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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

Our Ref. No.: MGR-PC-21/

Date: 01.06.2017

To.

The Director, Indira Paryavaran Bhavan, JOR Bagh Road, Aliganj, New Delhi-110003

Sub: Environmental Clearance Compliance report for Expansion of Clinker and Cement production, Captive power plant and WHR of M/s J.K. Cement Works, Mangrol at Village- Mangrol, District-Chittorgarh, Rajasthan.

Ref.: Environmental Clearance letter no. J-11011/267/2013-IA .II (I) dated. 08.09.2016

Dear Sir,

We are enclosing herewith the compliance report of Environmental Clearance conditions for Expansion of Clinker (2.90 MMTPA to 5.65 MMTPA) and Cement (3.54 MMTPA to 7.05 MMTPA) Captive Power Plant from 25 MW to 60 MW, by installation of an additional coal based Captive power plant of 35 MW to and WHRB from 10 MW to 20 MW by Installation of an additional waste heat recovery boiler of 10 MW at our J.K. Cement Works, Mangrol. We are submitting herewith compliance report from the month of October' 2016 to March' 2017 in hard copy as well as in CD as soft copy for your kind reference and record. Presently our project is not started. We trust you will find the same in order.

Thanking you,

(VK Gangaran)

Yours Faithfully

For J.K. Cement WORKS, MANGROL

S.K. Acharya

Astt. Vice President (E & I)

Encl: a/a Copy to:

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

2. The, Secretary, Department of Environment, Government of Rajasthan.

3.The Additional Principal Chief Conservator of Forest (C) Ministry of Environment, Forests & Climate Change, Regional office (CZ), Kendriya Bhawan, 5th Floor, Sector 'H', ALIGANJ, LUCKNOW- 226020 (U.P.)

4.The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-CUM office complex, East Arjun Nagar, New Delhi 110032

5. The Chairman, 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. Power, Bamania

J. K. Cement Works, Muddapur

J. K. White Cement Works, Gotan



J.K. Cement WORKS, Mangrol (RAJ)

Six Monthly Compliance report of Environment Clearance for Mangrol Cement Plant Line-3 (For the Period from October 2016 to March 2017)

Reference Letter from MOEF, New Delhi - J-11015/267/2013-IA.II (I) Dated 08.09.2016

S. No.	Condition Condition	Status				
	(A) Specific Conditions					
(i)	The project proponent should install 24x7 air monitoring devices to monitor air emission, as provided by the CPCB and submit report to Ministry and its Regional Office.	We have installed the continuous emission monitoring system (CEMS) & Continuous ambient air monitoring system (CAAQMS) for our existing unit Line – 1 & line 2 and real time data being send to CPCB & RPCB regularly. The same will be installed in proposed project after commissioning of Line – 3.				
(ii)	The Standard issued by the Ministry vide G.S.R. No. 612 (E) dated 25 th August, 2014 and subsequent amendment dated 9 th May, 2016 and 10 th May,2016 regarding cement plant with respect to particulate matter, SO ₂ and Nox shall be followed.	Complied with. We are achieving the new emission standard with respect to PM, SO2 & as per G.S.R. no. 612 (E) dated 25 th August, 2014 & subsequent amendment sated 9 th may, 2016 and 10 th May, 2016 for our existing plant Line – 1 & 2. Monitoring report is enclosed as Annexure – I. For Nox we are in the process to take primary abatement method in process and installation of SNCR system. We will be complied the new emission standard after commissioning of proposed project Line – 3.				
(iii)	Continuous stack monitoring facilities to monitor gaseous emissions from process stacks shall be provided. After expansion, limit of PM shall be controlled to meet prescribed standards by installing adequate air pollution control viz. Electrostatic precipitators to clinker cooler, bag house to raw mill/kiln and bag filter to coal mill and cement mill. Low Nox burner shall be provide to control Nox emissions. Regular calibration of the instruments must be ensured.	We will be provide the continuous gaseous emission monitoring system for our proposed project Line – 3. All adequate Air Pollution Control equipment's shall be provided for particulate matter viz. 1) ESP - Clinker cooler 2) Bag house – Raw mill / Kiln 3) Bag house – Coal mill 4) Bag house – Cement mill				

		Low NOx burner will be provided for NOx emission control and regular calibration of the instruments will be complied after plant commissioning.
(iv)	Efforts shall be made to achieve power consumption of 70 units/tonne for Portland Pozzolona Cement (PPC) and 95 units/tonnes for Ordinary Portland Cement (OPC) production and thermal energy consumption of 670 Kcal/Kg of clinker.	Will be complied by installation of energy efficient equipment.
(v)	The National Air Quality Standards issued by the Ministry vide G.S.R. No. 826 (E) dated 16 th November, 2009 shall be followed.	We will be adhere to comply the National Air Quality Standards issued by the Ministry vide G.S.R. no. 826 (E) dated 16 th November, 2009.
(vi)	AAQ Modelling shall be carried out based on the specific mitigative measures taken in the existing project and proposed for the expansion project to keep the emissions well below prescribed standards.	We will be carried out the AAQ modelling based on the specific mitigative measures in the existing project and proposed for the expansion project to keep the emission well below prescribed standards.
(vii)	Secondary fugitive emissions shall be controlled and shall be within the prescribed limits and regularly monitored. Guidelines/Code of Practice issued by the CPCB in this regard shall be followed.	We are in practice to conduct the fugitive emission monitoring regularly in our existing plant and controlled the emission by installing bag filters on material discharge point and water spraying in coal yard & other raw material yard. Guideline / Code of practice issued by the CPCB in this regard will be followed.
(viii)	A statement on carbon budgeting including the quantum of equivalent CO ₂ being emitted by the existing plant operations, the amount of carbon sequestered annually by the existing green belt and the proposed green belt and the quantum of equivalent CO ₂ that will be emitted due to the proposed expansion shall be prepared by the project proponent and submitted to the Ministry and the Regional Office of the Ministry. This shall be prepared within a period of 6 Months and subsequently it should be prepared every year.	Will be complied after commission of proposed project.
(ix)	For the employees working in high temperature zones falling in the plant operation areas, the total shift duration would be 4 hrs or less per day where the temperature is more than 50°C. Moreover, the jobs of these employees will be alternated in such a way that no employee is subjected to working in high temperature area for more than 1 hr continuously. Such employees would be invariably provided with proper protective equipments, garments and gears such as head gear, clothing, gloves eye	Will be complied with.

	protection etc. There should also be an arrangement for sufficient drinking water at site to prevent dehydration etc.	
(x)	Arsenic and Mercury shall be monitored in emissions, ambient air and water.	Will be complied, Arsenic and mercury monitoring in emissions, ambient air & water.
(xi)	The coal yard shall be lined and covered.	Coal yard of existing plant Line -1 & line -2 are in covered shed. Proposed Line -3 also will be covered after installation of plant.
(xii)	The project proponent shall prepare a report on impact of project on surrounding reserve forest within six months and will get it approved from the State Forest Department. A copy of the conservation with the State Forest and Wildlife Department. A copy of the same should be submitted to the Ministry and its Regional Office.	There is no National park, Wildlife Sanctuary and forest area within 10 kms. of project area.
(xiii)	The project proponent shall take all precautionary measures for conservation and protection of wild fauna in the study area. A Wildlife Conservation Plan specific to this project site shall be prepared in consultation with State Forest and Wildlife Department. A copy of the Conservation plan shall be submitted to the Ministry and its Regional Office.	We are in practice to adopt wild fauna conservation i.e. Peacock conservation plan submitted for approval of with Chief wild life warden is enclosed as Annexure – II.
(xiv)	The project proponent will also provide the latest status of the environment compliances in respect of its existing plant.	We are regular submitting the latest status of the environment compliances in respect of its existing plant by 1 st June & 1 st December of every calendar year.
(xv)	Efforts shall be made to reduce impact of the transport of the raw material and end products on the surrounding environment including agricultural land by the use of conveyors/rail mode of transport wherever feasible. The company shall have separate truck parking area. Vehicular emissions shall be regularly monitored.	All raw material transportation in covered dumper and end product being transporting in covered trucks or through rail mode fr existing plant. We have provided separate truck parking area in the existing plant Line 1 & 2. The same practice will be adopted after commissioning of proposed project line – 3 and Vehicular emission will be regularly
(xvi)	Efforts shall be made to further reduce water consumption by using air cooled condensers. All the treated waste water shall be recycled and reused in the process and/or for dust suppression and green belt development and other plant related	monitored during project activity. We have air cooled condensers in our captive power plant and treated waste water from CPP is being reuse in coal yard for dust suppression and from WHR is being recycle in cement plant for machineries cooling purpose only. Our Cement plant based on dry process cement manufacturing technology based, hence there is no

	activities etc. No process waste water shall be discharged outside the factory premises and 'zero' discharge shall be adopted.	waste water discharge outside the factory premises and 'Zero discharge' facility adopted.				
(xvii)	Efforts shall be made to make use of rain water harvested. If needed capacity of the reservoir shall be enhanced to meet the maximum water requirement. Only balance water requirement shall be met from other sources.	We are strictly adhere to use of harvested rain water from our adjacent Limestone mines pit reservoir for cement plant. Remaining balance water requirement will be fulfil by ground water/ other sources only.				
(xviii)	Regular monitoring of influent and effluent surface, sub-surface and ground water shall be ensured and treated waste water shall meet the norms prescribed by the State Pollution Control Board or described under the Environment (Protection) Act, 1986.	We are regular monitoring of Domestic effluent after treatment in STP, waste water from CPP & WHR after neutralization in neutralization pit and treated waste water will be achieve the norms prescribed by the State Pollution Control Board. Analysis report is enclosed as Annexure – III.				
		Same practice will be adopted in proposed line – 3 after commissioning of plant.				
(xix)	All the bag filter, raw mill dust, coal dust, clinker dust and cement dust from Pollution Control devices shall be recycled and reused in the process and used for cement manufacturing. Spent oil and batteries shall be sold to authorized recyclers/re-processors only.	All the dust i.e. 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 Line – 1 & 2. Hazardous waste i.e. Used Oil (5.1), Waste oil (5.2) and batteries are being sold out to authorized recyclers.				
		The same practice will be adopted in proposed line – 3 after commission of plant.				
(xx)	The kiln shall be provided with a flexible fuel feeding system to enable use of hazardous wastes and other wastes including biomass, etc.	We have arrangement for flexible fuel feeding system to enable use of hazardous wastes and other wastes including biomass etc.				
(xxi)	The proponent shall examine and prepare a plan for utilization of high calorific waste such as chemical waste, distillation residues, refuse derived fuels, etc as alternate fuels based on availability and composition. For this, the proponent shall identify suitable industries with such waste and enter into an MOU for long-term utilization of such waste as per the Environment (protection) Rules, 1986 and with necessary approvals.	We are having a various following hazardous waste / other waste permissions from CPCB / RSPCB to use as Alternative fuel & raw materials (AFR) in our existing Mangrol Plant. 1) Agro waste - 150 TPD 2) Plastic waste - 100 TPM 3) Carbon black - 4500 TPM 4) Tyre chips - 50 TPD 5) ETP waste from textile industries - 1200 TPA				

		 6) Lead zinc slag – 30,000 TPA 7) Waste mix solid – 8000 TPM 8) Waste mix liquid – 1500 TPM 9) Pharmaceutical waste – Category 20.3 – 100TPA, 28.1 – 552.600 TPA, 28.3 – 10 TPA, 28.5 – 0.512 TPA and 28.6 – 750 TPA from Symbiotic Pharma, Indore (M.P.)
(xxii)	Efforts shall be made to use the high calorific hazardous waste in the cement kiln and necessary provision shall be made accordingly. The PP shall enter into an MOU with units with potential for generating hazardous waste and in accordance with Hazardous Waste Regulation and prior approval of the MPPCB .	We are having a various hazardous waste / other waste permissions from CPCB / RSPCB to use as Alternative fuel & raw materials (AFR) in our existing Mangrol Plant as above and same will be adopted after commission of proposed project Line – 3.
(xxiii)	Green belt over 33% of the total project area shall be developed within plant premises with at least 10 meter wide green belt on all sides along the periphery of the project area and along road sides etc. by planting native and broad leaved species in consultation with local DFO, local community and as per the CPCB guidelines.	We will be develop the green belt over 33 % of the total project area with at least 10 meter wide green belt on all sides along the periphery of the project area and along road sides etc. as per the consultation with local DFO, and as per the CPCB guideline.
(xxiv)	The project proponent shall provide for solar light system for all common areas, street light, village and parking around project area and maintain the same regularly.	We will be provide the solar light system for all common areas, street lights, village and parking around project area and maintain the same regularly.
(xxv)	The project proponent shall provide for LED light in their offices and residential areas.	We have started process for replacement of light in the offices and residential areas.
(xxvi)	All the recommendations made in the Charter on Corporate Responsibility for Environment Protection (CREP) for the Cement plants shall be implemented.	We will be comply all recommendations made in the Charter on Corporate responsibility for Environment protection (CREP) for the Cement plants. Complying in our existing Unit 1 & 2.
(xxvii)	At least 2.5% of the total cost of the project shall be earmarked towards the Enterprise Social Commitment based on Public Hearing issues, locals need and items-wise details along with time bound action plan shall be prepared and submitted to the Ministry's Regional Office. Implementation of such program shall be ensured by constituting a Committee comprising of the proponent,	Agreed & will be complied with.

	representatives of village Panchayat and District Administration. Action taken report in this regards shall be submitted to the Ministry's Regional Office.	
(xxviii)	In addition to the above provision of ESC, the proponent shall prepare a detailed CSR Plan for the next 5 years including annual physical and financial targets for the existing-cum-expansion project, which includes village-wise, sector-wise (Health, Education, Sanitation, Skill Development and infrastructure etc) activities in consultation with the local communities and administration. The CSR Plan will include the amount of 2% retain annual profits of previous 3 years towards CSR activities for life of the project. A separate budget head shall be created and the annual capital and revenue expenditure on various activities of the CSR Plan shall also be uploaded on the company website and shall also be provided in the Annual Report of the company.	Agreed & will be complied with.
(xxix)	A risk Assessment Study and Disaster Preparedness and Management Plan along with the mitigation measures shall be prepared with a focus of Disaster Prevention and a copy submitted to the Ministry's Regional Office, SPCB and CPCB within 3 months of issue of Environment Clearance letter.	 We are having the onsite emergency plan with respect to following objectives. To overcome any emergency in its initial stage and to handle Disaster in most effective manner. To eliminate any chance of loss to Human Life. To minimise loss of Property in the Plant and surrounding areas. To maintain essential supplies at the time of natural Calamities and / or Public disturbances. A copy of the onsite emergency plan for Mangrol Plant existing unit is enclosed as Annexure – IV.
(xxx)	To educate the workers, all the work places where dust may cause a hazard shall be clearly indicated as a dust exposure area through the use of display signs which identifies the hazard and the associated health effects.	We have displayed Environment health & safety slogan / messages in the existing Plant premises to spread the awareness with respect to hazard and the associated health effects.
(xxxi)	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, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structure to be removed after the completion of the project.	We will take provisions for all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, safe drinking water, medical health care, crèche etc. during the construction of proposed plant.
	(B) GENERAL CONDITIONS	

(i)	The Project authorities must strictly adhere to the stipulation made by the Rajasthan Pollution Control Board and the State Government.	We are strictly adhere to stipulation made by RSPCB & State Government.
(ii)	No further expansion or modification in the plant shall be carried out without prior approval of the Ministry of Environment, Forest and Climate Change (MoEFCC).	Agreed. We will take prior approval of the Ministry of Environment, Forest & Climate Change (MoEF& CC) for expansion or modification in the plant.
(iii)	At least four ambient air quality monitoring stations should be established in the downward direction as well as where maximum ground level concentration of PM ₁₀ , PM _{2.5} , SO ₂ and NOx are anticipate in consultation with the SPCB. Data on ambient air quality and stack emission shall be regularly submitted to this Ministry including its Regional Office at Lucknow and the SPCB/CPCB once in Six months.	We are already having the 4 ambient air monitoring stations in the downward direction for PM 10, PM 2.5, SO2 & NOx are anticipate in consultation with the State Pollution Control Board and monitoring data is being regular submitting to the Ministry and its regional office at Lucknow and the SPCB/CPCB once in six month for existing Mangrol plant Line – 1 & Line 2. The same practice will be adopted in prosed Line – 3 after commissioning the plant.
(iv)	Industrial wastewater shall be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19 th May, 1993 and 31 st December, 1993 or as amended form time to time. The treated wastewater shall be utilized for plantation purpose.	There is no waste water discharge in the cement plant hence 'Zero discharge' facility adopted and only from CPP & WHR waste water after treatment are recycle & reuse for dust suppression in coal yard and machineries cooling in the cement plant respectively.
(v)	The overall noise levels in and around the plant area shall be kept well within the standards (85 dBA) by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels should conform to the standards prescribed under EPA Rules, 1989 viz. 75dBA (daytime) and 70 dBA (night time).	All necessary precaution has provided for control of noise pollution in the existing plant Line 1 & line 2.
(vi)	Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.	Occupational health surveillance of the workers is being done on regular basis in the existing cement plant Line 1 & 2. The same practice will be adopted after commissioning of line -3 .
(vii)	The company shall develop rain water harvesting structures to harvest the rain water for utilization in the lean season besides recharging the ground water table.	We have already developed 16 nos. of injection well and 1 recharge pond in the existing cement plant & colony.
(viii)	The project proponent shall also comply with all the environment protection measures and safeguards recommended in the EIA/EMP report. Further, the company must undertake socio-economic development activities in the surrounding	We will be complied all the environment protection measures and safeguards recommended in the EIA/EMP report. We have undertaken socio – economic development under CSR activities

	villages like community development programmes, education programmes, drinking water supply and health care etc.	like community development programmes, education programmes, drinking water supply and health care etc.
(ix)	Requisite funds shall be earmarked towards capital cost and recurring cost/annum for environment pollution control measures to implement the conditions stipulated by the Ministry of Environment, Forest and Climate Change (MoEFCC) as well as the State Government. An implementation schedule for implementing all the conditions stipulated herein shall be submitted to the Regional Office of the Ministry at Lucknow. The funds so provide shall not be diverted for any other purpose.	We will be earmarked towards cost and recurring cost / annum for environment pollution control measures to implement the conditions stipulated by the Ministry of Environment, Forest and Climate change (MoEF & CC) as well as the state govt. Implementation schedule will be submit to Regional office of the Ministry at Lucknow after commissioning of the Plant.
(x)	A copy of clearance letter shall be sent by the proponent to concerned Panchayat, Zila Parishad / Municipal Corporation, Urban Local Body and the local NGO, if any, from whom suggestion/representations, if any, were received while processing the proposal. The clearance letter shall also be put on the web site of the company by the proponent.	A copy of Environmental clearance letter has been sent to the SDM, Nimbhaera tehsil, The Sarpanch, Gram panchayat, Mangrol, DIC, Chittorgarh, Chief Executive offier Zila parishad, Chittorgarh The District Magistrate, Chitorgarh Local body on dated 19.09.2016 The clearance letter has uploaded on the website of the company i.e. www.jkcement.com
(xi)	The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of the MOEFCC at Lucknow. The respective zonal Office of CPCB and the SPCB. The criteria pollutant levels namely; PM10, SO2, NOx (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the projects shall be monitored and displayed at a convenient location near the main gate of the company in the public domain.	Agreed & We are regular uploading the status of compliance of the stipulated environment clearance conditions, including result of monitoring data of the existing plant on the company website periodically. The same is regularly being sent to regional office Lucknow. The criteria pollutant level namely; PM 10, SO2, NOx (ambient levels as well as stack emissions) for existing plant Line 1 & 2 is being displayed at main gate of the company for the public domain.
(xii)	The project proponent shall also submit six monthly reports on the status of the compliance of the stipulated environment conditions including results of monitored data (both in hard copies as well as by e-mail) to the Regional Office of MOEFCC, the respective Zonal Office of CPCB and the SPCB. The Regional Office of this Ministry at Lucknow/ CPCB/SPCB shall monitor the stipulated conditions.	We are regular submitting the six monthly compliance report of the stipulated environment conditions including result of monitored data (both in hard copies as well as by email) for existing plant to the regional office of MoEF & CC and zonal office of CPCB and the SPCB.
(xiii)	The environmental statement for each financial year ending 31 st March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company	We are regular submitting the Environment Statement report for each financial year ending 31 st March in the Form – V to the State Pollution Control Board and regional office of the MoEF & CC at Lucknow and uploading the same in the company website.

	along with the status of compliance of environmental conditions and shall also be sent to the respective Regional Office of the MOEFCC at Lucknow by e-mail.	
(xiv)	The Project Proponent shall inform the public that the project has been accorded environment 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, Forest and Climate Change (MoEFCC) at http://envfor.nic.in. This shall be advertised within seven days from the date of issue of the clearance letter, at least in two local newspaper that are	We have publish the notice that the project has been accorded environmental clearance by the Ministry of environment & Forest in two newspaper namely as followed. 1. Dainik Bhaskar dated 17.09.2016 2. Rajasthan Patrika dated 17.09.2016 The copy of newspaper cutting are enclosed as Annexure - V
(xv)	Widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same should be forwarded to the Regional Office at Lucknow.	Agreed & complied.
(xvi)	Project authorities shall 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.	We will inform the Regional Office as well as 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.

J.K. Cement WORKS, MANGROL (RAJ) (Unit-1) DATA SHEET FOR PARTICULATE MATTER EMISSION FROM POINT SOURCE October' 2016 - March' 2017

DATE	NAME OF THE STACK / DUCT ATTECHED WITH UNIT AND MONTH	CROSS SECTIONAL AREA OF	STACK GASES TEMP.	STACK GASES VELOCITY	FLOW OF GASES IN STACK	DUST CONC.	MEAN DUST CONC.	EMISSION RATE	REMARK
	October' 2016	DUCT (M2)	(°K)	(M / Sec.)	(NM³/Sec.)	(Mg/NM³)	(Mg/NM³)	(Ts/DAY)	
03.10.2016	KILN + RAW MILL -1 (B.H.)	5.23	391	15.52	61.86	10.30		0.055	
10.10.2016	KILN + RAW MILL -1 (B.H.)	5.23	393	15.94	63.21	16.10		0.088	
17.10.2016	KILN + RAW MILL -1 (B.H.)	5.23	389	15.33	61.42	11.30	12.6	0.060	
31.10.2016	KILN + RAW MILL -1 (B.H.)		U	Inder Mainten	ance				
	November' 2016								
01.11.2016	KILN + RAW MILL -1 (B.H.)								
15.11.2016	KILN + RAW MILL -1 (B.H.)		Ur	nder Mainten	ance				
23.11.2016	KILN + RAW MILL -1 (B.H.)	5.23	391	16.04	63.94	11.70	10.7	0.065	
30.11.2016	KILN + RAW MILL -1 (B.H.)	5.23	392	15.39	61.19	9.60		0.051	
	December' 2016								
03.12.2016	KILN + RAW MILL -1 (B.H.)	5.23	399	15.87	61.99	11.90		0.064	We have
10.12.2016	KILN + RAW MILL -1 (B.H.)	5.23	397	15.39	60.42	18.90		0.099	converted ESP into Bag
17.12.2016	KILN + RAW MILL -1 (B.H.)	5.23	401	15.07	58.57	23.20	16.2	0.117	house
27.12.2016	KILN + RAW MILL -1 (B.H.)	5.23	398	15.61	61.13	10.80		0.057	-
	January'2017								

02.01.2017	KILN + RAW MILL -1 (B.H.)	5.23	406	15.37	59.00	15.30		0.078	We have
08.01.2017	KILN + RAW MILL -1 (B.H.)	5.23	402	15.83	61.37	12.60	1	0.067	converted ESP into Bag
16.01.2017	KILN + RAW MILL -1 (B.H.)	5.23	408	14.68	56.08	17.60	13.8	0.085	house
24.01.2017	KILN + RAW MILL -1 (B.H.)	5.23	404	16.07	61.99	9.60	-	0.051	
	February'2017								
04.02.2017	KILN + RAW MILL -1 (B.H.)	5.23	405	15.04	57.88	17.60		0.088	We have
11.02.2017	KILN + RAW MILL -1 (B.H.)	5.23	403	15.51	59.98	16.50	- 	0.086	converted ESP into Bag
18.02.2017	KILN + RAW MILL -1 (B.H.)	5.23	406	14.90	57.20	18.80	17.0	0.093	house
25.02.2017	KILN + RAW MILL -1 (B.H.)	5.23	402	15.59	60.44	15.20	-	0.079	1
	March'2017								
02.03.2017	KILN + RAW MILL -1 (B.H.)	5.23	405	16.23	62.46	16.80		0.091	We have
09.03.2017	KILN + RAW MILL -1 (B.H.)	5.23	402	14.99	58.12	12.30	-	0.062	into Bag house
16.03.2017	KILN + RAW MILL -1 (B.H.)	5.23	399	15.87	61.99	17.70	15.6	0.095	
31.03.2017	KILN + RAW MILL -1 (B.H.)		Inder Maint	-					
	October' 2016								
03.10.2016	FOLAX COOLER (E.S.P)	7.07	395	8.86	47.26	27.30		0.111	
10.10.2016	FOLAX COOLER (E.S.P)	7.07	401	8.58	45.08	29.20	-	0.114	
17.10.2016	FOLAX COOLER (E.S.P)	7.07	398.00	7.57	40.07	25.60	27.4	0.089	
31.10.2016	FOLAX COOLER (E.S.P)		Kiln L	Inder Maint	enance	L			
	November' 2016								
01.11.2016	FOLAX COOLER (E.S.P)				<u> </u>	1	25.45		
15.11.2016	FOLAX COOLER (E.S.P)		Under Maintenance						

23.11.2016	FOLAX COOLER (E.S.P)	7.07	403.00	9.33	48.78	27.70		0.12	
30.11.2016	FOLAX COOLER (E.S.P)	7.07	399.00	8.67	45.78	23.20		0.09	
	December' 2016								
03.12.2016	FOLAX COOLER (E.S.P)	7.1	402.0	8.4	44.1	25.8		0.098	
10.12.2016	FOLAX COOLER (E.S.P)	7.1	400.0	9.0	47.5	28.3		0.116	
17.12.2016	FOLAX COOLER (E.S.P)	7.1	405.0	10.0	52.2	23.2	23.7	0.105	-
27.12.2016	FOLAX COOLER (E.S.P)	7.1	399.0	8.3	43.8	17.3	-	0.065	
	January'2017								
02.01.2017	FOLAX COOLER (E.S.P)	7.07	429	6.97	34.23	21.30		0.063	
08.01.2017	FOLAX COOLER (E.S.P)	7.07	432	7.77	37.89	24.80	-	0.081	
16.01.2017	FOLAX COOLER (E.S.P)	7.07	417	8.40	42.44	26.10	21.6	0.096	
24.01.2017	FOLAX COOLER (E.S.P)	7.07	423	7.75	38.60	14.30	-	0.048	
	February'2017								
04.02.2017	FOLAX COOLER (E.S.P)	7.07	430	7.14	34.98	25.80		0.078	
11.02.2017	FOLAX COOLER (E.S.P)	7.07	431	7.49	36.61	28.00	-	0.089	
18.02.2017	FOLAX COOLER (E.S.P)	7.07	428	8.33	41.01	24.80	26.4	0.088	
25.02.2017	FOLAX COOLER (E.S.P)	7.07	425	8.04	39.86	27.00	-	0.093	
	March'2017								
02.03.2017	FOLAX COOLER (E.S.P)	7.07	421	7.19	35.98	46.60		0.145	
09.03.2017	FOLAX COOLER (E.S.P)	7.07	425	8.28	41.05	35.20		0.125	
16.03.2017	FOLAX COOLER (E.S.P)	7.07	428	8.12	39.97	39.70	40.5	0.137	
31.03.2017	FOLAX COOLER (E.S.P)		Kiln Under Maintenance						

	October' 2016								
03.10.2016	COAL MILL (B.F.)	0.45	333	26.85	10.81	21.10		0.020	
10.10.2016	COAL MILL (B.F.)	0.45	335	25.89	10.36	14.10		0.013	
17.10.2016	COAL MILL (B.F.)	0.45	332	26.34	10.64	16.90	17.4	0.016	
31.10.2016	COAL MILL (B.F.)		Mill u	nder Mainte	enance				
	November' 2016								
01.11.2016	COAL MILL (B.F.)					<u> </u>			
15.11.2016	COAL MILL (B.F.)		Mill u	nder Mainte	enance				
23.11.2016	COAL MILL (B.F.)	0.45	334.00	26.41	10.60	13.00	15.35	0.01	
30.11.2016	COAL MILL (B.F.)	0.45	331.00	26.03	10.55	17.70	-	0.02	
	December' 2016								
03.12.2016	COAL MILL (B.F.)	0.45	333	26.37	10.62	15.90		0.015	
10.12.2016	COAL MILL (B.F.)	0.45	330	25.97	10.55	18.90	_	0.017	
17.12.2016	COAL MILL (B.F.)	0.45	328	25.57	10.45	19.30	16.6	0.017	
27.12.2016	COAL MILL (B.F.)	0.45	331	25.49	10.33	12.20	_	0.011	
	January'2017			-					
02.01.2017	COAL MILL (B.F.)	0.45	331	25.96	10.52	19.00		0.017	
08.01.2017	COAL MILL (B.F.)	0.45	334	26.66	10.70	12.50		0.012	
16.01.2017	COAL MILL (B.F.)	0.45	330	26.26	10.67	15.60	14.2	0.014	
24.01.2017	COAL MILL (B.F.)	0.45	335	26.86	10.75	9.70	1	0.009	
	February'2017								
04.02.2017	COAL MILL (B.F.)	0.45	332	25.45	10.28	18.80	18.0	0.017	

11.02.2017	COAL MILL (B.F.)	0.45	335	25.06	10.03	20.60		0.018	
18.02.2017	COAL MILL (B.F.)	0.45	331	25.16	10.19	15.40	_	0.014	
25.02.2017	COAL MILL (B.F.)	0.45	334	25.78	10.35	17.10	_	0.015	
	March'2017								
02.03.2017	COAL MILL (B.F.)	0.45	333	26.62	10.72	21.90		0.020	
09.03.2017	COAL MILL (B.F.)	0.45	336	26.88	10.73	16.60	_	0.015	
16.03.2017	COAL MILL (B.F.)	0.45	334	26.07	10.47	19.20	19.2	0.017	
31.03.2017	COAL MILL (B.F.)		Du	e to Kiln Sto	pped		_		
	October' 2016								
03.10.2016	CEMENT MILL No1 (B.F.)						I		
10.10.2016	CEMENT MILL No1 (B.F.)								
17.10.2016	CEMENT MILL No1 (B.F.)			Mill	Under Mainte	enance			
31.10.2016	CEMENT MILL No1 (B.F.)								
	November' 2016								
01.11.2016	CEMENT MILL - 1 (B.F.)								
08.11.2016	CEMENT MILL - 1 (B.F.)								
23.11.2016	CEMENT MILL - 1 (B.F.)			Mill	Under Mainte	enance			
30.11.2016	CEMENT MILL - 1 (B.F.)								
	December' 2016								
03.12.2016	CEMENT MILL No1 (B.F.)					1		1	
10.12.2016	CEMENT MILL No1 (B.F.)			Mill	Under Mainte	nance			
17.12.2016	CEMENT MILL No1 (B.F.)								

31.12.2016	CEMENT MILL No1 (B.F.)								
	January'2017			-					
02.01.2017	CEMENT MILL - 1 (B.F.)			L	<u>l</u>	- L	- L		
08.01.2017	CEMENT MILL - 1 (B.F.)				_				
16.01.2017	CEMENT MILL - 1 (B.F.)			Und	der Major Shu	ıtdown			
31.01.2017	CEMENT MILL - 1 (B.F.)								
	February'2017			-					
04.02.2017	CEMENT MILL No1 (B.F.)		1	I	1	1		1	
11.02.2017	CEMENT MILL No1 (B.F.)				_				
18.02.2017	CEMENT MILL No1 (B.F.)			Und	der Major Shu	ıtdown			
28.02.2017	CEMENT MILL No1 (B.F.)								
	March'2017								
02.03.2017	CEMENT MILL - 1 (B.F.)								
09.03.2017	CEMENT MILL - 1 (B.F.)								
16.03.2017	CEMENT MILL - 1 (B.F.)			Und	der Major Shu	ıtdown			
31.03.2017	CEMENT MILL - 1 (B.F.)								
	October' 2016								
04.10.2016	CEMENT MILL - 2 (E.S.P)	0.50	369	10.25	4.14	35.00		0.013	
13.10.2016	CEMENT MILL - 2 (E.S.P)	0.50	372	9.89	3.96	48.80		0.017	
20.10.2016	CEMENT MILL - 2 (E.S.P)	0.50	375	10.11	4.02	39.90	42.1	0.014	
26.10.2016	CEMENT MILL - 2 (E.S.P)	0.50	368	9.49	3.84	44.80		0.015	
	November' 2016								

03.11.2016	CEMENT MILL - 2 (E.S.P)	0.50	373	9.30	3.72	50.10		0.016	
11.11.2016	CEMENT MILL - 2 (E.S.P)	0.50	370	10.09	4.06	44.60		0.016	
18.11.2016	CEMENT MILL - 2 (E.S.P)	0.50	369	9.68	3.91	56.90	46.7	0.019	
26.11.2016	CEMENT MILL - 2 (E.S.P)	0.50	371	10.28	4.13	35.00		0.012	
	December' 2016								
02.12.2016	CEMENT MILL - 2 (E.S.P)	0.50	375	10.05	3.99	51.90		0.018	
09.12.2016	CEMENT MILL - 2 (E.S.P)	0.50	372	10.18	4.08	46.40		0.016	
16.12.2016	CEMENT MILL - 2 (E.S.P)	0.50	378	9.55	3.76	34.70	43.1	0.011	
28.12.2016	CEMENT MILL - 2 (E.S.P)	0.50	373	9.85	3.93	39.40		0.013	
	January'2017			-					
03.01.2017	CEMENT MILL - 2 (E.S.P)	0.50	371	9.34	3.75	32.10		0.010	
09.01.2017	CEMENT MILL - 2 (E.S.P)	0.50	374	9.92	3.95	45.00		0.015	
20.01.2017	CEMENT MILL - 2 (E.S.P)	0.50	376	10.23	4.05	35.40	36.6	0.012	
27.01.2017	CEMENT MILL - 2 (E.S.P)	0.50	373	9.67	3.86	33.70		0.011	
	February'2017			-					
02.02.2017	CEMENT MILL - 2 (E.S.P)	0.50	372	9.60	3.85	43.40		0.014	
10.02.2017	CEMENT MILL - 2 (E.S.P)	0.50	370	9.69	3.90	45.00		0.015	
17.02.2017	CEMENT MILL - 2 (E.S.P)	0.50	374	10.03	4.00	49.40	48.0	0.017	
24.02.2017	CEMENT MILL - 2 (E.S.P)	0.50	375	10.22	4.06	54.30		0.019	
	March'2017			-					
04.03.2017	CEMENT MILL - 2 (E.S.P)	0.50	369	9.85	3.98	40.70		0.014	
11.03.2017	CEMENT MILL - 2 (E.S.P)	0.50	371	10.28	4.13	50.20	45.0	0.018	

18.03.2017	CEMENT MILL - 2 (E.S.P)	0.50	372	9.54	3.82	35.10		0.012	
25.03.2017	CEMENT MILL - 2 (E.S.P)	0.50	367	9.94	4.04	54.00		0.019	
	October' 2016								
03.10.2016	CRUSHER-1 (B.F.)	0.38	321	13.84	4.88	28.10		0.012	
13.10.2016	CRUSHER-1 (B.F.)	0.38	318	13.42	4.78	26.90	-	0.011	
21.10.2016	CRUSHER-1 (B.F.)	0.38	320	14.08	4.98	29.80	28.3	0.013	
31.10.2016	CRUSHER-1 (B.F.)		Und	der Mainten	ance	<u> </u>			
	November' 2016								
01.11.2016	CRUSHER-1 (B.F.)								
08.11.2016	CRUSHER-1 (B.F.)		Und	der Mainten	ance				
15.11.2016	CRUSHER-1 (B.F.)						24.4		
24.11.2016	CRUSHER-1 (B.F.)	0.38	317.00	13.62	4.87	24.40		0.010	
	December' 2016								
03.12.2016	CRUSHER-1 (B.F.)	0.38	307	12.96	4.78	21.70		0.009	
10.12.2016	CRUSHER-1 (B.F.)	0.38	305	12.41	4.61	28.80		0.011	
17.12.2016	CRUSHER-1 (B.F.)	0.38	302	13.38	5.02	27.80	26.2	0.012	
29.12.2016	CRUSHER-1 (B.F.)	0.38	306	12.80	4.74	26.30	-	0.011	
	January'2017								
05.01.2017	CRUSHER-1 (B.F.)	0.38	302	12.54	4.70	19.90		0.008	
13.01.2017	CRUSHER-1 (B.F.)	0.38	304	13.43	5.00	24.20		0.010	
21.01.2017	CRUSHER-1 (B.F.)	0.38	305	12.17	4.52	26.00	22.7	0.010	
27.01.2017	CRUSHER-1 (B.F.)	0.38	301	12.65	4.76	20.70	-	0.009	

	February'2017								
02.02.2017	CRUSHER-1 (B.F.)	0.38	303	13.01	4.86	17.90		0.008	
10.02.2017	CRUSHER-1 (B.F.)	0.38	305	12.41	4.61	22.40	1	0.009	
17.02.2017	CRUSHER-1 (B.F.)	0.38	302	12.63	4.74	19.10	20.0	0.008	
24.02.2017	CRUSHER-1 (B.F.)	0.38	305	12.90	4.79	20.50		0.008	
	March'2017								
02.03.2017	CRUSHER-1 (B.F.)	0.38	310	13.60	4.97	24.10		0.010	
09.03.2017	CRUSHER-1 (B.F.)	0.38	308	12.98	4.77	22.30	1	0.009	
18.03.2017	CRUSHER-1 (B.F.)		Mill	under Mainte	enance	1	23.2		
31.03.2017	CRUSHER-1 (B.F.)								

J.K. Cement WORKS, MANGROL (RAJ) (Unit-2) DATA SHEET FOR PARTICULATE MATTER EMISSION FROM POINT SOURCE October' 2016 - March ' 2017

DATE	NAME OF THE STACK / DUCT	CROSS SECTIONAL	STACK GASES	STACK GASES	FLOW OF GASES IN	DUST CONC.	MEAN DUST	EMISSION RATE	REMARK
	ATTECHED WITH UNIT AND MONTH	AREA OF DUCT (M2)	(° K)	VELOCITY (M / Sec.)	STACK (NM³/Sec.)	(Mg/NM³)	CONC. (Mg/NM³)	(Ts/DAY)	
	October' 2016	DOCT (IVIZ)	(K)	<u>-</u>	(INIVI / Sec.)	(IVIS/IVIVI)	(IVIG/IVIVI)	(13/DA1)	
04.10.2016	KILN + RAW MILL (Bag House)	14.18	410	14.06	144.91	11.60		0.145	
11.10.2016	KILN + RAW MILL (Bag House)	14.18	409	13.06	134.93	15.60	11.7	0.182	
18.10.2016	KILN + RAW MILL (Bag House)	14.18	412	13.46	138.05	9.10	11.7	0.109	
26.10.2016	KILN + RAW MILL (Bag House)	14.18	411	13.27	136.43	10.40		0.123	
	November' 2016								
02.11.2016	KILN + RAW MILL (Bag House)	14.18	411	13.56	139.42	15.40		0.186	
09.11.2016	KILN + RAW MILL (Bag House)		Ur	nder Mainter	nance		12.0		
21.11.2016	KILN + RAW MILL (Bag House)	14.18	408	13.74	142.30	12.50	12.9	0.154	
28.11.2016	KILN + RAW MILL (Bag House)	14.18	413	13.48	137.92	10.90		0.130	
	December' 2016								
02.12.2016	KILN + RAW MILL (Bag House)	14.18	409	13.87	143.30	13.60		0.168	
13.12.2016	KILN + RAW MILL (Bag House)	14.18	412	13.46	138.05	15.60	15.4	0.186	
20.12.2016	KILN + RAW MILL (Bag House)	14.18	408	14.35	148.62	11.90		0.153	

27.12.2016	KILN + RAW MILL (Bag House)	14.18	410	13.72	141.40	20.50		0.250
	January'17							
03.01.2017	KILN + RAW MILL (Bag House)	14.18	410	13.66	140.79	13.40		0.163
09.01.2017	KILN + RAW MILL (Bag House)	14.18	413	14.05	143.75	18.00	16.6	0.224
16.01.2017	KILN + RAW MILL (Bag House)	14.18	411	14.62	150.31	15.60	16.6	0.203
24.01.2017	KILN + RAW MILL (Bag House)	14.18	415	13.92	141.74	19.20		0.235
	February'17							
03.02.2017	KILN + RAW MILL (Bag House)	14.18	409	13.70	141.54	13.40	14.4	0.164
10.02.2017	KILN + RAW MILL (Bag House)	14.18	412	13.64	139.90	11.90		0.144
17.02.2017	KILN + RAW MILL (Bag House)	14.18	410	14.11	145.42	15.50		0.195
24.02.2017	KILN + RAW MILL (Bag House)	14.18	413	14.50	148.36	16.80		0.215
	March'17							
06.03.2017	KILN + RAW MILL (Bag House)	14.18	412	13.29	136.31	10.70		0.126
15.03.2017	KILN + RAW MILL (Bag House)	14.18	418	14.86	150.22	16.50	12.2	0.214
22.03.2017	KILN + RAW MILL (Bag House)	14.18	420	14.06	141.46	13.20	13.2	0.161
29.03.2017	KILN + RAW MILL (Bag House)	14.18	415	13.69	139.40	12.20		0.147
	October' 2016							
04.10.2016	FOLAX COOLER (E.S.P)	8.8	402	10.2	66.7	20.1		0.116
11.10.2016	FOLAX COOLER (E.S.P)	8.8	399	10.6	69.5	17.6	24.5	0.106
18.10.2016	FOLAX COOLER (E.S.P)	8.8	400	10.0	65.8	22.8	21.5	0.130
26.10.2016	FOLAX COOLER (E.S.P)	8.8	397	10.3	68.2	25.4		0.150
	November' 2016							

02.11.2016	FOLAX COOLER (E.S.P)	8.80	405	10.56	68.38	17.00		0.100
09.11.2016	FOLAX COOLER (E.S.P)		Un	der Mainter	nance		1	
21.11.2016	FOLAX COOLER (E.S.P)	8.80	398	9.70	63.91	22.70	19.8	0.125
28.11.2016	FOLAX COOLER (E.S.P)	8.80	402	10.23	66.73	19.60	1	0.113
	December' 2016							
02.12.2016	FOLAX COOLER (E.S.P)	8.80	403	9.86	64.16	16.10		0.089
13.12.2016	FOLAX COOLER (E.S.P)	8.80	406	10.51	67.89	18.50	20.7	0.109
20.12.2016	FOLAX COOLER (E.S.P)	8.80	401	10.75	70.30	26.60	20.7	0.162
27.12.2016	FOLAX COOLER (E.S.P)	8.80	403	9.76	63.51	21.40		0.117
	January'17							
03.01.2017	FOLAX COOLER (E.S.P)	8.80	399	8.91	58.56	16.00		0.081
09.01.2017	FOLAX COOLER (E.S.P)	8.80	402	10.07	65.69	21.00	22.4	0.119
16.01.2017	FOLAX COOLER (E.S.P)	8.80	405	8.73	56.53	27.00	23.4	0.132
24.01.2017	FOLAX COOLER (E.S.P)	8.80	401	9.40	61.47	29.50		0.157
	February'17							
03.02.2017	FOLAX COOLER (E.S.P)	8.80	403	9.46	61.56	20.50		0.109
10.02.2017	FOLAX COOLER (E.S.P)	8.80	401	9.82	64.22	19.20	10.7	0.107
17.02.2017	FOLAX COOLER (E.S.P)	8.80	402	9.32	60.80	18.70	18.7	0.098
24.02.2017	FOLAX COOLER (E.S.P)	8.80	400	8.95	58.68	16.40		0.083
	March'17							
06.03.2017	FOLAX COOLER (E.S.P)	8.80	406	8.45	54.58	23.10	24.7	0.109
15.03.2017	FOLAX COOLER (E.S.P)	8.80	400	9.13	59.86	20.50	21.7	0.106

22.02.2017	FOLAY COOLED (F & D)	0.00	402	10.07	65.60	177		0.100
22.03.2017	FOLAX COOLER (E.S.P)	8.80	402	10.07	65.69	17.7	-	0.100
29.03.2017	FOLAX COOLER (E.S.P)	8.80	401	9.65	63.11	25.6		0.140
	October' 2016							
04.10.2016	COAL MILL (B.F.)	2.00	333	14.10	25.24	14.60		0.032
11.10.2016	COAL MILL (B.F.)	2.00	332	14.69	26.37	18.20	13.6	0.041
18.10.2016	COAL MILL (B.F.)	2.00	337	14.59	25.80	9.80	15.0	0.022
26.10.2016	COAL MILL (B.F.)	2.00	334	14.25	25.43	11.80		0.026
	November' 2016							
02.11.2016	COAL MILL (B.F.)	2.00	336	14.87	26.38	13.90		0.032
09.11.2016 COA	COAL MILL (B.F.)	Under Maintenance						
21.11.2016	COAL MILL (B.F.)	2.00	333	14.10	25.24	18.50	14.2	0.040
28.11.2016	COAL MILL (B.F.)	2.00	335	14.45	25.71	10.20		0.023
	December' 2016							
02.12.2016	COAL MILL (B.F.)	2.00	339	14.18	24.93	13.60		0.029
13.12.2016	COAL MILL (B.F.)	2.00	342	14.69	25.60	19.40	17.6	0.043
20.12.2016	COAL MILL (B.F.)	2.00	340	13.88	24.33	24.80	17.6	0.052
27.12.2016	COAL MILL (B.F.)	2.00	337	14.36	25.40	12.40		0.027
	January'17							
03.01.2017	COAL MILL (B.F.)	2.00	337	13.58	24.02	11.90		0.025
09.01.2017	COAL MILL (B.F.)	2.00	340	12.95	22.70	17.00	15.6	0.033
16.01.2017	COAL MILL (B.F.)	2.00	335	13.96	24.84	20.40	15.6	0.044
24.01.2017	COAL MILL (B.F.)	2.00	338	14.43	25.44	13.20		0.029

	February'17								
03.02.2017	COAL MILL (B.F.)	2.00	338	13.55	23.89	16.70		0.034	
10.02.2017	COAL MILL (B.F.)	2.00	339	13.23	23.26	20.20	10.2	0.041	
17.02.2017	COAL MILL (B.F.)	2.00	340	13.49	23.65	22.30	19.3	0.046	
24.02.2017	COAL MILL (B.F.)	2.00	337	14.18	25.08	18.10		0.039	
	March'17								
06.03.2017	COAL MILL (B.F.)	2.00	335	14.19	25.25	15.2		0.033	
15.03.2017	COAL MILL (B.F.)	2.00	339	13.62	23.95	19.10	18.6	0.040	
22.03.2017	COAL MILL (B.F.)	2.00	332	13.29	23.86	22.70	18.0	0.047	
29.03.2017	COAL MILL (B.F.)	2.00	341	14.45	25.26	17.40		0.038	
	October' 2016								
5.10.2016	CEMENT MILL - 3 (Bag filter)	6.60	364	12.60	68.08	25.70		0.151	
13.10.2016	CEMENT MILL - 3 (Bag filter)	6.60	372	11.81	62.44	15.10	20.8	0.081	
20.10.2016	CEMENT MILL - 3 (Bag filter)	6.60	375	12.10	63.46	22.60	20.8	0.124	
29.10.2016	CEMENT MILL - 3 (Bag filter)	6.60	368	12.27	65.58	19.60		0.111	
	November' 2016								
04.11.2016	CEMENT MILL - 3 (Bag filter)	6.60	373	12.92	68.13	23.60		0.139	
11.11.2016	CEMENT MILL - 3 (Bag filter)	6.60	369	12.18	64.92	18.50	22.6	0.104	
17.11.2016	CEMENT MILL - 3 (Bag filter)	6.60	370	12.42	66.02	20.90	22.6	0.119	
26.11.2016	CEMENT MILL - 3 (Bag filter)	6.60	372	11.87	62.76	27.20		0.147	
	December' 2016								
03.12.2016	CEMENT MILL - 3 (Bag filter)	6.60	370	12.02	63.89	22.60	21.6	0.125	

10.12.2016	CEMENT MILL - 3 (Bag filter)	6.60	372	12.79	67.62	15.50		0.091	
17.12.2016	CEMENT MILL - 3 (Bag filter)	6.60	369	11.76	62.68	26.60		0.144	
24.12.2016	CEMENT MILL - 3 (Bag filter)	6.60	374	12.37	65.05	21.50		0.121	
	January'17								
05.01.2017	CEMENT MILL - 3 (Bag filter)	6.60	371	13.16	69.77	17.80		0.107	
12.01.2017	CEMENT MILL - 3 (Bag filter)	6.60	373	12.41	65.44	23.80	24.2	0.135	
21.01.2017	CEMENT MILL - 3 (Bag filter)	6.60	375	12.45	65.30	28.60	24.3	0.161	
31.01.2017	CEMENT MILL - 3 (Bag filter)	6.60	374	11.78	61.95	26.90		0.144	
	February'17								
04.02.2017	CEMENT MILL - 3 (Bag filter)	6.6	372	12.79	67.62	21.6		0.126	
10.02.2017	CEMENT MILL - 3 (Bag filter)	6.6	374	13.2	69.47	19.6	22.0	0.118	
18.02.2017	CEMENT MILL - 3 (Bag filter)	6.6	376	12.75	66.69	24	22.0	0.138	
25.02.2017	CEMENT MILL - 3 (Bag filter)	6.6	375	12.27	64.35	22.8		0.127	
	March'17								
07.03.2017	CEMENT MILL - 3 (Bag filter)	6.60	374	12.66	66.58	27.10		0.156	
16.03.2017	CEMENT MILL - 3 (Bag filter)	6.60	370	12.08	64.21	20.00	22.4	0.111	
23.03.2017	CEMENT MILL - 3 (Bag filter)	6.60	372	13.34	70.53	22.90	23.4	0.140	
30.03.2017	CEMENT MILL - 3 (Bag filter)	6.60	376	12.41	64.91	23.50	-	0.132	
	October' 2016								
04.10.2016	CRUSHER-2 (B.F.)	1.23	318.00	11.19	12.86	24.40		0.027	
11.10.2016	CRUSHER-2 (B.F.)	1.23	314.00	11.60	13.50	22.20	25.6	0.026	
18.10.2016	CRUSHER-2 (B.F.)	1.23	316.00	10.37	11.99	26.90		0.028	
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25.10.2016	CRUSHER-2 (B.F.)	1.23	315.00	10.81	12.54	28.80		0.031	
	November' 2016								
02.11.2016	CRUSHER-2 (B.F.)	1.23	315	11.77	12.86	29.20	27.3	0.034	
08.11.2016	CRUSHER-2 (B.F.)	1.23	313.00	11.16	12.51	27.30		0.031	
15.11.2016	CRUSHER-2 (B.F.)		Und	der Mainter	nance				
29.11.2016	CRUSHER-2 (B.F.)	1.23	312	10.82	12.60	25.30		0.028	
	December' 2016								
02.12.2016	CRUSHER-2 (B.F.)	1.23	308	10.96	13.00	21.6		0.024	
13.12.2016	CRUSHER-2 (B.F.)	1.23	311	10.69	12.56	18.9	20.2	0.021	
20.12.2016	CRUSHER-2 (B.F.)	1.23	307	10.84	12.90	22.8	20.2	0.025	
27.12.2016	CRUSHER-2 (B.F.)	1.23	309	10.49	12.40	17.5		0.019	
	January'17								
03.01.2017	CRUSHER-2 (B.F.)	1.23	302	10.31	12.47	14.80		0.016	
10.01.2017	CRUSHER-2 (B.F.)	1.23	304	10.17	12.22	20.4	18.8	0.022	
16.01.2017	CRUSHER-2 (B.F.)	1.23	305	10.69	12.81	17.6	10.0	0.019	
27.01.2017	CRUSHER-2 (B.F.)	1.23	301	10.84	13.16	22.5		0.026	
	February'17								
02.02.2017	CRUSHER-2 (B.F.)	1.23	305	10.58	12.67	17.60		0.019	
09.02.2017	CRUSHER-2 (B.F.)	1.23	303	10.82	13.05	16.7	16.0	0.019	
16.02.2017	CRUSHER-2 (B.F.)	1.23	304	10.51	12.63	15.9	10.0	0.017	
23.02.2017	CRUSHER-2 (B.F.)	1.23	302	10.91	13.2	13.8		0.016	
	March'17								

07.03.2017	CRUSHER-2 (B.F.)	1.23	310	11.05	13.02	23.4		0.026
16.03.2017	CRUSHER-2 (B.F.)	1.23	309	10.43	12.33	18.2	22.2	0.019
23.03.2017	CRUSHER-2 (B.F.)	1.23	312	10.25	12	21.3	22.2	0.022
30.03.2017	CRUSHER-2 (B.F.)	1.23	314	10.96	12.75	25.9		0.029
	October' 2016							
01.10.2016	PACKER-1 (B.F.)	0.785	322	12.46	9.05	24.7		0.019
08.10.2016	PACKER-1 (B.F.)	0.785	320	12.62	9.23	29.4	27.4	0.023
15.10.2016	PACKER-1 (B.F.)	0.785	319	11.53	8.46	27.3	27.4	0.020
22.10.2016	PACKER-1 (B.F.)	0.785	323	12.02	8.71	28.1		0.021
	November' 2016							
05.11.2016	PACKER-1 (B.F.)	0.785	317	12.65	9.34	24.6		0.020
12.11.2016	PACKER-1 (B.F.)	0.785	315	12.37	9.19	15.9	20.6	0.013
18.11.2016	PACKER-1 (B.F.)	0.785	319	11.85	8.69	19	20.6	0.014
25.11.2016	PACKER-1 (B.F.)	0.785	320	12.22	8.93	22.9		0.018
	December' 2016							
03.12.2016	PACKER-1 (B.F.)	0.785	315	11.67	8.67	22.5		0.017
10.12.2016	PACKER-1 (B.F.)	0.785	312	12.46	9.34	17.8	10.6	0.014
17.12.2016	PACKER-1 (B.F.)	0.785	311	11.07	8.33	15.2	18.6	0.011
27.12.2016	PACKER-1 (B.F.)	0.785	310	12.22	9.22	18.8		0.015
	January'17							
03.01.2017	PACKER-1 (B.F.)	0.785	310	12.03	9.08	25.1	24.2	0.020
10.01.2017	PACKER-1 (B.F.)	0.785	308	11.69	8.88	18.4	21.2	0.014

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17.01.2017	PACKER-1 (B.F.)	0.785	312	11.3	8.47	16.5		0.012	
24.01.2017	PACKER-1 (B.F.)	0.785	309	12.3	9.31	24.8		0.020	
	February'17								
03.02.2017	PACKER-1 (B.F.)	0.785	309	11.71	8.87	21.3		0.016	
10.02.2017	PACKER-1 (B.F.)	0.785	310	11.93	9	18.5	10.2	0.014	
17.02.2017	PACKER-1 (B.F.)	0.785	311	11.18	8.41	19.7	19.3	0.014	
24.02.2017	PACKER-1 (B.F.)	0.785	308	11.79	8.95	17.7		0.014	
	March'17								
03.03.2017	PACKER-1 (B.F.)	0.785	315	11.62	8.63	15.1		0.011	
14.03.2017	PACKER-1 (B.F.)	0.785	317	11.28	8.32	22.3	47.2	0.016	
22.03.2017	PACKER-1 (B.F.)	0.785	314	12.3	9.16	18.1	17.2	0.014	
29.03.2017	PACKER-1 (B.F.)	0.785	318	11.98	8.81	13.4		0.010	
	October' 2016								
01.10.2016	PACKER-2 (B.F.)	0.785	323	11.76	8.52	23		0.017	
08.10.2016	PACKER-2 (B.F.)	0.785	318	12.67	9.32	28.9	26.4	0.023	
15.10.2016	PACKER-2 (B.F.)	0.785	320	12.32	9.01	27.2	26.1	0.021	
22.10.2016	PACKER-2 (B.F.)	0.785	321	11.94	8.7	25.1		0.019	
	November' 2016								
05.11.2016	PACKER-2 (B.F.)	0.785	314	12.25	9.13	19.2		0.015	
12.11.2016	PACKER-2 (B.F.)	0.785	316	12.87	9.53	27.4	22.7	0.023	
18.11.2016	PACKER-2 (B.F.)	0.785	317	12.16	8.97	22.5	23.7	0.017	
25.11.2016	PACKER-2 (B.F.)	0.785	313	11.89	8.9	25.6		0.020	

	December' 2016								
05.12.2016	PACKER-2 (B.F.)	0.785	313	11.94	8.92	16.5		0.013	
13.12.2016	PACKER-2 (B.F.)	0.785	311	12.24	9.21	20.9	16.2	0.017	
20.12.2016	PACKER-2 (B.F.)	0.785	315	11.25	8.35	12.4	16.2	0.009	
27.12.2016	PACKER-2 (B.F.)	0.785	314	12.11	9.02	14.9		0.012	
	January'17								
03.01.2017	PACKER-2 (B.F.)	0.785	311	11.23	8.45	20.5		0.015	
10.01.2017	PACKER-2 (B.F.)	0.785	313	11.89	8.89	24.7	22.4	0.019	
17.01.2017	PACKER-2 (B.F.)	0.785	309	12.2	9.24	18.8	22.4	0.015	
24.01.2017	PACKER-2 (B.F.)	0.785	310	11.68	8.81	25.5		0.019	
	February'17								
03.02.2017	PACKER-2 (B.F.)	0.785	309	12.11	9.17	19		0.015	
10.02.2017	PACKER-2 (B.F.)	0.785	311	11.7	8.8	20.7	20.4	0.016	
17.02.2017	PACKER-2 (B.F.)	0.785	310	12.08	9.12	19.9	20.4	0.016	
24.02.2017	PACKER-2 (B.F.)	0.785	312	11.67	8.75	22		0.017	
	March'17								
03.03.2017	PACKER-2 (B.F.)	0.785	316	11.64	8.62	25.5		0.019	
14.03.2017	PACKER-2 (B.F.)	0.785	312	11.25	8.43	29.7	24.4	0.022	
22.03.2017	PACKER-2 (B.F.)	0.785	315	12.18	9.05	20	24.4	0.016	
29.03.2017	PACKER-2 (B.F.)	0.785	317	12.56	9.27	22.4		0.018	
	October' 2016								
01.10.2016	PACKER-3 (B.F.)	0.785	318	11.83	8.7	26.1	21.8	0.020	

08.10.2016	PACKER-3 (B.F.)	0.785	317	12.31	9.08	23.4		0.018
15.10.2016	PACKER-3 (B.F.)	0.785	320	12.12	8.86	16.7		0.013
22.10.2016	PACKER-3 (B.F.)	0.785	319	12	8.8	21.1		0.016
	November' 2016							
05.11.2016	PACKER-3(B.F.)	0.785	315	12.18	9.05	28.7		0.022
12.11.2016	PACKER-3(B.F.)	0.785	312	11.87	8.9	25.3	26	0.019
18.11.2016	PACKER-3(B.F.)	0.785	317	12.31	9.1	27.4	26	0.022
25.11.2016	PACKER-3(B.F.)	0.785	314	11.65	8.68	23.4		0.018
	December' 2016							
03.12.2016	PACKER-3(B.F.)	0.785	312	11.72	8.79	24.3		0.018
10.12.2016	PACKER-3(B.F.)	0.785	311	12.24	9.21	19.8	22	0.016
17.12.2016	PACKER-3(B.F.)	0.785	314	12.25	9.13	25.8	23	0.020
27.12.2016	PACKER-3(B.F.)	0.785	310	11.58	8.74	22.0		0.017
	January'17							
05.01.2017	PACKER-3 (B.F.)	0.785	311	11.23	8.45	17.1		0.012
12.01.2017	PACKER-3 (B.F.)	0.785	309	12.3	9.31	23.5	24.5	0.019
19.01.2017	PACKER-3 (B.F.)	0.785	310	11.68	8.81	29.3	21.5	0.022
28.01.2017	PACKER-3 (B.F.)	0.785	308	11.33	8.61	15.9		0.012
	February'17							
03.02.2017	PACKER-3(B.F.)	0.785	310	11.47	8.66	20.3		0.015
10.02.2017	PACKER-3(B.F.)	0.785	311	12.2	9.18	26.4	24.0	0.021
17.02.2017	PACKER-3(B.F.)	0.785	309	11.81	8.94	23.8		0.018

24.02.2017	PACKER-3(B.F.)	0.785	310	12.08	9.12	25.6		0.020	
	March'17								
03.03.2017	PACKER-3(B.F.)	0.785	315	12.13	9.01	29.8		0.023	
14.03.2017	PACKER-3(B.F.)	0.785	318	11.19	8.23	26.1	36.8	0.019	
22.03.2017	PACKER-3(B.F.)	0.785	316	11.94	8.84	23.9	26.8	0.018	
29.03.2017	PACKER-3(B.F.)	0.785	317	11.01	8.12	27.5		0.019	
	October' 2016								
01.10.2016	PACKER-4 (B.F.)	0.785	321	12.44	9.07	22.2		0.017	
08.10.2016	PACKER-4 (B.F.)	0.785	318	12.18	8.96	27.3	22.6	0.021	
15.10.2016	PACKER-4 (B.F.)	0.785	316	12.63	9.35	19.7	23.6	0.016	
22.10.2016	PACKER-4 (B.F.)	0.785	319	12	8.8	25.1		0.019	
	November' 2016								
05.11.2016	PACKER-4(B.F.)	0.785	317	12.75	9.41	18.0		0.015	
12.11.2016	PACKER-4(B.F.)	0.785	313	12.38	9.25	22.6	21.5	0.018	
18.11.2016	PACKER-4(B.F.)	0.785	315	11.98	8.9	26.1	21.5	0.020	
25.11.2016	PACKER-4(B.F.)	0.785	314	12.16	9.06	19.4		0.015	
	December' 2016								
03.12.2016	PACKER-4(B.F.)	0.785	316	11.94	8.84	20.7		0.016	
10.12.2016	PACKER-4(B.F.)	0.785	313	12.57	9.39	15.7	10.6	0.013	
17.12.2016	PACKER-4(B.F.)	0.785	310	11.27	8.5	23.4	19.6	0.017	
27.12.2016	PACKER-4(B.F.)	0.785	312	12.02	9.01	18.4		0.014	
	January'17								

05.01.2017	PACKER-4 (B.F.)	0.785	312	12.07	9.05	22.8		0.018
12.01.2017	PACKER-4 (B.F.)	0.785	314	11.23	8.37	19.3	24.1	0.014
19.01.2017	PACKER-4 (B.F.)	0.785	310	11.68	8.81	28.9	24.1	0.022
28.01.2017	PACKER-4 (B.F.)	0.785	311	11.02	8.29	25.2		0.018
	February'17							
03.02.2017	PACKER-4(B.F.)	0.785	313	11.63	8.69	18.3		0.014
10.02.2017	PACKER-4(B.F.)	0.785	312	11.35	8.51	16.4	18.0	0.012
17.02.2017	PACKER-4(B.F.)	0.785	311	11.95	8.99	17.9	18.0	0.014
24.02.2017	PACKER-4(B.F.)	0.785	314	11.23	8.37	19.3		0.014
	March'17							
03.03.2017	PACKER-4(B.F.)	0.785	317	12.7	9.37	20.6		0.017
14.03.2017	PACKER-4(B.F.)	0.785	315	12.13	9.01	25.5	20.4	0.020
22.03.2017	PACKER-4(B.F.)	0.785	319	12	8.8	16.7		0.013
29.03.2017	PACKER-4(B.F.)	0.785	318	11.52	8.47	18.9		0.014

J.K. Cement WORKS, MANGROL (RAJ) AMBIENT AIR QUALITY AVERAGE RESULTS (SPM) COMMON FOR UNIT-1 & UNIT-2 (ALL VALUES IN MICROGRAMS / CUBIC METER)

(October' 2016 - March ' 2017)

S.No. & Month	LOCATION / PERAMETER	NEAR TIME OFFICE	NEAR THERMAL POWER PLANT	NEAR RAW MATERIAL GATE	NEAR PACKING PLANT GATE	Remarks
October' 2016						
1	SPM	316.0	339.5	315.3	294.0	
2	SO2	12.2	13.7	10.9	9.7	
3	NOX	25.2	27.9	22.6	19.9	
4	со	601.1	572.5	629.8	558.2	
November' 2016						
1	SPM	324.0	349.8	322.5	310.5	
2	SO2	10.4	13.7	12.0	8.3	
3	NOX	22.2	28.4	24.6	17.3	
4	СО	415.1	586.8	529.6	601.1	
December' 2016						
1	SPM	346.5	365.0	329.8	307.5	
2	SO2	11.2	14.3	12.4	9.1	
3	NOX	22.8	26.2	25.5	18.4	

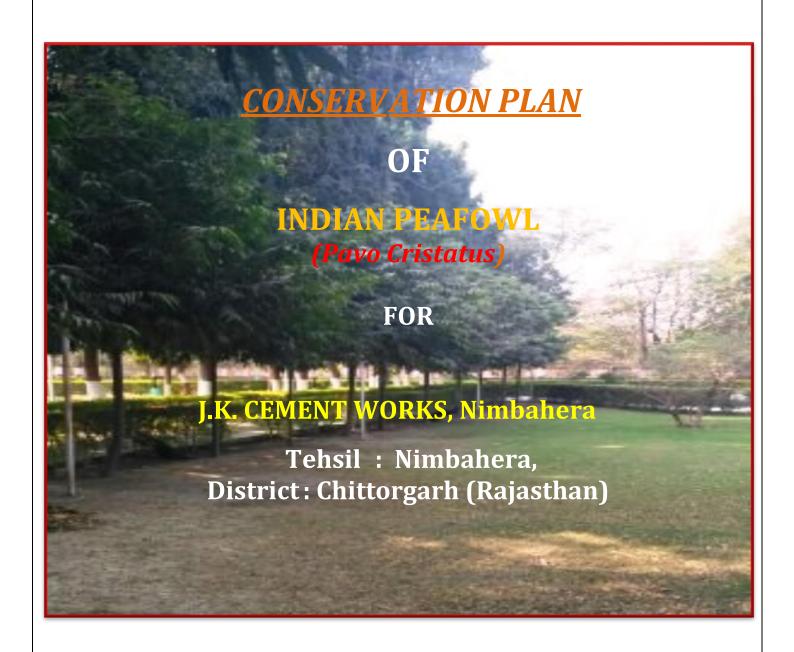
4	со	601.1	701.3	706.1	553.4	
January' 2017						
1	SPM	338.0	387.8	355.8	369.5	
2	SO2	11.0	17.1	14.1	14.4	
3	NOX	20.9	31.7	26.1	26.7	
4	со	687.0	625.0	672.7	629.8	
February' 2017						
1	SPM	324.2	358.3	348.8	350.0	
2	SO2	9.8	13.7	11.7	12.5	
3	NOX	18.5	28.7	27.0	26.8	
4	со	658.4	620.2	630	687.0	
March' 2017						
1	SPM	341.0	383.5	360.8	330.0	
2	SO2	11.8	15.2	13.8	10.3	
3	NOX	21.6	27.9	25.3	19.6	
4	со	596	777.6	720.4	639.3	
Six monthly Ave	orago.					
-	1	221.5	2612	222.2	225.5	
1	SPM	331.6	364.0	338.8	326.9	
2	SO2	11.1	14.6	12.5	10.7	
3	NOX	21.9	28.5	25.2	21.5	
4	СО	593.2	647.2	648.0	611.5	

J.K. Cement Works, Mangrol (Unit-1) Fugitive Emission Monitoring Report (October' 2016 - March ' 2017)

			SPM	I (μg/m3)	
S.No.	Month/Year	NEAR COAL YARD-1	NEAR LIMESTONE CRUSHING SITE-1	NEAR STACKER RECLAIMER-1	NEAR GYPSUM YARD-1
1	Oct-16	1395.8	2133.7	2390.7	2186.6
2	Nov-16	1407.1	2954.2	2301.7	2354.3
3	Dec-16	1520.8	2286.6	2185.8	2024.8
4	Jan-17	1439.7	2186.6	2482.6	1929.6
5	Feb-17	1557.4	2618.1	2141.9	2107.0
6	Mar-17	1777.8	2853.6	2647.1	2230.2

J.K. Cement Works, Mangrol (Unit-2) Fugitive Emission Monitoring Report (October' 2016 - March ' 2017)

			SPM	(μg/m3)	
S.No.	Month/Year	NEAR COAL YARD-2	NEAR LIMESTONE CRUSHING SITE-2	NEAR STACKER RECLAIMER-2	NEAR GYPSUM YARD-2
1	Oct-16	1256.8	1582.6	1407.1	1697.9
2	Nov-16	1327.3	1649.3	1566.8	1861.6
3	Dec-16	1075.8	1876.7	1430.6	1575.2
4	Jan-17	1343.8	1734.4	1588.1	1645.8
5	Feb-17	1527.8	1579.9	1411.8	1512.6
6	Mar-17	1659.7	1832.0	1809.0	2069.6



CONSERVATION PLAN FOR INDIAN PEAFOWL

(Pavo cristatus)

1.0 INTRODUCTION

This conservation plan is a planning document that ensures that the anticipated take of the listed species Peacock will be minimized or mitigated by conserving the habitat upon which the species depend, thereby contributing to the recovery of the species as a whole. The purpose of this plan is not only to protect this specie that have been listed as threatened or endangered, but also to conserve the ecosystems upon which these depends.

The proposed expansion project is situated within premises of J.K. Cement Works, Nimbahera, Tehsil –Nimbahera, District – Chittorgarh, Rajasthan. The project site falls within the Survey of India Toposheet no. -

45 L/ 10. A detailed biological survey of the core zone (cement plant & colony) and buffer zone (10 km radius of periphery of the project) was carried out Peacock which belongs to Schedule I of the Wildlife (Protection) Act 1972 is the species of fauna found in the core zone and villages of the study area. This conservation plan for peacock has been formulated in consultation of the respective Forest Department of Chittorgarh (Raj).

CLASSIFICATION							
Kingdom	Animalia						
Scientific Name	Pavo cristatus						
Phylum	Chordata						
Class	Ave						
Order	Galliformes						
Family	Phasianidae						
Genus	Pavo						
Species	cristatus						

1.1 STUDY APPROACH

Core and Buffer zone of the study area has been reported as a habitat of Schedule-I species *Pavo cristatus* commonly known as peacock, more effort was made to assess their status in term of movements and habitat use in and around the study area. At first, a detailed biological survey of the core zone and buffer zone (10 Km radius from periphery of the proposed expansion project) was carried out to understand the status distribution of the species in the study area. Also, questionnaire survey was carried out to understand the recent status of peacock sightings and their movements. Overall, 20 people from core zone

(staff and residential people in colony) also seven villages were interviewed randomly. The conclusion of the survey discussed the potential sightings & habitat use, and movement and food habits of peacock in the study area.

1.2 HABITAT, LIFE CYCLE AND DIET

	SIZE & HABITAT								
Body length	180 – 230 cm								
Weight	2,750 – 6,000 gm								
Habitat	In the undergrowth in deciduous forests near streams. Tall/								
	medium size trees for roosting Semi-feral in villages and fields.								

Size of the male tail feathers, its coloration, and numbers of "eyes" present, determine the dominance of the male in peacock hierarchy. The females are believed to be attracted towards the male with longest and most colorful tail feathers.

1.3 BEHAVIOR

Peacocks are gregarious by nature. In the breeding season they are usually seen in small parties of one male with three to five females, whereas in the non breeding season they remain in separate parties of adult males and females with juveniles. **Peacocks roost in tall trees** and emerge from the dense thickets to feed in fields and openings in forests and fields.

	Reproduction & life cycle
Call	kee-ow, kee-ow, kee-ow, ka-an, ka-an, kok-kok, kok-kok, cain-kok
Breeding	July-September
Nest site	On ground in undergrowth (wild) On buildings by semi-feral birds in villages
Clutch size	4 to 6
Incubation	28 days.

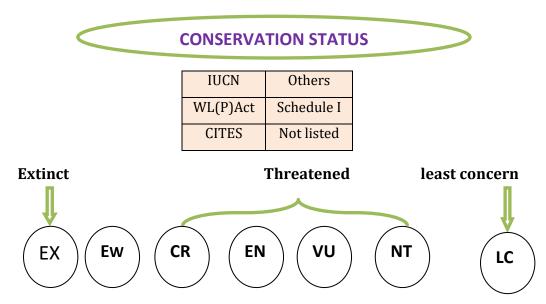
1.4 DIET

Peacocks are ground-feeders. Indian Peafowl do most of their foraging early in the morning, and shortly before sunset. They retreat to the shade and security of the trees for the hottest portion of the day. Peacocks are omnivorous and eat not only creatures like ticks, termites, ants, locusts, mice, scorpions, reptiles, worms and frogs, but also the green shoots of plants,

flower petals, seed heads, vegetables, grass, wheat, cracked corn, rice, etc. In fact they will eat almost anything reasonable that they can get their beaks.

2.0 CONSERVATION AND RELATIONSHIP WITH MAN

The great beauty and popularity of the Indian Peafowl has ensured its protection throughout most of its native ranges. It is the national bird of India. The peafowl is prominent in the mythology and folklore of the Indian people. The Hindus consider the bird to be sacred because of its association with Lord **Krishna** who used to wear its feather as crown (Mormukut). It is also associated with the God **Kartikeya**, son of the Lord Shiva and Parvati and brother of Lord Ganesh. It is "vaahan" (transport) of Lord Kartikeya. This long and close association with humans has proven the peafowl's adaptability to human-altered landscapes. In villages where it is protected it becomes quite tame, but is very shy and secretive where hunted. In the core zone J. K. Cement Works conserve the *Pavo cristatus* with developed habitation and in the nearby villages in buffer area of project peacock is generally protected by the local people.



3.0 PERCEIVED THREATS

Threats to the peacocks in the area are:-

- ➤ Habitat loss, specially the shortage of tall trees in and around the project for roosting and for providing shade during hot summer months
- ➤ Shortage of drinking water for the birds, during the hot summer days
- ➤ Casualties caused by eating chemically treated agricultural crop seeds.
- ➤ Illegal hunting by some persons.

Peacock conservation plan has to address these threats.

4.0 CONSERVATION MEASURES NEEDED

In view of the above threats to the peacocks in the area the measures needed for their conservation in the area were discussed with the officers of Forest and Wildlife Department. Written suggestions of the Forests and Wildlife Department for conservation of the peacocks in the buffer areas were also obtained.

Accordingly it is proposed to take the following conservation measures in the buffer area of the project.

i Increase in tree cover

Increasing the tree cover in the buffer area for shelter and roosting of peacocks. This will be achieved by planting of tree groves (a group of trees that grow close together, generally without many bushes or other plants) in core zone and in buffer area. Some local species such as Neem, Amaltash, Ardu, Sheesham, Dhak, Ber, Peepal tree etc. will be planted. Planting of tree groves in school compounds in the villages of buffers area will be planted as per the plantation programme. In the premises (core zone) company also developed the habitation for peafowl with tree, grass and shrubs between the trees to attract the peafowl.

ii Publicity

For generating public awareness for conservation of Peacocks in the area

- a) Amongst cultivators to avoid using chemically treated crop seeds.
- b) Generating awareness in school children by organizing competitions during Wildlife Week and Van Mahotsavas celebrations.

iii Strengthening of anti-poaching measures.

Giving cash rewards to the people/informers who provide information about the poaching of peacocks and get the poachers arrested.

5.0 DETAILS OF THE PROPOSED CONSERVATION MEASURES

For increasing the tree cover it is proposed to:-

A. The farmers in the buffer area will be motivated to plant fruit and local species of trees on the boundaries of their agricultural fields and near their homes etc. Benefits of planting these trees would be explained to them by distribution of printed pamphlets or posters designed for the purpose. Cash awards of Rs. 1,000/- is proposed to be given to those

farmers who are able to maintain and grow at least eight out of ten plants supplied to them for five years, provided these plants have attained a height of ten feet and have a proportionately developed girth and crown. Twenty such farmers will be rewarded each year. Selection of the farmers for cash awards each year will be done jointly by the project proponent and money for the awards will be provided by project proponent.

- B. The school campuses existing in the buffer zone are proposed to be developed as roosting places for peacocks by planting trees. 150 plants will be planted each year in the selected schools of the buffer area. The planting work will be done by the active participation of school children during Van Mahotsava, national festivals. The estimated cost of planting including the transport of plants, digging of pits, planting of seedlings, watering etc. will be around Rs. 300/- per sapling. The children of the schools will be motivated to look after the plants later on. To induce a spirit of competition in protection and development of these plants, the school having the best maintained plants/trees in the third year of the planting would be given a trophy and a cash prize of Rs 2,500/- by the Company.
- C. Wide publicity for the conservation of peacocks would be done in the surrounding villages and schools of the area. This would include distribution of pamphlets and posters for peacock protection, and generating awareness in masses for making drinking water available to peacocks and other birds by hanging earthen pots under trees and filling them with water. Following further activities are proposed to be undertaken for publicity purposes:-
 - ❖ As suggested by the Forest Department the Wildlife Week and "Van Mahotsavas" would be annually organised in the schools of the buffer area. These will be organised by the school teachers in respective schools. Programmes like debate competitions, essay writing, and painting competitions, etc. could be organised. Prizes worth Rs. 2,500/- will be distributed to the students in each school. These prizes will be distributed in the schools for five years.
 - Publishing and distributing posters/ pamphlets in the buffer area, urging the cultivators to protect their fields from peacocks feeding on their chemically treated seeds.
 - ❖ Occasionally some people indulge in poaching of peacocks for its meat and feathers. To curb this occasional poaching it is proposed to give a cash reward of Rs. 5,000/- to anyone who would help the forest department in apprehending and prosecution such poacher. With the objective of effectively protecting the wild life and to control poaching, smuggling and illegal trade in wildlife and its derivatives the government of India enacted Wild Life (Protection) Act 1972. The act was amended in January 2003 and punishment for offences under the Act has been made more stringent.

J.K.Cement works, Kailashnagar (Nimbahera) already conserving the peafowl since 2003, company continuously positively trying for conserve the Indian peafowl

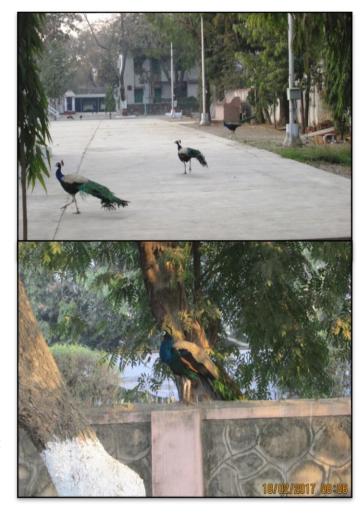
Peacocks roam freely in the wild, taking cover up in the trees at night to sleep and avoid predators. A peacock that has access to water, food and shelter



will not leave its immediate area. For the same company constructed open tanks for them so peacocks roaming freely around the plant premises of Kailashnagar colony no. I without flying away. Peafowl are familiar with residential peoples of J.K. Cement staff

and their family members.

These birds are sometimes kept companion animals. males are brightly colored and females are monotone. Peacocks like peace and harmony, and can become stressed if they don't have it. They also need companionship, and can become depressed even heartbroken - if obliged to live alone. Therefore since company conserving the Pavo cristatus their population are increasing per year approximately 200 peafowl are present in colony and all around the cricket ground of J.K. cement works Kailashnagar.





(Peahen and Peacock recorded in buffer zone)

6.0 BUDGET

In addition to development, following activities will be also implemented. Budget for the conservation of peacock is given below:-

	Expenditure Budget for Five Years For Peacock Conservation										
S.	Activity	1st year	2 nd year	3 rd year	4 th year		5 th year		Budget		
No								(INR)			
1 Plantation- approximately 150 saplings/year for five years (@ Rs.300/- per saplings)											
A	mount Rs.	45000/-	45000/-	45000/-	45000/-	45000/-	45000/-	45000/-	Rs.		
	Villages	Sangariya	Barolighta	Rampura	Bhatt kotri	Badoli madho singh	Borakheri	Phachar	3,15,000/-		
2		ss programn hing award	•	ock" conserv	ation will be	scheduled in a	year in five	schools and	villages and		
A	mount Rs.	35,000/-	35,000/-	35,000/-	35,000/-	35,000/-	35,000/-	35,000/-	Rs.		
	Schools of	Sangariya	Barolighta	Rampura	Bhatt kotri	Badoli madho singh	Borakheri	Phachar	2,45,000/-		
								Total	Rs.		
	(Five Lacs sixty Thousand Rupees)										

7.0 SUGGESTED PLANT SPECIES FOR DEVELOPING HABITATION

Some plant species should be prorogate for attract the bird and developing of habitation in the study area as follows:-

	Trees suggested	d for Peacock and other bird	S
S. No.	Common Name	Binominal Name	Family
1	Gulmohar	Delonix regia	Fabaceae
2	Aam	Mangifera indica	Anacardiaceae
3	Jamun	Syzygium cumini	Myrtaceae
4	Neem	Azadirachta indica	Meliaceae
5	Karanj	Pongamia pinnata	Fabaceae
6	Kadam	Anthocephalus cadamba	Rubiaceae
7	Aanvla Indian goosberry	Phyllanthus emblica	Phyllanthaceae
8	Peacock flower	caesalpinia pulcherrima	Fabaceae
9	peacock plant	Calathea makoyana	Marantaceae
10	Arjun	Terminalia arjuna	Combretaceae
11	Sitaphal	Annona squamosa	Annonaceae
12	Amaltas	Cassia fistula	Fabaceae
13	Banyan tree	Ficus benghalensis	Moraceae
14	Pipal	ficus religiosa	Moraceae
15	Ashok	Polyalthia longifolia	Fabaceae
	Shr	ubs and Creepers	
1	Bougainvillea	Bougainvillea glabra	Nyctaginaceae
2	Ber	Ziziphus sppecies	Rhamnaceae
3	Marigold	Tagetes erecta	Asteraceae
4	Gudhal	Hibiscus rosasinesis	Malvaceae
5	Fire brush	Hamelia patens	Rubiaceae
6	Kaner	Nerium oleander	Apocynaceae
7	Tulip heart	Tradescantia pallida	Commelianaceae
8	Champa/Frangipani	Plumeria,magnolia champa	Apocynaceae
9	Morning glories	Ipomea spp.	Convolvulaceae
10	Raimuniya/Lantana bush	Lantana camara	Verbenaceae
11	Curry tree/ Kaddipatta	Murraya koenigii	Rutaceae

Out of above species Some are already planted in the J.K. Cement plant premises i.e. (i) Kailashnagar Colony No. I (ii) all around the cricket ground of Kailashnagar plant.

J.K. Cement WORKS, MANGROL (RAJ) (Unit-1) DATA SHEET FOR PARTICULATE MATTER EMISSION FROM POINT SOURCE October' 2016 - March' 2017

DATE	NAME OF THE STACK / DUCT ATTECHED WITH UNIT AND MONTH	CROSS SECTIONAL AREA OF	STACK GASES TEMP.	STACK GASES VELOCITY	FLOW OF GASES IN STACK	DUST CONC.	MEAN DUST CONC.	EMISSION RATE	REMARK
	October' 2016	DUCT (M2)	(°K)	(M / Sec.)	(NM³/Sec.)	(Mg/NM³)	(Mg/NM³)	(Ts/DAY)	
03.10.2016	KILN + RAW MILL -1 (B.H.)	5.23	391	15.52	61.86	10.30		0.055	
10.10.2016	KILN + RAW MILL -1 (B.H.)	5.23	393	15.94	63.21	16.10		0.088	
17.10.2016	KILN + RAW MILL -1 (B.H.)	5.23	389	15.33	61.42	11.30	12.6	0.060	
31.10.2016	KILN + RAW MILL -1 (B.H.)		U	Inder Mainten	ance				
	November' 2016								
01.11.2016	KILN + RAW MILL -1 (B.H.)								
15.11.2016	KILN + RAW MILL -1 (B.H.)		Ur	nder Mainten	ance				
23.11.2016	KILN + RAW MILL -1 (B.H.)	5.23	391	16.04	63.94	11.70	10.7	0.065	
30.11.2016	KILN + RAW MILL -1 (B.H.)	5.23	392	15.39	61.19	9.60		0.051	
	December' 2016								
03.12.2016	KILN + RAW MILL -1 (B.H.)	5.23	399	15.87	61.99	11.90		0.064	We have
10.12.2016	KILN + RAW MILL -1 (B.H.)	5.23	397	15.39	60.42	18.90		0.099	converted ESP into Bag
17.12.2016	KILN + RAW MILL -1 (B.H.)	5.23	401	15.07	58.57	23.20	16.2	0.117	house
27.12.2016	KILN + RAW MILL -1 (B.H.)	5.23	398	15.61	61.13	10.80		0.057	
	January'2017								

02.01.2017	KILN + RAW MILL -1 (B.H.)	5.23	406	15.37	59.00	15.30		0.078	We have
08.01.2017	KILN + RAW MILL -1 (B.H.)	5.23	402	15.83	61.37	12.60	1	0.067	converted ESP into Bag
16.01.2017	KILN + RAW MILL -1 (B.H.)	5.23	408	14.68	56.08	17.60	13.8	0.085	house
24.01.2017	KILN + RAW MILL -1 (B.H.)	5.23	404	16.07	61.99	9.60	-	0.051	
	February'2017								
04.02.2017	KILN + RAW MILL -1 (B.H.)	5.23	405	15.04	57.88	17.60		0.088	We have
11.02.2017	KILN + RAW MILL -1 (B.H.)	5.23	403	15.51	59.98	16.50	- 	0.086	converted ESP into Bag
18.02.2017	KILN + RAW MILL -1 (B.H.)	5.23	406	14.90	57.20	18.80	17.0	0.093	house
25.02.2017	KILN + RAW MILL -1 (B.H.)	5.23	402	15.59	60.44	15.20	-	0.079	
	March'2017								
02.03.2017	KILN + RAW MILL -1 (B.H.)	5.23	405	16.23	62.46	16.80		0.091	We have
09.03.2017	KILN + RAW MILL -1 (B.H.)	5.23	402	14.99	58.12	12.30	-	0.062	converted ESP into Bag
16.03.2017	KILN + RAW MILL -1 (B.H.)	5.23	399	15.87	61.99	17.70	15.6	0.095	house
31.03.2017	KILN + RAW MILL -1 (B.H.)		Kiln L	Inder Maint	enance		-		
	October' 2016								
03.10.2016	FOLAX COOLER (E.S.P)	7.07	395	8.86	47.26	27.30		0.111	
10.10.2016	FOLAX COOLER (E.S.P)	7.07	401	8.58	45.08	29.20	-	0.114	
17.10.2016	FOLAX COOLER (E.S.P)	7.07	398.00	7.57	40.07	25.60	27.4	0.089	
31.10.2016	FOLAX COOLER (E.S.P)		Kiln L	Inder Maint	enance	L			
	November' 2016								
01.11.2016	FOLAX COOLER (E.S.P)								
15.11.2016	FOLAX COOLER (E.S.P)		Und	der Mainten	25.45				

23.11.2016	FOLAX COOLER (E.S.P)	7.07	403.00	9.33	48.78	27.70		0.12	
30.11.2016	FOLAX COOLER (E.S.P)	7.07	399.00	8.67	45.78	23.20		0.09	
	December' 2016								
03.12.2016	FOLAX COOLER (E.S.P)	7.1	402.0	8.4	44.1	25.8		0.098	
10.12.2016	FOLAX COOLER (E.S.P)	7.1	400.0	9.0	47.5	28.3		0.116	
17.12.2016	FOLAX COOLER (E.S.P)	7.1	405.0	10.0	52.2	23.2	23.7	0.105	-
27.12.2016	FOLAX COOLER (E.S.P)	7.1	399.0	8.3	43.8	17.3	-	0.065	
	January'2017								
02.01.2017	FOLAX COOLER (E.S.P)	7.07	429	6.97	34.23	21.30		0.063	
08.01.2017	FOLAX COOLER (E.S.P)	7.07	432	7.77	37.89	24.80	-	0.081	
16.01.2017	FOLAX COOLER (E.S.P)	7.07	417	8.40	42.44	26.10	21.6	0.096	
24.01.2017	FOLAX COOLER (E.S.P)	7.07	423	7.75	38.60	14.30	-	0.048	
	February'2017								
04.02.2017	FOLAX COOLER (E.S.P)	7.07	430	7.14	34.98	25.80		0.078	
11.02.2017	FOLAX COOLER (E.S.P)	7.07	431	7.49	36.61	28.00	-	0.089	
18.02.2017	FOLAX COOLER (E.S.P)	7.07	428	8.33	41.01	24.80	26.4	0.088	
25.02.2017	FOLAX COOLER (E.S.P)	7.07	425	8.04	39.86	27.00	-	0.093	
	March'2017								
02.03.2017	FOLAX COOLER (E.S.P)	7.07	421	7.19	35.98	46.60		0.145	
09.03.2017	FOLAX COOLER (E.S.P)	7.07	425	8.28	41.05	35.20		0.125	
16.03.2017	FOLAX COOLER (E.S.P)	7.07	428	8.12	39.97	39.70	40.5	0.137	
31.03.2017	FOLAX COOLER (E.S.P)		Kiln L	Inder Maint	-				

	October' 2016								
03.10.2016	COAL MILL (B.F.)	0.45	333	26.85	10.81	21.10		0.020	
10.10.2016	COAL MILL (B.F.)	0.45	335	25.89	10.36	14.10		0.013	
17.10.2016	COAL MILL (B.F.)	0.45	332	26.34	10.64	16.90	17.4	0.016	
31.10.2016	COAL MILL (B.F.)		Mill u	nder Mainte					
	November' 2016								
01.11.2016	COAL MILL (B.F.)					<u> </u>			
15.11.2016	COAL MILL (B.F.)		Mill u	nder Mainte	enance				
23.11.2016	COAL MILL (B.F.)	0.45	334.00	26.41	10.60	13.00	15.35	0.01	
30.11.2016	COAL MILL (B.F.)	0.45	331.00	26.03	10.55	17.70	-	0.02	
	December' 2016								
03.12.2016	COAL MILL (B.F.)	0.45	333	26.37	10.62	15.90		0.015	
10.12.2016	COAL MILL (B.F.)	0.45	330	25.97	10.55	18.90	_	0.017	
17.12.2016	COAL MILL (B.F.)	0.45	328	25.57	10.45	19.30	16.6	0.017	
27.12.2016	COAL MILL (B.F.)	0.45	331	25.49	10.33	12.20	_	0.011	
	January'2017			-					
02.01.2017	COAL MILL (B.F.)	0.45	331	25.96	10.52	19.00		0.017	
08.01.2017	COAL MILL (B.F.)	0.45	334	26.66	10.70	12.50		0.012	
16.01.2017	COAL MILL (B.F.)	0.45	330	26.26	10.67	15.60	14.2	0.014	
24.01.2017	COAL MILL (B.F.)	0.45	335	26.86	10.75	9.70	1	0.009	
	February'2017								
04.02.2017	COAL MILL (B.F.)	0.45	332	25.45	10.28	18.80	18.0	0.017	

11.02.2017	COAL MILL (B.F.)	0.45	335	25.06	10.03	20.60		0.018		
18.02.2017	COAL MILL (B.F.)	0.45	331	25.16	10.19	15.40	_	0.014		
25.02.2017	COAL MILL (B.F.)	0.45	334	25.78	10.35	17.10	_	0.015		
	March'2017									
02.03.2017	COAL MILL (B.F.)	0.45	333	26.62	10.72	21.90		0.020		
09.03.2017	COAL MILL (B.F.)	0.45	336	26.88	10.73	16.60	_	0.015		
16.03.2017	COAL MILL (B.F.)	0.45	334	26.07	10.47	19.20	19.2	0.017		
31.03.2017	COAL MILL (B.F.)		Due to Kiln Stopped							
	October' 2016									
03.10.2016	CEMENT MILL No1 (B.F.)						I			
10.10.2016	CEMENT MILL No1 (B.F.)									
17.10.2016	CEMENT MILL No1 (B.F.)			Mill	Under Mainte	enance				
31.10.2016	CEMENT MILL No1 (B.F.)									
	November' 2016									
01.11.2016	CEMENT MILL - 1 (B.F.)									
08.11.2016	CEMENT MILL - 1 (B.F.)									
23.11.2016	CEMENT MILL - 1 (B.F.)			Mill	Under Mainte	enance				
30.11.2016	CEMENT MILL - 1 (B.F.)									
	December' 2016									
03.12.2016	CEMENT MILL No1 (B.F.)					1		1		
10.12.2016	CEMENT MILL No1 (B.F.)			Mill	Under Mainte	nance				
17.12.2016	CEMENT MILL No1 (B.F.)	1								

31.12.2016	CEMENT MILL No1 (B.F.)										
	January'2017			-							
02.01.2017	CEMENT MILL - 1 (B.F.)			L	<u>l</u>	- L	- L				
08.01.2017	CEMENT MILL - 1 (B.F.)				_						
16.01.2017	CEMENT MILL - 1 (B.F.)			Und	der Major Shu	ıtdown					
31.01.2017	CEMENT MILL - 1 (B.F.)										
	February'2017			-							
04.02.2017	CEMENT MILL No1 (B.F.)		1	I	1	1		1			
11.02.2017	CEMENT MILL No1 (B.F.)				_						
18.02.2017	CEMENT MILL No1 (B.F.)		Under Major Shutdown								
28.02.2017	CEMENT MILL No1 (B.F.)										
	March'2017										
02.03.2017	CEMENT MILL - 1 (B.F.)										
09.03.2017	CEMENT MILL - 1 (B.F.)										
16.03.2017	CEMENT MILL - 1 (B.F.)			Und	der Major Shu	ıtdown					
31.03.2017	CEMENT MILL - 1 (B.F.)										
	October' 2016										
04.10.2016	CEMENT MILL - 2 (E.S.P)	0.50	369	10.25	4.14	35.00		0.013			
13.10.2016	CEMENT MILL - 2 (E.S.P)	0.50	372	9.89	3.96	48.80		0.017			
20.10.2016	CEMENT MILL - 2 (E.S.P)	0.50	0.50 375 10.11 4.02 39.90 42.1 0.014								
26.10.2016	CEMENT MILL - 2 (E.S.P)	0.50	368	9.49	3.84	44.80		0.015			
	November' 2016										

03.11.2016	CEMENT MILL - 2 (E.S.P)	0.50	373	9.30	3.72	50.10		0.016	
11.11.2016	CEMENT MILL - 2 (E.S.P)	0.50	370	10.09	4.06	44.60		0.016	
18.11.2016	CEMENT MILL - 2 (E.S.P)	0.50	369	9.68	3.91	56.90	46.7	0.019	
26.11.2016	CEMENT MILL - 2 (E.S.P)	0.50	371	10.28	4.13	35.00		0.012	
	December' 2016								
02.12.2016	CEMENT MILL - 2 (E.S.P)	0.50	375	10.05	3.99	51.90		0.018	
09.12.2016	CEMENT MILL - 2 (E.S.P)	0.50	372	10.18	4.08	46.40		0.016	
16.12.2016	CEMENT MILL - 2 (E.S.P)	0.50	378	9.55	3.76	34.70	43.1	0.011	
28.12.2016	CEMENT MILL - 2 (E.S.P)	0.50	373	9.85	3.93	39.40		0.013	
	January'2017			-					
03.01.2017	CEMENT MILL - 2 (E.S.P)	0.50	371	9.34	3.75	32.10		0.010	
09.01.2017	CEMENT MILL - 2 (E.S.P)	0.50	374	9.92	3.95	45.00		0.015	
20.01.2017	CEMENT MILL - 2 (E.S.P)	0.50	376	10.23	4.05	35.40	36.6	0.012	
27.01.2017	CEMENT MILL - 2 (E.S.P)	0.50	373	9.67	3.86	33.70		0.011	
	February'2017			-					
02.02.2017	CEMENT MILL - 2 (E.S.P)	0.50	372	9.60	3.85	43.40		0.014	
10.02.2017	CEMENT MILL - 2 (E.S.P)	0.50	370	9.69	3.90	45.00		0.015	
17.02.2017	CEMENT MILL - 2 (E.S.P)	0.50	374	10.03	4.00	49.40	48.0	0.017	
24.02.2017	CEMENT MILL - 2 (E.S.P)	0.50	375	10.22	4.06	54.30		0.019	
	March'2017			-					
04.03.2017	CEMENT MILL - 2 (E.S.P)	0.50	369	9.85	3.98	40.70		0.014	
11.03.2017	CEMENT MILL - 2 (E.S.P)	0.50	371	10.28	4.13	50.20	45.0	0.018	

18.03.2017	CEMENT MILL - 2 (E.S.P)	0.50	372	9.54	3.82	35.10		0.012	
25.03.2017	CEMENT MILL - 2 (E.S.P)	0.50	367	9.94	4.04	54.00		0.019	
	October' 2016								
03.10.2016	CRUSHER-1 (B.F.)	0.38	321	13.84	4.88	28.10		0.012	
13.10.2016	CRUSHER-1 (B.F.)	0.38	318	13.42	4.78	26.90	-	0.011	
21.10.2016	CRUSHER-1 (B.F.)	0.38	320	14.08	4.98	29.80	28.3	0.013	
31.10.2016	CRUSHER-1 (B.F.)		Und	der Mainten	ance	<u> </u>			
	November' 2016								
01.11.2016	CRUSHER-1 (B.F.)								
08.11.2016	CRUSHER-1 (B.F.)		Und	der Mainten	ance				
15.11.2016	CRUSHER-1 (B.F.)						24.4		
24.11.2016	CRUSHER-1 (B.F.)	0.38	317.00	13.62	4.87	24.40		0.010	
	December' 2016								
03.12.2016	CRUSHER-1 (B.F.)	0.38	307	12.96	4.78	21.70		0.009	
10.12.2016	CRUSHER-1 (B.F.)	0.38	305	12.41	4.61	28.80		0.011	
17.12.2016	CRUSHER-1 (B.F.)	0.38	302	13.38	5.02	27.80	26.2	0.012	
29.12.2016	CRUSHER-1 (B.F.)	0.38	306	12.80	4.74	26.30	-	0.011	
	January'2017								
05.01.2017	CRUSHER-1 (B.F.)	0.38	302	12.54	4.70	19.90		0.008	
13.01.2017	CRUSHER-1 (B.F.)	0.38	304	13.43	5.00	24.20		0.010	
21.01.2017	CRUSHER-1 (B.F.)	0.38	305	12.17	4.52	26.00	22.7	0.010	
27.01.2017	CRUSHER-1 (B.F.)	0.38	301	12.65	4.76	20.70	-	0.009	

	February'2017								
02.02.2017	CRUSHER-1 (B.F.)	0.38	303	13.01	4.86	17.90		0.008	
10.02.2017	CRUSHER-1 (B.F.)	0.38	305	12.41	4.61	22.40	1	0.009	
17.02.2017	CRUSHER-1 (B.F.)	0.38	302	12.63	4.74	19.10	20.0	0.008	
24.02.2017	CRUSHER-1 (B.F.)	0.38	305	12.90	4.79	20.50		0.008	
	March'2017								
02.03.2017	CRUSHER-1 (B.F.)	0.38	310	13.60	4.97	24.10		0.010	
09.03.2017	CRUSHER-1 (B.F.)	0.38	308	12.98	4.77	22.30	1	0.009	
18.03.2017	CRUSHER-1 (B.F.)		Mill	under Mainte	enance	1	23.2		
31.03.2017	CRUSHER-1 (B.F.)								

J.K. Cement WORKS, MANGROL (RAJ) (Unit-2) DATA SHEET FOR PARTICULATE MATTER EMISSION FROM POINT SOURCE October' 2016 - March ' 2017

DATE	NAME OF THE STACK / DUCT	CROSS SECTIONAL	STACK GASES	STACK GASES	FLOW OF GASES IN	DUST CONC.	MEAN DUST	EMISSION RATE	REMARK
	ATTECHED WITH UNIT AND MONTH	AREA OF DUCT (M2)	(° K)	VELOCITY (M / Sec.)	STACK (NM³/Sec.)	(Mg/NM³)	CONC. (Mg/NM³)	(Ts/DAY)	
	October' 2016	DOCT (IVIZ)	(K)	<u>-</u>	(INIVI / Sec.)	(IVIS/IVIVI)	(IVIG/IVIVI)	(13/DA1)	
04.10.2016	KILN + RAW MILL (Bag House)	14.18	410	14.06	144.91	11.60		0.145	
11.10.2016	KILN + RAW MILL (Bag House)	14.18	409	13.06	134.93	15.60	11.7	0.182	
18.10.2016	KILN + RAW MILL (Bag House)	14.18	412	13.46	138.05	9.10	11.7	0.109	
26.10.2016	KILN + RAW MILL (Bag House)	14.18	411	13.27	136.43	10.40		0.123	
	November' 2016								
02.11.2016	KILN + RAW MILL (Bag House)	14.18	411	13.56	139.42	15.40		0.186	
09.11.2016	KILN + RAW MILL (Bag House)		Ur	nder Mainter	nance		12.0		
21.11.2016	KILN + RAW MILL (Bag House)	14.18	408	13.74	142.30	12.50	12.9	0.154	
28.11.2016	KILN + RAW MILL (Bag House)	14.18	413	13.48	137.92	10.90		0.130	
	December' 2016								
02.12.2016	KILN + RAW MILL (Bag House)	14.18	409	13.87	143.30	13.60		0.168	
13.12.2016	KILN + RAW MILL (Bag House)	14.18	412	13.46	138.05	15.60	15.4	0.186	
20.12.2016	KILN + RAW MILL (Bag House)	14.18	408	14.35	148.62	11.90		0.153	

27.12.2016	KILN + RAW MILL (Bag House)	14.18	410	13.72	141.40	20.50		0.250
	January'17							
03.01.2017	KILN + RAW MILL (Bag House)	14.18	410	13.66	140.79	13.40		0.163
09.01.2017	KILN + RAW MILL (Bag House)	14.18	413	14.05	143.75	18.00	16.6	0.224
16.01.2017	KILN + RAW MILL (Bag House)	14.18	411	14.62	150.31	15.60	16.6	0.203
24.01.2017	KILN + RAW MILL (Bag House)	14.18	415	13.92	141.74	19.20		0.235
	February'17							
03.02.2017	KILN + RAW MILL (Bag House)	14.18	409	13.70	141.54	13.40	14.4	0.164
10.02.2017	KILN + RAW MILL (Bag House)	14.18	412	13.64	139.90	11.90		0.144
17.02.2017	KILN + RAW MILL (Bag House)	14.18	410	14.11	145.42	15.50		0.195
24.02.2017	KILN + RAW MILL (Bag House)	14.18	413	14.50	148.36	16.80		0.215
	March'17							
06.03.2017	KILN + RAW MILL (Bag House)	14.18	412	13.29	136.31	10.70		0.126
15.03.2017	KILN + RAW MILL (Bag House)	14.18	418	14.86	150.22	16.50	12.2	0.214
22.03.2017	KILN + RAW MILL (Bag House)	14.18	420	14.06	141.46	13.20	13.2	0.161
29.03.2017	KILN + RAW MILL (Bag House)	14.18	415	13.69	139.40	12.20		0.147
	October' 2016							
04.10.2016	FOLAX COOLER (E.S.P)	8.8	402	10.2	66.7	20.1		0.116
11.10.2016	FOLAX COOLER (E.S.P)	8.8	399	10.6	69.5	17.6	24.5	0.106
18.10.2016	FOLAX COOLER (E.S.P)	8.8	400	10.0	65.8	22.8	21.5	0.130
26.10.2016	FOLAX COOLER (E.S.P)	8.8	397	10.3	68.2	25.4		0.150
	November' 2016							

02.11.2016	FOLAX COOLER (E.S.P)	8.80	405	10.56	68.38	17.00		0.100
09.11.2016	FOLAX COOLER (E.S.P)		Un	der Mainter	nance		1	
21.11.2016	FOLAX COOLER (E.S.P)	8.80	398	9.70	63.91	22.70	19.8	0.125
28.11.2016	FOLAX COOLER (E.S.P)	8.80	402	10.23	66.73	19.60	1	0.113
	December' 2016							
02.12.2016	FOLAX COOLER (E.S.P)	8.80	403	9.86	64.16	16.10		0.089
13.12.2016	FOLAX COOLER (E.S.P)	8.80	406	10.51	67.89	18.50	20.7	0.109
20.12.2016	FOLAX COOLER (E.S.P)	8.80	401	10.75	70.30	26.60	20.7	0.162
27.12.2016	FOLAX COOLER (E.S.P)	8.80	403	9.76	63.51	21.40		0.117
	January'17							
03.01.2017	FOLAX COOLER (E.S.P)	8.80	399	8.91	58.56	16.00		0.081
09.01.2017	FOLAX COOLER (E.S.P)	8.80	402	10.07	65.69	21.00	22.4	0.119
16.01.2017	FOLAX COOLER (E.S.P)	8.80	405	8.73	56.53	27.00	23.4	0.132
24.01.2017	FOLAX COOLER (E.S.P)	8.80	401	9.40	61.47	29.50		0.157
	February'17							
03.02.2017	FOLAX COOLER (E.S.P)	8.80	403	9.46	61.56	20.50		0.109
10.02.2017	FOLAX COOLER (E.S.P)	8.80	401	9.82	64.22	19.20	10.7	0.107
17.02.2017	FOLAX COOLER (E.S.P)	8.80	402	9.32	60.80	18.70	18.7	0.098
24.02.2017	FOLAX COOLER (E.S.P)	8.80	400	8.95	58.68	16.40		0.083
	March'17							
06.03.2017	FOLAX COOLER (E.S.P)	8.80	406	8.45	54.58	23.10	24.7	0.109
15.03.2017	FOLAX COOLER (E.S.P)	8.80	400	9.13	59.86	20.50	21.7	0.106

22.02.2017	FOLAY COOLED (F & D)	0.00	402	10.07	65.60	177		0.100
22.03.2017	FOLAX COOLER (E.S.P)	8.80	402	10.07	65.69	17.7	-	0.100
29.03.2017	FOLAX COOLER (E.S.P)	8.80	401	9.65	63.11	25.6		0.140
	October' 2016							
04.10.2016	COAL MILL (B.F.)	2.00	333	14.10	25.24	14.60		0.032
11.10.2016	COAL MILL (B.F.)	2.00	332	14.69	26.37	18.20	13.6	0.041
18.10.2016	COAL MILL (B.F.)	2.00	337	14.59	25.80	9.80	15.0	0.022
26.10.2016	COAL MILL (B.F.)	2.00	334	14.25	25.43	11.80		0.026
	November' 2016							
02.11.2016	COAL MILL (B.F.)	2.00	336	14.87	26.38	13.90		0.032
09.11.2016	COAL MILL (B.F.)		Un	der Mainter	nance		14.2	
21.11.2016	COAL MILL (B.F.)	2.00	333	14.10	25.24	18.50	14.2	0.040
28.11.2016	COAL MILL (B.F.)	2.00	335	14.45	25.71	10.20		0.023
	December' 2016							
02.12.2016	COAL MILL (B.F.)	2.00	339	14.18	24.93	13.60		0.029
13.12.2016	COAL MILL (B.F.)	2.00	342	14.69	25.60	19.40	17.6	0.043
20.12.2016	COAL MILL (B.F.)	2.00	340	13.88	24.33	24.80	17.6	0.052
27.12.2016	COAL MILL (B.F.)	2.00	337	14.36	25.40	12.40		0.027
	January'17							
03.01.2017	COAL MILL (B.F.)	2.00	337	13.58	24.02	11.90		0.025
09.01.2017	COAL MILL (B.F.)	2.00	340	12.95	22.70	17.00	15.6	0.033
16.01.2017	COAL MILL (B.F.)	2.00	335	13.96	24.84	20.40	15.6	0.044
24.01.2017	COAL MILL (B.F.)	2.00	338	14.43	25.44	13.20		0.029

	February'17								
03.02.2017	COAL MILL (B.F.)	2.00	338	13.55	23.89	16.70		0.034	
10.02.2017	COAL MILL (B.F.)	2.00	339	13.23	23.26	20.20	10.2	0.041	
17.02.2017	COAL MILL (B.F.)	2.00	340	13.49	23.65	22.30	19.3	0.046	
24.02.2017	COAL MILL (B.F.)	2.00	337	14.18	25.08	18.10		0.039	
	March'17								
06.03.2017	COAL MILL (B.F.)	2.00	335	14.19	25.25	15.2		0.033	
15.03.2017	COAL MILL (B.F.)	2.00	339	13.62	23.95	19.10	18.6	0.040	
22.03.2017	COAL MILL (B.F.)	2.00	332	13.29	23.86	22.70	18.0	0.047	
29.03.2017	COAL MILL (B.F.)	2.00	341	14.45	25.26	17.40		0.038	
	October' 2016								
5.10.2016	CEMENT MILL - 3 (Bag filter)	6.60	364	12.60	68.08	25.70		0.151	
13.10.2016	CEMENT MILL - 3 (Bag filter)	6.60	372	11.81	62.44	15.10	20.8	0.081	
20.10.2016	CEMENT MILL - 3 (Bag filter)	6.60	375	12.10	63.46	22.60	20.8	0.124	
29.10.2016	CEMENT MILL - 3 (Bag filter)	6.60	368	12.27	65.58	19.60		0.111	
	November' 2016								
04.11.2016	CEMENT MILL - 3 (Bag filter)	6.60	373	12.92	68.13	23.60		0.139	
11.11.2016	CEMENT MILL - 3 (Bag filter)	6.60	369	12.18	64.92	18.50	22.6	0.104	
17.11.2016	CEMENT MILL - 3 (Bag filter)	6.60	370	12.42	66.02	20.90	22.6	0.119	
26.11.2016	CEMENT MILL - 3 (Bag filter)	6.60	372	11.87	62.76	27.20		0.147	
	December' 2016								
03.12.2016	CEMENT MILL - 3 (Bag filter)	6.60	370	12.02	63.89	22.60	21.6	0.125	

10.12.2016	CEMENT MILL - 3 (Bag filter)	6.60	372	12.79	67.62	15.50		0.091	
17.12.2016	CEMENT MILL - 3 (Bag filter)	6.60	369	11.76	62.68	26.60		0.144	
24.12.2016	CEMENT MILL - 3 (Bag filter)	6.60	374	12.37	65.05	21.50		0.121	
	January'17								
05.01.2017	CEMENT MILL - 3 (Bag filter)	6.60	371	13.16	69.77	17.80		0.107	
12.01.2017	CEMENT MILL - 3 (Bag filter)	6.60	373	12.41	65.44	23.80	24.2	0.135	
21.01.2017	CEMENT MILL - 3 (Bag filter)	6.60	375	12.45	65.30	28.60	24.3	0.161	
31.01.2017	CEMENT MILL - 3 (Bag filter)	6.60	374	11.78	61.95	26.90		0.144	
	February'17								
04.02.2017	CEMENT MILL - 3 (Bag filter)	6.6	372	12.79	67.62	21.6		0.126	
10.02.2017	CEMENT MILL - 3 (Bag filter)	6.6	374	13.2	69.47	19.6	22.0	0.118	
18.02.2017	CEMENT MILL - 3 (Bag filter)	6.6	376	12.75	66.69	24	22.0	0.138	
25.02.2017	CEMENT MILL - 3 (Bag filter)	6.6	375	12.27	64.35	22.8		0.127	
	March'17								
07.03.2017	CEMENT MILL - 3 (Bag filter)	6.60	374	12.66	66.58	27.10		0.156	
16.03.2017	CEMENT MILL - 3 (Bag filter)	6.60	370	12.08	64.21	20.00	22.4	0.111	
23.03.2017	CEMENT MILL - 3 (Bag filter)	6.60	372	13.34	70.53	22.90	23.4	0.140	
30.03.2017	CEMENT MILL - 3 (Bag filter)	6.60	376	12.41	64.91	23.50	-	0.132	
	October' 2016								
04.10.2016	CRUSHER-2 (B.F.)	1.23	318.00	11.19	12.86	24.40		0.027	
11.10.2016	CRUSHER-2 (B.F.)	1.23	314.00	11.60	13.50	22.20	25.6	0.026	
18.10.2016	CRUSHER-2 (B.F.)	1.23	316.00	10.37	11.99	26.90		0.028	
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25.10.2016	CRUSHER-2 (B.F.)	1.23	315.00	10.81	12.54	28.80		0.031			
	November' 2016										
02.11.2016	CRUSHER-2 (B.F.)	1.23	315	11.77	12.86	29.20	27.3	0.034			
08.11.2016	CRUSHER-2 (B.F.)	1.23	313.00	11.16	12.51	27.30		0.031			
15.11.2016	CRUSHER-2 (B.F.)		Und	der Mainter	nance						
29.11.2016	CRUSHER-2 (B.F.)	1.23	312	10.82	12.60	25.30		0.028			
	December' 2016										
02.12.2016	CRUSHER-2 (B.F.)	1.23	308	10.96	13.00	21.6		0.024			
13.12.2016	CRUSHER-2 (B.F.)	1.23	311	10.69	12.56	18.9	20.2	0.021			
20.12.2016	CRUSHER-2 (B.F.)	1.23	307	10.84	12.90	22.8	20.2	0.025			
27.12.2016	CRUSHER-2 (B.F.)	1.23	309	10.49	12.40	17.5		0.019			
	January'17										
03.01.2017	CRUSHER-2 (B.F.)	1.23	302	10.31	12.47	14.80		0.016			
10.01.2017	CRUSHER-2 (B.F.)	1.23	304	10.17	12.22	20.4	18.8	0.022			
16.01.2017	CRUSHER-2 (B.F.)	1.23	305	10.69	12.81	17.6	10.0	0.019			
27.01.2017	CRUSHER-2 (B.F.)	1.23	301	10.84	13.16	22.5		0.026			
	February'17										
02.02.2017	CRUSHER-2 (B.F.)	1.23	305	10.58	12.67	17.60		0.019			
09.02.2017	CRUSHER-2 (B.F.)	1.23	303	10.82	13.05	16.7	16.0	0.019			
16.02.2017	CRUSHER-2 (B.F.)	1.23	304	10.51	12.63	15.9	10.0	0.017			
23.02.2017	CRUSHER-2 (B.F.)	1.23	302	10.91	13.2	13.8		0.016			
	March'17										

07.03.2017	CRUSHER-2 (B.F.)	1.23	310	11.05	13.02	23.4		0.026
16.03.2017	CRUSHER-2 (B.F.)	1.23	309	10.43	12.33	18.2	22.2	0.019
23.03.2017	CRUSHER-2 (B.F.)	1.23	312	10.25	12	21.3	22.2	0.022
30.03.2017	CRUSHER-2 (B.F.)	1.23	314	10.96	12.75	25.9		0.029
	October' 2016							
01.10.2016	PACKER-1 (B.F.)	0.785	322	12.46	9.05	24.7		0.019
08.10.2016	PACKER-1 (B.F.)	0.785	320	12.62	9.23	29.4	27.4	0.023
15.10.2016	PACKER-1 (B.F.)	0.785	319	11.53	8.46	27.3	27.4	0.020
22.10.2016	PACKER-1 (B.F.)	0.785	323	12.02	8.71	28.1		0.021
	November' 2016							
05.11.2016	PACKER-1 (B.F.)	0.785	317	12.65	9.34	24.6		0.020
12.11.2016	PACKER-1 (B.F.)	0.785	315	12.37	9.19	15.9	20.6	0.013
18.11.2016	PACKER-1 (B.F.)	0.785	319	11.85	8.69	19	20.6	0.014
25.11.2016	PACKER-1 (B.F.)	0.785	320	12.22	8.93	22.9		0.018
	December' 2016							
03.12.2016	PACKER-1 (B.F.)	0.785	315	11.67	8.67	22.5		0.017
10.12.2016	PACKER-1 (B.F.)	0.785	312	12.46	9.34	17.8	10.6	0.014
17.12.2016	PACKER-1 (B.F.)	0.785	311	11.07	8.33	15.2	18.6	0.011
27.12.2016	PACKER-1 (B.F.)	0.785	310	12.22	9.22	18.8		0.015
	January'17							
03.01.2017	PACKER-1 (B.F.)	0.785	310	12.03	9.08	25.1	24.2	0.020
10.01.2017	PACKER-1 (B.F.)	0.785	308	11.69	8.88	18.4	21.2	0.014

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17.01.2017	PACKER-1 (B.F.)	0.785	312	11.3	8.47	16.5		0.012	
24.01.2017	PACKER-1 (B.F.)	0.785	309	12.3	9.31	24.8		0.020	
	February'17								
03.02.2017	PACKER-1 (B.F.)	0.785	309	11.71	8.87	21.3		0.016	
10.02.2017	PACKER-1 (B.F.)	0.785	310	11.93	9	18.5	10.2	0.014	
17.02.2017	PACKER-1 (B.F.)	0.785	311	11.18	8.41	19.7	19.3	0.014	
24.02.2017	PACKER-1 (B.F.)	0.785	308	11.79	8.95	17.7		0.014	
	March'17								
03.03.2017	PACKER-1 (B.F.)	0.785	315	11.62	8.63	15.1		0.011	
14.03.2017	PACKER-1 (B.F.)	0.785	317	11.28	8.32	22.3	47.2	0.016	
22.03.2017	PACKER-1 (B.F.)	0.785	314	12.3	9.16	18.1	17.2	0.014	
29.03.2017	PACKER-1 (B.F.)	0.785	318	11.98	8.81	13.4		0.010	
	October' 2016								
01.10.2016	PACKER-2 (B.F.)	0.785	323	11.76	8.52	23		0.017	
08.10.2016	PACKER-2 (B.F.)	0.785	318	12.67	9.32	28.9	26.4	0.023	
15.10.2016	PACKER-2 (B.F.)	0.785	320	12.32	9.01	27.2	26.1	0.021	
22.10.2016	PACKER-2 (B.F.)	0.785	321	11.94	8.7	25.1		0.019	
	November' 2016								
05.11.2016	PACKER-2 (B.F.)	0.785	314	12.25	9.13	19.2		0.015	
12.11.2016	PACKER-2 (B.F.)	0.785	316	12.87	9.53	27.4	22.7	0.023	
18.11.2016	PACKER-2 (B.F.)	0.785	317	12.16	8.97	22.5	23.7	0.017	
25.11.2016	PACKER-2 (B.F.)	0.785	313	11.89	8.9	25.6		0.020	

	December' 2016								
05.12.2016	PACKER-2 (B.F.)	0.785	313	11.94	8.92	16.5		0.013	
13.12.2016	PACKER-2 (B.F.)	0.785	311	12.24	9.21	20.9	16.2	0.017	
20.12.2016	PACKER-2 (B.F.)	0.785	315	11.25	8.35	12.4	16.2	0.009	
27.12.2016	PACKER-2 (B.F.)	0.785	314	12.11	9.02	14.9		0.012	
	January'17								
03.01.2017	PACKER-2 (B.F.)	0.785	311	11.23	8.45	20.5		0.015	
10.01.2017	PACKER-2 (B.F.)	0.785	313	11.89	8.89	24.7	22.4	0.019	
17.01.2017	PACKER-2 (B.F.)	0.785	309	12.2	9.24	18.8	22.4	0.015	
24.01.2017	PACKER-2 (B.F.)	0.785	310	11.68	8.81	25.5		0.019	
	February'17								
03.02.2017	PACKER-2 (B.F.)	0.785	309	12.11	9.17	19		0.015	
10.02.2017	PACKER-2 (B.F.)	0.785	311	11.7	8.8	20.7	20.4	0.016	
17.02.2017	PACKER-2 (B.F.)	0.785	310	12.08	9.12	19.9	20.4	0.016	
24.02.2017	PACKER-2 (B.F.)	0.785	312	11.67	8.75	22		0.017	
	March'17								
03.03.2017	PACKER-2 (B.F.)	0.785	316	11.64	8.62	25.5		0.019	
14.03.2017	PACKER-2 (B.F.)	0.785	312	11.25	8.43	29.7	24.4	0.022	
22.03.2017	PACKER-2 (B.F.)	0.785	315	12.18	9.05	20	24.4	0.016	
29.03.2017	PACKER-2 (B.F.)	0.785	317	12.56	9.27	22.4		0.018	
	October' 2016								
01.10.2016	PACKER-3 (B.F.)	0.785	318	11.83	8.7	26.1	21.8	0.020	

08.10.2016	PACKER-3 (B.F.)	0.785	317	12.31	9.08	23.4		0.018
15.10.2016	PACKER-3 (B.F.)	0.785	320	12.12	8.86	16.7		0.013
22.10.2016	PACKER-3 (B.F.)	0.785	319	12	8.8	21.1		0.016
	November' 2016							
05.11.2016	PACKER-3(B.F.)	0.785	315	12.18	9.05	28.7		0.022
12.11.2016	PACKER-3(B.F.)	0.785	312	11.87	8.9	25.3	26	0.019
18.11.2016	PACKER-3(B.F.)	0.785	317	12.31	9.1	27.4	26	0.022
25.11.2016	PACKER-3(B.F.)	0.785	314	11.65	8.68	23.4		0.018
	December' 2016							
03.12.2016	PACKER-3(B.F.)	0.785	312	11.72	8.79	24.3		0.018
10.12.2016	PACKER-3(B.F.)	0.785	311	12.24	9.21	19.8	22	0.016
17.12.2016	PACKER-3(B.F.)	0.785	314	12.25	9.13	25.8	23	0.020
27.12.2016	PACKER-3(B.F.)	0.785	310	11.58	8.74	22.0		0.017
	January'17							
05.01.2017	PACKER-3 (B.F.)	0.785	311	11.23	8.45	17.1		0.012
12.01.2017	PACKER-3 (B.F.)	0.785	309	12.3	9.31	23.5	24.5	0.019
19.01.2017	PACKER-3 (B.F.)	0.785	310	11.68	8.81	29.3	21.5	0.022
28.01.2017	PACKER-3 (B.F.)	0.785	308	11.33	8.61	15.9		0.012
	February'17							
03.02.2017	PACKER-3(B.F.)	0.785	310	11.47	8.66	20.3		0.015
10.02.2017	PACKER-3(B.F.)	0.785	311	12.2	9.18	26.4	24.0	0.021
17.02.2017	PACKER-3(B.F.)	0.785	309	11.81	8.94	23.8	1	0.018

24.02.2017	PACKER-3(B.F.)	0.785	310	12.08	9.12	25.6		0.020	
	March'17								
03.03.2017	PACKER-3(B.F.)	0.785	315	12.13	9.01	29.8		0.023	
14.03.2017	PACKER-3(B.F.)	0.785	318	11.19	8.23	26.1	36.8	0.019	
22.03.2017	PACKER-3(B.F.)	0.785	316	11.94	8.84	23.9	26.8	0.018	
29.03.2017	PACKER-3(B.F.)	0.785	317	11.01	8.12	27.5		0.019	
	October' 2016								
01.10.2016	PACKER-4 (B.F.)	0.785	321	12.44	9.07	22.2		0.017	
08.10.2016	PACKER-4 (B.F.)	0.785	318	12.18	8.96	27.3	22.6	0.021	
15.10.2016	PACKER-4 (B.F.)	0.785	316	12.63	9.35	19.7	23.6	0.016	
22.10.2016	PACKER-4 (B.F.)	0.785	319	12	8.8	25.1		0.019	
	November' 2016								
05.11.2016	PACKER-4(B.F.)	0.785	317	12.75	9.41	18.0		0.015	
12.11.2016	PACKER-4(B.F.)	0.785	313	12.38	9.25	22.6	21.5	0.018	
18.11.2016	PACKER-4(B.F.)	0.785	315	11.98	8.9	26.1	21.5	0.020	
25.11.2016	PACKER-4(B.F.)	0.785	314	12.16	9.06	19.4		0.015	
	December' 2016								
03.12.2016	PACKER-4(B.F.)	0.785	316	11.94	8.84	20.7		0.016	
10.12.2016	PACKER-4(B.F.)	0.785	313	12.57	9.39	15.7	10.6	0.013	
17.12.2016	PACKER-4(B.F.)	0.785	310	11.27	8.5	23.4	19.6	0.017	
27.12.2016	PACKER-4(B.F.)	0.785	312	12.02	9.01	18.4		0.014	
	January'17								

05.01.2017	PACKER-4 (B.F.)	0.785	312	12.07	9.05	22.8	- 24.1	0.018
12.01.2017	PACKER-4 (B.F.)	0.785	314	11.23	8.37	19.3		0.014
19.01.2017	PACKER-4 (B.F.)	0.785	310	11.68	8.81	28.9		0.022
28.01.2017	PACKER-4 (B.F.)	0.785	311	11.02	8.29	25.2		0.018
	February'17							
03.02.2017	PACKER-4(B.F.)	0.785	313	11.63	8.69	18.3	18.0	0.014
10.02.2017	PACKER-4(B.F.)	0.785	312	11.35	8.51	16.4		0.012
17.02.2017	PACKER-4(B.F.)	0.785	311	11.95	8.99	17.9		0.014
24.02.2017	PACKER-4(B.F.)	0.785	314	11.23	8.37	19.3		0.014
	March'17							
03.03.2017	PACKER-4(B.F.)	0.785	317	12.7	9.37	20.6	20.4	0.017
14.03.2017	PACKER-4(B.F.)	0.785	315	12.13	9.01	25.5		0.020
22.03.2017	PACKER-4(B.F.)	0.785	319	12	8.8	16.7		0.013
29.03.2017	PACKER-4(B.F.)	0.785	318	11.52	8.47	18.9		0.014

J.K. Cement WORKS, MANGROL (RAJ) AMBIENT AIR QUALITY AVERAGE RESULTS (SPM) COMMON FOR UNIT-1 & UNIT-2 (ALL VALUES IN MICROGRAMS / CUBIC METER)

(October' 2016 - March ' 2017)

S.No. & Month	LOCATION / PERAMETER	NEAR TIME OFFICE	NEAR THERMAL POWER PLANT	NEAR RAW MATERIAL GATE	NEAR PACKING PLANT GATE	Remarks
October' 2016						
1	SPM	316.0	339.5	315.3	294.0	
2	SO2	12.2	13.7	10.9	9.7	
3	NOX	25.2	27.9	22.6	19.9	
4	со	601.1	572.5	629.8	558.2	
November' 2016						
1	SPM	324.0	349.8	322.5	310.5	
2	SO2	10.4	13.7	12.0	8.3	
3	NOX	22.2	28.4	24.6	17.3	
4	со	415.1	586.8	529.6	601.1	
December' 2016						
1	SPM	346.5	365.0	329.8	307.5	
2	SO2	11.2	14.3	12.4	9.1	
3	NOX	22.8	26.2	25.5	18.4	

4	со	601.1	701.3	706.1	553.4	
January' 2017						
1	SPM	338.0	387.8	355.8	369.5	
2	SO2	11.0	17.1	14.1	14.4	
3	NOX	20.9	31.7	26.1	26.7	
4	со	687.0	625.0	672.7	629.8	
February' 2017						
1	SPM	324.2	358.3	348.8	350.0	
2	SO2	9.8	13.7	11.7	12.5	
3	NOX	18.5	28.7	27.0	26.8	
4	со	658.4	620.2	630	687.0	
March' 2017						
1	SPM	341.0	383.5	360.8	330.0	
2	SO2	11.8	15.2	13.8	10.3	
3	NOX	21.6	27.9	25.3	19.6	
4	со	596	777.6	720.4	639.3	
Six monthly Ave	Drago.					
-	1	221.5	2612	222.2	225.5	
1	SPM	331.6	364.0	338.8	326.9	
2	SO2	11.1	14.6	12.5	10.7	
3	NOX	21.9	28.5	25.2	21.5	
4	СО	593.2	647.2	648.0	611.5	

J.K. Cement Works, Mangrol (Unit-1) Fugitive Emission Monitoring Report (October' 2016 - March ' 2017)

			SPM	I (μg/m3)	
S.No. Month/Year		NEAR COAL YARD-1 NEAR LIMESTONE CRUSHING SITE-1		NEAR STACKER RECLAIMER-1	NEAR GYPSUM YARD-1
1	Oct-16	1395.8	2133.7	2390.7	2186.6
2	Nov-16	1407.1	2954.2	2301.7	2354.3
3	Dec-16	1520.8	2286.6	2185.8	2024.8
4	Jan-17	1439.7	2186.6	2482.6	1929.6
5	Feb-17	1557.4	2618.1	2141.9	2107.0
6	Mar-17	1777.8	2853.6	2647.1	2230.2

J.K. Cement Works, Mangrol (Unit-2) Fugitive Emission Monitoring Report (October' 2016 - March ' 2017)

		SPM (µg/m3)						
S.No.	Month/Year	onth/Year NEAR COAL YARD-2 NEAR LIMESTONE CRUSHING SITE-2		NEAR STACKER RECLAIMER-2	NEAR GYPSUM YARD-2			
1	Oct-16	1256.8	1582.6	1407.1	1697.9			
2	Nov-16	1327.3	1649.3	1566.8	1861.6			
3	Dec-16	1075.8	1876.7	1430.6	1575.2			
4	Jan-17	1343.8	1734.4	1588.1	1645.8			
5	Feb-17	1527.8	1579.9	1411.8	1512.6			
6	Mar-17	1659.7	1832.0	1809.0	2069.6			

ON-SITE EMERGENCY PLAN

FOR

J.K.CEMENT WORKS: MANGROL

SAFETY DEPARTMENT

J.K.CEMENT WORKS

SUSHILA NAGAR – 312617

MANGROL (CHITTORGARH)

2

Rev. No. : 00 Date : 24.08.2014

J.K. Cement Works: Mangrol On – Site Emergency Plan

PREFACE

An "ON-SITE EMERGENCY" may arise on account of dangerous occurrence taking place in the Plant, which could go out of control and threaten the Safety of Personnel, Environment, Plant / Equipments and their operations. Any such occurrence may develop into a major Emergency with ON / OFF Site consequences. Hence it is absolutely essential that emergency Procedures are planned before hand to clearly specify various line responsibilities at different operation levels so as to act in a systematic manner during Emergency and restore normally within shortest span of time.

With above in view, a set of Guidelines under "ON-SITE EMERGENCY PLAN" has been prepared identifying Emergency areas / Materials along with their preventive and control measures for proper utilisation of Internal and External resources.

The Emergency Management Plan aims to focus on the following areas:

- Emergency scope and control Objectives
- Identification of Emergency prone areas / material.
- Emergency Alarm / Communication System and Mechanism.
- Precautionary / Corrective measures for Prevention and Control.
- Organisation for Emergency Control.
- Emergency Roles, Duties / Responsibilities of key Personnel.
- Emergency control, Services, Facilities and Utilities.
- Contact Locations / Telephones of key Personnel and Services.

Keeping above in view the Management is fully committed to discharge its activities with deep sense of responsibility and due regards for the well being of Personnel in and around the Plant in term of their Safety, Health and Environment Protection.

> S.K.Rathore) Unit Head

1.0 STATUTORY PROVISIONS.

Cement Manufacturing is declared a Hazardous Process under the provisions of Schedule 1 (8) attached to Section 2 (cb) of revised Factory Act, 1987.

As per Section 41 - B (4) of Factory Act, 1948 amended in 1987 with special provisions for Hazardous Processes, it is required that all Hazardous Industries should draw up an "ON – SITE EMERGENCY PLAN".

Every Occupier of the Hazardous Industries shall formulate an "ON – SITE EMERGENCY PLAN" with approval of Chief Inspector of Factories & Boilers, and ensure to take all suitable measures for the Safety of his Employees, as required to be taken in the event of any Emergency taking place.

1.1 OBJECTIVES

- To overcome any emergency in its initial stage and to handle Disaster in most effective manner.
- To eliminate any chance of loss to Human Life.
- To minimise loss of Property in the Plant and surrounding areas.
- To maintain essential supplies at the time of natural Calamities and / or Public disturbances.

1.2 SCOPE

- Assessment of the size and nature of events foreseen for causing Emergency and probability of their Occurrence.
- Hazards Identification and control Safety precautions.
- Service Utilities / Facilities and their Locations.
- Organisation for Emergency
- Assignment of duties and responsibilities to key Personnel for action on site

1.3 THE ORGANISATION

J.K. Cement Works and Head Office located at the following Places.

Works : Shri S.K.Rathore

Unit Head

J.K. Cement Works,

Kailash Nagar – 312 617

Nimbahera, Distt. – Chittorgarh (Rajasthan)

Head Office: Shri Yadupati Singhania,

Whole Time Director

J.K. Cement Ltd Kamla Tower Kanpur (U.P.)

2.1 THE PLANT:

J.K. Cement is engaged in Production of Portland Grey Cement and PPC with a capacity of about 2.9 Million Tons per year with about 600 People Employed at its Works in Mangrol.

2.1 LAY OUT:

The Layout of Plant is shown as per drawing enclosed.

2.2 EXIT / ENTRY POINTS:

The entry route to the Plant and the Exit Point for coming out from the Plant have been Marked in the Drawing.

2.2.1 APPROACH ROAD:

The Approach to the Plant is through a pucca Road, which is about 3.5 K.M from Chittor – Neemuch state Highway Road as shown in the Drawing.

2.2.3 MAX. WORKERS IN EACH SHIFT:

A Shift	B Shift	C Shift	G. Shift	Total
				Employ
125	125	100	250	600

2.2.4 TOTAL WORKERS PRESENT IN A DAY: about 580 workers

2.2.5 Number of Safety Officers:

Number of Safety Officers : Two

Name, Designation & Contact : Shri S.N.Sharma

Dy.GM (Safety) J.K.Cement Works, Mangrol 312617 Chittorgarh(Raj.)

T.No.- 220087 Ext.2249 (O)3227(R)

221882 (R)

Mobile No. – 9799296563

: Shri Sajjan singh Charan

Sr.Engineer

J.K.Cement Works, Mangrol 312617 Chittorgarh(Raj.)

T.No. - 220087 Ext.115 (O) Mobile No. -9799278666

2.3 LOCATION:

The Plant is located at Mangrol in District Chittorgarh and is well connected by road / Rail link. It is situated at a point equally Distanced between Chittorgarh and Neemuch on Jaipur – Indore route about 1.5 Km from Railway Station on the Western Railway. It is also connected by Air through Dabok Airport in Udaipur at a Distance of about 97-Km from Mangrol.

The Plant has an ideal location surrounded with lush green Fields / gardens and Colony Complex equipped with all civil amenities and a Township with railway Station at about 1.5 Kms from Works.

2.4 BRIEF MANUFACTURING PROCESS:

The Manufacturing of Cement is based on Dry Process Technology with latest Machinery and Equipments supplied by M/s F.L.Smith, Denmark. It is using modern Technology with automatic control by sophisticated Instruments.

The Cement Grade Limestone is extracted from Mines adjacent to Plant through Open Cast Mining Process. It is crushed in Primary and Secondary Crusher. The crushed Limestone is mixed with Laterite and ground in Raw Mills. The ground

Raw Meal is then fed to Rotary Kiln, Where Calcination and Clinkerisation take place. The Clinker is further mixed with Gypsum and ground in Cement Mill to make Cement, Which is packed, in 50 Kg. Bags for onward dispatch, through Railway Wagons and Trucks. The process control system is fully automatic with FUZZY-LOGIC applications for centralised control and QCX for ON-LINE quality Control through X-Ray.

2.0 EMERGENCY – PREVENTION AND CONTROL.

2.1 THE EMERGENCY

The Process and Material used in Cement Manufacturing are generally not hazardous in nature. However, an Emergency like situation may take place if any dangerous occurrence goes out of control in the Plant using heavy Equipments / Machinery and Structures with volumes of Raw & Finished Materials.

As such, an emergency like situation is deemed as one that may be caused by a dangerous occurrence or natural calamity affecting people and plant property at large and which calls for their safe evacuation through mobilisation of resources and teamwork.

2.2 NATURE OF EMERGENCY:

An emergency may crop up on account of any of the following occurrences.

- Major fire in the plant engulfing large area and People.
- Collapse of any heavy Structural installation or Plant Building.
- Natural calamity like Flood, Earthquake or Thunderous Windstorm.

2.3 HAZARDS IDENTIFICATION:

Following Areas, Materials and Structures are identified as possible Hazards, which may lead to any Emergency like situation.

(A) SENSITIVE AREAS

- Diesel House
- HDP Bag Godown
- Coal Yard
- Electrical Sub Station

(B) FLAMMABLE MATERIALS

- Diesel Oil
- HDP Bags

2.3.1 SITE PLAN – HAZARDS IDENTIFICATION:

The Hazard prone Areas as detailed above are distinctly marked in the Site Plan for proper identification.

3.3.2 HAZARD ASSESSMENT TECHNIQUE:

All potential risks in the plant areas as borne out of hazardous process activities and materials are regularly assessed for elimination of unsafe situations thereby preventing chances of an Emergency. Following Techniques are adopted for assessment of Hazards.

- Regular Safety Inspections of Plant Areas.
- Periodical Safety Sampling.
- Regular job safety Analyses.
- Safety Audit / Survey of Oil Tank Installations conforming to Petroleum Act / Rules.
- Test / Examination of Lifting Machines / Pressure Vessels under Factories Act / Rules.
- Dust Monitoring of Working Zones under Factories Act / Rules.
- Dust Monitoring of Stack emission & Ambient Air under Pollution control Act / Rules.

3.3.3 Techniques adopted for Assessment of Safety Hazards.

We have scheduled for Inspection of Plant at regular intervals as detailed below.

Joint Safety Inspection by Safety committee Members:

Periodic Safety Inspections are carried out by Members of Safety Committee to locate / identify causes that may lead to unsafe conditions and practices. This will enable us to find what safeguarding is necessary to protect against these Hazards and prevent Accident. Inspections check list enclosed.

Safety Sampling Technique:

Safety Sampling is done on random basic for inspection of particular Equipment for its safety status for which a particular route is fixed and number of observation counts is made out of existing stocks. Safety status is then assessed for rectifying necessary unsafe observations for safety.

Job Safety Analyses.

Job Safety Analyses is done to ensure safety during execution of the job. This practice is adopted before starting job, i.e. at the time of job planning.

Basic steps of JSA

- Break the job down into successive components as independent unit.
- Identify the potential hazards associated which may lead to accident.
- Work out corrective measures to eliminate probable accident cause.

3.4 STORAGE QUANTITY OF HAZARDOUS MATERIALS.:

Details of maximum quantity of Hazardous Material Stored at a time are as under.

Name of the	Max Qty at a time	Property	Location	Mode of
substance	licensed			storage
High Speed	40 K.Ltr.	Flammable	Near DG	Under Ground
Diesel(HSD)			House	Tank
Coal	20,000 MT	Combustible	Coal yard	Open Piles.
HDP Bag	10 lacks	Combustible	Godown	Bales / Loose

3.5 MATERIAL SAFETY DATA SHEET.

Material	Characteristic /	Effect on	Prevention	Control
	Properties	Exposure /		Measures
		Control		
1	2	3	4	5
Diesel	B.P.: 229 – 338 C.	Fire	Welding / hot job	Use DCP, Foam
(H.S.D.)	F.P.: 52 C.	accumulate	under permission and	Co2, and Halen
	LEL: 1.3 %	static Charge	supervision and	Fire
	UEL: 6.0 %	Toxic to some	grounding and	Extinguishers.

10				
	AIT: 255 C.	extent	bounding earthing	
				Cool the
			Tight Fittings. Use	container with
	Sp. Gr.: 0.841		hand gloves and safety	sufficient water
	Combustible.		goggles. Good House	jetting and dust
	Skin Irritation.		Keeping	filters
			Proper firing for	
Coal	Highly	Fire	complete combustion.	
	Carbonaceous	Spontaneous	Check CO gas	
	Volatile: 6 %	ignition. Coal	occurrence	
	C.V.: 7800 – 8600	dust Explosion		
	K. Cal / Kg.	Asphyxia (0 2,	Avoid open flame.	
		Deficient	Dust Good ventilation.	
	Mixture of Coal dust	caused by coal	Use hand gloves and	
	and air is explosive	dust explosion	dust filters. Increase	
	combustible highly	Irritation to	heat exchange area.	
	toxic on formation of	respiratory	Avoid formulation of	
	carbon monoxide	tract.	heaps and high piles.	
			Proper water spraying.	
			No smoking. No hot	
			job. Proper techniques	Sufficient water
H.D.P.	Cap: 50 Kg.	Fire	of stacking. Proper	jetting for
Bags	M.S.: 85 Kg.		ventilation. No loose	extinguishing
2485	S.S.: 40 Kg.		piling stacks of	fire.
	M.P.: 100 – 120 C.		controlled height.	
	Organic compound		Space for movement.	
	combustible		Covered storage.	
				Sufficient water
				jetting. Dozing
				and shifting
				material / piles.
				Use hand gloves

F.P. = Flash Point **AIT** = Auto Ignition Temp. **Sp. Gr.** = Specific Gravity **C.V.** = Calorific Value LEL = Lower Explosive Limit UEL = Upper Explosive Limit B.P. = Boiling Point M.P. = Melting Point. CAP = CapacityM.S. = Mech StrengthS.S. = Seam Strength

3.5.1 ASSESSMENT FOR PROBABILITY OF OCCURRENCE;

Normally there is no potential for any Emergent situation to occur in the Plant other than natural Disasters like Earth Quake, Flood etc. Cement Manufacturing Process does not involve any treatment, Storage, Handling, Releasing or Transporting any Toxic / Hazardous Chemicals or Gases. However, effective measures are planned to control any emergency in time.

3.5.2 EMERGENCY SHUTDOWN PROCEDURE

3.5.3 SHUT DOWN OF KILN OPERATION

In case of an Emergency, The conditions are such which may force a Shut Down of the Plant. If the situation so warrants then the Shut Down should be effected in a systematic manner without causing any loss to Plant, People and the Auxiliaries / Equipment.

In the Cement Unit the kiln is the Heart of the Plant which produces Clinker in the granular form, which is powered by grinding to produce Cement and packed in Bags. Other Plant being supplement to the Kiln, its Shut Down results in shutting off other Plants.

Following Procedure should be adopted to shut down the Kiln.

- Section Incharge to ask the incident controller for Shutting off the Plant.
- Stop the Coal Firing to the Kiln
- Stop the Raw Meal feed to the Kiln.
- Stop the S.G. Fan meant for sucking of the hot Gases from the Kiln.
- Switch off the drives to stop rotation of Kiln.
- Switch off the Kiln Cooler, Clinker transport and Coal Mill simultaneously.
- Switch off other Auxiliaries related to Kiln.
- Inform the Incharge Power Supply for cutting off Power supply to the Plant.
- Continue alternate Power Supply to general / Road lights and important utilities.

3.5.4 RECOMMISSIONING

Start-Up the Kiln may resume after long shut down. As such every care should be taken to avoid any untoward happening at the time of restarting of the Plant.

Following Procedure should be adopted during relighting the Kiln.

The Section / Area Incharge to ensure for restoring normalcy after Emergency.

- Ensure for removal of left out Materials and safe movement in working area.
- Ensure that all Manholes Ducting are closed and moving M/c parts are guarded.
- Arrange for switching on Power supply to the Plant through In-charge Power supply.
- Switch on Power supply to the Control Panels.
- Switch on Power supply for trail run of Auxiliaries relating to the Kiln.
- Switch on Power supply to the Drives for rotation of Kiln.
- Check for smooth functioning of control System during trial run of Auxiliaries.
- Check for proper feed of Raw Meal & Coal.
- Start lighting of the Kiln with a small flame.
- Start Kiln rotation continuously with Smoke Gas Fan start.
- Observe the flame condition in Burning Zone, if found stable, take out Kiln lighting.
- Gradually control other kiln functions to maintain Process Parameters.

Power Plant(22MW CPP) Shutdown Procedure: -

- Reduce coal feeding and first stop the Coal feeder one by one from fourth compartment
- According to pressure reduce the load.
- Keep one compartment in service.
- If generator load is <2.5 mw open the grid barker and run the TG with home load for some time.
- Ensure startup feeder is closed or not.
- Open the Generator breaker and run the TG rated speed.
- Stop the first compartment coal feeder and wait for bed temperature down up to 600 deg.c for safety operation.
- If boiler to be shutdown means depressurize the boiler naturally other vice hot box up the boiler.
- Generator desynchronizes and trips the turbine manually.
- After stopped coal feeder immediately close the boiler MSSV.
- Until stop the first coal feeder frequently give air mixing for remaining Compartments like 2, 3, and 4.
- After tripping the turbine immediately open the warm up vent, turbine casing drains, ESV drains.

Boiler Shutdown Procedure (WHR):-

- Inform to CCR related boiler regarding stoppage of WHRB Boiler.
- Open the bypass damper to 100% by inching operation as per standard operating procedure.
- Close the out let damper and subsequently close the gas inlet damper.
- Stop rapping system mechanism after 20 minutes.
- STOP drag chain and RAV after half an hour.
- Maintain drum level and continue RC Pump in service for one hour.
- Stop HP dosing pump.

3.6 PREVENTION AND CONTROL

Any dangerous occurrence can be checked with adequate precautionary measures before it may lead to Emergency. Following precautionary measures shall be taken to effectively control the Hazardous Situation.

3.6.1 FIRE PREVENTION MEASURES

No hot work or any other Job involving naked flame shall be done in sensitive areas as earlier identified without any valid permission / clearance or authorisation from Area / Section Incharge.

- Naked flame if any will not be left unattended.
- Smoking is prohibited in side the Plant especially in the areas where no smoking Board is displayed like Packing, Godown, Diesel Oil / Petrol Tanks.
- Flammable scrapes like Packing Material, Waste Rubber and Jute, Oil soaked rags etc should be dumped away from the working Place and disposed off regularly.
- Areas under Welding should be cleared off flammable Materials to prevent chance of Fires from Welding splatters.
- Fire extinguishers and water availability should be ensured on site where Welding Jobs are carried out near or around flammable Materials area.
- Loose Electrical fittings and exposed joints should be properly insulated to check short-circuiting / sparking.
- All Fire Extinguishers shall be kept ready for operation duly checked / tagged through regular inspection.
- Access to Fire Fighting Equipments should not be blocked.
- Ensure proper lubrication and cooling of Machine Parts to avoid friction.
- Does not over load the Electrical circuit by using too much Equipment at one point.
- All Welding Machines and other Electrical Motors should be earthed.

3.6.2 FIRE CONTROL MEASURES.

Any person who detects the Fire will shout Fire-Fire to gather the attention of other fellow persons and rush to the scene to help extinguishing the Fire.

Simultaneously, the concerned Shift / Area Incharge and Fire Section / Security Department should be informed.

The shift area Incharge should inform his senior officers about the nature and location of the Fire.

In case the Fire aggravates and is likely to cause damage to Plant and property, the Shift area Incharge should consult his senior Officers for approval to isolate the affected area by cutting off inlet / outlet flow of Material.

Similarly any decision to cut off the Power supply or shutting down the Plant, should make every effort to put off the Fire with whatever resources those are available with him.

On receipt of Fire call the fireman on duty will rush to the site of Fire with trained persons and Fire Tender & Fire Equipments. Fight out Fire so as to bring it under control as early as possible.

He will inform the Pump House to arrange and ensure sufficient Water supply for Hydrant Line.

The affected area should be cordoned off.

Chimneys / Structural, towers, Tanks, Silos etc. should be electrically earthed.

All other combustible material should be removed from the place of Fire.

3.6.3 FIRE ON GAS CYLINDER

Warp/ cover the Cylinder body with wetted cloth or Gunny Bag. Use hand gloves.

The cylinder regulator / valve should be immediately closed. Use hand gloves.

Try to roll down the cylinder and take it away to some safer place.

3.6.4 ELECTRICAL FIRE.

Switch / Cut off the Power supply immediately.

Water should not be used on Electric Fires.

Use only Dry Chemical Powder / Co2 / ABC type Fire Extinguishers.

3.6.5 OIL ON FIRE.

Isolate the affected part by cutting off inlet / outlet Control valve.

Cool down the outer surface by sprinkling water in case of Fire in the Oil Drum.

Do not pour water on the burning Oil.

For Controlling /Extinguishing the Fire on Oil, We use the Chemical foam / Mech. Foam.

Mixed Oil & Foam (Waste Mixture after Fire Extinguishing) Collected in Drums and Send the same to Store.

3.6.6 **DON'TS**

Never fiddle with Safety pin valve regulator of the Fire Extinguisher.

Do not hammer the Nozzle / Plunger with a hard object.

The Fire Equipments should not be hit against wall or hand object.

Don't be panicky during the Fire.

Don't switch On the Power Supply till the normal conditions are restored.

3.6.7 SAFETY OF HEAVY STRUCTURES/BUILDING.

Following measures should be taken to ensure Safety of Structures / Buildings.

- Vibration Monitoring of Plant/Unit should be done where there are operations causing vibrations.
- Trusses and Purlins and Beams of Sheet Roofing Structures should be thoroughly checked and rectified for aging.
- Supporting Columns should be thoroughly reinforced whenever any crack is detected.
- Any major crack developed in the walls should be informed.
- Chipping, major Dismantling / Modification work of R.C.C. Structure should only be done under Supervision.
- The roof sheeting should be regularly cleaned off dust, especially before Rains.
- Any masonry erosion or civil defects in the Structure should be promptly attended.

- Steel Structures and Fabrication should be ensured for properly wedded joints and strength for uniformly distribution of bearing load.
- Proper alignment of Crane, Rails should be done to avoid jerking, vibrations and derailment.
- Stability certificate of fitness in respect of heavy structures / building should be taken from approved competent person.

3.6.8 SAFETY AGAINST NATURAL CALAMITIES.

- Daring System inside the Plant should be perfect.
- Water logging should be checked through effective disposal.
- Lightning arrestors should be mounted on tall Buildings.
- Chimneys / Structural Towers, Tanks, Silos etc. should be electrically earthed.

3.6.9 EVACUATION / RESCUE PROCEDURE

The work of evacuating the Personnel will be done under the Supervision of Rescue Co-ordinator as per following procedure.

- The Section Incharge of the Emergency affected area will call for Rescue Coordinator to arrange for evacuation of Personnel required if any.
- The Rescue Co-ordinator will immediately summon his Team with necessary Materials / Gadgets and reach to the evacuation site to assess the situation.
- All Employees other than affected Persons shall gather at the Assembly Point.
- The Rescue Co-ordinator will seek help from Transport / Medical / Welfare Co-coordinators for necessary arrangements as may be required for evacuation.

2.4 ORGANISATION FOR EMERGENCY

4.1 EMERGENCY ROLE.

Following Executives / Officers of the Plant shall be responsible for providing "ORGANISATIONAL SUPPORT" and services to help controlling the Emergency in any Section of the Plant.

They will form a "Emergency Task Group" and give the desired "LEAD" in Areas of their Operational Control.

The EMERGENCY ROLE" as assigned to each Designated Persons of the task group is defined as under.

	DESINGATED PERSON	EMERGENCY ROLE
01	Head of the Organisation	Will act as Site controller
02	Sr.G.M. (O&M)	Will act as Incident Controller
03	Duty Incharge (Security)	Will act as Communication Coordinator
04	Deptt./ Section Heads	Will act as "Area / Section Incharge"
05	Head (Security)	Will act as "Rescue Coordinator"
06	Chief Medical Officer	Will act as Medical Coordinator
07	Head / Section Incharge (Safety)	Will act as Safety and Fire Coordinator
08	HOD (Stores)	Will act as Material coordinator
09	Transport Incharge (Security)	Will act as Transport Coordinator
10	HOD (Personnel)	Will act as Liaisoning & public relation
		coordinator
11	HOD (Electrical)	Will act as Incharge Power supply
12	HOD / Sectional Heads of Mech.	Will act as Incharge Water Supply and
	Maintenance	Pump Operation Co-ordinator.
13	Dept. / Sectional Head of Mech.	Will act as Co-ordinator of Mechanical
	Maint.	Utility
14	Welfare Incharge	Will act as Welfare Co-ordinator
15	H.O.D (Training)	Will act as Training Co-ordinator

4.2 ORGANISATION STRUCTURE:

The Organisation Structure for "ON SITE EMERGENCY ACTION PLAN" is drawn as per Chart enclosed as Annexure.

In the absence of any Member of the Task Group, the 2nd Person in Chain of Command will automatically take charge of the responsibilities for the respective Function and Duties of his senior.

All Personnel as notified above for Emergency work shall report to Emergency Control Officer immediately after an Emergency is declared.

Duties & Responsibilities of all Key Members of the Emergency Task Group are detailed separately.

3.0 EMERGENCY DUTIES / RESPONSIBILITIES OF KEY PERSONNEL:

3.1 SITE CONTROLLER:

The Site Controller will be the overall Incharge of Emergency Control activities and his duties during Emergency shall be:

- To make himself available in the Emergency Control Room immediately after receiving the information regarding serious Occurrence.
- To declare the affected Area as Emergency Zones in consultation with Incident Controller and Site Incharge take control of Situation for overall Co-ordination of the Emergency handling operation between different Agencies at Work.
- To Contact if needed the Local / District Administration, Police, Hospital, Fire Brigade etc for any help required and give instructions to Liaison Officer to this effect.
- To assess the Magnitude of the situation in consultation with Incident Controller and decide if Employees need to be evacuated from the affected Area to the Assembly Point.
- To maintain continuos review of developments in consultation with Incident Controller as to whether shutting down of the Plant or any Unit / Equipment is required.
- To issue authorised statement to News Media if required and ensure that material evidence is preserved for any Enquiry to be conducted by Statutory Authorities.

3.2 INCIDENT CONTROLLER

Incident Controller will function as Site Controller in his absence with duties as under:

- To control Plant Operations and take Emergency shutdown in consultation with Area Section Incharge.
- To ensure evacuation of Employees to the Assembly Point.
- To direct Fire Fighting Operations till the Fire Fighting Squad reaches the site.
- To identify urgent Material requirement and advise the "Material Co-ordinator"
- To direct all Emergency handling operation on priority for Safety of Personnel & Minimum losses to Machine and Material.
- To keep in touch with Site Controller and inform all developments to the Communication Officer with specific information.

3.3 COMMUNICATION CO-ORDINATOR:

- He will ensure that all Communication System under him are maintained to work with.
- To operate from Emergency Control center and inform the Site Controller / Incident Controller about the Emergency situation immediately after he receives the information from Area / Section Incharge.
- He will arrange to blow the Siren / Hooter for declaring or clearing emergency under instruction from Site Controller.
- He will inform all the Members of Emergency Task Force on receiving the information in this regard.
- Telephone lines, STD, Hot lines etc , shall be kept clear on priority during Emergency to ensure speedy transmission of urgent message.
- In case of Power / Telephone failure he will arrange to use Runners / Messengers.
- He will use Public address system / Mike to convey any specific information to the Persons gathered at Assembly point as per instruction of Site Controller.

3.4 AREA / SECTION INCHARGE

- The Area / Section Incharge in whose jurisdiction the Emergency has occurred will reach the Site and take stock of its Magnitude and implication.
- He will lead the Rescue Team and direct all Control Operations.
- He will inform the Communication Officer about the Emergency Occurrence.
- He will inform the Incident Controller / Site Controller and ask for Shutting down the Plant Operation or any additional help as may be required.
- He will ask the Incharge Power Supply to Cut Off in the affected area as required in consultation with Incident Controller.
- He will arrange to cordon off the Area around Emergency Zone to prevent entry of unauthorised Personnel.
- He will also arrange for the Evacuation of affected personnel to the Safe Zone.

3.5 RESCUE CO-ORDINATOR:

- Shall take charge of all Rescue & Relief Operations at the Emergency Site: like Firefighting and evacuation of affected Personnel etc and work under the direction of Incident Controller.
- To immediately arrange to call all Members of Rescue / Relief Operations, and rush them to the Site for fighting out the Emergency.
- To arrange / co-ordinate for calling Fire Brigade from outside as may be required.
- To cordon off the affected Area in consultation with Area / Section Incharge.

3.6 MEDICAL CO-ORDINATOR:

- To immediately call all the Members of First Aid Team and establish First Aid care.
- To ensure availability of Ambulance Equipped with essential Items ready for use.
- Assign specific Job / Instructions to First Aid Team and to Paramedical & Ambulance Staff.
- To arrange & ensure supply of Medicines to First Aid Emergency Center from Plant Dispensary, stores or from outside in consultation with Material Co-ordinator.
- To direct the removal of Injured Personnel to the Dispensary or to outside Hospital for Treatment as the case may be.
- To summon outside Medical Aid if required.

3.7 SAFETY AND FIRE CO-ORDINATOR:

- He will rush to the site of Emergency and identify all Safety requirements keeping Safety of Persons on priority.
- To arrange suitable Safety Appliances for Personnel Protection like Safety Helmet, Hand Gloves, Safety Belt, face Shield, dust Filters etc from Stores, Plant / Department and Emergency stock etc in consultation with Material Co-ordinator.
- To take all possible Safety Measures and Safeguards to arrest further spread of hazards, in co-ordination with Area / Section Incharge and Incident Controller.
- Ensure / Secure isolation of Plant Process and operation of Machine / Equipment to keep away danger from Persons.
- To mobilise sufficient quantities of Fire Equipment, Fire Brigade and fittings at Emergency Site and arrange for Fire Fighting operations.
- To conduct investigations into causes of Emergency occurrences and suggest remedial measures for prevention of its reoccurrence.
- To evaluate the adequacy of Emergency Control Plans for Disaster Prevention and preparedness and suggest measures for rectification of Shortcoming.

3.8 MATERIAL CO-ORDINATOR:

- To maintain reasonable stocks of Materials like Safety, Fire, First Aid Items, Mechanical, Material Handling fightings etc and earmark "Emergency Stock" of above Items.
- To maintain Emergency Stocks separately at Emergency Control Center and review / replenish them.
- To arrange prompt supply of essential goods from local market as and when required during Emergency.
- To remain in constant touch with Incident Controller and Area / Section Incharge for identification and supply of Material and Equipments / Accessories.

3.9 TRANSPORT CO-ORDINATOR.

- To mobilise sufficient Vehicles and Transport Equipment's for shifting Man / Material and Evacuation of Employees.
- To arrange strict Security at the Gate to prevent entry of unauthorised Personnel and Vehicles.
- To control Traffic movement and ensure that no crowding of Vehicle is there Around emergency zone.
- To ensure that alternate Transport is also available as and when required.

3.10 LIAISONING AND PUBAIC RELATION CO-ORDINATOR:

- To assist Site Controller in seeking help from outside agencies like Police, Administration, Hospital, Fire Brigade for Emergency Work.
- To keep himself informed on the status of casualties or other Emergency losses and arrange to provide any additional help for prompt Treatment of the Injured.
- To handle all inquires from relatives and provide appropriate Information.

3.11 INCHARGE POWER SUPPLY:

- To cut off the source of Power Supply to the affected Emergency Zone and related operational Units as and when required authentically by Area Section Incharge.
- Restore Power Supply after Emergency clearance is obtained from authorised Person.
- To provide alternate source of Power Supply to Electrical Equipment / Auxiliary from J.K.Thermal or D.G.House in case of Power failure from R.S.E.B

3.12 INCHARGE WATER SUPPLY:

- To ensure sufficient Reserves of Water Storage.
- To maintain Pump operation and Valve control for proper supply of water.
- To give top priority for Water supply to affected Zone as may be required for Emergency use.

3.13 CO-ORDINATOR MECHANICAL EQUIPMENT / UTILITIES:

To arrange supply and installation of all Mechanical / Material Handling Equipments and their fittings like Mobil Crane, Chain Pulley Block, Slings, Ropes, Ladders, Winch Crab, Trolley etc as may be required for use during Emergency.

3.14 WELFARE CO-ORDINATOR:

- To ensure that Casualties receive adequate attention.
- In-Case Emergency is prolonged, he will arrange for the relief of Personnel and organise Refreshment / Catering facilities.
- To arrange Admission / Hospitalisation and proper care of the Injured during Treatment outside in co-ordination with Doctors.
- To keep in touch with the Family Members of the Injured.

3.15 TRAINING CO-ORDINATOR:

- To prepare and earmark a Rescue Team of trained Personnel capable of handling Emergency control / relief Operation.
- To arrange Training of Rescue Team Personnel in all Rescue Operations like Evacuation, Fire Fighting etc through demonstration / drills of Fire Equipments.
- To form a First Aid Team and provide Training in First Aid so as to make them capable of rendering all First Aid Services and care.

• To provide the list of all trained Members of the Rescue Team and First Aid Team in the Emergency Control Center intimating them to operate under Rescue Coordinator respectively during Emergency.

3.16 FOR EMERGENCY DURING NIGHT DUTY HOURS:

- During Night duty Working hours, the Security Officer on duty will be the Emergency night duty Incharge for Emergency Control Works. He will be responsible for Co-ordinating all necessary action to help control the Emergency Situations.
- To assess the scale and magnitude of the Emergency implications and accordingly inform the Incident controller of Area Section Incharge as the case may be.
- If required inform all members of Emergency task Group & Rescue First Aid Teams.
- To use Runners / Messengers in –case of Telephone failure.
- To blow the Siren / hooter for declaring state of Emergency under instructions of incident controller.
- To arrange the Transport / Vehicle for Emergency and Rescue Operations.
- To act under instructions of incident Controller and carry out other jobs as are attributed to communication Co-Ordinator.

4.0 EMERGENCY SERVICES & UTILITIES

4.1 EMERGENCY CONTROL CENTRE.

Security office at main Gate will be the Emergency Centre during emergency and all emergency operations would be directed from there.

The emergency control Centre shall have the following facilities.:-

- Internal and external telephone facilities.
- List of key persons notified for Emergency work with their contact Telephone numbers and addresses.
- List of all employees as engaged in different shifts in the plant.
- List of control locations / contact Telephone numbers for service and liaising.
- List of outside Agencies for help like local / Distt. Administration, Hospital, Police, and Fire brigade etc., along with their addresses and phone numbers.
- Emergency Siren / hooter control a public address system.
- Emergency stock of essential items for Fire fighting, safety, First Aid, Rescue / valuation, Transport etc.

4.2 CONTROL ROOM / COMMUNICATIONS CENTRE :

- Location & Access: The Security office at the main Gate is the control Room and communication Centre during emergency as identified in the lay out plan. The control Room has a clear access.
- Vehicles / Transport: the control room has ready availability of sufficient Vehicles to meet any emergency as detailed under.
- Plan: A lay out plant of the factory is displayed in the control room.
- The plant has following vehicles, which can exclusively be put in service for evacuating and shifting of personnel and Material during Emergency.

Jeeps : 02 Nos.
 Cars : 02 Nos.
 Fire Jeep : 01 No.

4. Trucks : 02 No's (on hire)

- These vehicles shall be available near the Emergency control centre under the charge of security office.
- Besides, ambulance facilities are also available round the clock in the plant dispensary. There are 02 Ambulances, which can be put to Emergency use.
- Important Telephones: A list of all important Telephones is also displayed in the emergency control Room.
- Communication Facilities. : The control Room is provided with Internal & External phone to make use of the same during Emergency.
- Also the runner's persons designated as Runner is available in each shift.
- The details are also exhaustively covered under communication System Mechanism with all concerned Persons / Agencies for arranging necessary help to effectively handle emergency control operations.

4.3 ASSEMBLY POINT :-

- The open area infront of Time office near main security gate is designated as assembly point.
- Display of Board: A Board has been displayed to mark and identify the location as assembly point.
- Roll Call System: The assembly point is adjacent to the Time office of personnel Deptt. Where Employees records are available and the roll call can be taken.

- Visitor's record: There is a system to maintain a Visitor register in which all entries of visitors are recorded.
- All personnel shall assemble at the assembly point during emergency to ensure that emergency related instructions could b given to them and a roll call in maintained.
- In case any affected personnel are likely to be evacuated, the site controller shall advice the incident controller & section in charge for arranging the same.

6.4 COMMUNICATION FACILITIES & PROCEDURES

The plant has following systems of communication widely spread over to every Department Colony complex and outside contacts.

- Internal Telephone
- External telephones with STD facilities
- Telephone / Mobile phone will be used his liaising at Udaipur & H.O. Kanpur.
- Computerized PBX junction through computerized Electronic Telephone Exchange.
- Direct lines to Sr. Executives at night hours.
- FAX System Telex System.
- Electrical Siren Hooter
- Public Address Mike / Horn
- Runner System
- Jeeps.

The alarms/ Sirens are provided at strategic points whereas telephone systems are provided in each and every section.

- The communication officer will use the alarm siren for emergency as and when required.
- In addition, the communication officer shall also inform all concerned persons telephonically as notified for Emergency work.
- In case of telephone failure the communication officer shall arrange to rush the runner with a conveyance to convey the massage to all concerned.
- If needed he should also use public address / Mike system at the assembly point for conveying any information as may be required to the persons who have assembled there after being evacuated from the affected area.
- Telephone / Mobile Phones: facilities shall be used for conveying messages to Head Office or area Marketing / Liaisoning office.
- STD, E-mail & FAX facilities shall be used for onward communication to statutory authorities informing them about the occurrence / declaration of an Emergency.

• The communication officer in consultation with incident & site controllers shall municipal / District Administration etc on Telephones to summon any urgent help as may be required to bring the situation under control without loss of time.

6.41 ON DETECTION OF FIRE:

In case a fire is detected by any person, he will.

- Raise the alarm by shouting Fire, Fire, and Fire to draw attention of his other colleagues.
- Immediately inform the section Incharge, Departmental Head, Fire Section, Security officer on duty etc. and also inform his colleagues to make possible arrangements for fire fighting by using portable fire extinguishers as are placed nearby.
- On receiving the information the section in charge will immediately rush to the site of fire occurrence and make all possible arrangements to control the situation.
- He will also assess the magnitude and gravity of the situation and if required shall inform the occurrence to incident controller and communication officer.
- If required, the section in charge will inform Electrical Department to arrange shutting off" the power supply.

6.5 ALARAM MECHANISM FOR EMERGENCY:

Following system will be adopted for blowing the alarm /Siren for Emergency.

- In case of Emergency the Communication Officer will arrange to blow the Siren
- First at high pitch and then gradually at low pitch for 20 seconds.
- He should repeat the blowing of Siren 03 times at a stretch intermittently.
- The alarm will signify that an Emergency has occurred and Emergency services should accordingly be put in operation.

6.5.1 ALL CLEAR SIGNAL:

The Communication Officer shall arrange to blow a long pitched siren continuously for some time without break to indicate that Emergency is over and normally is being restored after the emergency has been controlled.

6.6 MEDICAL AID:

The Plant has 02 Dispensary one each in Works & Colony Complex operating round the Clock under qualified Medical Doctor. It has facilities for Dressing, Minor Operations.

Oxygen cylinders, Beds, Stretchers etc. to meet First Aid requirements of the Employees and Colony Resident for Medical Treatment.

6.6.1 DISPENSARY STAFF:

Following Medical / Para-Medical Staff are available on regular roll in the Dispensary who can always be put for Emergency use.

Medical Doctor	01
Compounder	05
Female Nurse	01
Helpers	01

In addition we have scheduled visits of guest Doctors on regular basis also. Further 03 Government Hospitals / Dispensaries are located in Nimbahera close to the Plant namely: Referral Hospital, ESI Dispensary and a Family Planning unit. Besides 01 District Hospital is also operating at Chittorgarh where the Injured Person can be sent.

6.6.2 EMERGENCY EQUIPMENT

Following Equipments are readily available in the dispensary.

Ambulance	01	Portable Trolley	02
Other Transport	03	Eye Wash Bottle	06
First Aid Box	10	Splints Sufficient	
Oxygen Cylinder	03	Beds	03
Stretcher	01	Resuscitator	01

6.7 EMERGENCY MEDICINES / FACILITIES

A stock of following emergency medicines is maintained in the dispensary.

Inj Adrenaline	21 amp.	Tab Aten	20
Inj Dexona	12 vial	Inj. Hacmecial	05 Bottle
Tab Indral	20	Inj Avil	20 ampules
I.V. Set	50 Nos.	Inj. Atropine	10 ampulses
Inj Vit. K	05 amp.	Inj. Lasix	10 ampulses
Inj Primacort	10 vial	Inj. Batropose	05 ampulses
Inj Calmposet	10 amp.	Inj. Dopamine	05 ampulses
Tab Sorbitrate	50.	TabEcosprin	50

Besides, many other general Medicines & Facilities are available in sufficient quantities.

6.7.1 FIRE EQUIPMENTS

Various types of Fire Fighting Equipments are available in the Plant in sufficient numbers to meet any Emergency. These are fixed at prominent locations in the Plant and reserve stock is also maintained in Fire Station and Stores. These are available in various sizes as detailed below.

ITEM	QUANTITY
Co2 Type (all size)	75 Nos
DCP Type (All Sizes)	60 Nos
Foam Type (All Sizes)	50 Nos
ABC Type (Multi Purposes)	100 Nos.
Hydrant Points	10 Nos
Water Pump	2 Nos
Troller ump	1 No.
Hose Winding Machine	1 No.
Sand Buckets	75 Nos.
Hose Pipes	10 Nos.
Branch Nozzle	3 Nos.
Spare Fittings / Parts & accessories	Sufficient

6.7.2MUTUAL AID:

Fire Brigade services can be summoned from outside like Wonder Cement, Aditya Cement, Chanderia Zinc Plant Besides help from Nimbahera / Chittorgarh Nagar Palika on request under Mutual aid Scheme.

6.7.3 ADEQUACY OF FIRE EQPT. :

Fire Equipment's are sufficiently available as per TAC norms.

6.7.4 WATER SUPPLY

The plant has a system of storing water in number of ways like overhead water tank, surface water tanks & Return water Tanks. Also sufficient number of under ground Tube wells are there to supply water on regular basis for use in plant and machinery. Separate

Pumps and water hydrants are there for fire Emergency. The total storage of water reserves are as under.

6.8 TOTAL WATER STORING CAPACITY

Surface water Tanks
 Elevated water tanks (Inside plant)
 = 53,000 Gallons
 26,500 Gallons

Total Water = 79,500 Gallons

6.9.0 SAFETY EQUIPMENT (PERSONNAL PROTECTIVE APPLIANCES)

Sufficient quantities of personnel protective appliances like safety helmets face shield, Safety Goggles, Filter Masks, safety Belts, Hand Gloves, Apron, Gum Boots and Safety Shoes etc. are available in stores and plant department.

•	Safety helmet	40	hand Gloves	50
•	Ear Plug	50	Goggles	40
•	Dust Filter Mask	100	Hand Screen	05
•	Safety Belt	15	Head Screen	05
•	Apron / Overall	5		

6.9 POWER SUPPLY

Total requirement of Power supply for Plant is about 33 M.W. which is met through following Power supply sources.

From CPP 25 M.W. From WHR 10M.W.

GRID 20MVA (YET TO COMMISSIONING). Bamania CPP 10 M.W. (1*10MW + 1*7.45 MW)

6.10 MECHANICAL EQUIPMENT / ACCESSORIES

Ropes, ladders, chain Pulley Blocks etc. are available in stores and Mechanical Departments for use during Emergency.

6.11 LIAISONING & CO-ORDINATION

All liaisoning & Co-ordination work with concerned Authorities like Police, Hospital, Local/ District Administration, Fire Brigade etc. shall be done from the Emergency Control Centre. Various other enquiries shall also be entertained from there.

6.12 MUTUAL AID SCHEME:

The Scheme is existing and Factories included under the mutual aid scheme are Aditya Cement, Birla Cement, and Chanderia Zinc Smelter & Vikram Cement. Besides help can be sought from Nimbahera & Chittorgarh Nagar palika as and when required during Emergency.

6.13 CONTACTS FOR KEY PERSONNEL

CONTACT RESOURCES	LOCATION	CONTACT TELEPHONE NUMBER
Site Controller	Unit Head	220087Ext. 2218 (O) Ext. 2207 (R)
Incident Controller	Sr. G.M. (O&M)	220087 Ext. 2008 (O) Ext.2208 (R)
Communication Co-ordinator	Security Office Main Gate	220087 Ext. 2093
Area / Section Incharge	Plant / Deptt	
Rescue Co-ordinator	Security Office	220087 Ext. 2159 (O) Ext. 3262 (R)
Medical Co-ordinator	Dispensary	220087 Ext. 2058(O) Ext. 3297 (R)
Safety / Fire Co-oridnator	Safety Deptt.	220087 Ext. 2249 (O) Ext. 3227 (R)
Material Co-ordinator	Gen. Office	220087 Ext. 2246
Liaisoning & Public Relations Co-ordinator	Personnel Department	220087 Ext. 2015 (O) Ext. 2215 (R)
Incharge Power Supply	Electrical Department	220087 Ext. 2070
Incharge Water Supply	Mechanical Workshop	220087 Ext. 2157 (O) Ext. 3135 (R)
Co-Ordinator Mech. Eqpt.	Mech. Maintenance Mills	220087 Ext. 2011 (O)
Utilities	/ Kiln	Ext. 2014 (O)
Welfare Co-Ordinator	Training Centre	220087 Ext. 2117 (O)
Security Officer (Night Emergency)	Security Officer	220087 Ext. 2093

6.13.1.1 CONTACTS FOR EMERGENCY SERVICES

CONTACT RESOURCES	LOCATION	CONTACT TELEPHONE NUMBER
Emergency Control Centre	Sec. Office Main Gate	220087 Ext.2093
Communication	-do-	-do-
Emergency Alarm	-do-	-do-
Transport	-do-	-do-
Ambulance	Plant Dispensary	220087 Ext.2058
Medical Aid	-do-	220087 Ext.2058
Fire Equipments	Fire Station	220087 Ext.1000
Water Supply	Pump House	220087 Ext.2085
Safety Equipment	General store	220087 Ext.2246
Power Supply	Electrical Deptt.	220087 Ext.2077 & 2067
Mechanical Eqpts. and Accessories	Mech. Maint.(Mills & Kiln)	220087 Ext.2011 / 2014
Liaisoning and Co-ordination	Personnel Deptt.	220087 Ext. 2015 (O) 2215 (R)

6.13.2 CONTACTS FOR EXTERNAL HELP

The contact Telephones for External support are given as below:

CONTACT RESOURCES	LOCATION	CONTACT TELEPHONE NUMBER
NIMBAHERA		STD CODE – 01477
Administration	SDM Office	220002
Police	Dy. S.P. Office	220039
Govt. Hospital	Chief Medical Officer	221189
Post & Telegraph Office	Post Master	220061
Telephone Exchange	Junior Engineering	220100
Railway Station	Station Master	220088
Municipality	Near City Rly. Station	220041
R.S.E.B.	Exec. Engineer	220583
Water Works	Asstt. Engineer	220070
OUT SIDE NIMBAHERA Sr. Inspector Factories & Chittorgarh 241213		
Sr. Inspector Factories & Boilers	Chittorgarh	241213
Chief Inspector, Factories & Boilers	Jaipur	0141 – 2519659 – 2519619
District Magistrate	D.M.'s Office, chittorgarh	01472 - 240001
Police	S.P. Office, Chittorgarh	01472 - 240006
Distt. Hospital	C.M.O. Chittorgarh	01472 - 241114
Fire Grigade	Chittorgarh	01472 - 241482
Fire Grigade	Chittorgarh	01472 - 241482
Fire Grigade	Pratapgarh	01478 - 220043

5.0 TRAINING OF PERSONNEL:

- All Employees of the Plant shall be regularly Trained and retained to meet effectively the Emergency requirements.
- Special emphasis will be given on Fire Fighting Demonstration and First Aid as being a regular part of such Training.
- It shall be always ensured that sufficient numbers of Trained Personnel are available at all times to meet any Emergency.

5.1 TRAINING OFFERED FOR:

• First Aiders: Training is arranged Periodically

• Fire Fighter: Regular Training is done on Fire Prevention

& Control.

• Essential / Key Personnel: Training regularly done.

• General Public: Knowledge is imparted through Health

Camps, Educational Functions and Community Welfare Activities.

7.1.1TYPE OF TRAINING:

Details of Training for desired Emergency personnel

(a) Training of First Aiders:

Type of Training:

➤ In-house Training / Demonstration by Training Deptt with faculty support from medical Deptt.

External Training of First Aiders through Red Cross Society or any other related agency.

Contents of Training: First aid procedures & Treatment of Fractured limbs.

➤ Knowledge of type and use of splints.

> First aid treatment against Electric Shock.

➤ Use of Resuscitator /Artificial Respiration

> First aid treatment against Burn Injuries

(b) Training of fire Fighter:

Type of Training : ➤ In-house Training / Demonstration

External Training on Effective Fire Fighting system

Contents of Training:

> Fire Chemistry & Classification of Fire

> Types of Fire Extinguishers and their use.

➤ Checking / Maint of Fire Eqpt. & Hydrants.

(c) Training of Essential Persons : Type of Training :

➤ In-house Training for handling Emergency and Management of Utilities / Auxiliaries.

> External Training of Disaster Management

➤ Contents of Training: Team Building & Leadership Qualities to lead their people during Emergency

Assessment of Emergency and managing ready stock of Emergency utilities like water, Air, Emergency power & Mech Fittings at site.

➤ Inter departmental liasoning and Co-ordination.

(d) Training of Key persons:

Type of Training : ➤ In-house Training / Demonstration

> Review Meetings

External Training on Disaster Control management

Contents of Training:

➤ About their Role / Duties during Emergency

Assessment of Emergency situation for deciding possible shutdown / startup of plant & its utilities.

➤ Liaoning and Co-ordination with out side agencies.

(e) Training of General Public:

Type of Training:

through Company organised Exhibitions and Health and welfare comps.

Cement Manufacturing does not involve release / leakage of any Toxic gas or vapor during production and transportation as such public Safety at large is not at all endangered.

(f) Training Manual for Emergency personnel

Objectives:

To provide procedural guidelines for assessment of Training needs imparting of Training for Emergency personnel and authorise them to effectively handle emergency situation in area of their control.

Responsibilities:

The Unit head of works shall be responsible for identifying suitable personnel who are directly or indirectly engaged for controlling emergency.

All such personnel will be apprised with their emergency roles and functions clearly as defined in "ON-SITE EMERGENCY PLAN"

All such emergency personnel / Co-ordinators shall be members of Emergency Taskforce.

Identification of Emergency personnel

Concerned Deptt. Head shall be responsible to identify and spare Emergency personnel's and co-ordinators from their department like First Aiders Fire.

Fighters, Utility Co-ordinators whom they deemed to be as essential persons to help controlling the Emergencies emergency.

Roles & Responsibilities of such personnel's during Emergency shall be well identified and apprised to them.

Assessment of Training Needs.

Head of Training Deptt. shall identify Training needs of all emergency personnel with a view to impart Training for enhancing their functional skills so that emergency situations could be handled effectively.

The assessment of training Needs shall be done in consultation with concerned dept Heads and Head of safety deptt.

Scope of Training

The Training of Emergency personnel should preferably cover following areas

- 1. Nature of emergency and disasters
- 2. On site Emergency plan
- 3. Disaster control Management
- 4. Emergency preparedness
- 5. Management of emergency utilities
- 6. Team Building amongst cross functional Groups
- 7. Leadership Development
- 8. First aid Measures
- 9. Fire control Measures
- 10. Rehearsal drills & Demonstration.

Training of Emergency Personnel

Head of Training Deptt. In consultation with Head of Safety shall be responsible to arrange suitable Training of Emergency Personnel as per their Training Needs identified under Role and functions as laid down in "ON-SITE EMERGENCY PLAN"

Training Head as per advice of head of Safety shall design suitable Training Programme aiming to develop necessary functional skills required for controlling emergency effectively.

The training will be need based focusing mainly in the emergency control areas as required for safe handling of emergencies.

Head of training shall conduct in-house training Programme with faculty support from experts for all categories of emergency personnel.

Head of training Deptt in constitution with head of safety shall also arrange external / Advanced Training in areas of disaster control Management and Emergency Preparedness for such persons as deemed fit.

Head of Safety will review their skills and take timely action for necessary upgradation.

Fire fighting demonstrations & rehearsal Drills shall be done periodically to take stock of emergency preparedness and efficiency of emergency of control systems by safety Deptt.

7.2 DEMONSTRATION / DRILLS:

Fire Demonstration / Drill shall be regularly done for Fire Fighters / Security Staff and Plant personnel to check the Efficiency and reliability of Fire Control System.

7.2.1 REHEARSAL of EMERGENCY:

Rehearsal of Emergency shall be conducted once in Year.

EXPLOSION and TOXIC GAS RELEASE:

Are not applicable as Cement Processing and Transporting do not involve any Explosion / Toxic Gases etc.

चित्तौडगढ्पत्रिका 11

rajasthanpatrika.com

राजस्थान पत्रिका . चित्तौड्गढ़. शनिवार. १७.०९.२०१६

जे.के. सीमेन्ट वर्क्स, मांगरोल (राज.)

सूचना

दिनांक : 16.09.2016

सर्व साधारण को सूचित किया जाता है कि जे. के. सीमेन्ट वक्स, मांत्ररोल का प्रस्तावित सीमेन्ट प्लान्ट क्षमता विस्तार 2.90 MMTPA से 5.65 MMTPA विलंकर एवं 3.45 MMTPA से 7.05 MMTPA सीमेन्ट उत्पादन, केप्टिव पावर प्लान्ट 25 MW से 60 MW (अतिरिक्त 35 MW, CPP स्थापित करके) एवं WHRB 10 MW से 20 MW (अतिरिक्त 10 MW, WHRB स्थापित करके) ग्राम मांत्ररौल, तहसील निम्बाहेझ, जिला चित्तौड़गढ़ (राजस्थान) के लिये भारत सरकार के वन-पर्यावरण एवं जलवायु परिवर्तन मंत्रालय द्वारा दिनांक 08.09.2016 को निम्न रूप से पर्यावरण स्वीकृति प्राप्त हो गई है।

- 1. प्रस्तावित जे. के. सीमेन्ट वक्स, मांगरोल सीमेन्ट प्लान्ट क्षमता विस्तार- 2.90 MMTPA से 5.65 MMTPA विलंकर एवं 3.45 MMTPA से 7.05 MMTPA सीमेन्ट उत्पादन ।
- 2. प्रस्तावित जे. के. सीमेन्ट वर्क्स, मांत्ररोल केंद्रिव पावर प्लान्ट क्षमता विस्तार- 25 MW से 60 MW (अतिरिक्त 35 MW, CPP स्थापित करके) ।
- 3. प्रस्तावित जे. के. सीमेन्ट वयर्स, मांग्ररोल वेस्ट हीट रिकवरी पावर प्लान्ट क्षमता विस्तार-10 MW से 20 MW (अतिरिक्त 10 MW, WHRB स्थापित करके) । उक्त स्वीकृति की कॉपी राजस्थान सज्य प्रदूषण नियंत्रण मण्डल कार्यालय में उपलब्ध है तथा भारत सरकार के वन-पर्यावरण एवं जलवायु परिवर्तन मंत्रालय की वेबसाइट http://envfor.nic.in पर भी उपलब्ध है ।

यूनिट हेड

जे.के. सीमेन्ट ववर्स, मांगरील (राज.)



जे.के. सीमेन्ट वर्क्स, मांगरील (राज.) सूचना दिनांक: 16.09.2016

सर्व साधारण को सूचित किया जाता है कि जे. के. सीमेन्ट वर्क्स, मांगरोल का प्रस्तावित सीमेन्ट प्लान्ट क्षमता विस्तार 2.90 MMTPA से 5.65 MMTPA क्लिंकर एवं से 3.45 MMTPA से 7.05 MMTPA सीमेन्ट उत्पादन, केप्टिव पावर प्लान्ट 25 MW से 60 MW (अतिरिक्त 35 MW, CPP स्थापित करके) एवं WHRB10 MW से 20 MW (अतिरिक्त 10 MW, WHRB स्थापित करके) ग्राम मांगरील, तहसील निम्बाहेड़ा, जिला चित्तौड़गढ़ (राजस्थान) के लिये भारत सरकार के वन-पर्यावरण एवं जलवायु परिवर्तन मंत्रालय द्वारा दिनांक 08.09.2016 को निम्न रूप से

- पर्यावरण स्वीकृति प्राप्त हो गई है। 1. प्रस्तावित जे. के. सीमेन्ट वर्क्स, मांगरोल सीमेन्ट प्लान्ट क्षमता विस्तार - 2.90 MMTPA से 5.65 MMTPA किलंकर एवं 3.45 MMTPA से 7.05 MMTPA
- 2. प्रस्तावित जे. के. सीमेन्ट वर्क्स, मांगरोल केप्टिव पावर प्लान्ट क्षमता विस्तार 25 MW से 60 MW (अतिरिक्त 35 MW,CPP स्थापित करके)।
- 3. प्रस्तावित जे. के. सीमेन्ट वर्क्स, मांगरोल वेस्ट हीट रिकवरी पावर प्लान्ट क्षमता विस्तार - 10 MW से 20 MW (अतिरिक्त 10 MW, WHRB स्थापित करके)। उक्त स्वीकृति की कॉपी राजस्थान राज्य प्रदूषण नियंत्रण मण्डल कार्यालय में उपलब्ध है तथा भारत सरकार के वन-पर्यावरण एवं जलवायु परिवर्तन मंत्रालय की वेबसाइट http://envfor.nic.in पर भी उपलब्ध है।

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