

**HALF YEARLY COMPLIANCE REPORT OF ENVIRONMENT CLEARNACE FOR JSW CEMENT PLANT CLINKER 2.0 TO 2.5 MPTA & CHANGE OF PRODUT MIX FROM 4.8 MTPA (1.1 MTPA OPC & 3.7 MTPA PSC) TO 4.8 MTPA OPC/ PSC/GGBS.**

<p><b>NAME OF THE PROJECT: JSW CEMENT LTD, Bilakalagudur (Village), Gadivemula (Mandal) dist. Kurnool (A.P.)</b></p> <p><b>MOEF&amp; CC LETTER NO. &amp; DATE: J-11011/889/2007-IA.II (I) Dated 09.03.2016</b></p> <p><b>PERIOD OF COMPLIANCE REPORT: 01.10.2022 to 31.03.2023</b></p>			
Sl.No.	SPECIFIC CONDITIONS	COMPLIANCE	
1	The project proponent should install 24x7 air monitoring devices to monitor air emissions, as provided by the CPCB and submit report to ministry and its regional office.	We have installed 24x7 three CAAQMS and Six online stack monitoring equipment's and real time AAQ data are transmitted to APPCB & CPCB website	
2	The standards issued by the Ministry vide G.S.R NO:612(E) dated 25.08.2014 regarding cement plants with respect to particulate matter ,SO2 and NOx shall be followed	Average Emission data from 01/10/2022 to 31/03/2023 are as follows:	
		Stack	Emission (mg/Nm <sup>3</sup> )
		Stack PM	16.45
		Kiln Sox	2.85
		Kiln NOx	312
		Applicable norms (mg/Nm <sup>3</sup> )	30
		Remarks	Pyritic Sulphur in limestone 0.68%
			Nox and So2 analyzers installed on 25/08/2014
3	Continuous stack monitoring facilities to monitor gaseous emissions from the process stacks shall be provided. After expansion, limit of PM shall be controlled to meet the prescribed standards by installing adequate air pollution control viz Electrostatic precipitators to clinker, bag house to raw mill/ kiln and bag filters to coal mill and cement mill. Low Nox burner shall be provided to control NOx emissions. regular calibration of the instruments be ensured.	We have installed Six online continuous stacks monitoring for the major stacks and Sox and NOx analyzers in the kiln stack to monitor PM, Sox and NOx as per latest MoEF notification dated 25.08.2014 Regular maintenance of online emission monitoring systems is done by qualified engineers deputed by our AMC vendor. Facilities for online calibration and tamper proof mechanism are in place.	
4	Efforts shall be made to achieve power consumption of 70 units /tone of Portland-Pozzolona cement (PPC) and 95 units /tone of cement for Ordinary Portland Cement and thermal energy consumption of 670 kcal/Kg of Clinker.	Power consumption for Ordinary Portland Cement (OPC) From Sep 22 to March 23 was <b>84.94 kWh/t cement</b> and Thermal energy consumption was: 751.15.38 kcal/Kg of Clinker. We are planning for cooler modification to further reduce the thermal energy consumption.	

5	National Ambient Air Quality Standards issued by Ministry vide G.S.R No:826 (E) dated 16.11.2009 shall be followed.	Agreed and followed															
6	AAQ Modeling shall be carried out based on the specific imitative measures taken in the existing project and proposed for the expansion project to keep the emission levels well below prescribed standards.	This study was conducted during the project stage and accordingly, the bag houses (including clinker cooler) were installed to control the outlet emission below 30 mg/Nm <sup>3</sup> .															
7	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.	CPCB guidelines for control of fugitive emissions are being followed. Fugitive emissions are maintained well within the prescribed norms. Average Fugitive emissions from 01/10/2022 to 31/03/2023 are as follows: <table border="1" data-bbox="787 661 1437 934"> <thead> <tr> <th>Sl no</th> <th>Location</th> <th>Dust concentration(mg/Nm<sup>3</sup>)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Packing plant</td> <td>0.51</td> </tr> <tr> <td>2</td> <td>Coal mill Hopper</td> <td>0.34</td> </tr> <tr> <td>3</td> <td>Raw mill hopper</td> <td>0.42</td> </tr> <tr> <td>4</td> <td>Crusher Hopper</td> <td>0.41</td> </tr> </tbody> </table>	Sl no	Location	Dust concentration(mg/Nm <sup>3</sup> )	1	Packing plant	0.51	2	Coal mill Hopper	0.34	3	Raw mill hopper	0.42	4	Crusher Hopper	0.41
Sl no	Location	Dust concentration(mg/Nm <sup>3</sup> )															
1	Packing plant	0.51															
2	Coal mill Hopper	0.34															
3	Raw mill hopper	0.42															
4	Crusher Hopper	0.41															
8	Arsenic and Mercury shall be monitored in emissions and water.	Values of Arsenic and Mercury in emissions Air and Water are as follows: 1.Kiln stack: a). Arsenic (AS): BLQ mg/Nm <sup>3</sup> b). Mercury (Hg): BLQ mg/Nm <sup>3</sup> 2. Water a). ).Arsenic (AS): Nil mg/Nm <sup>3</sup> b).Mercury (Hg) : 0.001 mg/Nm <sup>3</sup>															
9	The coal shall be lined and covered	Coal yard is lined and covered shed has been provided.															
10	Efforts shall be made to reduce impact of transport of the raw materials and end products on the surrounding environment including agriculture land by use of conveyer's/rail mode of transport wherever feasible. The company shall have separate truck parking area. Vehicular emissions shall be regularly monitored.	We have constructed a 10 M x 30 Km concrete road from factory to Nandyal town to reduce the impact of transport of raw material/ finished goods on the environment/ agriculture land. We are also covering the trucks carrying raw material and finished products with tarpaulin in compliance with the CPCB guidelines. Loose powdery material viz. cement /GGBS/ fine coal etc. are transported in bulkers.															
11	Efforts shall be made to further reduce water consumption by using air cooled condensers. All the treated water shall be recycled and reused in the process and / or for dust suppression and greenbelt development and other plant related activities etc. No process waste water shall be discharged outside the factory premises and Zero discharge shall be adopted.	We have installed Air Cooled Condenser in CPP. Treated waste water are using used for the dust suppression. No process water will be discharged outside the factory premises. Domestic waste water treated in the STP and after the same water using for greenbelt development.															
12	Efforts shall be made to make use of rain water harvested .If needed,	We have so far adopted the following measures for rainwater harvesting and groundwater recharge:															

	capacity of the reservoir shall be enhanced to meet the maximum water requirement .Only balance water requirement shall be met from the other sources.	<ul style="list-style-type: none"> <li>- Constructed <b>rooftop rainwater harvesting</b> structure at Stores Building, Workshop, Time office, Coal shed, MRSS Building and LC-2 Load centre and Govt Primary School, Bilakagudur Village.</li> <li>- So far the harvested water is directly recharged into groundwater.</li> </ul>
13	Regular monitoring of influent and effluent surface, sub surface and ground water shall be ensured and treated waste water shall be meet the norms prescribed the norms by the State Pollution Control Board or described under the environment (Protection) Act, 1986 whichever are more stringent. Efforts shall be made to reduce impact of transport Leachate study for the effluent generated and analysis shall also regularly carried out and report submitted to the ministry 's regional office and SPCB and CPCB.	No effluent is being generated from the cement manufacturing process operations. Domestic waste water generated from the Canteen and offices was treated at STP and final treated waste water are using for Greenbelt development. Inlet and outlet of the STP waste water testing reports are submitting to SPCB.
14	All the bag filters dust, raw mill dust, coal dust, clinker dust and cement dust from pollution control devices shall be recycled and reused in the process used for cement manufacturing. Spent oil and batteries shall be sold to authorized recyclers/reprocesses only.	Provided bag filters to control fugitive emissions at all the transfer points and the collected dust is automatically recycled into the system. Collected waste oil and batteries are sold to authorized recyclers only.
15	The kiln shall be provided with a flexible fuel feeding system to enable us of hazardous wastes and other wastes including biomass.	The suitable system has been provided to feed the hazardous waste in to the kiln.
16	The proponent shall examine and prepare a plan for utilization of high calorific wastes such as chemical wastes, 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 wastes as per the Environmental (Protection) Rules, 1986 and with necessary approvals.	Utilization of high calorific Hazardous waste from the Pre-processing Units /Pharmaceuticals' industries waste as an alternate fuel in kiln as partial replacement of fossil fuel. The MOU with M/s. Mylan Laboratories Ltd (Units2,7, 8,9 and 10) and M/s. Ramkey Enviro Engineers for the hazardous waste for three years' agreement. <b>HW usage from 01. 10. 2022 to 31.03.2023: 3454 MT</b>
17	Efforts shall be made to use of high calorific hazardous waste in the cement kiln and necessary provision shall be made accordingly. The PP shall enter into an MOU with units	Please refer to point no:16

	with potential for generating hazardous waste and in accordance with Hazardous waste Regulations and prior of the APPCB.	
18	Green belt over 33% of the total project area shall be developed within the plant premises with at least 10 meter wide range greenbelt along the periphery of the project area and along road sides etc. by planting native and board leaved species in consultation with local DFO, local community and as per the CPCB Guidelines	Greenbelt in an area of 239 Acres (37%) has been developed.
19	The Project Proponent shall provide solar light system for all common areas, street lights, villages, parking around the project area and maintain the same regularly.	We have already provided solar lighting system in nearby villages and inside the plant premises.
20	The Project Proponent shall provide LED Lights in their office and residential areas.	All lightings are replaced with LED lights.
21	All the recommendations made in the charter on corporate Responsibility for Environmental Protection (CREP) for the cement plants shall be completd.	We are complying with all the applicable recommendations of CREP Guidelines.
22	At least 2.5% of the total cost of the project shall be earmarked towards the Enterprise Social Commitment based on local needs and action plan with the financial and physical breakup details shall be prepared and submitted to the ministry Regional office. Implementation of such program me shall be ensured accordingly in a time bound manner.	Since the expansion was carried out through optimization and minor modifications, the project capital cost was nil. However, we have already earmarked 2.5% of the project cost as mentioned in our earlier EC vide ref J-11011/889/2007-IA II (I) dt:09.03.2016 for expansion of Slag Grinding unit. Action plan for the ESC budget has also been submitted to the MoEF&CC. The same was duly implemented as committed.
23	The proponent shall prepare a detailed CSR plan for the every year for the next five years for the existing -cum-expansion project, which includes village wise, sector wise (Health, Education, Sanitation, Health, Skill Development and infrastructure requirements such as strengthening of village roads, avenue plantation,etc), activities in consultation with local communities and administration. The CSR plan will include the amount of 2% retain annual profits as provided for in clause 135 of the companies Act,2013	5 year CSR plan in accordance with the Companies Act requirements has been prepared and being implemented every year by the CSR cell.  Separate budget head has been created for the CSR for the year 2021-22 for Rs 1.5 Crores. CSR expenditure upto March 2022 was Rs 132.24 Lakhs as revenue expenditure and Rs nil as capital expenditure.

	which provides for 2% of the average net profit of previous 3 years towards CSR activities for the life of the project. A separate Budget head shall be created and the annual capital and revenue expenditure on various activities of the plan shall be submitted as part of the compliance Report to Ro. The details of CSR plan shall also be uploaded on the company website and shall also be provided in the annual Report of the company.	
24	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 regional office, SPCB and CPCB within three months of issue of environmental clearance letter.	Risk assessment cum disaster management plan with mitigation measures was prepared and included in the EIA/ EMP report and the same was submitted to the concerned regulatory authorities.
25	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.	Boards/ posters/ signs showing dust as a hazard and its associated impacts on human health are displayed in all dust prone areas. In addition, workers are periodically educated to use dust masks while working in dust prone areas. Lung function tests of workers engaged in dust prone areas is done on 6 monthly basis.
26	Provision shall be made for the housing of construction of 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 structures to be removed after the completion of the project.	The project has been completed and the necessary infrastructure was provided during construction.

#### GENERAL CONDITIONS

1	The project authorities must strictly adhere to the stipulations made by the Andhra Pradesh Pollution Control Board and the State Government.	We are adhering to the stipulations made by the Andhra Pradesh State Pollution Control Board and the State Government. We have obtained combined consent for Air and Water and authorization for Hazardous Waste from APPCB. We are complying with all the stipulations made in the Consent Order. The consent is renewed in a timely manner and its validity up 30.09.2027.
2	No further expansion or modifications in the plant shall be carried out without prior	Noted and agreed.

	approval of the Ministry of Environment and Forests.																										
3	At least four ambient air quality monitoring stations should be established in the downward direction as well as where maximum ground level concentration of PM10, SO2 and NOx are anticipated 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 Cheenai and the SPCB/CPCB once in six months.	<p>Four ambient air quality monitoring stations have been provided in-consultation with PCB officials. We have also installed 3 CAAQMS and real time AAQ data are transmitted to APPCB &amp; CPCB website</p> <p>Average values of particulate emissions at AAQS for the period 01.10.2022 to 31.03.2023.</p> <table border="1"> <thead> <tr> <th>Location</th> <th>PM-10 µgm/m<sup>3</sup></th> <th>PM 2.5 µgm/m<sup>3</sup></th> <th>So2 µg/m<sup>3</sup></th> <th>Nox µgm/m<sup>3</sup></th> </tr> </thead> <tbody> <tr> <td>New Security gate</td> <td>64.0</td> <td>39.00</td> <td>11.00</td> <td>12.80</td> </tr> <tr> <td>MRSS</td> <td>70.0</td> <td>49.00</td> <td>10.02</td> <td>12.00</td> </tr> <tr> <td>Old Security gate</td> <td>57.00</td> <td>31.00</td> <td>11.00</td> <td>12.25</td> </tr> <tr> <td>Colony</td> <td>50.00</td> <td>35.0</td> <td>10.70</td> <td>12.04</td> </tr> </tbody> </table>	Location	PM-10 µgm/m <sup>3</sup>	PM 2.5 µgm/m <sup>3</sup>	So2 µg/m <sup>3</sup>	Nox µgm/m <sup>3</sup>	New Security gate	64.0	39.00	11.00	12.80	MRSS	70.0	49.00	10.02	12.00	Old Security gate	57.00	31.00	11.00	12.25	Colony	50.00	35.0	10.70	12.04
Location	PM-10 µgm/m <sup>3</sup>	PM 2.5 µgm/m <sup>3</sup>	So2 µg/m <sup>3</sup>	Nox µgm/m <sup>3</sup>																							
New Security gate	64.0	39.00	11.00	12.80																							
MRSS	70.0	49.00	10.02	12.00																							
Old Security gate	57.00	31.00	11.00	12.25																							
Colony	50.00	35.0	10.70	12.04																							
4	Industrial waste water shall be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19 May, 1993 and 31st Dec,1993 or as amended from time to time. The treated water shall be utilized for plantation purpose. No waste water generated from the process. Treated waste water form STP is used on-land for gardening/ greenbelt development.	No waste water generated from the process. Treated waste water form STP is used on-land for gardening/ greenbelt development																									
5	The overall noise levels in and around the plant area shall be kept well within the plant standards 85 dB(A) by providing noise control measures including acoustic hoods, silencers, enclosures etc.on all sources of noise generation.	<p>The overall noise levels in and around the plant area is well within the standards. The following measures are adopted for control on noise:</p> <ol style="list-style-type: none"> <li>All major industrial fans are fitted with silencers.</li> <li>DG sets are provided with acoustic enclosures &amp; installed in enclosed rooms.</li> <li>Compressors are installed within enclosed rooms</li> <li>Speed limit restrictions for vehicles within plant premises</li> </ol> <p>Average values of ambient noise levels for the period 01.10.2022 to 31.03.2023 are as under:</p> <table border="1"> <thead> <tr> <th>#</th> <th>Location</th> <th>Noise levels dBA (avg.)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Near New Security Gate</td> <td>65.88</td> </tr> <tr> <td>2</td> <td>Near MRSS Building</td> <td>68.75</td> </tr> <tr> <td>3</td> <td>Near Old Security Gate</td> <td>67.00</td> </tr> <tr> <td>4</td> <td>Near Colony</td> <td>54.00</td> </tr> </tbody> </table>	#	Location	Noise levels dBA (avg.)	1	Near New Security Gate	65.88	2	Near MRSS Building	68.75	3	Near Old Security Gate	67.00	4	Near Colony	54.00										
#	Location	Noise levels dBA (avg.)																									
1	Near New Security Gate	65.88																									
2	Near MRSS Building	68.75																									
3	Near Old Security Gate	67.00																									
4	Near Colony	54.00																									
6	Occupational health surveillance of the workers should 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 and records maintained as per the Factory Act. For this purpose, we have set up a dispensary inside the factory premises with qualified doctors, paramedical staff and all emergency arrangements including ambulance. In addition, the company, as part of its CSR programme, has also																									

		<p>deployed one Mobile Health Care Van for providing medical aid to nearby villages.</p> <p>As part of Occupational Health Surveillance programme, we are conducting 6 monthly health checkup of workers exposed to dust and noise. The health check-up includes spirometry (lung function test), audiometry, chest X-Ray, blood examination among others. Records of periodic health checkups are maintained at the health centre.</p>
7	The company shall develop Rainwater harvesting structures to harvest the rain water for utilization in the lean season besides recharge the ground water table.	Please refer point No. 12, Sp. Conditions.
8	The project proponent shall also comply with all the environmental protection measures and safeguards recommended in the EIA/EMP report. Further ,the company must undertake socio economic development activities in the surrounding villages like community development programmes ,educations programmes ,drinking water supply and health care etc.	<p>We are complying with all environmental protection measures and safeguards recommended in their EIA/EMP report. Also our company has undertaken various socio-economic development activities in the surrounding villages. The key areas of community/ socio economic development are as follows:</p> <ol style="list-style-type: none"> <li>1) Improving Living conditions, a). Agri Business b). Heath and Nutrition c). War on Covid d). Water</li> <li>2) Promoting Social development, a). Skills b). Education</li> <li>3) Addressing Environmental issues, a). Environment</li> <li>4) Swachcha Bharat Abhiyan a) Sanitation.</li> </ol> <p>We have implemented various schemes under the above heads to achieve the CSR objectives.</p>
9	The requisite funds shall be earmarked towards capital cost and recurring cost/annum for environmental pollution control measures to implement the conditions stipulated by the MOEF 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 Bangalore. The funds so provided shall not be diverted for any other purpose.	Agreed and implementing
10	A copy of the 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 suggestions/representations, if any, were received while processing of the proposal. The clearance letter shall be put on the	A copy of clearance letter had been sent to all the concerned. We have also put the clearance letter on the website of the company

	web site of the company by the proponent.	
11	The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitoring data on their website and shall update the same periodically. It shall simultaneously be sent to the regional office of MOEF&CC at Chennai. The respective zonal office of CPCB and SPCB. The criteria pollutant levels namely, PM <sub>10</sub> , SO <sub>2</sub> , NO <sub>x</sub> (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 gate of the company in the public domain.	Status of compliance and monitored data are regularly uploaded on the company's website ( <a href="http://www.jswcement.in">www.jswcement.in</a> ) and reports are being sent to the regional Office of the MoEF&CC at Chennai and the respective Zonal Office of CPCB and monitored data are being displayed through electronic display board at the main gate of the company in the public domain
12	The project proponent shall also submit six monthly report on the status of the compliance of the stipulated environmental conditions including results of the monitored data to the regional office of MOEF, the respective zonal office of CPCB and SPCB.	We are regularly submitting the six-monthly compliance reports and Last six monthly compliance report submitted on 27.05.2022 vide letter no: JSWCL-NDL/MOEF&CC-CHENNAI/F-02/21-22. ambient air quality monitoring data. We are also uploading our six-monthly compliance reports in the company's website, <a href="http://www.jsw.in">www.jsw.in</a> .
13	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 PCB	We are regularly submitting the environmental statement in Form-V to the APPCB, and Copy of the Environment Statement is also uploaded on the company website ( <a href="http://www.jsw.in">www.jsw.in</a> ).
14	The project proponent shall inform the public that the project has been accorded environmental clearance by Ministry and copies of the clearance letter are available with SPCB and may also be seen at Website of the MOEF at <a href="http://envfor.nic.in">http://envfor.nic.in</a> . This shall be advertised within seven days from the date of issue of the clearance letter, at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same should be forwarded to regional office at Chennai .	We have already advertised in two local newspapers (Ennadu and Deccan Chronicle dated 14.03.2016) widely circulated in the region and copies of the same had been forwarded to the regional office, MoEF.



15	The project authorities shall inform the regional office as well as the ministry date of financial closure and final approval of the project by the concerned authorities and the date of commencing the land development work.	Not applicable as it was an expansion project without any capital investment.
16	The ministry may revoke or suspend the clearance if implementation of any of the above conditions is not satisfactory.	Noted and agreed.
17	The ministry reserves the right to stipulate additional conditions if found necessary. The company in a time bound manner shall implement these conditions.	Noted and agreed.
18	The above conditions shall be enforced, interalia, under the provisions of the Water (Prevention and Control of pollution) Act, 1974, The Air (Prevention & Control of pollution) Act 1981 and The Environmental Protection Act, 1986, Hazardous Waste (management, handling and transboundary) Rules, 2008 and Public (Insurance) Liability Act, 1991 along with their amendments and Rules	Noted and agreed.