



JCL/JRD/ENV/2026-27/05

Date: 29.05.2026

To

Deputy Director General of Forests (C)
Ministry of Environment, Forest & Climate Change
Regional Office (EZ)
A/3, Chandrasekharpur
Bhubaneswar-751023

Sub: Half Yearly Compliance Report of Environment Clearance for the period from October, 2025 to March, 2026.

Ref: 1. Environment Clearance vide Letter No. IA-J-11011/111/2018-IA-II(I), dated 9th May 2022 for Expansion of Coke production from 0.425 MTPA to 0.78 MTPA by installation of a new Stamp charged by-product recovery type Coke Oven Battery.

2. Environment Clearance vide Letter No. IA-J-11011/111/2018-IA-II(I), dated 25.05.2018 for 0.425 MTPA Coke Oven Battery (Recovery Type).

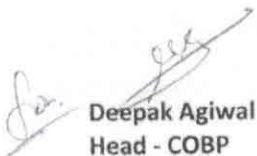
Dear Sir,

With reference to the above Environment Clearances, please find enclosed herewith the half yearly compliance report for the stipulated conditions for the period from October, 2025 to March, 2026.

The soft copy of the same has also been sent to email -id roez.bsr-mef@nic.in.

Thanking You,

Yours faithfully,
For Jindal Coke Limited


Deepak Agiwal
Head - COBP

Enc: As Above



Copy to:

1. The Zonal Officer, Central Pollution Control Board, Southern Conclave Block 502, 5th & 6th Floors, 1582 Rajdanga Main Road, Kolkata - 700107.
2. The Member Secretary, SPCB, Parivesh Bhawan, A/118, Nilakahanta Nagar, UnitVIII, Odisha, Bhubaneswar-751012.



Jindal Coke Limited

CIN: U23101HR2014PLC053884

Jajpur Office: Kalinga Nagar Industrial Complex, Duburi, Dist - Jajpur - 755 026 (Odisha), India

Registered office: O.P. Jindal Marg, Hisar - 125005 (Haryana), India

T: +91 6726 266260 F: +91 6726 266006 E: info@jindalcoke.com





JINDAL COKE LIMITED

Half Yearly Environment Clearance Compliance Report (October 25-March 26)



Status of compliance report of environment clearance conditions for Expansion of Coke production from 0.425 MTPA to 0.78 MTPA by installation of a new Stamp charged by-product recovery type Coke Oven Battery within the existing steel plant. (EC Identification No.: EC22A008OR150400, Ref: IA-J-11011/111/2018-IA-II(I), dated 9th May 2022

A. SPECIFIC CONDITIONS:

S. No.	Condition	Compliance
i.	Coke Dry Quenching (CDQ) and Zero Liquid Discharge (ZLD) facilities shall be installed in the Coke Oven Plant as committed by PP.	Coke Dry Quenching (CDQ) has been installed and commissioned. ZLD with Mechanical Vapor Recompression (MVR) has been installed.
ii.	Tar sludge from BOD plant of Coke Oven shall be reused in coke oven plant	Tar sludge generated from BOD plant of Coke Oven Battery is being reused in coke oven plant.
iii.	Coke Oven Gas shall be desulfurized	The coke oven gas is being desulfurized in Desulphurization unit.
iv.	Out of 24 acres area for green belt development, project proponents have developed green belts in 15 acres area. The remaining 9 acres area of green belt shall be completed by December 2022. Three tier Green Belt shall be developed after consulting with local forest department with native species all along the periphery of the project site of adequate width and tree density shall not be less than 2500 per ha. Survival rate of green belt developed shall be monitored on periodic basis to ensure that damaged plants are replaced with new plants in the subsequent years.	Three tier greenbelts with 2500 density per ha have been developed with native species. The survival rate of the saplings is being closely monitored and replaces all the damaged plants with new saplings.
v.	Greening and Paving shall be implemented in the plant area to arrest soil erosion and dust pollution from exposed soil surface.	To control soil erosion and reduce dust pollution, roads have been paved and plantations are being carried out in vacant areas.
vi.	PM10 values are almost near the threshold limit, the PP shall prepare and implement a project specific Air Quality Management Plan with best practices. Develop a control strategy and incorporate pollution control measures. Emission control measures related to transportation shall include the use of cleaner fuels.	To control point source emissions, dust extraction and suppression systems have been implemented wherever applicable. For controlling area source emissions, regular water sprinkling is being carried out using fixed-type sprinklers and tankers. The ambient air quality is being monitored through both online and offline monitoring systems.
vii.	The progress made in the implementation of Corporate Environment Responsibility (CER) related activities shall be submitted along with six monthly compliance report to the concerned IRO and be uploaded on the company web site.	The implementation status of the Corporate Environment Responsibility (CER) related activities is enclosed as Annexure – I . Which is being submitted along with the Six-monthly compliance report and uploaded on the company website.
viii.	All stockyards shall be having impervious flooring and shall be equipped with water spray system for dust suppression. Stockyards shall also have garland drains to	Stock yard has impervious flooring along with water sprinkler system. Garland drains have been constructed and interconnected throughout the JCL complex. Surface runoff from all sources within the

S. No.	Condition	Compliance
	trap the runoff material.	complex is routed through these drains for subsequent treatment in the common SRTS of JSL.
ix.	All internal roads and connecting roads from project site to main highway shall be developed and maintained with suitable Million Axle Standard (MSA) as per the traffic load due to existing and proposed project	All the internal roads and connecting road from project site to main highway are made with RCC and Paver blocks.
x.	Performance tests shall be conducted on all pollution control systems every year and report shall be submitted to Regional Office of the MoEF&CC.	NIT Rourkela has conducted the performance test of all pollution control devices in the FY 2025-26. After receiving the final report, the same will be submitted to MoEF&CC.
xi.	Particulate matter emission from stacks shall be less than 30 mg/Nm ³ .	Particulate Matter emission is within the stipulated standard as mentioned in CTO. The monitoring report is enclosed as Appendix – A .
xii.	Following additional arrangements to control fugitive dust shall be provided: a. Fog / Mist Sprinklers at all conveyors point and on bulk raw material storage area (at the transfer points) like Iron Ore, Coal and for Fly Ash and similar solid waste storage areas. b. Proper covered vehicles shall be used while transport of materials. c. Wheel Washing mechanism shall be provided in entry and exit gates with complete recirculation system.	- The primary raw material for the coke-making process is coking coal, which is transported to the plant via rail. - Water sprinkling systems have been installed in the coal storage yard to control dust emissions. - Coal is transported from the coal yard to the coke oven through closed conveyor system minimizing material spillage and DFS have also been installed to control air pollution. - Mechanized wheel washing system with water recirculation facility has been installed and all vehicles pass through the wheel washing system before exiting the premises.

B. GENERAL CONDITIONS:

S. No.	Condition	Compliance
I. Statutory compliance		
i.	The Environment Clearance (EC) granted to the project/ activity is strictly under the provisions of the EIA Notification, 2006 and its amendments issued from time to time. It does not tantamount/ construe to approvals/ consent/ permissions etc., required to be obtained or standards/conditions to be followed under any other Acts /Rules/ Subordinate legislation, etc., as may be applicable to the project.	All applicable acts/rules/subordinate legislation are being followed.
II. Air quality monitoring and preservation		
i.	The project proponent shall install 24x7 continuous emission monitoring system at process stacks to monitor stack emission as	CEMS have been installed at Coke Oven Battery stacks and connected to SPCB/CPCB servers.

	well as 04 Nos. Continuous Ambient Air Quality Station (CAAQS) for monitoring AAQ parameters with respect to standards prescribed in Environment (Protection) Rules 1986 as amended from time to time. The CEMS and CAAQMS shall be connected to SPCB and CPCB online servers and calibrate these systems from time to time according to the equipment supplier specification through labs recognized under Environment (Protection) Act, 1986 or NABL accredited laboratories.	- One no. of continuous ambient air quality station has been installed in JCL which caters to the requirement of downstream installation. - For upstream installation there are 3 stations which share the common boundary of JSL & JCL to monitor PM₁₀, PM_{2.5}, SO_x, NO_x. - The installation has been completed in consultation with SPCB. - All data are continuously transmitted to OSPCB & CPCB and submitted periodically to MoEF&CC. Both the manual and online monitoring report of Stack & ambient air quality is enclosed as Appendix-A and Appendix-B respectively.
ii.	The project proponent shall monitor fugitive emissions in the plant premises at least once every quarter through laboratories recognized under Environment (Protection) Act, 1986 or NABL accredited laboratories.	Fugitive emission monitoring at various locations of coke oven plants is being carried out through NABL accredited laboratory monthly. The Monitoring report is Annexed as Appendix – A.
iii.	Sampling facilities at process stacks and at quenching towers shall be provided as per CPCB guidelines for manual monitoring of emissions.	Sampling facilities at process stacks of the unit and dry dust quenching system have been provided.
iv.	Appropriate Air Pollution Control (APC) system shall be provided for all the dust generating points including fugitive dust from all vulnerable sources, to comply with prescribed stack emission and fugitive emission standards.	Appropriate DE systems have been provided to mitigate fugitive dust emission from Dust generating sources from material handling systems like coal crusher, coke screening.
v.	The project proponent shall provide leakage detection and mechanized bag cleaning facilities for better maintenance of bags.	The bag filters provided are equipped with mechanical bag cleaning which is interlocked with differential pressure of the bag.
vi.	Sufficient number of mobile or stationery vacuum cleaners shall be provided to clean plant roads, shop floors, roofs, regularly.	Vacuum road sweepers are provided for cleaning of plant roads, shop floors of Coke Oven Plant.
vii.	Recycle and reuse iron ore fines, coal and coke fines, lime fines and such other fines collected in the pollution control devices and vacuum cleaning devices in the process after briquetting/ agglomeration.	Coal and coke fines collected from pollution control devices are being reused in the coke oven plant for coke manufacturing.
viii.	The project proponent use leak proof trucks/dumpers carrying coal and other raw materials and cover them with tarpaulin.	Coal is transported through rail and covered trucks.
ix.	Facilities for spillage collection shall be provided for coal and coke on wharf of coke	Provision for spillage collection has been provided for coal and coke on wharf of coke oven battery.

	oven batteries (Chain conveyors, land based industrial vacuum-cleaning facility).	
x.	Land-based APC system shall be installed to control coke pushing emissions.	Land based APC system has been installed for controlling pushing emission. Additionally Jindal Coke Limited has installed a double M-type gas transfer car for Battery-I and Battery-II that runs on oven top rail and the smoke generated during coal charging is being collected into gas collecting pipe from the oven being charged controlling the emission escape to atmosphere.
xi.	Monitor CO, HC and O ₂ in flue gases of the coke oven battery to detect combustion efficiency and cross leakages in the combustion chamber.	CO, O ₂ and HC monitoring at stack connected to Coke Oven Battery is being conducted periodically through NABL accredited third party laboratory. Monitoring report is enclosed as Appendix –A.
xii.	Vapor absorption system shall be provided in place of vapor compression system for cooling of coke oven gas in case of recovery type coke ovens.	Vapor absorption system has been provided for cooling Coke Oven gas.
xiii.	Wind shelter fence and chemical spraying shall be provided on the raw material stockpiles.	Wind Fence has been installed at coal stockpile. Chemical spraying at coal heap is also being implemented. Additionally, all non-working coal heaps are kept covered with Tarpaulin to avoid any fugitive emission.
xiv.	Design the ventilation system for adequate air changes as per prevailing norms for all tunnels, motor houses, Oil Cellars.	Adequate ventilation measures have been taken for air changes for all tunnels, motor houses and shop cellars.
xv.	Dry quenching (CDQ) system shall be installed along with power generation facility from waste heat recovery from hot coke.	Coke Dry Quenching (CDQ) with Waste heat recovery system has been installed and commissioned.
III. Water quality monitoring and preservation		
i.	The project proponent shall provide appropriate ETP for effluents discharged from coke oven and by-product to meet the standards prescribed in G.S.R 277 (E) 31 st March 2012 (applicable to Coke oven plants) as amended from time to time.	The effluent water generated from both existing Battery # 1 and Battery # 2 is being treated in the existing ETP of capacity 90 M ³ /hr (2 x 45 M ³ /hr). To monitor compliance w.r.t. G.S.R 277 (E) 31 st March 2012 (applicable to Coke oven plants) as amended from time to time the treated effluent is being periodically tested from NABL accredited third Party.
ii.	The project proponent shall monitor regularly ground water quality at least twice a year (pre- and post-monsoon) at sufficient numbers of piezometers/sampling wells in the plant and adjacent areas through labs recognized under Environment (Protection) Act, 1986 and NABL accredited laboratories.	Ground water quality inside plants and in nearby area is monitored pre- monsoon & post monsoon. Report is annexed as Appendix – A.
iii.	A sewage Treatment Plant shall be provided for treatment of domestic wastewater to	STP of capacity 100 KLD has been installed for treatment of domestic wastewater, and the treated

	meet the prescribed standards.	water is being reused for greenbelt development.
iv.	Garland drains and collection pits shall be provided for each stockpile to arrest the run-off in the event of heavy rains and to check the water pollution due to surface run off.	Garland drains have been constructed and interconnected throughout the JCL complex. Surface runoff from all sources within the complex is routed through these drains for subsequent treatment in the common SRTS of JSL.
v.	Water meters shall be provided at the inlet to all unit processes in the coke oven plants.	Water meter has been provided at all water inlet points.
IV. Noise monitoring and prevention		
i.	Noise pollution shall be monitored as per the prescribed Noise Pollution (Regulation and Control) Rules, 2000 and the report in this regard shall be submitted to the Regional Officer of the Ministry as a part of six-monthly compliance report.	The monitoring of shopfloor noise level as well as ambient noise level is being carried out periodically and the monitoring data is annexed as Appendix – A .
V. Energy Conservation measures		
i.	Provide solar power generation on rooftops of buildings, for solar light system for all common areas, streetlights, parking around project area and maintain the same regularly;	Installation of roof top solar panels has been initiated.
ii.	Provide LED lights in their offices and residential areas.	LED lights are provided in the office area, on roads and on shop floors.
VII. Green Belt		
i.	The project proponent shall prepare GHG emissions inventory for the plant and shall submit the program for reduction of the same including carbon sequestration by trees.	GHG inventory has been prepared, and short term and long-term reduction plans have been developed.
ii.	Project proponent shall submit a study report on Decarbonization program, which would essentially consist of company's carbon emissions, carbon budgeting/ balancing, carbon sequestration activities and carbon capture, use and storage and offsetting strategies. Further, the report shall also contain time bound action plan to reduce its carbon intensity of its operations and supply chains, energy transition pathway from fossil fuels to Renewable energy etc. All these activities/ assessments should be measurable and monitorable with defined time frames.	Short Term Program: - Process Optimization: Implement advanced process control systems and automation to optimize oven heating, coking time, charging operations, minimizing energy use and fugitive emissions. Medium Term Program: - Increased Renewable Energy Procurement. - Use of Blast Furnace Gas in heating. - Use of optimize coal blends.
VIII. Public hearing and Human health issues		
i.	Emergency preparedness plan based on the Hazard identification and Risk Assessment (HIRA) and Disaster Management Plan shall be implemented	Emergency preparedness plan based on the Hazard identification and Risk Assessment (HIRA) has been made. Regular mock drills based on worst case risk scenario are being conducted.
ii.	The project proponent shall carry out heat stress analysis for the workmen who work in high temperature work zone and provide	Heat Stress analysis for the workmen working in high temperature work zone is being carried out by third party and suitable Personal Protective

	Personal Protection Equipment (PPE) as per the norms.	Equipment (PPE) are being provided to the workman of Coke Oven.
iii.	Occupational health surveillance of the workers shall be done on a regular basis and records maintained.	Annual health checkups of workers at Coke Oven is being carried out and records are maintained.
IX. Environment Management		
i.	The project proponent shall comply with the provisions contained in this Ministry's OM vide F.No. 22-65/2017-IA.III dated 30/09/2020. As part of Corporate Environment Responsibility (CER) activity, company shall adopt nearby villages namely Siaria, Banshipur, Hudi Shai and Katipur.	Detailed status of Corporate Environment Responsibility is enclosed as Annexure- I.
ii.	The company shall have a well-laid-down environmental policy duly approved by the Board of Directors. The environmental policy should prescribe standard operating procedures to have proper checks and balances and to bring into focus any infringements/deviation/violation of the environmental / forest / wildlife norms / conditions. The company shall have defined system of reporting infringements / deviation / violation of the environmental / forest / wildlife norms / conditions and / or shareholders / stakeholders. The copy of the board resolution in this regard shall be submitted to the MoEF&CC as a part of six-monthly report.	The company has well documented QSHE Policy. Copy of the latest Quality, Environment, Occupational Health & Safety Policy of Jindal Coke Limited is attached as Annexure-II.
iii.	A separate Environmental Cell both at the project and company head quarter level, with qualified personnel shall be set up under the control of senior Executive, who will directly to the head of the organization.	An Environment department with qualified and experienced officers under the control of a senior executive has been established. Head Environment reports directly to Unit Head.
X. Miscellaneous		
i.	The project proponent shall make public the environmental clearance granted for their project along with the environmental conditions and safeguards at their cost by prominently advertising it at least in two local newspapers of the District or State of which one shall be in the vernacular language within seven days and in addition this shall also be displayed in the project proponent's website permanently.	Advertisement on grant of Environment Clearance had been published in newspapers namely The New Indian Express (English) and Prameya (Odia) on 14.05.2022. Environmental Clearance is displayed on the website of the company permanently.
ii.	The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.	The copies of the environmental clearance have been submitted to the Heads of local bodies, Panchayats. On 18.05.2022 vide our letter no. JCL/JRD/ENV/2022-23/04.
iii.	The project proponent shall upload the	Six-monthly compliance reports on the status of

	status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same on half-yearly basis.	the compliance of the stipulated environmental conditions uploaded on company websites and are being updated periodically.
iv.	The project proponent shall monitor the criteria pollutants level namely; PM10, SO2, NOx (ambient levels as well as stack emissions) or critical sector parameters, indicated for the projects and display the same at a convenient location for disclosure to the public and put on the website of the company.	Ambient air and stack emissions monitoring are being carried out, and monitoring data are displayed at the display board installed at the main gate for public view.
v.	The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.	Six-monthly report on the status of compliance of the stipulated environmental conditions is being submitted to MOEF&CC and also uploaded on MoEF&CC website.
vi.	The project proponent shall submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company.	Environmental statement for each financial year in Form-V is being submitted to SPCB, Odisha in due time and the latest report was submitted to SPCB on 18.09.2025. The same has been put on the company website.
vii.	The project proponent 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, commencing the land development work and start of production operation by the project.	Battery I & II are in operation and OSPCB has granted CTO via letter no. 5892/IND-I-CON-6566 dated 24.03.2025 valid up to 31.03.2027.
viii.	The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report, commitments made during Public Hearing and also that during their presentation to the Expert Appraisal Committee.	All the commitments and recommendations made in the EIA/EMP report, commitment made during Public Hearing and that during presentation to the Expert Appraisal Committee are being complied. Details are enclosed as Annexure- I .
ix.	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change (MoEF&CC).	Expansion projects, if any will be routed through the prevailing guidelines of MoEF&CC.
x.	Concealing factual data or submission of false/fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.	All the data/information submitted are factual and correct.
xi.	The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.	The project proponent is implementing all the relevant conditions.
xii.	The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time-bound manner shall	All the existing and any additional condition are being implemented on priority.

	implement these conditions.	
xiii.	The Regional Office of this Ministry shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information/monitoring reports.	Full cooperation will be extended to the officer (s) of the Regional Office of MoEF&CC.
xiv.	Any appeal against this EC shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.	Any such appeal shall be routed through the NGT if required.

Status of compliance report of Environment Clearance conditions of 0.425 MTPA Coke Oven Battery (Recovery type) (Ref: IA-J-11011/111/02018-1A II (I), dt. 25th May 2018)

A. SPECIFIC CONDITIONS:

S. No.	Condition	Compliance Status
i.	The industry shall follow coke oven standards as per Environment (P) Act, 1986. VOCs from the coke oven shall be monitored and controlled as per CPCB guideline	- Coke Oven standard as per EP Act and MoEF&CC notification for Iron & Steel dated 31st March 2012 is being followed. - VOC from coke oven battery stack is being monitored by NABL Accredited Laboratory. The latest monitoring report is enclosed as Appendix-A.
ii.	Bag filters shall be installed to control the emissions from the coal crusher section, charging the fume car section of the Coke Oven Plant. Online continuous monitoring systems shall be installed to monitor various pollutants and data submitted to the Ministry's Regional Office at Bhubaneswar, CPCB and OPCB. Dust suppression systems shall be installed at raw material handling areas, material transfer points and solid waste dumps to control fugitive emissions. Water sprinkling shall be done on the roads to control fugitive emissions.	- Bag filter having adequate capacity has been installed at Primary coal crusher, secondary coal crusher section and coke crushing section of the Coke Oven Plant - Online continuous monitoring system has been installed at battery stack of Coke Oven and data is being transmitted to SPCB & CPCB. - Dust suppression system has also been installed at raw material handling areas, material transfer points to control fugitive dust emission. - The entire internal road is paved, and water sprinkling is being done to control the fugitive emission.
iii.	No ground water shall be used for the plant. All the treated wastewater shall be recycled and reused in the process and 'Zero' discharge shall be strictly adopted as per direction of OPCB. Phenolic effluent from Coke Oven complex shall be treated in the ETP of BOD Plant and recycled and reused	- No ground water is being used in the plant. - Effluent generated from process is being treated in BOD Plant for all pollutants including ammonia, phenol & cyanide and the treated water is completely reused in the system.

S. No.	Condition	Compliance Status
	for quenching of coke. Ammonia, Phenol and Cyanide in the effluent should be treated. Cyanide shall meet the standard of 0.2 ppm. TDS in the effluent shall not be more than 2100 mg/l. The domestic wastewater after treatment in STP shall be used for green belt development.	The treated effluent is being tested for parameters like Ammonia, Phenol, Cyanide and TDS etc. by internal as well as through NABL accredited third party laboratory. The Analysis report is enclosed as Appendix-A.
iv.	Coke oven by-product effluent shall be treated as per notified standards and only treated effluents after meeting the norms shall be used for coke quenching. No fresh water shall be used for this purpose.	Coke oven by-product effluent is being treated at BOD plant and is being analyzed by NABL accredited third party laboratory on monthly basis and the result is found to be within the permissible limit. The monitoring report is enclosed as Appendix – A .
v.	Ground water monitoring around the solid waste disposal site/ secured landfill (SLF) shall be carried out regularly and report submitted to the Ministry's Regional Office at Bhubaneswar / CPCB and OPCB.	Ground water quality monitoring is being carried out in core zone as well as peripheral areas and analysis report is enclosed as Appendix-A .
vi.	Solid waste shall be disposed of in secured landfill designed as per the specifications of the CPCB. Coke breeze from Coke oven shall be sold to the parent company (JSL) for recycling	Process Solid waste generated from JCL is being completely reused into the process. Coke breeze from Coke oven is being sold to parent company for recycling.
vii.	Green belt shall be developed within and around the plant premises as per the CPCB guidelines in consultation with DFO.	Three tier greenbelts with 2500 density per ha have been developed. The survival of the saplings is being closely monitored and replaced with all the damaged plants.
viii.	As proposed, modified wet quenching for 1 st Coke oven battery as per CPCB guidelines, shall be adopted.	Coke Dry Quenching has been installed.

B. GENERAL CONDITIONS:

S. No.	Condition	Compliance
i.	The project authorities must strictly adhere to the stipulations made by the Orissa Pollution Board (OPCB) and the State Government.	All the stipulations made by the State Pollution Control Board, Odisha, are being complied.
ii.	No further expansion or modifications in the plant should be carried out without prior approval of the Ministry of Environment and Forests.	Any further expansion of the project is being routed in accordance with the MoEF&CC's relevant guidelines.
iii.	The gaseous emissions from various process units shall conform to the mass-based load standards notified by this Ministry on 19 th May, 1993 and standards prescribed from time to time. The state board may specify more stringent standards for the relevant parameters keeping in view the nature of the industry	- The gaseous emissions from coke oven battery stacks are being monitored internally as well as by NABL accredited third party Laboratory. The analysis reports are being submitted to SPCB and MoEF&CC regularly. - Online continuous emission monitoring

S. No.	Condition	Compliance
	and its size and location. At no time, the emission level shall go beyond the prescribed standards. Online continuous monitoring systems shall be installed in stacks to monitor SPM and interlocking facilities shall be provided so that process can be automatically stopped in case emission level exceeds the limit. NOx burners shall be installed to control NOx levels.	system has been installed at Coke Oven battery stack to monitor PM, SO₂ & NO_x and PM at CDQ. The NO_x monitored in online and offline found well within the stipulated limit.
iv.	At least four ambient air quality- monitoring stations shall be established in the downward direction as well as where maximum ground level concentration of SPM, SO ₂ and NO _x is anticipated in consultation with the OPCB. Data on ambient air quality and stack emission shall be regularly submitted to this Ministry including its Regional Office at Bhubaneswar/ OPCB/ CPCB once in six months.	- One no. of continuous ambient air quality station has been installed in JCL which caters to the requirement of downwind installation. - For upwind installation there are 3 stations which share the common boundary of JSL & JCL to monitor PM₁₀, PM_{2.5}, Sox, Nox. - All data are continuously transmitted to OSPCB & CPCB and submitted periodically to MoEF&CC. - The installation has been completed in consultation with SPCB. - Both the manual and online monitoring report of stack & ambient air quality is enclosed as Appendix-A and Appendix-B respectively.
v.	In-plant control measures for checking fugitive emissions from all the vulnerable sources of Coke oven area shall also be provided. De-dusting system i.e. collection of fugitive emissions through suction hood and subsequent treatment through bag filter or any other device and finally emitted through a stack of appropriately designed and height conforming to the standards shall be provided. Fugitive emissions shall be controlled, regularly monitored and records maintained.	- Dedusting systems (Bag filters) have been installed in coal crushing and coke screening operations to minimize fugitive emission. - Fugitive emission monitoring is being carried out by internal as well as NABL Accredited external Laboratory. The monitoring data for the is enclosed as Appendix – A.
vi.	Industrial waste water 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 from time to time. The wastewater treated shall be utilized for plantation purpose.	Effluent generated from process is being treated in BOD Plant for all pollutants including ammonia, phenol & cyanide and the treated water is being tested to conform compliance against. GSR 422 (E) dated 19 th May 1993 and 31 st December 1993 or as amended from time to time.

S. No.	Condition	Compliance
vii.	The overall noise levels in and around the plant area shall be kept 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 EIA Rules, 1989 viz. 75 dBA (daytime) and 70 (dBA) nighttime.	Adequate measures like Silencers and Acoustic Enclosures are provided for noise generating equipments like Diesel Generator set etc. to control noise generation. The Ambient Noise levels are being monitored, and the noise monitoring results are enclosed as Appendix-A .
viii.	The company shall develop surface water harvesting structures to harvest the rainwater for utilization in the lean season besides recharging the ground water table.	Surface runoffs from all sources of JCL complex are routed through storm water drains for further treatment in common Surface Runoff Treatment System (SRTS) of JSL group companies. Further, the water treated from SRTS is being used for different applications inside plant.
ix.	Occupational Health Surveillance of the workers shall be done on a regular basis and record maintained as per the Factories Act.	Occupational health surveillance of the workers is being carried out on a regular basis and records are being maintained as per the Factories Act.
x.	Recommendations made in the CREP guidelines issued for the steel plants shall be implemented.	CREP guidelines are being followed. The recommendation made in the Chapter on Corporate Responsibility for Environment Protection (CREP) is followed regarding control of air pollution, installation of state of art air pollution control equipment. Pollution control equipments are installed as per CREP Guidelines of CPCB, such as bag filters, Effluent Treatment Plant etc.
xi.	The project proponent shall also comply with all the environmental protection measures and safeguards recommended in the EIA/ EMP report for Coke oven plant.	The Plant has taken the environmental protection measures and safeguards recommended in the EIA/EMP report. The details are enclosed as - Annexure I.
xii.	The project authorities shall utilize Rs. 6.0 Crores earmarked for the environment pollution control measures judiciously to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds provided shall not be diverted for other purpose.	The project has earmarked the cost incurred for environment pollution control and judiciously implementing the control measures. From FY24 to FY26 JCL has spent Rs.73.53 crore on pollution control measures.
xiii.	The regional office of the Ministry at Bhubaneswar/ CPCB/ OPCB will monitor the stipulated conditions. A six-monthly compliance report and the monitored data along with statistical interpretation shall be submitted to them regularly.	Six monthly compliance report along with monitored data is being submitted to the Ministry regularly. The latest compliance report was submitted on 27.05.2025

S. No.	Condition	Compliance
xiv.	The project proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the OPCB/ Committee and may also be seen at Website of the Ministry of Environment and Forests 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 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 shall be forwarded to the regional Office.	The grant of Environment clearance was advertised in two daily newspapers. In English at Orissa post and in regional language in Prameya on 25.05.2018. The advertisement was published within 7 days of the grant of EC.
xv.	Project authorities shall inform the Regional Office as well as the Ministry of the date of financial closure and final approval of the project by the concerned authorities and the date of commencing the land development work.	Battery 1 & 2 are in operation and SPCB, Odisha has granted CTO via letter no. 5892/IND-I-CON-6566 dated 24.03.2025.
xvi.	The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.	The project proponent is implementing all the relevant conditions of environment clearance.
xvii.	The Ministry reserves the right to stipulate additional conditions if found necessary. The company in a time-bound manner will implement these conditions	All the existing and any additional condition is being implemented on priority.
xviii.	The above conditions will be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous Waste (Management & Handling) Rules, 2016 and the Public (Insurance) Liability Act, 1991 along with their amendments and rules.	All the prevailing acts under the provision Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous Waste (Management & Handling) Rules 2016 and the Public (Insurance) Liability Act, 1991 along with their amendments and rules is being complied.

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Annexure - I

CER Compliance Status

Major Issue Raised	Action Plan	Timeline for Execution			Total Budget (Lakhs)	Spent as on date
		Year 1 st	Year 2 nd	Year 3 rd		
Area Development						
Development of park	Set up of park along with area development at two nos. of places.	Condition: Development of park with construction of tennis court at village panikoili. Status: Development of park with construction of tennis court at panikoili has been successfully done. Apart from that, one parking shed has been developed adjacent to the ground.	Condition: Development of parks at village Telibahali by construction of boundary walls, land scaping, Temple Development. Status: Park at Telibahali has been developed by State Govt, Stainless Steel Gate with grill has been installed at Dhabalagiri Siba Temple.	Condition: Continuation of Development work of park at village Telibahali by arrangement of permanent entire walkway, sitting arrangement.	180	72
Development of public community hall	New establishment of community hall at 5 nos. of villages.	Condition: Set up in villages namely: Khurunti, Malikasahi by providing new buildings with electrification. Status: New community hall with provision of electricity has been established. at Khurunti village.	Condition: Set up in villages namely: Ostapal by providing new building with electrification. Status: Instead of Community Centre as requested by villagers, Khudurukuni Puja mandap with Electrification has been done in Ostapal.	Condition: Set up in villages namely: Karadapal, Suanlo by providing new buildings with electrification. Status: New community center has been established with complete electrification at Karadapal. and Suanlo Adivashi sahi.	60	80
Plantation Activities in peripheral villages	Plantation drive at five numbers of village.	Condition: Village: Solei Status: Plantation has been carried out at Govt. Polytechnic college, Ragadi. - 200 Nos. At Kumbhiragadhia High School (Danagadi)-107 Nos	Condition: Village: Marutikar, Danagadi. Status: At Telibahali in Danagadi Block, 6700 Plantation has been done with 2 years maintenance.	Condition: Village: Patranga, Mantira: Status: At Manatira Sr. Secondary School-350 Nos of saplings have been planted.	30	32
Medical Facilities						

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Provision of health care facilities	Establishment of Homeopathic clinic at six numbers of villages.	Condition: At village: Kumbirgadia, Marutikar Construction of building for homeopathic clinic along with supply of essential medicines. Status: The Homeopathy clinic at Kumbhiragadia and Classroom at Marutikar as requested by the Villagers has been Completed.	Condition: At village: Mantira, Olala Construction of building for homeopathic clinic along with supply of essential medicines. Status: Instead of Homeopathy centre, Community Hall has been constructed at Mantira as per villagers' request. However, due to land issues, the work could not be taken up at Olala.	Condition: At village: Tikara, Danagadi Construction of building for homeopathic clinic along with supply of essential medicines. Status: At Tikara, Community Hall instead of Homeopathy Centre has been constructed as per villager's request. At Danagadi, medical equipment is given at OHC Danagadi.	70	80
Local Employment						
Provide employment with preference to local people	Priority to be given for local employment during both construction and operation phase.	During Construction phase it is envisaged for Direct employment of 40 Nos. and Indirect employment of 200 Nos & during operation phase direct employment of 150 Nos. and Indirect employment of 120 Nos. During construction phase 70% indirect employment and 30 % direct employment will be through local employment.During operation phase 90 % indirect employment and 30% direct employment will be through local employment.			Jindal Coke has employed 125 nos. of direct and 925 nos. of indirect personnel from Odisha.	
Education						
Renovation/Construction of additional new 2 Nos. of classrooms and electrification with sanitation facility at four nos. school.	Condition: At village:Danagadi Status: Classroom and toilet of Sisumandir at Danagadi have been completed.	Condition: At village: Kharadi, Kankadajhar: Status: Instead of Classrooms, Community Centers in the village Kharadi and Kankadajhar has been completed.	Condition: At village: JK Road Status: As per MLA Korei recommendation, construction of classroom was taken up at Sankhachila High School but due to some issues the job has been diverted to Khetarpal High School which is under progress.	60	70	
Facilitate students in providing special training on Stainless Steel related works to make them knowledgeable in getting jobs in steel sector.	Condition: At: Ragadi Polytechnic College As on 31 st March 2026, high end training on Stainless Steel Welding has been provided to 260 nos. of students of the govt. polytechnic, jajpur, Ragadi perusing diploma course in mechanical/electrical branch (Final Year) for enhancement of technical skill.	Shall continue	Shall Continue	15	8	
Women Empowerment						

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Strengthening of women empowerment measures in peripheral villages.	Focus on various livelihood programme for women empowerment in peripheral villages.	Condition: Livelihood promotion that tailoring, beauty parlor, training, skill development training at village mantira. Status: Livelihood programmes like ASMITA Boutique, Tailoring Training Centres, Boutique centers, Farm income generating activities such as dairy, goat rearing, poultry, and mushroom cultivation are continued through SHG of village Mantira.	Condition: Livelihood promotion includes dairy farming, poultry, goatery, wheat grinding at village Jakhapura. Status: Various Livelihood programmes like ASMITA Boutique, Tailoring Training Centres, Boutique centers, Farm income generating activities such as dairy, goat rearing, poultry, mushroom cultivation, and Turmeric making unit are continued through SHG of village Jakhapura.	Condition: Establishment of skill development center to provide training in Computer education, electrical, and mechanical at village Trijanga (Dangadi). Status: Computer training center has been established at Danagadi of Trijanga GP.	150	-
Environment						
Air and Water pollution control	Effective APC devices to be in place during plant operation and set up of ETP for treatment of process of effluent. No wastewater discharge to be ensured.	Condition: Effective pollution control equipment is with interlocking facilities with process to be in place for proposed expansion project. Continuous emission monitoring, ambient air quality monitoring and effluent quality monitoring to be done. Periodical Ambient air quality monitoring to be done in buffer zone of plant site. Status: Effective operation pollution control equipments are being ensured. Continuous emission monitoring systems, ambient air quality monitoring systems and effluent quality monitoring systems are installed. Periodical Ambient air quality monitoring is being carried out in buffer zones of plants. Additional measure has been taken to reduce fugitive emission improved water quality and recycling			As per EMP budget of the plant.	In FY 25-26 environmental expenditure was Rs.765.1 lacs including capital and revenue spent

Environment Monitoring Report (October 2025 – March 2026)

INDEX

- A. Stack Analysis Report
- B. Ambient Air Quality Report
- C. Noise Monitoring Report
- D. Ground Water Quality Report
- E. Treated Effluent/Sewage/Surface Runoff Quality Report
- F. Fugitive Dust Emission Report
- G. Fugitive Visual Emission of Battery

Environment Monitoring Report (October 2025 - March 2026)

A. Stack Analysis: Particulate Matter (PM)

Sl. No.	Sampling Stations	Results (mg/Nm3)						
		Oct-25	Nov-25	Dec-25	Jan-26	Feb-26	March-26	Limit (CTO)
1	Coke Oven Battery 1	28.3	29.5	20.3	14.6	28.6	24.8	50
2	Coke Oven Battery 2	25.2	27.9	28.6	18.5	17.1	28.1	30
3	Primary Crusher	19.3	14.7	11.8	17.8	15.4	19.7	50
4	Secondary Crusher	15.2	20.9	15.7	16.9	19.3	20.6	50
5	Coke De-dusting	12.8	18.3	18.1	14.8	18.2	22.4	50
6	CDQ De-dusting	26.4	24.6	26.5	15.1	20.4	40.8	50

Sulphur Dioxide (SO2)

Sl. No.	Sampling Stations	Results (mg/Nm3)						
		Oct-25	Nov-25	Dec-25	Jan-26	Feb-26	March-26	Limit (CTO)
1	Coke Oven Battery#1	315.4	352.2	314.2	368.4	342.5	395.0	800
2	Coke Oven Battery#2	378.2	405.3	354.2	392.8	366.7	378.0	

Oxide of Nitrogen (NOx)

Sl. No.	Sampling Stations	Results (mg/Nm3)						
		Oct-25	Nov-25	Dec-25	Jan-26	Feb-26	March-26	Limit (CTO)
1	Coke Oven Battery#1	194.3	179.4	154.3	146.2	127.2	156.0	500
1	Coke Oven Battery#2	212.5	217.8	198.6	174.0	182.5	192.0	

VOC

Concentration of VOC - Battery # 1 (Nov- 25)

Sl. No.	Parameters	Test Method	Unit of Measurement	Analysis Results
1.	Benzene	HESC-G/INS/SOP/028 Issue No.:01 Issue Date:01.03	mg/m3	<0.01
2.	Toluene		mg/m3	<0.01
3.	Ethyle Benzene		mg/m3	<0.01
4.	O- Xylene		mg/m3	<0.01
5.	M- Xylene		mg/m3	<0.01
6.	P- Xylene		mg/m3	<0.01
7.	Chlorobenzene		mg/m3	<0.01
8.	Isopropyl benzene		mg/m3	<0.01
9.	Bromobenzene		mg/m3	<0.01
10.	1,3,5-Trimethyle benzene		mg/m3	<0.01
11.	1,3,4-Trimethyle benzene		mg/m3	<0.01
12.	Sec- Butylbenzene		mg/m3	<0.01
13.	Tert- Butylbenzene		mg/m3	<0.01
14.	1,4- Dichlorobenzene		mg/m3	<0.01
15.	n- Butylbenzene		mg/m3	<0.01
16.	1,2,3- Trichlorobenzene		mg/m3	<0.01
17.	Trichloroethylene		mg/m3	<0.01
18.	1,1,1,2- Tetrachloroethane		mg/m3	<0.01

Environment Monitoring Report (October 2025 - March 2026)

19.	Hexachlorobutadiene		mg/m ³	<0.01
20.	1,2-Dibromo-3-Chloropropane		mg/m ³	<0.01
21.	1,1,1- Trichloroethane		mg/m ³	<0.01
22.	1,1,2,2- Tetrachloroethane		mg/m ³	<0.01
23.	1,1,2- Trichloroethane		mg/m ³	<0.01
24.	1,1- Dichloroethane		mg/m ³	<0.01
25.	1,1- Dichloroethylene		mg/m ³	<0.01
26.	1,1- Dichloropropylene		mg/m ³	<0.01
27.	1,2,3- Trichloropropane		mg/m ³	<0.01
28.	1,2,4- Trichlorobenzene		mg/m ³	<0.01
29.	1,2,4- Trimethylebenzene		mg/m ³	<0.01
30.	1,2- Bromomethane		mg/m ³	<0.01

Concentration of VOC – Battery # 2 (Nov.' 25)

Sl. No.	Parameters	Test Method	Unit of Measurement	Analysis Results
1.	Benzene	HESC-G/INS/SOP/028 Issue No.:01 Issue Date:01.03	mg/m ³	<0.01
2.	Toluene		mg/m ³	<0.01
3.	Ethyle Benzene		mg/m ³	<0.01
4.	O- Xylene		mg/m ³	<0.01
5.	M- Xylene		mg/m ³	<0.01
6.	P- Xylene		mg/m ³	<0.01
7.	Chlorobenzene		mg/m ³	<0.01
8.	Isopropyl benzene		mg/m ³	<0.01
9.	Bromobenzene		mg/m ³	<0.01
10.	1,3,5-Trimethyle benzene		mg/m ³	<0.01
11.	1,3,4-Trimethyle benzene		mg/m ³	<0.01
12.	Sec- Butylbenzene		mg/m ³	<0.01
13.	Tert- Butylbenzene		mg/m ³	<0.01
14.	1,4- Dichlorobenzene		mg/m ³	<0.01
15.	n- Butylbenzene		mg/m ³	<0.01
16.	1,2,3- Trichlorobenzene		mg/m ³	<0.01
17.	Trichloroethylene		mg/m ³	<0.01
18.	1,1,1,2- Tetrachloroethane		mg/m ³	<0.01
19.	Hexachlorobutadiene		mg/m ³	<0.01
20.	1,2-Dibromo-3-Chloropropane		mg/m ³	<0.01
21.	1,1,1- Trichloroethane		mg/m ³	<0.01
22.	1,1,2,2- Tetrachloroethane		mg/m ³	<0.01
23.	1,1,2- Trichloroethane		mg/m ³	<0.01
24.	1,1- Dichloroethane		mg/m ³	<0.01
25.	1,1- Dichloroethylene		mg/m ³	<0.01
26.	1,1- Dichloropropylene		mg/m ³	<0.01
27.	1,2,3- Trichloropropane		mg/m ³	<0.01
28.	1,2,4- Trichlorobenzene		mg/m ³	<0.01
29.	1,2,4- Trimethylebenzene		mg/m ³	<0.01
30.	1,2- Bromomethane		mg/m ³	<0.01



Environment Monitoring Report (October 2025 - March 2026)

B. Ambient Air Monitoring Report (Inside Plant & Buffer Zone)

AAQ near Admin. Building (Inside plant)

Sl. No.	Parameters	Results (µg/m ³)						
		Oct-25	Nov-25	Dec-25	Jan-26	Feb-26	Mar-26	NAAQS Limit [^]
1	PM ₁₀	82.6	85.1	91.4	93.8	95.2	93.7	100
2	PM _{2.5}	28.2	30.6	31.2	34.6	36.4	34.8	60
3	SO ₂	18.3	18.8	19.4	20.6	21.8	21.3	80
4	NO _x	16.8	16.3	16.8	17.4	17.2	16.8	80
5	CO (mg/m ³)	0.85	0.90	0.99	0.96	1.02	0.97	2
NB: Parameters such as Lead, Benzene, Benzopyrene, Arsenic & Nickel found below detection limit (BDL)								

AAQ near Silo DCS Panel Room (Inside plant)

Sl. No.	Parameters	Results (µg/m ³)						
		Oct-25	Nov-25	Dec-25	Jan-26	Feb-26	Mar-26	NAAQS Limit [^]
1	PM ₁₀	78.8	81.2	83.8	85.3	87.8	89.2	100
2	PM _{2.5}	28.5	28.8	29.4	29.8	29.8	30.4	60
3	SO ₂	17.4	17.9	18.6	18.2	18.8	19.2	80
4	NO _x	14.9	15.2	15.4	16.2	16.4	16.1	80
5	CO (mg/m ³)	0.80	0.84	0.89	0.86	0.88	0.91	2
NB: Parameters such as Lead, Benzene, Benzopyrene, Arsenic & Nickel found below detection limit (BDL).								

AAQ near Budhraj Nodal Bidyapitha, Dhanagadi (Buffer zone)

Sl. No.	Parameters	Results (µg/m ³)						
		Oct-25	Nov-25	Dec-25	Jan-26	Feb-26	Mar-26	NAAQS Limit [^]
1	PM ₁₀	74.2	77.6	79.1	79.2	82.1	79.8	100
2	PM _{2.5}	22.4	22.8	23.5	23.5	24.6	22.4	60
3	SO ₂	14.7	14.2	14.7	14.6	13.2	13.8	80
4	NO _x	12.9	12.5	12.2	12.2	12.8	12.3	80
5	CO mg/m ³	0.38	0.42	0.50	0.49	0.52	0.48	2
NB: Parameters such as Lead, Benzene, Benzopyrene, Arsenic & Nickel found below detection limit (BDL).								

[^] 24 hrs, CO 8Hrs

C. Noise Monitoring Report

a. Ambient Noise Monitoring (Inside plant)

Sl. No.	Location	Noise Level Leq in dB(A)											
		Oct-25		Nov-25		Dec-25		Jan-26		Feb-26		Mar-26	
		Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night
1	At Admin. Building	74.2	57.3	73.8	58.2	73.2	59.2	71.6	60.2	72.2	62.8	72.5	61.7
2	At Silo DCS panel room	72.8	56.8	71.4	56.1	72.5	57.2	70.9	61.8	71.5	61.2	71.9	61.4
Permissible limit		75	70	75	70	75	70	75	70	75	70	75	70



Environment Monitoring Report (October 2025 - March 2026)

a. Ambient Noise Monitoring (Buffer Zone)

Sl. No.	Location	Noise Level Leq in dB(A)											
		Oct-25		Nov-25		Dec-25		Jan-26		Feb-26		Mar-26	
		Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night
1	At Budhraja Nodal Bidyapitha, Dhanagadi	52.8	43.3	54.0	41.6	52.8	42.5	52.8	42.1	53.4	41.9	52.7	42.1
Permissible limit		55	45	55	45	55	45	55	45	55	45	55	45

b. Work Zone Noise Monitoring Report

Sl. No.	Location	Noise Level Leq in dB(A)						
		Oct-25	Nov-25	Dec-25	Jan-26	Feb-26	Mar-26	Permissible limit
1	Quality Laboratory	74.1	69.6	71.6	72.3	75.5	76.1	85 dB(A) 8 hrs. continuous exposure
2	Coke Dispatch office	72.6	76.3	78.2	70.2	73.2	76.8	
3	Near Administrative Building	68.2	70.7	70.2	69.2	71.6	73.5	
4	Battery#1 Control Room	69.7	73.8	72.4	68.0	69.8	71.8	
5	Battery#2 Control Room	66.1	72.8	73.1	68.7	69.3	70.6	
6	PETP control room	67.3	74.7	73.7	66.8	68.1	69.5	

Environment Monitoring Report (October 2025 - March 2026)

D. Ground Water Quality: Inside Plant-January'26

Sr. No.	Parameter	Limit as per IS 10500 :2012		Date of sampling: 21.01.2026
		Acceptable Limit	Permissible limit	GW1
1	Colour, Hazen Units	5	15	BLQ (<1.0)
2	Odour	Agreeable	Agreeable	Agreeable
3	pH	6.5 - 8.5	6.5 - 8.5	8.0
4	Turbidity, NTU	1	5	BLQ (<1.0)
5	Total dissolve solid, mg/l	500	2000	475.0
6	Total Hardness (as CaCO ₃), mg/l	200	600	182.0
7	Iron (as Fe), mg/l	0.3	0.3	BLQ(<0.05)
8	Chloride (as Cl), mg/l	250	1000	7.9
9	Residual Free Chlorine, mg/l	0.2	1	BLQ (< 0.1)
10	Fluoride (as F), mg/l	1	1.5	0.7
11	Calcium (as Ca), mg/l	75	200	38.0
12	Magnesium(as Mg), mg/l	30	100	21.2
13	Copper(as Cu), mg/l	0.05	1.5	BLQ (< 0.01)
14	Manganese (as Mn), mg/l	0.1	0.3	BLQ (< 0.02)
15	Sulphate (as SO ₄), mg/l	200	400	76.3
16	Nitrate (as NO ₃), mg/l	45	45	10.3
17	Phenol (as C ₆ H ₅ OH), mg/l	0.001	0.002	BLQ (<0.001)
18	Cyanide (as CN), mg/l	0.05	0.05	BLQ (<0.01)
19	Mercury,(as Hg), mg/l	0.001	0.001	BLQ (< 0.001)
20	Cadmium (as Cd), mg/l	0.003	0.003	BLQ (<0.003)
21	Selenium (as Se), mg/l	0.01	0.01	BLQ (<0.001)
22	Arsenic (as As), mg/l	0.01	0.05	BLQ(<0.002)
23	Lead (as Pb), mg/l	0.01	0.01	BLQ (< 0.002)
24	Zinc (as Zn), mg/l	5	15	BLQ (< 0.01)
25	Total Chromium (as Cr), mg/l	0.05	0.05	BLQ (< 0.01)
26	Total Alkalinity(as CaCO ₃), mg/l	200	600	145.0
27	Aluminium (as Al), mg/l	0.03	0.2	BLQ (< 0.001)
28	Nickel (as Ni), mg/l	0.02	0.02	BLQ (<0.004)
29	Cobalt (as Co), mg/l	0.5	1	BLQ (<0.1)
30	Coliform Organisms, (MPN/100ml)	Shall not be detectable in any 100 ml sample		Absent
31	E Coli (MPN/100 ml)	Shall not be detectable in any 100 ml sample		Absent

N.B: - GW1: Borewell at Coke Oven Plant

Environment Monitoring Report (October 2025 - March 2026)

Ground Water Quality: Buffer Zone- January'26

Sr. No.	Parameter	Limit as per IS 10500 :2012		Date of sampling: 21.01.2016
		Acceptable Limit	Permissible limit	GW2
1	Colour, Hazen Units	5	15	BLQ (<1.0)
2	Odour	Agreeable	Agreeable	Agreeable
3	pH	6.5 - 8.5	6.5 - 8.5	6.83
4	Turbidity, NTU	1	5	BLQ (<1.0)
5	Total dissolve solid, mg/l	500	2000	488.0
6	Total Hardness (as CaCO ₃), mg/l	200	600	174.0
7	Iron (as Fe), mg/l	0.3	0.3	0.2
8	Chloride (as Cl), mg/l	250	1000	106.0
9	Residual Free Chlorine, mg/l	0.2	1	BLQ (< 0.1)
10	Fluoride (as F), mg/l	1	1.5	BLQ (< 0.01)
11	Calcium (as Ca), mg/l	75	200	44.0
12	Magnesium(as Mg), mg/l	30	100	15.4
13	Copper(as Cu), mg/l	0.05	1.5	BLQ (< 0.01)
14	Manganese (as Mn), mg/l	0.1	0.3	BLQ (< 0.02)
15	Sulphate (as SO ₄), mg/l	200	400	32.2
16	Nitrate (as NO ₃), mg/l	45	45	17.8
17	Phenol (as C ₆ H ₅ OH), mg/l	0.001	0.002	BLQ (<0.001)
18	Mercury,(as Hg), mg/l	0.001	0.001	BLQ (< 0.001)
19	Lead (as Pb), mg/l	0.01	0.01	BLQ (< 0.002)
20	Cadmium (as Cd) mg/l	0.003	0.003	BLQ(<0.003)
21	Selenium (as Se) mg/l	0.01	0.01	BLQ(<0.001)
22	Cyanide (as CN), mg/l	0.05	0.05	BLQ (<0.01)
23	Arsenic (as As), mg/l	0.01	0.05	BLQ(<0.002)
24	Zinc (as Zn), mg/l	5	15	BLQ (< 0.01)
25	Total Chromium (as Cr), mg/l	0.05	0.05	BLQ (< 0.01)
26	Total Alkalinity(as CaCO ₃), mg/l	200	600	190.0
27	Aluminium (as Al), mg/l	0.03	0.2	BLQ (< 0.001)
28	Cobalt (as CO), mg/l	0.5	1	BLQ (< 0.1)
29	Nickel (as Ni), mg/l	0.02	0.02	BLQ (<0.004)
30	Coliform Organisms, (MPN/100ml)	Shall not be detectable in any 100 ml sample		Absent
31	E Coli (MPN/100 ml)	Shall not be detectable in any 100 ml sample		Absent

N.B: - GW2: Tubewell at Manpur Village



Environment Monitoring Report (October 2025 – March 2026)

E. Treated Effluent Quality at COBP – PETP OUTLET

Sl. No.	PARAMETER	Norm as per G.S.R. 422 (E) (Inland Surface water)/EC	Oct-25	Nov-25	Dec-25	Jan-26	Feb-26	Mar-26
			Sampling Date 29.10.2025	Sampling Date 17.11.2025	Sampling Date 16.12.2025	Sampling Date 21.01.2026	Sampling Date 23.02.2026	Sampling Date 23.03.2026
1	Color , Hazen	--	BLQ (<5.0)	BLQ (<5.0)	BLQ (<5.0)	BLQ (<5.0)	BLQ (<5.0)	BLQ (<5.0)
2	pH Value	5.5 to 9.0	7.7	7.9	7.6	8.0	7.9	7.7
3	Suspended Solid, mg/l	100	69.2	56.2	61.8	63.3	52.8	48.7
4	Oil & grease, mg/l	10	5.8	6.3	5.2	5.9	4.8	5.3
5	Total Dissolved Solids, mg/l	2100	582.6	728.0	624.0	652.0	528.0	648.0
6	Total Res. Chlorine, mg/l	1	BLQ (<0.1)	BLQ (<0.1)	BLQ (<0.1)	BLQ (<0.1)	BLQ (<0.1)	BLQ (<0.1)
7	Ammonical Nitrogen, mg/l	50	14.4	16.2	13.8	20.4	18.6	15.2
8	Total Kjeldahl Nitrogen, mg/l	100	32.8	28.4	22.6	47.4	34.3	39.1
9	BOD (3 days at 270C), mg/l	30	12.6	12.2	14.8	14.8	14.2	16.2
10	COD, mg/l	250	50.4	54.0	78.2	78.2	62.4	78.6
11	Nitrate Nitrogen, mg/l	10	5.6	8.3	5.8	5.1	6.2	4.4
12	Hexavalent chromium (as Cr6+), mg/l	0.1	BLQ (< 0.01)	BLQ (< 0.01)	BLQ (< 0.01)	BLQ (< 0.01)	BLQ (< 0.01)	BLQ (< 0.01)
13	Sulphide (as S) mg/l	2	BLQ (< 1.0)	BLQ (< 1.0)	BLQ (< 1.0)	BLQ (< 1.0)	BLQ (< 1.0)	BLQ (< 1.0)
14	Phenolic compound (as C6H5OH), mg/l	1	BLQ (<0.1)	BLQ (<0.1)	BLQ (<0.1)	BLQ (<0.1)	BLQ (<0.1)	BLQ (<0.1)
15	Cyanide (as CN), mg/l	0.2	BLQ (<0.01)	BLQ (<0.01)	BLQ (<0.01)	BLQ (<0.01)	BLQ (<0.01)	BLQ (<0.01)
16	Fluoride (as F), mg/l	2	BLQ (<0.1)	BLQ (<0.1)	0.2	0.86	0.3	0.2
17	Dissolved Phosphate, mg/l	5	0.6	0.8	0.8	0.9	3.8	1.5
18	Arsenic, mg/l	0.2	BLQ (< 0.004)	BLQ (< 0.004)	BLQ (< 0.004)	BLQ (< 0.004)	BLQ (< 0.004)	BLQ (< 0.004)
19	Mercury, mg/l	0.01	BLQ (< 0.004)	BLQ (< 0.004)	BLQ (< 0.004)	BLQ (< 0.004)	BLQ (< 0.004)	BLQ (< 0.004)
20	Lead, mg/l	0.1	BLQ(< 0.01)	BLQ(< 0.01)	BLQ(< 0.01)	BLQ(< 0.01)	BLQ(< 0.01)	BLQ(< 0.01)
21	Cadmium, mg/l	2	BLQ(< 0.03)	BLQ(< 0.03)	BLQ(< 0.03)	BLQ(< 0.03)	BLQ(< 0.03)	BLQ(< 0.03)



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Sl. No.	PARAMETER	Norm as per G.S.R. 422 (E) (Inland Surface water)/EC	Oct-25	Nov-25	Dec-25	Jan-26	Feb-26	Mar-26
			Sampling Date 29.10.2025	Sampling Date 17.11.2025	Sampling Date 16.12.2025	Sampling Date 21.01.2026	Sampling Date 23.02.2026	Sampling Date 23.03.2026
22	Total Chromium, mg/l	2	BLQ(<0.01)	BLQ(<0.01)	BLQ(<0.01)	BLQ(<0.01)	BLQ(<0.01)	BLQ(<0.01)
23	Copper, mg/l	3	BLQ(< 0.05)	BLQ(< 0.05)	BLQ(< 0.05)	BLQ(< 0.05)	BLQ(< 0.05)	BLQ(< 0.05)
24	Zinc, mg/l	5	BLQ(< 0.03)	BLQ(< 0.03)	BLQ(< 0.03)	BLQ(< 0.03)	BLQ(< 0.03)	BLQ(< 0.03)
25	Selenium, mg/l	0.05	BLQ(< 0.001)	BLQ(< 0.001)	BLQ(< 0.001)	BLQ(< 0.001)	BLQ(< 0.001)	BLQ(< 0.001)
26	Nickel, mg/l	3	BLQ(< 0.01)	BLQ(< 0.01)	BLQ(< 0.01)	BLQ(< 0.01)	BLQ(< 0.01)	BLQ(< 0.01)
27	Manganese, mg/l	2	BLQ(< 0.05)	BLQ(< 0.05)	BLQ(< 0.05)	BLQ(< 0.05)	BLQ(< 0.05)	BLQ(< 0.05)
28	Iron (as Fe), mg/l	3	0.7	BLQ(<0.5)	BLQ(<0.5)	BLQ(<0.5)	BLQ(<0.5)	BLQ(<0.5)
29	Vanadium, mg/l	0.2	BLQ(< 0.01)	BLQ(< 0.01)	BLQ(< 0.01)	BLQ(< 0.01)	BLQ(< 0.01)	BLQ(< 0.01)

Treated Sewage water quality- STP (COBP)

Sl. No.	Parameter	Feb - 2026	CTO Limit
		Sampling Date 09.02.2026	
1	pH	7.05	6.5-9.0
2	Suspended Solid, mg/l	6.0	100
3	Biochemical Oxygen Demand (3 days @27oC), mg/l	10.2	30.0
4	Faecal Coliform, MPN/100ml	92.8	<1000



Environment Monitoring Report (October 2025 – March 2026)

H. Fugitive Air Emission:

Sl. No.	Sampling Stations	Benzo alpha pyrene (µg/m ³)				Permissible limits (MoEF&CC)
		Nov.-25	Jan.-26	Mar.-26		
1	Battery#1 Top	0.04	0.03	0.05		5
2	Battery#2 Top	0.02	0.05	0.06		
3	By product Area	0.01	0.02	0.01		2

Fugitive Visible Emission

Monitoring of PLL, PLO, PLD and Charging Emission from COBP Battery#1

Sl. No.	Parameters	Results						Standard MoEF&CC
		Oct-25	Nov-25	Dec-25	Jan-26	Feb-26	Mar-26	
1	Percentage Leaking Door (PLD)	1.58	1.19	2.38	3.17	3.17	3.17	10
2	Percent Leaking Leads (PLL)	0	0	0	0	0	0	1
3	Percent Leaking Offtakes (PLO)	3.17	3.17	1.59	3.17	1.58	1.58	4
4	Charging Emission (Second/ Charge (HPLA)	70.0	73.0	71.0	70.0	71.0	70.0	75

CO emission/MT of Product

1	Carbon Monoxide Kg/MT of Coke product	1.4	0.9	1.1	1.0	1.0	1.0	3
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Monitoring of PLL, PLO, PLD and Charging Emission from COBP Battery# 2

Sl. No.	Parameters	Fugitive Visible Emission Monitoring Report						Standard MoEF&C C
		Oct-25	Nov-25	Dec-25	Jan-26	Feb-26	Mar-26	
1	Percentage Leaking Door (PLD)	0.79	1.19	1.59	0.79	2.38	2.38	5
2	Percent Leaking Leads (PLL)	0	0	0	0	0	0	1
3	Percent Leaking Offtakes (PLO)	3.17	1.58	3.17	1.58	1.58	3.17	4
4	Charging Emission (Second/ Charge (HPLA)	15.0	12.0	15.0	15.0	15.0	13.0	16

CO emission/MT of Product

1	Carbon Monoxide Kg/MT of Coke product	2.0	2.0	2.1	1.5	1.9	2.0	3
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October-2025 to March-2026

Online Monitoring Report

October-2025 to March-2026

INDEX

- A. Continuous Ambient Air Quality Monitoring Report
- B. Continuous Emission Monitoring Report
- C. Effluent Quality Monitoring Report



October-2025 to March-2026

A. Continuous Ambient Air Quality Monitoring System (CAAQMS) report

Location - Near Admin Building:

Sl. No.	Parameters	Monthly Average concentration						
		Oct'25	Nov'25	Dec'25	Jan'26	Feb'26	Mar'26	NAAQS
1	PM ₁₀ (µg/m ³)	53.03	52.61	52	51.75	64.68	74.29	100(24 Hrs)
2	PM _{2.5} (µg/m ³)	25.47	25.56	25.65	25.56	32.59	39.93	60 (24 Hrs)
3	SO ₂ (µg/m ³)	13.55	16.25	16.93	12.05	13.79	17.1	80(24 Hrs)
4	NO _x (µg/m ³)	21.94	26.79	35.4	36.28	36	30.59	80(24 Hrs)
5	CO (mg/m ³)	1.71	0.43	0.42	0.37	0.36	0.36	02 (08 Hrs)

Location - Near Nursery:

Sl. No.	Parameters	Monthly Average concentration						
		Oct'25	Nov'25	Dec'25	Jan'26	Feb'26	Mar'26	NAAQS
1	PM ₁₀ (µg/m ³)	57.05	77.09	74.29	83.13	77.64	61.94	100(24 Hrs)
2	PM _{2.5} (µg/m ³)	36.7	40.51	32.14	50.28	40.22	38.81	60 (24 Hrs)
3	SO ₂ (µg/m ³)	13.02	20.33	19.79	25.59	30.89	31.55	80(24 Hrs)
4	NO _x (µg/m ³)	15.58	15.58	15.45	15.46	15.45	15.27	80(24 Hrs)

Location - Near Security Barrack

Sl. No.	Parameters	Monthly Average concentration						
		Oct'25	Nov'25	Dec'25	Jan'26	Feb'26	Mar'26	NAAQS
1	PM ₁₀ (µg/m ³)	52.94	53.01	54.67	54.23	84.9	94.2	100(24 Hrs)
2	PM _{2.5} (µg/m ³)	36.1	52.29	32.14	27.67	53.92	56.11	60 (24 Hrs)
3	SO ₂ (µg/m ³)	15.36	12.82	10.71	9.32	8.99	9.21	80(24 Hrs)
4	NO _x (µg/m ³)	14.16	Na	NA	NA	NA	NA	80(24 Hrs)



October-2025 to March-2026

Location - Near CPP

Sl. No.	Parameters	Monthly Average concentration						
		Oct'25	Nov'25	Dec'25	Jan'26	Feb'26	Mar'26	NAAQS
1	PM ₁₀ (µg/m ³)	66.25	77.18	67.74	103.45	69.16	90.61	100(24 Hrs)
2	PM _{2.5} (µg/m ³)	37.75	39.04	26.79	25.8	35.86	26.09	60 (24 Hrs)
3	SO ₂ (µg/m ³)	36.83	36.16	36.16	37	40.26	40.11	80(24 Hrs)
4	NO _x (µg/m ³)	21.62	21.68	21.69	21.75	21.99	22.04	80(24 Hrs)

NAAQS: National Ambient Air Quality Standard; NA-Not Available

B. Continuous Emission Monitoring System (CEMS) report

Sl. No.	Sampling Stations	Parameters	Monthly Average Concentration of PM, SO ₂ , NO _x (mg/Nm ³)						
			Oct'25	Nov'25	Dec'25	Jan'26	Feb'26	Mar'26	Limit CTO
1	Coke Oven Stack-1	PM	33.18	24.36	23.93	29.39	24.18	20.22	50
		SO ₂	90.48	179.09	180.12	188.52	167.28	180.34	800
		NO _x	67.1	130.25	129.12	145.77	129.68	122.1	500
2	Coke Oven Stack-2	PM	16.61	17.84	18.4	16.99	13.35	14.88	30
		SO ₂	307.03	324.85	319.1	247.39	241.73	136.91	800
		NO _x	190.2	203.13	210.27	170	127.5	125.33	500

C. Effluent Quality Monitoring System (EQMS) report:

Location: Coke Oven ETP Outlet

Sl. No.	Parameters	Monthly Average concentration						
		Oct'25	Nov'25	Dec'25	Jan'26	Feb'26	Mar'26	Limit CTO
1	TSS	32.6	27.98	30.11	31.99	42	37.1	100
2	pH	7.01	7.08	8.13	8.22	8.03	7.99	5.5 - 9.0
3	BOD	5.38	5.17	11.21	14.63	9.86	8.66	30.0 mg/l
4	COD	49.52	47.37	103.08	134.42	90.75	79.64	250.0 mg/l