of Intent

As a responsible corporate citizen JKCW aims to own and manage the greenhouse gas emission inventory due to its operation. Through this exercise, the site of JKCW intends to

- Volunteer its resources to adopt sustainability as a core business value and thereby showcase its commitment towards clean and green future to its stakeholders.
- To monitor, inventorize, report and own the Greenhouse Gas emissions due to its operation.
- Lay the foundation for future roll up of the inventory to arrive at inventory for JKCW.

Emission Summary

The overall emission inventory has been calculated as aggregated emissions from the operation of JKCW site. The table below presents the emission inventory for the year 2019-20:

Table 1 : Absolute GHG emissions in tCO₂e for the unit of JKCW

Emissions	Classification	Nimbahera
<i>Direct Emissions (Scope 1)</i>	<i>Total CO₂ from Raw Materials</i>	<i>1206952</i>
	<i>Total CO₂ from fossil based kiln fuels</i>	<i>606552</i>
	<i>Total Direct Emissions</i>	<i>1813504</i>
<i>Indirect Emissions (Scope 2)</i>	<i>CO₂ from External Power Generation</i>	<i>36461.38</i>

** Both direct emission and indirect emission figures have been rounded-up to the nearest integer. The total figure reported is the sum of the rounded-up figures. The emission figures reported*

The emission sources for JKCW (Nimbahera unit) have been tabulated below:

Table 2: Explanation of Direct Emission Sources

Emission Type	Direct Emissions
CO ₂ Emissions from Raw Materials	Emissions from Calcination of raw materials consumed for clinker production
	Emissions from organic carbon content of raw meal
CO ₂ Emissions from Kiln Fuels (incl. of Drying of Fuels & Raw Materials)	Emissions from fossil fuel consumption (conventional)
	Emissions from alternative fossil fuel consumption
CO ₂ Emissions from Non- Kiln Fuels	Emissions from fossil fuel consumption
	Emissions from fossil fuel consumption for onsite vehicles and equipment's
	Emissions from fossil fuel consumption in onsite power

Table 3: Explanation of Indirect Emission Sources

Emission Type	Indirect Emissions
Main Sources	Emissions from External Power Generation

The emission sources have been referenced from WBCSI Cement Sustainability Initiative Version 3.1

Background and Scope

A leading cement manufacturer in the country, JK Cement Ltd is an affiliate in a multi-disciplinary industry conglomerate JK Organization which was founded by Lala Kamlapat Singhania. For over four decade, JK Cement has partnered India multi-sectoral infrastructure needs on the strength of its product excellence, customer orientation and technology leadership. The Company has over four decades of experience in cement manufacturing. Our operations commenced with commercial production at our first grey cement plant at Nimbahera, Rajasthan in May 1975. Subsequently, the company also set up 2 more units in Rajasthan at Mangrol and Gotan. In the year 2009, the company extended its footprint by setting up a green-field unit in Muddapur, Karnataka giving it access to the markets of south-west India. In the year 2014, the company further expanded its capacity in the north with brownfield expansion of 1.5 MnTPA integrated unit at Mangrol and split grinding unit of 1.5 MnTPA at Jhajjar. Today, JK Cement has an installed grey cement capacity of 14 MnTPA, making it one of the top cement manufacturers in the country.

JK White Cement, a division of JK Cement Ltd., enjoys a PAN India presence and the Company is the leading producer of Wall Putty in the Country. The Company is the second largest manufacturer of white cement in India, with an annual capacity of 600,000 tonnes. Having established a strong presence in India, the Company made its first international foray with the setting up of a green-field dual process White Cement-cum-Grey Cement plant in the free trade zone at Fujairah, U.A.E to cater to the GCC and African markets. JK White Cement is sold across 43 countries around the globe. With the commissioning of this plant, JK Cement became one of largest producers of White Cement in the world, with a total white cement capacity of 1.20 MnTPA and wall putty capacity of 0.9 MnTPA.

JK Cement was the first company to install a captive power plant in the year 1987 at Bamania, Rajasthan and the first cement company to install a waste heat recovery power plant to take care of the need of green power. Today at its different locations, the Company has captive power generation capacity of over 125.7 MWs which includes 23.2 MW of waste heat recovery power plants.

We are steadily enhancing our capacity, diversifying our range of products, ushering in advanced technology and quality assurance, and above all, expanding our presence nationally and internationally. Our brands continue to enjoy the trust of millions of consumers for the high quality and innovation benchmarks that we have attained.

Superior products and a strong Brand name, an extensive marketing and distribution network and the technical know-how represent JK Cement's abiding strengths.

About the Unit:

J. K. Cement Works, Nimbahera is situated at Nimbahera tehsil in Chittorgarh district, Rajasthan. Near Railway station is Nimbahera (2 km), NH - (1.5 km), airport Udaipur (120 km). Production

Our plant is also ISO 9001:2015 & ISO 14001:2015 certified and our laboratory is accredited with the NABL-National Accreditation Board for Testing and Calibration Laboratories. Plant is also certified with ISO 5001: 2011 & ISO 45001: 2018

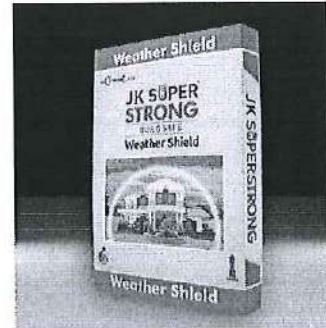
Our Products & Information



OPC



PPC



Weather Shield

Ordinary cement (OPC)

Company also produces Ordinary Portland cement (OPC) which is much in demand for its extra strength and fineness. It is ideal for all kinds of construction jobs and concrete components production. OPC has three grade that we produce, that are differentiated by their compressive strengths expressed in Mega Pascals (MPa) as specified by BIS. These grades are 53 grade OPC, 43 grade OPC, 33 grade OPC, 53 grade OPC having the highest compressive strength. The customer selects the grade of OPC based on the intended application. Our most popular cement is 43 grade cement, with 53 grade cement being used in application which require high strength characteristics

Portland

JK Super Cement (PPC)

JK Super Cement is one of the premium gray cement brands in the country, available as application friendly Portland Pozzolona Cement (PPC). The product complies with quality standards specified by the Bureau of Indian Standard (BIS) and is much in demand by both the retail and the institutional segment.

JK Super strong Weather Shield Cement

JK Super strong Weather Shield Cement is a water repellent cement having and integral water repellent property at the cement particle level manufactured through a technology developed in-house called PWRT (Particle Level Water Repellent Technology). Cement manufactured with PWRT exhibits resistance to penetration of water in mortar, plaster & concrete. This property is incorporated by modifying the particle size distribution and fineness of cement through an innovative technique. It significantly reduces water permeation to concrete or mortar, which results in dry walls and healthy indoor climate. This cement can be

JK Cement: Environment, Health & Safety (EHS) Policy

JK Cement actively promotes environment, health & safety responsibility as one of its core business values and is committed towards environmental protection and providing healthy & safe work environment by way of

- ❖ *Compliance with all applicable legal, social and other requirements.*
- ❖ *Improvement in environmental performance and resource efficiency*
- ❖ *Reviewing objectives and targets for continual improvement in environment, workplace, health and safety*
- ❖ *Engaging and training human capital to enhance their skills and augment resources for effective EHS performance.*
- ❖ *Controlling Pollution*
- ❖ *Prevention of occupational injuries and health hazards*

JK Cement: Energy Policy

JK Cement is also committed towards improvement of Energy Efficiency and performance by using alternative fuels and by identification and reduction of energy losses by:

- ❖ *Establishing framework for setting energy objectives and targets*
- ❖ *Reviewing, monitoring and analyzing Energy Consumption*
- ❖ *Conducting audits for improvement of overall Energy Efficiency of the plant*
- ❖ *Purchasing equipment and appliances with consideration of the Bureau of Energy Efficiency Star Ratings and energy efficiency.*
- ❖ *Ensuring Energy conservation, management and awareness throughout the organization*
- ❖ *Always complying with relevant and applicable Laws and Regulations*

JKCW has initiated estimation of Greenhouse Gas inventory from cement manufacturing unit in the same spirit. JKCW management has already reported the GHG emissions as a key performance indicator in its annual Sustainability Report.

GHG Footprint Assessment: Drivers and Benefits

Greenhouse gas emissions being one of the key concerns of “cost to environment” for modern businesses, JKCW wishes to embark on a low carbon growth trajectory in its operations. Managing GHG emissions is only possible with effective monitoring set-up and practices to measure, record, calculate and report emissions over a period of time. Hence, JKCW has decided to calculate the GHG inventory of its installation at Nimbahera. The initial study will help to fulfil the following objectives:

1. Review its monitoring set-up and improve it to enable a corporate level replication for future.
2. Increase know-how of the employees for future repetitions of the exercise.
3. Capitalize on the benefits of GHG inventory estimation.

Various business goals that may be served by GHG footprint estimation include:

- (I) Managing GHG risks and identifying reduction opportunities – By becoming cognizant to the current emission status of the organization a company can:

(a) Evaluate its position with respect to industry leaders

(b) Identify risks associated with GHG constraints in the future - Identification and quantification of the carbon assets and liabilities of an organization which are the two essential components for understanding climate change risk-return perspective of the organization.

(c) Identify cost effective reduction opportunities - Identification of potential opportunities of GHG emission reduction (Energy optimization, Process modifications and improvements, adoption of clean technologies etc.). JK Cement has already implemented CDM projects off set RPO obligation of RE power (Solar + Wind) by WHRS power plant.

(d) Set GHG targets, measuring and reporting progress

(II) Public reporting and participation in voluntary GHG programs – Voluntary GHG abatement initiatives are globally acknowledged. It requires:

(a) Voluntary stakeholder reporting of GHG emissions and progress towards GHG targets.

(b) Reporting to Government and NGO reporting programs, including GHG registries.

(c) Eco-labelling, benchmarking and GHG Certification

(III) Recognition for early action and associated intangible benefits, which include:

(a) Recognition for early accounting and taking ownership of its emission inventory leading to enhancement of brand image and pan industry recognition.

(b) Greater preparedness to effectively align present and future business policies in line with the GHG risk exposure.

(c) Optimum utilization of the carbon market to avail financial incentives and credits for GHG abatement measures, as applicable presently.

(d) Align with Indian government climate policy

Approach and Methodology

Approach

The GHG Invenierization was carried out in the below mentioned way:

- ❖ Training Programs on GHG Invenierization were conducted.
- ❖ An understanding of the cement manufacturing process.
- ❖ Determination of operational boundary and emission sources.
- ❖ This was followed by data collection and subsequent analysis
- ❖ Determination of GHG Inventory and Submission of Results

Methodology

The methodology for GHG Footprint Estimation has been designed in line with ISO 14064-1:2006 Guidelines. The key steps followed in the determination of the GHG Footprint are as follows:

- ❖ Confirmation of Organizational Boundary
- ❖ Determination of Operational Boundary
- ❖ Quantification of GHG emission and removal
- ❖ Quantification of directed actions in the organization

Determination of Organizational Boundary

The organization may comprise one or more facilities. Facility-level GHG emissions or removals may be produced from one or more GHG sources or sinks. The organization shall consolidate its facility-level GHG emissions and removals by one of the following approaches:

- (a) Control: the organization accounts for all quantified GHG emissions and/or removals from facilities over which it has financial or operational control; or
- (b) Equity share: the organization accounts for its portion of GHG emissions and/or removals from respective facilities.

It is imperative from the above guidance that if the reporting company wholly own operation, its organizational boundary will be the same, whichever approach is used. The unit of JKCW covered under this study is operationally directly controlled by JK Cement Limited and hence the **Operational Control** approach for setting the organizational boundaries has been selected.

Determination of Operational Boundary

The establishment of operational boundaries includes identifying GHG emissions and removals associated with the organization's operation, categorizing GHG emissions and removals into direct emissions, energy indirect emissions and other indirect emissions. It includes choosing which of the other indirect emissions will be quantified and reported." In line with the above guidance, the operational boundary for JKCW has been determined. The boundary encompasses the process operation at the following location:

Integrated Cement Unit at Kailash Nagar, PO-Nimbahera, Chittorgarh District, Rajasthan

This includes the cement manufacturing operations in the above mentioned sites. The following operations/activities are included in the operational boundary of JKCW:

- Calcination of raw materials consumed for clinker production
- Kiln Fuel Consumption
- Non-Kiln Fuel Consumption
- Alternative Fuel Consumption
- Fossil fuel consumption in onsite vehicles and equipment.
- Purchased Electricity
- Electricity Generated by own thermal power plant

The standard ISO 14064-1:2006

- ❖ mandates quantification of Direct GHG emissions in the boundary
- ❖ recommends quantification of Direct GHG removals in the operational boundary
- ❖ mandates quantification of energy indirect GHG emissions from the generation of imported electricity, heat or steam consumed
- ❖ Provides for the choice to (or not to) quantify other indirect GHG emissions.

Accordingly, JKCW has chosen to quantify and report **direct GHG emissions (scope 1) and energy indirect GHG emissions (scope 2)** from all sources within the chosen operational boundary.

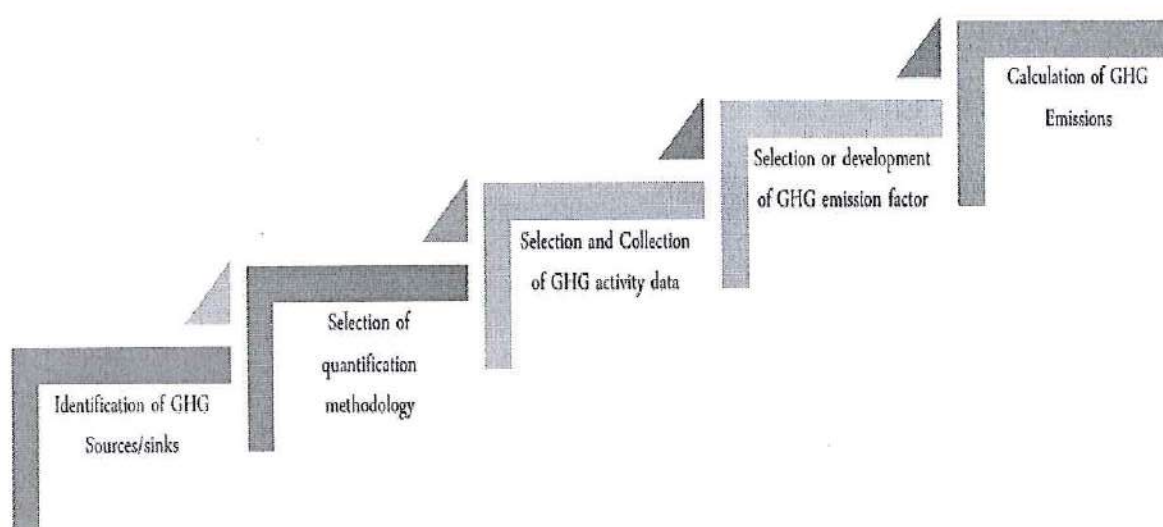
Direct emissions accounts for all operations related emissions due to Raw Material

Energy Indirect emissions accounts for emissions due to electricity purchased from the grid.

JKCW has decided not to report Scope 3 (**Other Indirect**) emissions due to non-availability of data.

Quantification of GHG emissions and removals

Quantification of GHG emissions have been carried out as per the steps outlined in ISO14064-1:2006 and WBCSI Cement Sustainability Initiative (Cement CO₂ and Energy Protocol, Version 3.1, CO₂ Emissions Energy Inventory). GHG removals in the operational boundary have not been quantified due to absence of verifiable data. The steps of calculation are as presented in the list below:



Identification of GHG Sources and sinks

An activity wise or process wise approach was considered for evaluating the GHG emissions. The following sources were identified and accordingly data collection templates were prepared and circulated.

Table 4 : Direct and Indirect Emission Sources for JKCW

Source		GHG	Unit
Scope 1 (Direct Emissions)			
Kiln operations	Raw Material Consumption for clinker production	CO ₂	tCO ₂ e
	Organic Carbon Content of Raw Material	CO ₂	tCO ₂ e
	Consumption of Fossil based kiln fuels	CO ₂	tCO ₂ e
Non-kiln Operations	Consumption of non-kiln fossil fuels	CO ₂	tCO ₂ e
Mobile Emissions	Fossil Fuel Consumption usage in onsite vehicles and equipment's	CO ₂	tCO ₂ e
On-site power generation	Consumption of Fossil based fuels	CO ₂	tCO ₂ e
Scope 2 (Energy Indirect Emissions)			
Consumption of purchased electricity from grid	Emissions associated with power generation in the power plants connected to the regional grid	CO ₂	tCO ₂ e

Source		GHG	Unit
Direct CO2 from Biomass			
Biomass Consumption	Combustion of Biomass (kiln fuel)	CO2	tCO2e

The only GHG sink relevant is due to afforestation within the physical boundaries. However, quantification of these being extremely difficult due to requirement of tree species specific data which is unavailable, GHG sinks have not been reported in this study. Further, JKCW would like to focus on reducing emission at source for mitigating their GHG inventory.

Selection and Collection of GHG activity data

The different emission sources, activity data required and algorithm for determination of emissions is presented below:

I. Direct Emissions:

The following sources were considered while computing the direct emissions:

- *Emissions from calcination of raw materials consumed for clinker production*
- *Emissions from organic carbon content of raw meal*
- *Emissions from consumption of fossil based kiln fuel*
- *Emissions from consumption of fossil based non-kiln fuel*
- *Emissions from consumption of fossil fuel in onsite power generation*

The computation for direct GHG Emissions have been done based on WBCSI Cement Sustainability Initiative (Cement CO2 and Energy Protocol, Version 3.1, CO2 Emissions and Energy Inventory) GNR database.

II. Indirect Emissions

The following sources were considered while computing the indirect emissions:

- *Emissions from external power generation*

The computation for indirect GHG Emissions have been done based on GHG Protocol (Scope 2 Guidance on how corporations measure emissions from purchased or acquired electricity, steam, heat, and cooling)

Selection or development of GHG emission factors

JKCW has selected GHG emission factors as per recognized sources such as 2006 IPCC Guidelines for National Greenhouse Gas Inventories, IPCC Fourth Assessment Report, CSI default and CEA. The following emission factors have been used in the calculations:

Table 6: List of emission factors and other constants

Type	Category		IPCC default kg CO ₂ /GJ	CSI default kg CO ₂ /GJ	CSI default % biomass
Fossil fuels					
1		coal + anthracite + waste coal	96		
2		petrol coke		92.8	
3		(ultra) heavy fuel	77.4		
4		diesel oil	74.1		
5		natural gas (dry)	56.1		
6		oil shale	107		
6, a		lignite	101		
7		gasoline	69.3		
Alternative fossil fuels					
8		waste oil		74	
9		tyres		85	27.00%
10		plastics		75	
11		solvents		74	
12		impregnated saw dust		75	
12,a		mixed industrial waste		83	
13		other fossil based wastes		80	
Biomass fuels					
14		dried sewage sludge		110	
15		wood, non-impregnated saw dust		110	
16		paper, carton		110	
17		animal meal		89	
18		animal bone meal		89	
19		animal fat		89	
20		agricultural, organic, diaper waste, charcoal		110	
21		other biomass		110	

The values have been sourced from IPCC Guidelines for National Greenhouse Gas Inventories, Prepared by the National Greenhouse Gas Inventories Programme, and WBCSI Cement Sustainability Initiative Cement CO₂ and Energy Protocol, Version 3.1, CO₂ Emissions and Energy Inventory

Table 7: Grid Emission Factor

Parameter	Unit	Value
Grid Emission Factor	tCO ₂ /MWh	0.82
Grid Emission Factor	tCO ₂ /MWh	0.82

This may be noted that the CEA Data base version 10 has been used to compute the GHG emissions from external power generation.

Calculation of GHG emissions and removals

Using the activity data collected as explained above and the emission factors selected in previous section, emissions due to different processes / activities are calculated. The next chapter provides the result of the calculations for FY 2019-20 for JKCW.

GHG Emissions & Performance Indicators

This section provides the specific activity wise details on data and information that has been collated, verified and used as per the computation methodology described in the previous sections of this report, to estimate the greenhouse gas emissions due to the operations of JKCW. This chapter includes the following:

- I. Total GHG emission (Direct & Energy Indirect) for Nimbahera
- II. CO₂ Specific Performance Indicators
- III. Other Performance Indicators

Total GHG Emissions (Direct & Indirect for Nimbahera)

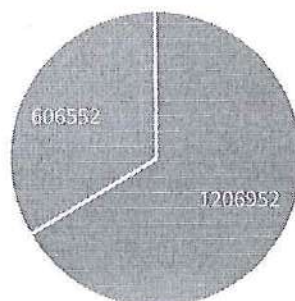
Table 8: Source wise Direct GHG Emissions for JKCW (Nimbahera Unit) (all units in tCO₂e)

<i>Location</i>	<i>Latitude</i>	<i>Longitude</i>	<i>Source</i>	<i>Total Emissions</i>
JK Cement Works, Nimbahera	24°38"18.46 to 24°38,41.50 N	74°41"5.93 to 74°41:1.84 E	Calcination of Raw Materials consumed for Clinker Production	1206952
			Consumption of Fossil based Kiln Fuels	606552
Total Direct Emissions (Scope 1)				1813504

**Total figures rounded-up to the nearest integer*

Contribution of Direct Emission Sources (GRAPH)

Contribution of Direct Emission Sources



- Calcination of Raw Materials consumed for Clinker Production
- Consumption of Fossil based Kiln Fuels

Table 9: Source wise Energy Indirect GHG Emissions for JKCW (Nimbahera Unit) (all units in tCO₂e)

Location	Latitude	Longitude	Source	Total Emissions
JK Cement Works, Nimbahera	24°38'18.46 to 24°38,41.50 N	74°41'5.93 to 74°41:1.84 E	External Power Generation	36461.38
Energy Indirect Emissions (Scope 2)				

*Total figures rounded-up to the nearest integer

CO₂ specific Performance Indicators

Following performance indicators have been shown for Nimbahera:

- Specific Gross CO₂ per tonne of cementitious product
- Specific Gross CO₂ per tonne of calcination component
- Specific Gross CO₂ per tonne of fuel component
- Specific Net CO₂ per tonne of cementitious product

Table 10: CO₂ specific performance indicators (all units in tCO₂e)

Location	Specific Gross CO ₂ per tonne of cementitious product	Specific Gross CO ₂ per tonne of calcination component
	Kg CO ₂ /t cem. prod	Kg CO ₂ /t cem. prod
Nimbahera	707	881

Other performance parameters

Apart from the CO₂ specific parameters, other general performance indicators have been identified for Nimbahera Unit:

- Specific heat consumption of clinker production
- Biomass fuel rate
- Specific total power consumption
- Specific power consumption of clinker production
- Specific power consumption of cement production

Performance indicators and relevant values for Nimbahera Unit have been provided below:

Table 11: Other Performance Indicators -Nimbahera (all units in tCO₂e)

Performance Indicator	Unit	Value
Specific heat consumption of clinker production	MJ/t clinker	3057.6
Specific total power consumption	kWh/t cem. Prod.	93.3
Specific power consumption of clinker production	kWh/t clinker	34.53
Specific power consumption of cement production	kWh/t cem. Prod.	33.5
Others AFR rate (kiln fuels)	AFR %	0.75
Coal rate (kiln fuels)	Coal %	12.02

Table 12: Key performance Indicator –Nimbahera (all units in tCO₂e)

Performance Indicator	Unit	Value
Net CO ₂ per tonne of cementitious product	Kg CO ₂ /t cem. Prod.	760

Energy Efficiency Measures

Cement is a highly energy intensive industry. The energy cost accounts to almost 50% of the total operational cost, hence reduction in the energy cost is JKCW prime target. BEE in this PAT cycle has given targets and 24 energy intensive sectors to reduce their specific energy consumption. JKCW Nimbahera unit has been a designated consumer under PAT is in the process of reducing its specific energy consumption. Thus JKCW gives priority to fulfilling regulatory obligations arising out of the climate change policies of the government. The company also prioritizes and identifies improvement opportunities based on return on investment and effect on the organization on a mid to long term basis which reduces the input costs and increases operational efficiency.

Energy Efficiency Measures Taken by JKCW during 2019-20

As a part of the improvement opportunities, JKCW has identified and implemented the following improvement measures:

This is may be noted that the above mentioned energy efficiency measures have been already implemented and has resulted in an emission reduction of around 8820 tCO₂ and has also resulted in energy savings of around 9692420 KWh.

With emission reduction and energy efficiency improvement measures in place, it is anticipated that JK Cement Works would take realistic and achievable GHG reduction targets which not only reduces the GHG emissions from present level but also increases the resource efficiency.

This all data has validated by BEE audit during PAT cycle and third party by EY (Ernst & Young).

Table 13: Energy Efficiency Measures taken at Nimbahera unit

Energy Efficiency Measures taken by JK Cement Nimbahera (FY 2019-20)			
S.no	Activity	Estimated CO2 Savings	Annual Energy Savings
		tCO2	kWh
1	Energy Efficient Cooling Tower Fan (Cell No.-2)	70.8	77760
2	Replacement of Old ACWP by New efficient ACW Pump	37.1	40726
3	Energy Efficient ACC Fan (Total Quantity 5 Nos)	162.2	178261
4	Replacement of Old ACWP by New efficient ACW Pump	30.4	33449
5	Power saving in Line 3 compressor by better blaster maintenance practices and arresting compressed air leakages	361.4	397155
6	compressor load and unload setting Changed (P3X04) 6.5 to 5.5 kg/cm2	24.0	26394
7	compressor load and unload setting Changed (Z5X06) 6.5 to 5.5 kg/cm2	14.0	15396
8	compressor load and unload setting Changed (U4X02) 6.5 to 5.5 kg/cm2	16.0	17596
9	Kiln 3 preheater and PC blaster operation timing changed to save compressed air power	23.8	26174
10	One CLT compressor got stopped after connecting to common header, so unload power of the compressor got saved	142.7	156816
11	Compressed air power saving by reducing pressure setting from 6.6 bar to 5.5 bar in cooler and coal mills compressor K3X26. current amp reduced from 145 to 125 Amp	88.1	96782
12	Replacement of 125W HPMV/HPSV light by 35W & 70W LED light	15.4	16973
13	Replacement of 250W HPMV/HPSV light by 90W, 135W & 200W LED light	35.1	38588
14	Replacement of 80W, 72W & 36W Tube light by 24W & 18W LED light	15.1	16644
15	High Volume Low Speed Fan at Colony-1	15.3	16848
16	Replacement of 15W CFL light by 250 Number 9W LED light	6.0	6570
17	A3L21 feeder belt motor replacement	17.4	19140
18	A3L17 RBC motor size reduced from 90 KW to 75 KW	34.9	38400
19	Replacement of 3 Nos. 3.7KW IE-2 Air Slide Blower Motor by IE-3 Motor at Kiln-3 Section	15.5	17021
20	Replacement of 7.5KW IE-2 Air Slide Blower Motor by IE-3 Motor at Kiln-3 Section	5.2	5694
21	Interlocking of RM-4 Main Drive Cooling System Blower with Main Motor: Saves ideal running of motor	16.4	18068
22	Hot air cyclone air sluice start/stop interlocking done with hot air fan in place of IKN cooler grate	2.0	2220
23	Power saving in pumps after Line-1 & 2 water optimization.	88.4	97090

24	Kiln-3 Cooler ESP Third filed Current optimization	28.5	31347
25	Kiln-3 Cooler ESP Second Field current optimization	76.3	83889
26	Reduced RPM Dust filter fan P1P10	8.7	9601
27	Reduced RPM Dust filter fan P4P10	16.2	17852
28	Replacement of Rotary air lock by flap valve below dust filter 1A	2.0	2160
29	Cooler Fan-1,2,3 & 10 Silencer removal.	555.0	609840
30	kiln 3 shell cooling fan impeller replacement by FRP from Aluminuim W3W82	10.1	11088
31	kiln 3 sheel cooling fan impeller replacement by FRP from Aluminuim W3W84	9.9	10850
32	Installation of Roller press with CM-4 in combi circuit for Cement grinding	268.9	295483
33	WHRS-5 SCREW CONVEYOR W3P87 & W3P88 OPTIMIZATION	38.4	42240
34	Coal Mill-1 optimization by grinding media regradation, folaphone optimization and auxilliary furnace optimization	300.9	330660
35	Coal Mill-2 optimization by grinding media regradation, folaphone optimization and auxilliary furnace optimization	360.5	396180
36	Optimization of Kiln 1 bag house fan power by reducing SG gan 1 outlet draught	92.7	101880
37	Optimization of Kiln 2 bag house fan power by reducing SG gan 2 outlet draught	74.5	81900
38	Savings in Coal Mill 3 Due to optimization of Auxilliary Stop time (15 min to 5 min after MD stoppage)	68.4	75180
39	Savings in Coal Mill 4 Due to optimization of Auxilliary Stop time (15 min to 5 min after MD stoppage)	24.9	27360
40	Kiln 3 DBC Tunnel ventilation fans by optimizing run hrs (fan 1,2 & 3)	55.2	60661
41	WHRS power generation saving	5410.3	5945357
42	Saving in Raw mills due to Auxilliary Stop time optimization	23.0	25239
43	Saving in Raw mills due to Start time reduced by implementing single start	35.4	38930
44	Saving in cemen Mills due to change in logic and auxilliary stop times'	29.0	31880
45	Water pump stopped for main crusher internal water spray	5.5	5990
46	Main water Tank Water pump optimization	88.4	97090
Total		8820	9692420

Reduction of CO2 emission by WHRS

WHRs plant installed at JKCW, Nimbahera to utilize waste heat generated through kiln (calcination process) and generate electricity without using any natural fuel. The equivalent CO2 emission has reduced, which is shown in the table below:

Table 14: Key performance Indicator –Nimbahera (units in tCO₂e)

Year	WHR power generation (MWh)	Emission reduction of tones CO2 equivalent
2019-20	65004.732	59840.35