

JCL/JRD/ENV/2023-24/21

Date: 24.11.2023

To

Joint Director
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 April, 2023 to September, 2023.

- 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 of the stipulated conditions as per Environment Clearance granted for the period from April, 2023 to September, 2023.

The soft copy of the same has also been sent to your good office through email – id raez.bsr-mef@nic.in.

Thanking You,

Yours faithfully,
For Jindal Coke Limited


Deepak Agiwal
Head - COBP

Enc: As Above

CC:

1. The Director, Industry – I, MOEF&CC, Indira Paryavaran, Jor Bagh Road, Aliganj, New Delhi – 110003.
2. The In-Charge, Central Pollution Control Board, 502, Southernd Conclave 1582, Rajdanga Main Road, Kolkata – 700017.
3. The Member Secretary, State Pollution Control Board, Odisha, A/118, Nilakantha Nagar, Unit – VIII, Bhubaneswar – 751012.

Jindal Coke Limited

CIN: U23101HR2014PLC053884

Jaipur Office: Karinga Nagar Industrial Complex, Dubori, Dist. - Jaipur - 755 026 (Odisha), India

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

T: +91 6726 266200 F: +91 6726 266006 E: info@jindalcoke.com

M/S. JINDAL COKE LIMITED



HALF YEARLY EC COMPLIANCE REPORT

APRIL, 2023 TO SEPTEMBER, 2023



M/s. JINDAL COKE LIMITED
Kalinganagar Industrial Complex
Duburi, Dist. Jajpur - 755026, Orissa, India
Tel: +91 06726 266260 Fax: +91 06726 266006
E-mail: info@jindalcoke.com

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
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	Being Complied. VOC from coke oven is being monitored by NABL Accredited Laboratory. The last monitoring report is enclosed as Annexure – I.
ii.	Bag filter shall be installed to control the emissions from the coal crusher section, charging fume car section of the Coke Oven Plant. Online continuous monitoring system shall be installed to monitor various pollutants and data submitted to the Ministry's Regional Office at Bhubaneswar, CPCB and OPCB. Dust suppression system 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.	Being complied. Bag filter having adequate capacity has been installed at dedusting, secondary coal crusher section and coke crushing section of the Coke Oven Plant Online continuous monitoring system has been installed at main stack of Coke Oven and data is being transmitted to SPCB & CPCB on uninterrupted basis. M type gas transfer car has been installed at the existing unit to control process emission during charging. 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 concrete and water sprinkling systems have been installed to control fugitive emission. Photograph is attached as Annexure – II.
iii.	No ground water shall be used for the plant. All the treated waste water 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 for quenching of coke. Ammonia, Phenol and Cyanide in the effluent should be treated. Cyanide shall meet the	Complied. No ground water is being used in the plant. Zero discharge is being maintained for the entire plant. Effluent generate from process is being treated in BOD Plant and the treated water is completely reused for coke quenching. Photograph of BOD Plant is enclosed as Annexure – III.

S. No.	Condition	Compliance
	standard of 0.2 ppm.TDS in the effluent shall not be more than 2100 mg/l. The domestic waste water after treatment in STP shall be used for green belt development.	Monitoring of parameters like Ammonia, Phenol and Cyanide, TDS etc. in effluent of BOD plant is being carried out in regular interval and all the parameters are well within standard. The monitoring report is being submitted to SPCB on regular basis. The monitoring report for the period from Apr' 22 to Sep' 23 is enclosed as Appendix-A . The domestic waste water after treatment is being reused for green belt development
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.	Being complied. Effluent generated from Coke Oven by-product is being treated in BOD plant and the treated water is completely reused for coke quenching
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.	Being complied. There is no solid waste landfill site constructed. Ground water monitoring is carried out in peripheral areas and analysis report is enclosed as Appendix-A . BOD sludge is completely reused in process.
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	Noted and agreed. There is no landfill site constructed. Coke breeze from Coke oven is being sold to outside sinter plant for recycling.
vii.	Green belt shall be developed within and around the plant premises as per the CPCB guidelines in consultation with DFO.	Being Complied. As on date, we have planted 23,500 nos. of saplings covering an area of 22 Acres till March' 2023.
viii.	As, proposed, modified wet quenching for 1 st Coke oven battery as per CPCB guidelines shall be adopted.	Noted. Wet quenching is installed for existing unit. Dry quenching has been proposed for the expansion project.

B. GENERAL CONDITIONS:

S. No.	Condition	Compliance
i.	The project authorities must strictly adhere to the stipulations made by the Orissa Pollution Control Board (OPCB)	Being Complied. JCL is strictly adhering to the stipulations

S. No.	Condition	Compliance
	and the State Government.	made by SPCB and the State Government.
ii.	No further expansion or modifications in the plant should be carried out without prior approval of the Ministry of Environment and Forests.	<p>Noted & Agreed.</p> <p>The unit has obtained EC and CTE for expansion project from 0.425 MTPA to 0.78 MTPA on 9th May. Expansion project is under construction stage.</p>
iii.	The gaseous emissions from various process units shall conform to the load/mass based 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 and its size and location. At no time, the emission level shall go beyond the prescribed standards. On-line continuous monitoring system 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.	<p>Being Complied.</p> <p>The gaseous emissions from various process units are being monitored by in-house Environmental Laboratory. The analysis reports are being submitted to SPCB and MOEF regularly. Online continuous monitoring system is installed Coke Oven battery stack to monitor PM, SO₂ & NO_x and interlocking facility is provided.</p>
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.	<p>Complied.</p> <p>4(four) nos. of CAAQ monitoring stations have been installed at M/s. Jindal Stainless Limited, which is common for M/s. Jindal Coke Limited and M/s. Jindal Stainless Limited; as the both plant are in same premises. Monitoring of Ambient Air is being carried out for PM₁₀, PM_{2.5} and other gaseous parameters. Monitoring data is being submitted to both SPCB and MOEF regularly. Both the manual and online monitoring report of Stack & ambient air quality is for the period from Apr' 22 to Sep' 23 is enclosed as Appendix-A and Appendix-B respectively. However, 1 no. of dedicated CAAQMS has been installed at Jindal Coke Limited for monitor of</p>

S. No.	Condition	Compliance
		parameters like, PM ₁₀ , PM _{2.5} , SO ₂ , NO _x and CO in ambient air.
v.	In-plant control measures for checking fugitive emissions from all the vulnerable sources of Coke oven area shall also be provide. 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.	<p>Being Complied.</p> <p>Fugitive emission monitoring is being carried out on regular basis. The monitoring data for the period from Apr' 23 to Sep' 23 is enclosed as Appendix – A.</p>
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 treated waste water shall be utilized for plantation purpose.	<p>Being Complied.</p> <p>The plant is being maintained a zero discharge plant. Industrial waste water is treated to conform to prescribed standards and fully recycled / reused in the process and various in-house applications.</p> <p>BOD plant has been installed for treatment of process water and the treated water is being reutilize for coke quenching and other activities to reduce fresh water consumption.</p>
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) night time.	<p>Being Complied.</p> <p>Adequate measures have been taken to keep noise level within 85 dB(A) in and around plant area. Silencers, Acoustic Enclosures are provided to control noises, in various areas of the Plant.</p> <p>The Ambient Noise levels are conforming to the standards prescribed under EPA Rules, 1989.</p> <p>Noise monitoring result are enclosed as Appendix-A.</p>

S. No.	Condition	Compliance
viii.	The company shall develop surface water harvesting structures to harvest the rain water for utilization in the lean season besides recharging the ground water table.	Rain water harvesting pits are constructed to harvest the rain water/ surface runoff water from plant catchment area. Recharging the ground water through Rain water harvesting is not feasible as the ground water table in the area is high. Presently, we are reusing approximately 25 m ³ /day seepage water in process as makeup water. The water so collected through rain water/ surface runoff water is reused in plant usage.
ix.	Occupational Health Surveillance of the workers shall be done on a regular basis and record maintained as per the Factories Act.	Being Complied. 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.	Being Complied. 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, installing state of art air pollution control equipments. 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.	Being Complied. The Plant has taken all the environmental protection measures and safeguards recommended in the EIA/EMP report.
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	Noted. Regarding environment pollution control measure, expenditure details given below for existing operation:

S. No.	Condition	Compliance																
	State Government along with the implementation schedule for all the conditions stipulated herein. The funds so provided shall not be diverted for other purpose.	<table border="1"> <thead> <tr> <th data-bbox="855 349 1161 409">Environment Control Cost</th> <th data-bbox="1161 349 1473 409">Capital (in Cr)</th> </tr> </thead> <tbody> <tr> <td data-bbox="855 409 1161 441">Water</td> <td data-bbox="1161 409 1473 441">40.0</td> </tr> <tr> <td data-bbox="855 441 1161 472">Air</td> <td data-bbox="1161 441 1473 472">12.0</td> </tr> <tr> <td data-bbox="855 472 1161 504">Solid waste</td> <td data-bbox="1161 472 1473 504">1.0</td> </tr> <tr> <td data-bbox="855 504 1161 535">Green belt</td> <td data-bbox="1161 504 1473 535">0.5</td> </tr> <tr> <td data-bbox="855 535 1161 566">Online monitoring</td> <td data-bbox="1161 535 1473 566">1.5</td> </tr> <tr> <td data-bbox="855 566 1161 627">Surface runoff management</td> <td data-bbox="1161 566 1473 627">2.0</td> </tr> <tr> <td data-bbox="855 627 1161 687">Public Hearing Commitment</td> <td data-bbox="1161 627 1473 687">1.79</td> </tr> </tbody> </table>	Environment Control Cost	Capital (in Cr)	Water	40.0	Air	12.0	Solid waste	1.0	Green belt	0.5	Online monitoring	1.5	Surface runoff management	2.0	Public Hearing Commitment	1.79
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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.	<p>Being Complied.</p> <p>Six monthly compliance report and monitored data is being submitted to the Ministry regularly. The last compliance report for the period of Oct' 22 to Mar '23 was submitted on 29.05.2023.</p>																
xiv.	The project proponent shall inform to 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.	<p>Complied.</p> <p>The grant of Environment clearance is advertised in advertised in 02 dailies newspaper. English in Orissa post and regional language in Prameya on 25.05.2018. The advertisement was published within 7 days of grant of EC.</p>																
xv.	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.	<p>Complied.</p> <p>The date of financial closure of the project by the concerned authorities is not applicable at present. The date of commencing the land development work is in year 2008.</p>																
xvi.	The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.	<p>Noted.</p>																
xvii.	The Ministry reserves the right to stipulate additional conditions if found necessary. The company in a time	<p>Noted.</p>																

S. No.	Condition	Compliance
	bound manner will implement these conditions	
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.	Noted.

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

C. 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.	Noted and agreed. Coke Dry Quenching (CDQ) is under installation for the ongoing expansion project. Presently the effluent generated from the existing operation of Battery # 1 (0.425 MTPA) is being treated in the BOD plant of capacity 2 x 45m ³ /hr for further reuse for coke quenching and other activities. After completion of the proposed expansion project of Battery # 2 the effluent of both the existing and proposed expansion will be treated in the existing BOD plant followed by RO and the treated water will be used in the process to maintain Zero Liquid Discharge (ZLD).
ii.	Tar sludge from BOD plant of Coke Oven shall be reused in coke oven plant	Noted and agreed. Presently, Tar sludge generated from BOD plant of Coke Oven Battery # 1 is being

S. No.	Condition	Compliance
		reused in coke oven plant and the same practice shall be followed in expansion project for Battery # 2.
iii.	Coke Oven Gas shall be desulfurized	<p>Noted and agreed.</p> <p>The existing Desulfurization unit of Battery # 1 will take care of both the existing Battery # 1 and proposed Battery # 2 for Desulfurization.</p>
iv.	Out of 24 acres area for green belt development, project proponent has developed green belt in 15 acres area. Remaining 9 acres area of green belt shall be completed by December, 2022. Three tier Green Belt shall be developed after consult 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.	<p>Being complied.</p> <p>As on date, we have planted 23,500 nos. of saplings covering an area of 22 Acres till March' 2023. The unit has planted over 7 acres of area in FY 2022-23. But having less survival due to ongoing project.</p>
v.	Greening and Paving shall be implemented in the plant area to arrest soil erosion and dust pollution from exposed soil surface.	<p>Being Complied.</p> <p>At present, Greening and Paving has been done in the Battery # 1 plant area to arrest soil erosion and dust pollution from exposed soil surface. The same shall be adopted in the said expansion project of Battery # 2.</p>
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 incorporates in the pollution control measures. Emission control measures related to transportation shall include with the use of cleaner fuels.	<p>Noted & agreed</p> <p>The ambient air quality is being monitored regularly by NABL Accredited Laboratory and the results of PM₁₀ are within the limit. The monitor report for the period from Apr' 23 to Sep' 23 is enclosed as Appendix – A. For more effective control of emission, a new M type gas transfer car has also been installed in the existing Battery for control of emission. A new dedicated CAAQMS has been installed at Jindal Coke Limited for monitor of parameters like, PM₁₀, PM_{2.5}, SO₂, NOx and CO in ambient air.</p>

S. No.	Condition	Compliance
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 also be uploaded on the company web site.	Being complied. The implementation status of the Corporate Environment Responsibility (CER) related activities are enclosed as Annexure – V.
viii.	All stockyards shall be having impervious flooring and shall be equipped with water spray system for dust suppression. Stock yards shall also have garland drains to trap the run off material.	Being Complied. All stockyards of Battery # 1 are made of concrete flooring and water spraying systems are also installed for dust suppression with garland drains to trap the run off material. The same shall be followed in the said expansion project of Battery # 2.
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	Being Complied. All the internal roads and connecting road from project site of Battery # 1 to main highway are made with RCC/PCC and the same shall be followed in the said expansion project of Battery # 2.
x.	Performance test shall be conducted on all pollution control systems every year and report shall be submitted to Regional Office of the MoEF&CC.	Noted & agreed. Performance test of bag filters have been carried out by NABL accredited Laboratory and reports are enclosed as Annexure – IV.
xi.	Particulate matter emission from stacks shall be less than 30 mg/Nm ³ .	Being Complied. Suitable Pollution Control equipments will be installed in the proposed Battery # 2 to confirm the Particulate Matter emission from stacks less than 30 mg/Nm ³ .
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 vehicle shall be used	Being Complied. Compliance: At present, for existing Battery # 1 Dry fog systems have been installed at conveyors points and gun sprinklers were also installed at raw material storage yard to control fugitive emission. The same practice shall be followed in the said expansion project of Battery # 2.

S. No.	Condition	Compliance
	<p>while transport of materials.</p> <p>c. Wheel Washing mechanism shall be provided in entry and exit gates with complete recirculation system.</p>	<p>Compliance: At present, for existing Battery # 1 all the raw materials are transporting through rail and covered vehicles and the same shall be followed in the said expansion project of Battery # 2.</p> <p>Compliance: Wheel washing system with complete recirculation system is available in is available in Central Raw material handling section additional one no. to be installed exclusively of JCL post commission of the project.</p>

D. SPECIFIC CONDITIONS:

S. No.	Condition	Compliance
I. Statutory compliance		
ix.	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 legislations, etc., as may be applicable to the project.	Noted & agreed
II. Air quality monitoring and preservation		

i	<p>The project proponent shall install 24x7 continuous emission monitoring system at process stacks to monitor stack emission as 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 equipment supplier specification through labs recognized under Environment (Protection) Act, 1986 or NABL accredited laboratories.</p>	<p>Being Complied.</p> <p>CEMS have been installed existing Coke Oven Battery # 1 stack and connected to SPCB/CPCB servers and the same practice shall be followed in the said expansion project of Battery # 2..</p> <p>Four numbers of continuous on-line ambient air quality monitoring systems (CAAQMS) have been installed which are common for JSL group Company in consultation with SPCB and the data is continuously transmitted to both SPCB & CPCB. However, one new dedicated CAAQMS has been installed at JCL.</p>
x.	<p>The project proponent shall monitor fugitive emissions in the plant premises at least once in every quarter through laboratories recognized under Environment (Protection) Act, 1986 or NABL accredited laboratories.</p>	<p>Being Complied.</p> <p>For existing Coke Oven Battery # 1, fugitive emission monitoring at various locations are being carried out through NABL accredited laboratory on monthly basis. The same practice shall be followed in the said expansion project of Battery # 2.</p>
xi.	<p>Sampling facility at process stacks and at quenching towers shall be provided as per CPCB guidelines for manual monitoring of emissions.</p>	<p>Noted & agreed</p> <p>Sampling facility at process stacks of existing unit are available and for proposed expansion it will be provided.</p>
xii.	<p>Appropriate Air Pollution Control (APC) system shall be provided for all the dust generating points including fugitive dust from all vulnerable sources, so as to comply prescribed stack emission and fugitive emission standards.</p>	<p>Being complied</p> <p>For existing Coke Oven Battery # 1 appropriate Air Pollution Control (APC) system have been provided for all the dust generating points including fugitive dust from all vulnerable sources to comply with prescribed stack emission and fugitive emission standards. The same practice shall be followed in the said expansion project of Battery # 2.</p>
xiii.	<p>The project proponent shall provide leakage detection and mechanized bag cleaning facilities for better maintenance of bags.</p>	<p>Being complied.</p> <p>Leakage detection and mechanized bag cleaning facilities have been provided for better maintenance of bags in existing unit and the same shall follow in expansion project..</p>

xiv.	Sufficient number of mobile or stationery vacuum cleaners shall be provided to clean plant roads, shop floors, roofs, regularly.	Being complied. Road sweepers are provided for cleaning of plant roads, shop floors of Coke Oven Battery # 1 and the same shall be followed in the expansion project of Battery # 2.
xv.	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.	Being complied. In existing Coke Oven Battery # 1 coal and coke fines collected from pollution control devices are being reused in Coke oven plant and the same shall be followed in the expansion project of Battery # 2.
xvi.	The project proponent use leak proof trucks/dumpers carrying coal and other raw materials and cover them with tarpaulin.	Being complied. Leakage detection and mechanized bag cleaning facilities has been provided in existing unit and the same shall be followed in expansion project for better maintenance of bags.
xvii.	Facilities for spillage collection shall be provided for coal and coke on wharf of coke oven batteries (Chain conveyors, land based industrial vacuum cleaning facility).	Noted & agreed. Provision for spillage collection has been provided for coal and coke on wharf of coke oven battery and same shall be followed for expansion unit also.
xviii.	Land-based APC system shall be installed to control coke pushing emissions.	Noted & agreed. Land-based APC system shall be installed for new Battery – 2 to control coke pushing emissions.
xix.	Monitor CO, HC and O2 in flue gases of the coke oven battery to detect combustion efficiency and cross leakages in the combustion chamber.	Noted & agreed. Portable Multi gas analyzer is available to monitor CO,HC and O2 in flue gases.
xx.	Vapor absorption system shall be provided in place of vapour compression system for cooling of coke oven gas in case of recovery type coke ovens.	Noted & agreed. Vapor absorption system has been provided for cooling of Coke Oven gas for existing Battery # 1 and shall be provided for new unit.

xxi.	Wind shelter fence and chemical spraying shall be provided on the raw material stock piles.	<p>Being complied</p> <p>Retaining wall with chemical spraying system has been provided at Central Raw Material Storage Yard of existing Battery # 1 and the same shall be followed in the expansion project of Battery # 2.</p>
xxii.	Design the ventilation system for adequate air changes as per prevailing norms for all tunnels, motor houses, Oil Cellars.	<p>Being complied</p> <p>All the ventilation system are adequate for air changes as per norm for all tunnels, motor houses and shop floors of existing Coke Oven Battery # 1 and the same shall be followed in the expansion project of Battery # 2.</p>
xxiii.	Dry quenching (CDQ) system shall be installed along with power generation facility from waste heat recovery from hot coke	<p>Noted & agreed.</p> <p>Dry quenching (CDQ) system is under installation along with WHRB for power generation from waste heat recovery from hot coke.</p>
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.	<p>Being Complied.</p> <p>The process water generated from both existing Battery # 1 and proposed Battery # 2 will be treated in the existing ETP of capacity 90 M³/hr (2 x 45 M³/hr). Continuous Effluent Quality Monitoring System (EQMS) has already been installed for existing Effluent Treatment Plant (ETP) and data is being sent to SPCB/CPSB server.</p>
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.	<p>Noted</p> <p>At present the unit is not drawing ground water for plant usage. However, ground water quality in nearby plant vicinity is being monitored bi-monthly by MoEF accredited / NABL accredited third party. Report is annexed as Appendix – A.</p>
iii.	Sewage Treatment Plant shall be provided for treatment of domestic wastewater to meet the prescribed standards.	<p>Being complied.</p> <p>Two nos. of Sewage Treatment Plants have been installed inside plant premises for treatment of domestic waste water generated from both JSL & JCL.</p>

iv.	Garland drains and collection pits shall be provided for each stock pile to arrest the run-off in the event of heavy rains and to check the water pollution due to surface run off.	<p>Being complied.</p> <p>Garland drains and collection pits has been made for each stock pile of existing Coke Oven Battery # 1 to arrest the run-off in the event of heavy rains and the same shall be followed in the said expansion project of Battery # 2.</p>								
v.	Water meters shall be provided at the inlet to all unit processes in the coke oven plants.	<p>Being complied</p> <p>Water meter has been provided at all water distribution points along with individual process units and shall be complied for proposed expansion project.</p>								
IV. Noise monitoring and prevention										
i.	Noise pollution shall be monitored as per the prescribed Noise Pollution (Regulation and Control) Rules, 2000 and report in this regard shall be submitted to Regional Officer of the Ministry as a part of six-monthly compliance report.	<p>Being complied.</p> <p>The monitoring of work zone noise level is being carried out periodically and the monitoring data is annexed as Appendix – A.</p>								
V. Energy Conservation measures										
i.	Provide solar power generation on roof tops of buildings, for solar light system for all common areas, street lights, parking around project area and maintain the same regularly;	<p>Being complied.</p> <p>Solar power generation will be installed on roof tops of buildings however a solar power plant of capacity 7 MW has been installed under the group company JSL.</p>								
ii.	Provide LED lights in their offices and residential areas.	<p>Noted</p> <p>Already provided LED lights where ever possible and the same shall be followed in the said expansion project.</p>								
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.	<p>Being complied.</p> <p>GHG emissions inventory for the plant has been carried out for the FY 2022-23.</p> <table border="1" data-bbox="863 1787 1461 1895"> <thead> <tr> <th colspan="3">GHG Emission Intensity (TCO₂e/T)</th> </tr> </thead> <tbody> <tr> <td rowspan="2">2022-23</td> <td>Scope 1</td> <td>0.177</td> </tr> <tr> <td>Scope 2</td> <td>0.073</td> </tr> </tbody> </table>	GHG Emission Intensity (TCO ₂ e/T)			2022-23	Scope 1	0.177	Scope 2	0.073
GHG Emission Intensity (TCO ₂ e/T)										
2022-23	Scope 1	0.177								
	Scope 2	0.073								

ii.	Project proponent shall submit a study report on Decarbonisation 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 monitor able with defined time frames.	<p>Being complied.</p> <p>JCL has taken various Decarburization programs. The detail report is enclosed as Annexure – VI.</p>
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	<p>Being complied.</p> <p>Emergency preparedness plan based on the Hazard identification and Risk Assessment (HIRA) and Disaster Management Plan has been implemented for the existing operation and same shall be followed for the expansion project.</p>
ii.	The project proponent shall carry out heat stress analysis for the workmen who work in high temperature work zone and provide Personal Protection Equipment (PPE) as per the norms.	<p>Being complied.</p> <p>Periodical Health Checkup for the workmen who work in high temperature work zone is being carried out and Personal Protection Equipment (PPE) as per the norms of Factory Act is being provided to the workman of Coke Oven Battery # 1. The same shall be followed in the said expansion project of Battery # 2.</p>
iii.	Occupational health surveillance of the workers shall be done on a regular basis and records maintained.	<p>Being complied.</p> <p>Annual health check up of workers of Coke Oven Battery # 1 is being carried out and records are maintained. The same shall be followed in the said expansion project of Battery # 2.</p>
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.	<p>Noted.</p> <p>Necessary initiative has been taken to adopt the villages as per the need base programme. Details are enclosed as Annexure – VII.</p>
ii.	The company shall have a well laid down environmental policy duly approve by the Board of Directors. The environmental policy should prescribe for 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 / stake holders. The copy of the board resolution in this regard shall be submitted to the MoEF&CC as a part of six-monthly report.	<p>Being complied.</p> <p>JCL already has framed Environmental Policy as a part of the QEOHS (Quality, Environment, Occupational Health & Safety) policy framework and is committed to maintain environment friendly, safe, healthy and sustainable working condition in all its operations. The same shall be followed in the said expansion project.</p>
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.	<p>Being complied</p> <p>JCL already has a well-constituted Environment, Horticulture & Safety (EHS) department with qualified and experienced officers under the administrative control of Head EHS and Head EHS directly report to the Plant Head</p>
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.	<p>Complied</p> <p>Advertisement on grant of Environment Clearance has been published in newspapers namely The New Indian Express (English) and Prameya (Odia) on 14.05.2022. The copy of the news clipping is enclosed as Annexure – VIII. Environment Clearance is displayed in the website of the company permanently.</p>
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.	<p>Complied.</p> <p>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.</p>
iii.	The project proponent shall upload the 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.	<p>Being complied</p> <p>Presently, six-monthly reports on the status of the compliance of the stipulated environmental conditions uploaded on company website and same shall be continued.</p>
iv.	The project proponent shall monitor the criteria pollutants level namely; PM10, SO2, NOx (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the projects and display the same at a convenient location for disclosure to the public and put on the website of the company.	<p>Being complied</p> <p>Both online and manual Stack Monitoring is being carried out and the data are displayed on the display board installed at main gate for public view. The same shall be continued in the said expansion project.</p>
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.	<p>Being complied</p> <p>Presently, six-monthly reports on the status of the compliance of the stipulated environmental conditions is being submitted to MOEF&CC and also uploaded on MoEF&CC website.</p>

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.	Being complied Presently, environmental statement for each financial year in Form-V is being submitted to SPCB, Odisha in due time and last report was submitted to SPCB on 28.09.2023. The same shall be continued in the said expansion project.
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.	Noted & agreed
viii.	The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report, commitment made during Public Hearing and also that during their presentation to the Expert Appraisal Committee.	Noted & agreed All the commitments and recommendations made in the EIA/EMP report, commitment made during Public Hearing and also that during their presentation to the Expert Appraisal Committee will be complied.
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).	Noted & agreed
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.	Noted & agreed
xi.	The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.	Noted & agreed
xii.	The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.	Noted & agreed

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.	Noted & agreed
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.	Noted & agreed

LIST OF ENCLOSURES

Sl. No.	Description	Annexure /Appendix
1	VOC monitoring Report	Annexure - I
2	Water sprinkling systems	Annexure - II
3	BOD Plant	Annexure - III
4	Performance Evaluation of PCEs	Annexure - IV
5	CER Compliance	Annexure - V
6	Report on De carbonization programme	Annexure - VI
7	Adoption of Villages under JCL	Annexure - VII
8	Advertisement copy	Annexure - VIII
9	Manual Monitoring Report	Appendix –A
10	Online Monitoring report	Appendix –B

Mitra S.K.Private Limited



Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road,
Kolkata 700015, West Bengal
Tel. : 91 33 23230072. Fax : 91 33 23230078.
Email : mitrasklab@yahoo.com
Web : www.mitrask.com

**TEST REPORT**

ULR: TC-695022000000740F

Name & Address of the Customer:
Jindal Stainless Limited
Unit – Central Plant
Kalinga Nagar Industrial Complex
Jajpur-755026. Odisha

Report No. : C/2022/740
Date : 10.02.22
Sample No. : MSK/KOL/2022/629
Date of receipt of sample : 03.02.22
Date(s) of performance : 03.02.22-10.02.22
Ref. No. & Date : P.O.: 6230000556 Date: 11.07.2019
Discipline : Chemical


We hereby certify that the following sample drawn by us from the customer has been analyzed with the following results:

1	Group	: Atmospheric Pollution
2	Description of sample (As declared by customer)	: Stack
3	Date of sampling	: 31.01.22 at 04.31 PM
4	Unique Identification	: Equipment Used: MSK/BBSR/FIELD/S-01
5	Place of sampling	: Coke Oven
6	Sampling Plan & Procedures used	: EPA/IS
7	Environmental conditions during sampling & Transport Condition	: Cold Chain Maintained
8	Identification of the personnel performing sampling	: Mr. Subhrakanta Mohanty

Report prepared by:

Signature : 
Name : Mr. Subyendu Chakraborty
Designation : QA Assistant

Report Verified By

Signature : 
Name : Ms. Paulami Dutta
Designation : Executive QA

Report Sign By Authorized Signatory

Signature : 
Name : Dr. Soumyadeep Mukhopadhyay
Designation : Lab In Charge

- The results relate only to the item(s) tested.
- This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.
- The reserved part of sample(s), except perishable sample(s), shall be retained for 15 days & 1 year (Atr) from the date of issue of the Test Report.
- The reserved part of sample(s), Soil, Solid & Liquid Waste shall be retained for 15 days (as per CPCB guideline) from the date of issue of the Test Report.
- Microbiological sealed pack water sample(s) shall be retained for 15 days & food sample(s) shall be retained for 4 days after analysis.

Mitra S.K.Private Limited



Building No. P- 48, Udayan Industrial Estate,
3, Pagladanga Road,
Kolkata 700015, West Bengal
Tel. : 91 33 23230072. Fax : 91 33 23230078.
Email : mitrasklab@yahoo.com
Web : www.mitrask.com



Report No. : C/2022/740
Sample No. : MSK/KOL/2022/629

ULR: TC-695022000000740F

ANALYSIS RESULT

A : GENERAL INFORMATION ABOUT STACK :				
1	Stack connected to	:Coke Oven		
2	Emission due to	:Burning of Coal		
3	Material of construction of Stack	:Concrete		
4	Shape of Stack	:Circular		
5	Whether Stack is provided with permanent platform	:Yes		
B : PHYSICAL CHARACTERISTICS OF STACK :				
1	Height of Stack from ground level	:120 m		
2	Diameter of Stack at sampling point	:5.865 m		
3	Height of the sampling point from ground level	:37 m		
4	Area of Stack	:27.0163 m ²		
C : ANALYSIS/CHARACTERSTIC OF STACK :				
1	Fuel used : Coal	2. Fuel consumption: ---		
D : RESULTS OF SAMPLING & ANALYSIS OF GASEOUS EMISSION:				
		<u>Unit</u>	<u>RESULT</u>	<u>METHOD</u>
1	Temperature of emission	"C	185	IS:11255 Part-3
2	Barometric pressure	mm of Hg	751	IS:11255 Part-3
3	Velocity of gas	m/sec	6.76	IS:11255 Part-3
4	Quantity of gas flow	Nm ³ /hr	412351.21	IS:11255 Part-3
E : POLLUTION				
Details of pollution control devices attached with the stack: Nil				

Report prepared by:
Signature :
Name : Mr. Subyendu Chakraborty
Designation : QA Assistant

Report Verified By
Signature :
Name : Ms. Paulami Dutta
Designation : Executive QA

Report Sign By Authorized Signatory
Signature :
Name : Dr. Soumyadeep Mukhopadhyay
Designation : Lab In Charge

Mitra S.K.Private Limited

Building No. P-48, Udayan Industrial Estate,
3, Pagiadanga Road,
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Tel. : 91 33 23230072. Fax : 91 33 23230078.
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TC-6950

ULR: TC-695022000000740F


Report No. : C/2022/740
Sample No. : MSK/KOL/2022/629

ANALYSIS RESULT


D : RESULTS OF SAMPLING & ANALYSIS OF GASEOUS EMISSION :		Unit	RESULT	METHOD
22	Volatile Organic Compounds (VOCs)			
i)	Benzene	mg/m ³	<0.01	USEPA 18, 25/09/1996 & USEPA 31, 01/12/1996
ii)	Toluene	mg/m ³	<0.01	
iii)	Ethyl Benzene	mg/m ³	<0.01	
iv)	O-Xylene	mg/m ³	<0.01	
v)	M- Xylene	mg/m ³	<0.01	
vi)	P- Xylene	mg/m ³	<0.01	
vii)	Chlorobenzene	mg/m ³	<0.01	
viii)	Isopropyl benzene	mg/m ³	<0.01	
ix)	Bromobenzene	mg/m ³	<0.01	
x)	1,3,5- Trimethyl benzene	mg/m ³	<0.01	
xi)	1,2,4- Trimethyl benzene	mg/m ³	<0.01	
xii)	Sec- Butylbenzene	mg/m ³	<0.01	
xiii)	Tert- Butylbenzene	mg/m ³	<0.01	
xiv)	1,4- Dichlorobenzene	mg/m ³	<0.01	
xv)	n-Butylbenzene	mg/m ³	<0.01	
xvi)	1,2,3- Trichlorobenzene	mg/m ³	<0.01	
xvii)	Trichloroethylene	mg/m ³	<0.01	
xviii)	1,1,1,2- Tetrachloroethane	mg/m ³	<0.01	
xix)	Hexachlorobutadiene	mg/m ³	<0.01	
xx)	1,2-Dibromo-3-Chloropropane	mg/m ³	<0.01	

End


Report prepared by:

Signature : 
Name : Mr. Subyendu Chakraborty
Designation : QA Assistant

Report Verified By

Signature : 
Name : Ms. Paulami Dutta
Designation : Executive QA

Report Sign By Authorized Signatory

Signature : 
Name : Dr. Soumyadeep Mukhopadhyay
Designation : Lab In charge

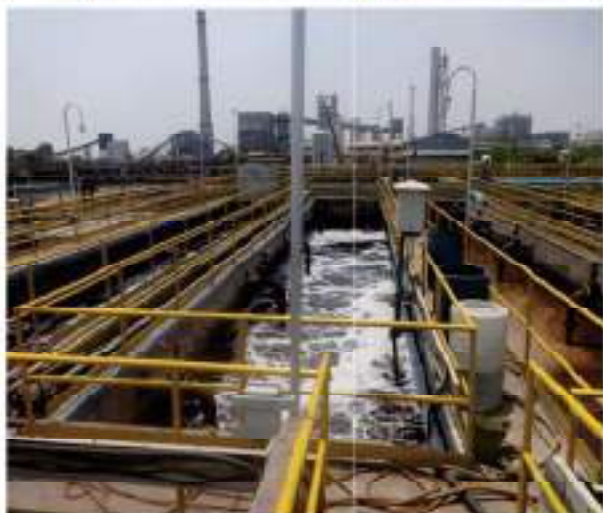


WATER SPRINKLERS AT COAL STACK YARD



WATER SPRINKLER AT COKE OVEN AREA

Waste Water Treatment Facility At COBP





Visiontek Consultancy Services Pvt. Ltd.

(Committed For Better Environment)

(ISO 9001:2015, ISO 14001:2015 & ISO 45001:2018 Certified)



TC-7946

TEST REPORT

ULR No: TC794423000000481F

Date: 30.11.2023

Name & Address of the Customer	M/s Jindal Coke Limited, Kalinga Nagar Industrial Complex, Jajpur, Odisha		
Sample Code	2023/ST/064/S1	Date of Sampling	25.11.2023
		Sample Received on	26.11.2023
Sample Description	Source Emission	Sampling Procedure	VCSP/SOP/003, Dt. 01.08.2019
Identification by Customer	ST-1	Sampling Location	Inlet of Primary De-dusting unit
Sample Condition	Air Tight Sealed and gaseous Sample Solution Refrigerated	Sampling done by	Chitranjan Sahoo
Test Started on	26.11.2023	Test Completed on	30.11.2023

1. Chemical Testing

A. Atmospheric Pollution

A. General Information :					
1. Emission due to	Processes Dust				
2. Material of construction of stack	M. S.				
3. Shape of stack	Circular				
4. Whether stack is provided with permanent platform & Ladder	Temporary				
B. Physical Characteristics of Stack :					
1. Height of stack from ground level	-				
2. Diameter at sampling point	0.56 m				
3. Height of the sampling point from ground level	-				
4. Cross section area of sampling point	0.2462 m ²				
C. Fuel Details:					
1. Fuel used	-				
2. Fuel Consumption	-				
D. Pollution Control Devices :					
1. Details of pollution control devices attached with the stack	Bag filter				
E. Results of sampling & Analysis of Gaseous emission :					
Sl. No.	Parameters	Area of stack	Standard as per SPCB	Unit of Measurement	Analysis Results
1.	Temperature		--	⁰ K	325.0
2.	Velocity	IS 11255: Part-3, (2008) RA, 2019	--	m/sec	12.9
3.	Quantity of gas flow	IS 11255: Part-3, (2008) RA, 2019	--	Nm ³ /Hr	10483.7
4.	Particulate Matter as PM	IS 11255: Part-1 (1983), RA 2019	--	mg/Nm ³	6302.4

*** End Report***



Sibsan Mandal
(Technical Manager)



Soumen Mandal Biswal
(Authorized Signatory)

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7. The data and information (i.e., A. Atmospheric pollution 1 to 4), identified & provided by the customer, the laboratory did not provide the data & information required for the test report.

Page 01 of 01



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TC-7944

TEST REPORT

ULR No: TC794423000000482F

Date: 30.11.2023

Name & Address of the Customer	M/s Jindal Coke Limited, Kalinga Nagar Industrial Complex, Jajpur, Odisha		
Sample Code	2023/ST/064/S2	Date of Sampling	25.11.2023
		Sample Received on	26.11.2023
Sample Description	Source Emission	Sampling Procedure	VCSPL/SOP/003, Dt. 01.08.2019
Identification by Customer	ST-1	Sampling Location	Primary De-dusting stack (Outlet)
Sample Condition	Air Tight Sealed and gaseous Sample Solution Refrigerated	Sampling done by	Chitranjan Sahoo
Test Started on	26.11.2023	Test Completed on	30.11.2023

I. Chemical Testing

A. Atmospheric Pollution

A. General Information :					
1. Emission due to	Processes Dust				
2. Material of construction of stack	M. S.				
3. Shape of stack	Circular				
4. Whether stack is provided with permanent platform & Ladder	Temporary				
B. Physical Characteristics of Stack :					
1. Height of stack from ground level	30.0 m				
2. Diameter of stack at sampling point	0.9 m				
3. Height of the sampling point from ground level	12.5 m				
4. Cross section area of sampling point	0.6358 m ²				
C. Fuel Details:					
1. Fuel used	-				
2. Fuel Consumption	-				
D. Pollution Control Devices:					
1. Details of pollution control devices attached with the stack	Bag Filter				
E. Results of sampling & Analysis of Gaseous emission :					
Sl. No.	Parameters	Area of stack	Standard as per SPCB	Unit of Measurement	Analysis Results
1.	Stack Temperature		--	^o K	331
2.	Velocity	IS 11255: Part-3, (2008) RA 2019	--	m/sec	13.2
3.	Quantity of gas flow	IS 11255: Part-3, (2008) RA 2019	--	Nm ³ /Hr	27201.0
4.	Particulate Matter as PM	IS 11255: Part-1 (1985), RA 2019	100	mg/Nm ³	29.7

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TC-7944

TEST REPORT

ULR No: TC794423000000483F

Date: 30.11.2023

Name & Address of the Customer	M/s Jindal Coke Limited, Kalinga Nagar Industrial Complex, Jajpur, Odisha		
Sample Code	2023/ST/064/S3	Date of Sampling	25.11.2023
		Sample Received on	26.11.2023
Sample Description	Source Emission	Sampling Procedure	VCSPL/SOP/003, Dt. 01.08.2019
Identification by Customer	ST-1	Sampling Location	Inlet of Secondary De-dusting unit
Sample Condition	Air Tight Sealed and gaseous Sample Solution Refrigerated	Sampling done by	Chittoranjan Sahoo
Test Started on	26.11.2023	Test Completed on	30.11.2023

I. Chemical Testing

A. Atmospheric Pollution

A. Information :					
1. Emission due to	Processes Dust				
2. Material of construction of stack	M. S.				
3. Shape of stack	Circular				
4. Whether stack is provided with permanent platform & Ladder	Temporary				
B. Physical Characteristics of Stack :					
1. Height of stack from ground level	-				
2. Diameter at sampling point	0.56 m				
3. Height of the sampling point from ground level	-				
4. Cross section area of sampling point	0.2462 m ²				
C. Fuel Details:					
1. Fuel used	-				
2. Fuel Consumption	-				
D. Pollution Control Devices :					
1. Details of pollution control devices attached with the stack	Bag filter				
E. Results of sampling & Analysis of Gaseous emission :					
Sl. No.	Parameters	Area of stack	Standard as per SPCB	Unit of Measurement	Analysis Results
1.	Temperature		--	^o K	328.0
2.	Velocity	IS 11255: Part-3, (2008) RA 2019	--	m/sec.	11.6
3.	Quantity of gas flow	IS 11255: Part-3, (2008) RA 2019	--	Nm ³ /Hr	9340.9
4.	Particulate Matter as PM	IS 11255: Part-1 (1985), RA 2019	--	mg/Nm ³	4886.4

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Page 01 of 01



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TC-7944

TEST REPORT

ULR No: TC794423000000484F

Date: 30.11.2023

Name & Address of the Customer	M/s Jindal Coke Limited, Kalinga Nagar Industrial Complex, Jajpur, Odisha		
Sample Code	2023/ST/064/S4	Date of Sampling	25.11.2023
Sample Description	Source Emission	Sample Received on	26.11.2023
Identification by Customer	ST-1	Sampling Procedure	VCSPL/SOP/003, Dt. 01/08/2019
Sample Condition	Air Tight Sealed and gaseous Sample Solution Refrigerated	Sampling Location	Secondary De-dusting stack (Outlet)
Test Started on	26.11.2023	Sampling done by	Chituranjan Sahoo
		Test Completed on	30.11.2023

1. Chemical Testing

A. Atmospheric Pollution

A. General Information :					
1. Emission due to	Processes Dust				
2. Material of construction of stack	M. S.				
3. Shape of stack	Circular				
4. Whether stack is provided with permanent platform & Ladder	Temporary				
B. Physical Characteristics of Stack :					
1. Height of stack from ground level	30.0 m				
2. Diameter of stack at sampling point	0.9 m				
3. Height of the sampling point from ground level	12.5 m				
4. Cross Section area of sampling point	0.6358 m ²				
C. Fuel Details:					
1. Fuel used	-				
2. Fuel Consumption	-				
D. Pollution Control Devices :					
1. Details of pollution control devices attached with the stack	Bag Filter				
E. Results of sampling & Analysis of Gaseous emission :					
Sl. No.	Parameters	Area of stack	Standard as per SPCB	Unit of Measurement	Analysis Results
1.	Stack Temperature		--	^o K	329
2.	Velocity	IS 11255: Part-3, (2008) RA 2019	--	m/sec	12.2
3.	Quantity of gas flow	IS 11255: Part-3, (2008) RA 2019	--	Nm ³ /Hr	25295.2
4.	Particulate Matter as PM	IS 11255: Part-1 (1985), RA 2019	100.0	mg/Nm ³	24.3

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- The laboratory's responsibility under this report is limited to; proven willful negligence.
- Decision rule applied whenever the requirements/specification provided by customer/standard requirement.
- The data and information (i.e., A. Atmospheric pollution 1 to 4), identified & provided by the customer, the laboratory did not provide the data & information required for the test report.



Visiontek Consultancy Services Pvt. Ltd.

(Committed For Better Environment)

(ISO 9001:2015, ISO 14001:2015 & ISO 45001:2018 Certified)



TC-7944

TEST REPORT

ULR No: TC794423000000485F

Date: 30.11.2023

Name & Address of the Customer	M/s Jindal Coke Limited, Kalinga Nagar Industrial Complex, Jajpur, Odisha		
Sample Code	2023/ST/062/S1	Date of Sampling	24.11.2023
Sample Description	Source Emission	Sample Received on	25.11.2023
Identification by Customer	ST-1	Sampling Procedure	VCSPL/SOP/003, Dt. 01.08.2019
Sample Condition	Air Tight Sealed and gaseous Sample Solution Refrigerated	Sampling Location	Inlet of Coke De-dusting unit
Test Started on	25.11.2023	Sampling done by	Chitboranjan Sahoo
		Test Completed on	30.11.2023

1. Chemical Testing

A. Atmospheric Pollution

A. General Information :					
1. Emission due to	Processes Dust				
2. Material of construction of stack	M. S.				
3. Shape of stack	Circular				
4. Whether stack is provided with permanent platform & Ladder	Temporary				
B. Physical Characteristics of Stack :					
1. Height of stack from ground level	-				
2. Diameter at sampling point	1.8 m				
3. Height of the sampling point from ground level	-				
4. Cross section area of sampling point	2.5434 m ²				
C. Fuel Details:					
1. Fuel used	-				
2. Fuel Consumption	-				
D. Pollution Control Devices:					
1. Details of pollution control devices attached with the stack	Bag filter				
E. Results of sampling & Analysis of Gaseous emission :					
Sl. No.	Parameters	Area of stack	Standard as per SPCB	Unit of Measurement	Analysis Results
1.	Temperature		--	^o K	331.0
2.	Velocity	IS 11255: Part-3, (2008) RA 2019	--	m/sec	12.3
3.	Quantity of gas flow	IS 11255: Part-3, (2008) RA 2019	--	Nm ³ /Hr	101393.6
4.	Particulate Matter as PM	IS 11255: Part-1 (1985), RA 2019	--	mg/Nm ³	7904.2

*** End Report***



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- The data and information (i.e., A. Atmospheric pollution 1 to 4), identified & provided by the customer, the laboratory did not provide the data & information required for the test report.

Page 01 of 01



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TC-7844

TEST REPORT

ULR No: TC794423000000486F

Date: 30.11.2023

Name & Address of the Customer	M/s Jindal Coke Limited, Kalinga Nagar Industrial Complex, Jajpur, Odisha		
Sample Code	2023/ST/062/S2	Date of Sampling	24.11.2023
		Sample Received on	25.11.2023
Sample Description	Source Emission	Sampling Procedure	VCSPL/SOP/003, Dt. 01.08.2019
Identification by Customer	ST-1	Sampling Location	Coke De-dusting stack (Outlet)
Sample Condition	Air Tight Sealed and gaseous Sample Solution Refrigerated	Sampling done by	Chitranjan Sahoo
Test Started on	25.11.2023	Test Completed on	30.11.2023

I. Chemical Testing

A. Atmospheric Pollution

A. General Information :					
1. Emission due to	Processes Dust				
2. Material of construction of stack	M. S.				
3. Shape of stack	Circular				
4. Whether stack is provided with permanent platform & Ladder	Yes				
B. Physical Characteristics of Stack :					
1. Height of stack from ground level	30.0 m				
2. Diameter of stack at sampling point	1.8 m				
3. Height of the sampling point from ground level	19.7 m				
4. Cross Section area of sampling point	2.5434 m ²				
C. Fuel Details:					
1. Fuel used	-				
2. Fuel Consumption	-				
D. Pollution Control Devices :					
1. Details of pollution control devices attached with the stack	Bag Filter				
E. Results of sampling & Analysis of Gaseous emission :					
Sl. No.	Parameters	Area of stack	Standard as per SPCB	Unit of Measurement	Analysis Results
1.	Stack Temperature		--	°K	335
2.	Velocity	IS 11255: Part-3, (2008) RA 2019	--	m/sec	14.6
3.	Quantity of gas flow	IS 11255: Part-3, (2008) RA 2019	--	Nm ³ /Hr	118916.3
7.	Particulate Matter as PM	IS 11255: Part-1 (1985), RA 2019	100.0	mg/Nm ³	28.4

*** End Report***



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CER Compliance report - JCL

Major Issue Raised	Action Plan	Time Line for Execution			Total Budget (Lakhs)	Amount 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.	Development of park with construction of tennis court at village panikoili. Status: The development Work has been successfully Completed.	Development of park at village Telibahali by construction of boundary wall, landscaping, Temple Development.	Continuation of Development work of park at village Telibahali by arrangement of permanent entire walkway, sitting arrangement.	180	40
Development of public community hall	New establishment of community hall at 5 nos. of villages.	Set up in villages namely: Khurunti Malikasahi by providing new building with electrification.	Set up in villages namely: Ostapal by providing new building with electrification. Status: Instead of Community Centre as per requested by villagers, Khudurukuni Puja mandap with Electrification has been done.	Set up in villages namely: Karadapal, Suanlo by providing new Building with electrification. Status: Initiative taken to commence the Work.	60	20
Plantation Activities in peripheral villages	Plantation drive at five numbers of village.	Village: Solei Actual area and number of tress to be decided based survey and discussion with local authorities. Report will be sent to MoEF & CC as a part of Half Yearly EC Compliance.	Village: Marutikar, Danagadi Actual area and number of tress to be decided based survey and discussion with local authorities. Report will be sent to MoEF & CC as a part of Half Yearly EC Compliance.	Village: Patrangi, Mantira: Actual area and number of tress to be decided based survey and discussion with local authorities. Report will be sent to MoEF & CC as a part of Half Yearly EC Compliance.	30	9
Medical Facilities						
Provision of health care facilities	Establishment of Homeopathic clinic at six numbers of viilages.	At village: Kumbirgadia, Marutikar Construction of homeopathic clinic along with supply of essential medicines. Status: Establishment of Homeopathy clinic at Kumbhiragadia and Classroom at marutikar has been successfully Completed.	At village: Mantira, Olala Construction of building for homeopathic clinic along with supply of essential medicines. Status: The Work is in progress.	At village: Tikara, Danagadi Construction of building for homeopathic clinic along with supply of essential medicines.	70	40
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% directemployment will be through local employment.			-	
Education						
Renovation/Construction of additional new 2 Nos. of classrooms and electrification with sanitation facility at four nos. school.	At village : Danagadi Status: Classroom and toilet of Sisumandir at Danagadi has been completed.	At village : Kharadi, Kankadajhar:	At village : JK Road	60	35	
Facilitate students in providing special training on Stainless Steel related works to make knowledgeable in getting jobs in steel sector.	Special training on Steel Stainless related works to student on nearby village at Ragadi Polytechnic College	Shall Continue	Shall Continue	15		
Women Empowerment						
Strengthening of women empowerment measures in peripheral villages.	Focus on various livelihood programme for women empowerment in peripheral villages.	Livelihood promotion that includes tailoring, beauty parlor, training, skill development training at village mantira. Status: Its ongoing as committed	Livelihood promotion that includes dairy farming, poultry, goatery, wheat grinding at village Jakhapura. Status: Its ongoing as committed	Establishment of skill development center to provide training in Computer education, electrical, mechanical at village Trijanga (Dangadi). Status: Its ongoing as committed	150	35
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 waste water discharge to be ensured.	Effective pollution control equipments with interlocking facility 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.			As per EMP budget of plant	
Total				565	179	

GHG Emission inventory and Decarbonization initiatives

The unit is disclosing publicly the GHG emission level as Jindal group and the same is vetted by M/s. PWC for the financial year 2022-23.

However specific to Jindal Coke Limited the GHG inventory stands as below:

GHG Emission Intensity (TCO₂e/T)		
FY 2022-23	Scope 1	0.177
	Scope 2	0.073
	Total	0.25

De carbonization project

Jindal Coke Limited has undertaken various de carbonization projects to further bring down the GHG intensity.

The major initiative undertaken as capital project is to opt for CDQ option for quenching of coke in which 65 TPH WHRB would be installed for power generation for its captive use. The said project is presently under construction stage. This would help in achieving NET ZERO GHG Emission under Scope-2 which would help us in our march towards achieving carbon neutral for JCL.

Adoption of Villages under JCL

Name of the villages:

- 1- SIARIA
- 2- BAINSIPUR
- 3- HUDISAH
- 4- KANTIPUR

Facilities provided/Infrastructure developed

- Drinking water supply in all above villages
- School building extension to impact better education.
- Community Centre established in Bainsipur, Hudisahi and Kantipur.
- Common Medical facility at a central location for the cluster of 4 villages by establishing static Clinic at Hudisahi.
- Sanitation like road and drain cleaning in the villages
- Street light for all 4 villages.
- Teachers provided in the school to impart better education.
- Total 10 No's of SHG created and 4 Nos of SHG adopted.
- All SHGs have received comprehensive training in food processing, phenyl making, mushroom cultivation, and poultry. Additionally, JSL established bank and market linkages for all SHGs.
- Tailoring Training is provided at Asmita Tailoring Centre and Computer education training is being provided to the youth in those 4 Villages at JIET.
- Awareness Program on vector born disease, TB, Sunstroke and other diseases.
- Village library facility provided at 4 villages, daily Newspaper, magazine, competitive books and other skill development books are being provided.

Newspaper cutting

JINDAL **ସର୍ବସାଧାରଣ ସୂଚନା**

ଏତଦ୍ୱାରା ସର୍ବସାଧାରଣଙ୍କ ଅବଗତ ନିମନ୍ତେ ସୂଚିତ କରାଯାଉଛି କି ମେସର୍ସ ଜିନ୍ଦଲ କୋକ ଲିମିଟେଡ୍ (ଜେସିଏଲ) ଏହାର କୋକ ଉତ୍ପାଦନ କ୍ଷମତା ୦.୪୨୫ MTPA ରୁ ୦.୭୮ MTPA ସମ୍ପ୍ରସାରଣ ନିମନ୍ତେ ଏକ ନୂତନ ଷ୍ଟାମ୍ପ ଚାର୍ଜ ସହିତ ବାଲପ୍ରତ୍ୟୁ ପୁନଃରୁଦ୍ଧାର ପଦ୍ଧତି କୋକ ଓଭନ ବ୍ୟାଚେରା ପ୍ରାପନ କରିବା ନିମନ୍ତେ ଜଙ୍ଗଲ, ପରିବେଶ ଓ ପାଗ ପରିବର୍ତ୍ତନ ମନ୍ତ୍ରାଳୟ, ଦୁଆବିଲ୍ଲାଙ୍କ ଠାରୁ ପରିବେଶ ମଞ୍ଜୁରୀ ପତ୍ର ସଂଖ୍ୟା IA-J-11011/111/2018-IA-II(I), ତାରିଖ ୦୯.୦୫.୨୦୨୨ରେ ହାସଲ କରିଅଛି । ଏହି ପ୍ରକଳ୍ପଟି କଳିଙ୍ଗ ନଗର ଶିଳ୍ପାଞ୍ଚଳ, ଦାନଗଡ଼ି, ଜିଲ୍ଲା- ଯାଜପୁର- ୭୫୫୦୨୬ ଠାରେ ଅବସ୍ଥିତ । ମନ୍ତ୍ରାଳୟ ପ୍ରମାଣ ପତ୍ରର ନକଲ ରାଜ୍ୟ ପ୍ରଦୂଷଣ ନିୟନ୍ତ୍ରଣ ବୋର୍ଡ଼ ଠାରେ ଉପଲବ୍ଧ ହେବା ସହିତ ଜଙ୍ଗଲ, ପରିବେଶ ଓ ପାଗ ପରିବର୍ତ୍ତନ ମନ୍ତ୍ରାଳୟର ୱେବସାଇଟ୍ <http://envfor.nic.in> ରେ ଉପଲବ୍ଧ ହୋଇପାରିବ ।

S/d- ନିର୍ଦ୍ଦେଶକ, ମେସର୍ସ ଜିନ୍ଦଲ କୋକ ଲିମିଟେଡ୍

Public Notice on grant of Environment Clearance in Odia newspaper @ Prameya, dated 14.05.2022

JINDAL PUBLIC NOTICE

It is being brought to the notice of all that M/s Jindal Coke Limited (JCL) has obtained Environment Clearance from Ministry of Environment, Forest & Climate Change, New Delhi; vide MoEFCC 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 within the existing plant located at Kalinga Nagar Industrial Complex (KNIC), Danagadi, Dist.- Jajpur-755026. The copies of the clearance letter are available with SPCB, Odisha and may also be seen at Website of the Ministry of Environment, Forest & Climate Change at <http://envfor.nic.in>.

Sd/- Director
M/s Jindal Coke Limited

Public Notice on grant of Environment Clearance in English news paper @ The New Indian Express, dated 14.05.2022

Environmental Monitoring Report for the Period April-2023 to September-2023

INDEX

- A. Stack Analysis
- B. Ambient Air Quality
- C. Fugitive Visible Emission
- D. Noise Monitoring
- E. Ground Water Quality
- F. Treated Effluent Quality At COBP PETP- OUTLET
- G. Fugitive Air Emission

A. Stack Analysis:

Particulate Matter (PM):

Monitoring Results of Stack Analysis								
Sl. No.	Sampling Stations	Concentration of Particulate Matter (mg/Nm ³)						Permissible limits as per SPCB
		Apr. - 23	May - 23	June - 23	July -23	Aug. - 23	Sept. - 23	
1	Coke Oven Main Stack	46.2	42.6	41.8	40.2	39.8	38.8	50

Sulphur Dioxide (SO₂):

Monitoring Results of Stack Analysis								
Sl. No.	Sampling Stations	Concentration of Sulphur Dioxide (mg/Nm ³)						Permissible limits as per SPCB
		Apr. - 23	May - 23	June - 23	July -23	Aug. - 23	Sept. - 23	
1	Coke Oven Main Stack	438.6	418.6	402.6	452.1	476.8	426.7	800

Oxide of Nitrogen (NO_x):

Monitoring Results of Stack Analysis								
Sl. No.	Sampling Stations	Concentration of Oxide of Nitrogen (mg/Nm ³)						Permissible limits as per SPCB
		Apr. - 23	May - 23	June - 23	July -23	Aug. - 23	Sept. - 23	
1	Coke Oven Main Stack	196.2	204.2	178.4	228.6	238.1	206.8	500

Carbon Monoxide Oxide as (CO)

Monitoring Results of Stack Analysis								
Sl. No.	Sampling Stations	Concentration of Carbon Monoxide Oxide (PPM)						Permissible limits as per SPCB
		Apr. - 23	May - 23	June - 23	July -23	Aug. - 23	Sept. - 23	
1	Coke Oven Main Stack	540.0	482.0	434.2	468.0	419.6	418.2	-

CO emission load per ton of Coke

Monitoring Results of Stack Analysis								
Sl. No.	Sampling Stations	CO emission load per ton of Coke (Kg/Ton)						Permissible limits as per SPCB
		Apr. - 23	May - 23	June - 23	July -23	Aug. - 23	Sept. - 23	
1	Coke Oven Main Stack	-	1.6	1.5	1.1	1.8	1.4	3

B. Ambient Air Monitoring Report:

AAQ near Nursery

Sl. No.	Parameters	Monthly Average concentration						Permissible limits as per SPCB
		Apr. - 23	May - 23	June - 23	July -23	Aug. - 23	Sept. - 23	
1	PM ₁₀ µg/m ³	74.6	74.2	76.8	74.5	71.8	74.6	100(24 Hrs)
2	PM _{2.5} µg/m ³	35.2	34.4	34.8	28.8	27.8	27.2	60 (24 Hrs)
3	SO ₂ µg/m ³	23.2	22.1	22.6	19.7	17.8	17.4	80(24 Hrs)
4	NO _x µg/m ³	17.8	17.2	18.2	17.5	16.5	16.1	80(24 Hrs)
NB: Parameters such as Lead, Benzene, Benzopyrene, Arsenic & Nickel found to be below detection limit (BDL).								

AAQ near Security Barrack

Sl. No.	Parameters	Monthly Average concentration						Permissible limits as per SPCB
		Apr. - 23	May - 23	June - 23	July -23	Aug. - 23	Sept. - 23	
1	PM ₁₀ µg/m ³	83.6	80.7	86.2	80.2	82.2	74.2	100(24 Hrs)
2	PM _{2.5} µg/m ³	40.8	39.6	40.8	38.4	36.4	28.5	60 (24 Hrs)
3	SO ₂ µg/m ³	28.1	27.0	28.2	26.4	24.8	23.4	80(24 Hrs)
4	NO _x µg/m ³	21.4	20.4	20.8	19.8	19.0	19.2	80(24 Hrs)
NB: Parameters such as Lead, Benzene, Benzopyrene, Arsenic & Nickel found to be below detection limit (BDL).								

AAQ near Admin. Building

Sl. No.	Parameters	Monthly Average concentration						Permissible limits as per SPCB
		Apr. - 23	May - 23	June - 23	July -23	Aug. - 23	Sept. - 23	
1	PM ₁₀ µg/m ³	80.6	80.1	84.2	82.1	81.8	84.8	100(24 Hrs)
2	PM _{2.5} µg/m ³	39.6	39.2	40.2	39.6	38.1	41.3	60 (24 Hrs)
3	SO ₂ µg/m ³	27.2	26.8	27.6	26.7	24.4	26.4	80(24 Hrs)
4	NO _x µg/m ³	20.4	19.8	20	18.8	18.2	19.7	80(24 Hrs)
NB: Parameters such as Lead, Benzene, Benzopyrene, Arsenic & Nickel found to be below detection limit (BDL).								

AAQ near Silo DCS Panel Room

Sl. No.	Parameters	Monthly Average concentration						Permissible limits as per NAAQS, 2009
		Apr. - 23	May - 23	June - 23	July -23	Aug. - 23	Sept. - 23	
1	PM ₁₀ µg/m ³	81.2	80.4	77.4	76.5	78.2	76.8	100(24 Hrs)
2	PM _{2.5} µg/m ³	40.1	39.8	35.2	34.2	36.2	36.5	60 (24 Hrs)
3	SO ₂ µg/m ³	27.8	26.9	23.4	22.1	23.2	24.2	80(24 Hrs)
4	NO _x µg/m ³	20.8	20.0	18.6	17.4	17.8	19.1	80(24 Hrs)
NB: Parameters such as Lead, Benzene, Benzopyrene, Arsenic & Nickel found to be below detection limit (BDL).								

C. Fugitive Visual Emission:

Sl. No.	Parameters	Monthly Average concentration						Standard
		Apr. - 23	May - 23	June - 23	July -23	Aug. - 23	Sept. - 23	
1	Leakage from Door (PLD)	3.75	2.92	3.75	3.75	3.75	3.75	5
2	Leakage from Charging Lids (PLL)	0.52	0.52	0.52	0.52	0.52	0.52	1
3	Leakage from AP Covers (PLO)	3.13	1.56	3.13	2.34	3.13	2.34	4
4	Charging Emission (Second/ Charge (HPLA)	12.0	12.0	12.0	12.0	14.0	12.0	16
5	Carbon Monoxide Kg/MT of Coke product	2.4	2.6	2.5	2.3	2.4	2.4	3

D. Noise Monitoring Report:

i. Ambient Noise Monitoring Data

Noise Level Monitoring Results at Different Locations of the Plant								
Sl. No.	Location	Monthly Average Noise Level						Permissible limits as per CPCB
		Apr. - 23	May - 23	June - 23	July - 23	Aug. - 23	Sept. - 23	
DAY TIME								
1.	At Nursery	68.6	69.2	68.2	70.2	69.4	69.7	75 dB(A)
2.	At Security Barrack	72.4	70.8	72.4	72.4	71.8	71.3	
3.	At Admin. Building	72.1	69.7	70.2	71.4	72.4	72.4	
4.	At Silo DCS panel room	69.9	69.1	68.8	64.8	67.8	67.8	
NIGHT TIME								
1.	At Nursery	57.5	55.6	55.1	54.6	52.4	56.8	70 dB(A)
2.	At Security Barrack	59.4	58.2	58.6	57.3	59.1	60.3	
3.	At Admin. Building	55.9	55.2	56.8	54.6	55.3	55.8	
4.	At Silo DCS panel room	55.4	55	55.4	52.7	53.8	54.6	

ii. Work Zone Noise Monitoring Data

Noise Level Monitoring Results at Different Locations of the Plant								
Sl. No.	Location	Monthly Average Noise Level (Leq in dB(A))						Permissible limits as per Factory Act
		Apr. - 23	May - 23	June - 23	July - 23	Aug. - 23	Sept. - 23	
1	Near Admin. Building (CO)	78.8	79.1	78.4	77.2	77.8	74.6	85 dB(A)
2	Near By product area (CO)	78.4	78.2	76.8	70.1	75.6	73.7	
3	Near Secondary Crusher area (CO)	78.3	79.3	78.8	71.2	76.6	78.1	
4	Near PETP area (CO)	80.6	80.2	80.0	78.4	78.6	79.8	
5	Near Battery coal tower area (CO)	80.2	79.9	76.8	74.5	76.1	76.4	

E. Ground Water Quality:

Table E1: August'23

Sl. No.	Parameter	Limit as per IS 10500 :2012		Date of sampling: 13.08.2023	
		Acceptable Limit	Permissible limit	GW1	GW2
1	Colour, Hazen Units	5	15	<5	<5
2	Odour	Agreeable	Agreeable	Agreeable	Agreeable
3	pH	6.5 - 8.5	6.5 - 8.5	7.7	7.1
4	Turbidity, NTU	1	5	<1.0	<1.0
5	Total dissolve solid, mg/l	500	2000	159.4	254.6
6	Total Hardness (as CaCO ₃), mg/l	200	600	58.3	93.2
7	Iron (as Fe), mg/l	1.0	1.0	0.2	0.5
8	Chloride (as Cl), mg/l	250	1000	64.2	106.7
9	Residual Free Chlorine, mg/l	0.2	1.0	<0.1	<0.1
10	Fluoride (as F), mg/l	1.0	1.5	<0.1	<0.1
11	Calcium (as Ca), mg/l	75	200	34.8	58.1
12	Magnesium(as Mg), mg/l	30	100	18.8	28.3
13	Copper(as Cu), mg/l	0.05	1.5	<0.02	<0.02
14	Manganese (as Mn), mg/l	0.1	0.3	<0.05	<0.05
15	Sulphate (as SO ₄), mg/l	200	400	9.8	22.2
16	Nitrate (as NO ₃), mg/l	45	45	18.6	21.2

17	Phenol (as C ₆ H ₅ OH), mg/l	0.001	0.002	< 0.002	< 0.002
18	Mercury,(as Hg), mg/l	0.001	0.001	<0.001	<0.001
19	Cadmium (as Cd), mg/l	0.003	0.003	<0.01	<0.01
20	Selenium (as Se), mg/l	0.01	0.01	< 0.001	< 0.001
21	Arsenic (as As), mg/l	0.01	0.05	< 0.004	< 0.004
22	Cyanide (as CN), mg/l	0.05	0.05	<0.02	<0.02
23	Lead (as Pb), mg/l	0.01	0.01	<0.01	<0.01
24	Zinc (as Zn), mg/l	5	15	<0.01	<0.01
25	Anionic Detergents (as MBAS), mg/l	0.2	1.0	<0.1	<0.1
26	Total Chromium (as Cr), mg/l	0.05	0.05	< 0.05	<0.05
27	Mineral Oil, mg/l	0.5	0.5	< 0.2	< 0.2
28	Total Alkalinity(as CaCO ₃), mg/l	200	600	102.3	161.4
29	Aluminium (as Al), mg/l	0.03	0.2	< 0.01	< 0.01
30	Boron (as B), mg/l	0.5	1.0	< 0.1	< 0.1
31	Nickel (as Ni), mg/l	0.02	0.02	<0.02	<0.02
32	Molybdenum (as Mo), mg/l	0.07	0.07	<0.05	<0.05
33	Coliform Organisms, (MPN/100ml)	Nil	Nil	Absent	Absent
34	E Coli (MPN/100 ml)	Nil	Nil	Absent	Absent

N.B:- GW1: Tube well near Manpur Hauling Colony, GW2: Tube well near Visa Railway Crossing

F. Treated Effluent Quality At COBP – PETP OUTLET:

Table F₁:

Sl. No.	PARAMETER	Norm as per Consent Order	April -2023	May -2023
			Date of Sampling – 15.04.2023	Date of Sampling – 31.05.2023
1	Colour & Odour	Colourless & Odourless	<5 & Agreeable	<5 & Agreeable
2	Suspended Solid, mg/l	100	42.3	48.7
3	Total Dissolved Solids, mg/l	2100	684.8	623.6
4	pH Value	5.5 to 9.0	7.2	7.5
5	Temperature, 0C	Shall not exceed by + 50C	26.4	27.2
6	Oil & grease, mg/l	10	5.8	5.2
7	Total Res. Chlorine, mg/l	1	ND	ND
8	BOD (3 days at 270C), mg/l	30	14.0	14.8
9	COD, mg/l	250	58.6	62.8
10	Hexavalent chromium (as Cr ⁶⁺), mg/l	0.1	<0.01	<0.01

11	Cyanide (as CN), mg/l	0.2	<0.01	<0.01
12	Fluoride (as F), mg/l	2	<0.1	<0.1
13	Sulphide (as S) mg/l	2	<1.0	<1.0
14	Phenol (as C ₆ H ₅ OH), mg/l	1	<0.05	<0.05
15	Iron (as Fe), mg/l	3	1.8	2.0
16	Nitrate Nitrogen, mg/l	10	6.8	7.2
17	Dissolved Phosphate, mg/l	5	0.6	0.6
18	Arsenic, mg/l	0.2	< 0.004	< 0.004
19	Lead, mg/l	0.1	<0.01	<0.01
20	Zinc, mg/l	5	<0.01	<0.01
21	Mercury, mg/l	0.01	<0.004	<0.004
22	Total Chromium, mg/l	2	0.1	0.1
23	Copper, mg/l	3	<0.02	<0.02
24	Nickel, mg/l	3	<0.05	<0.05
25	Manganese, mg/l	2	<0.05	<0.05
26	Vanadium, mg/l	0.2	<0.02	<0.2
27	Selenium, mg/l	0.05	<0.001	<0.001
28	Bio-assay test	90% survival of fish after 96 hr. in 100% effluent	92%	93%

Table F₂:

Sl. No.	PARAMETER	Norm as per Consent Order	June - 2023	July - 2023
			Date of Sampling - 13.06.2023	Date of Sampling - 13.07.2023
1	Colour & Odour	Colourless & Odourless	<5 & Agreeable	<5 & Agreeable
2	Suspended Solid, mg/l	100	51.2	47.6
3	Total Dissolved Solids, mg/l	2100	682.1	618.3
4	pH Value	5.5 to 9.0	7.2	7.6
5	Temperature, 0C	Shall not exceed by + 50C	27.2	26.8
6	Oil & grease, mg/l	10	5.5	6.2
7	Total Res. Chlorine, mg/l	1	ND	ND
8	BOD (3 days at 270C), mg/l	30	14.4	15.8
9	COD, mg/l	250	60.4	82.2
10	Hexavalent chromium (as Cr ⁶⁺), mg/l	0.1	<0.01	<0.01
11	Cyanide (as CN), mg/l	0.2	<0.01	<0.02
12	Fluoride (as F), mg/l	2	<0.1	<0.1
13	Sulphide (as S) mg/l	2	<1.0	<1.0
14	Phenol (as C ₆ H ₅ OH), mg/l	1	<0.05	<0.05
15	Iron (as Fe), mg/l	3	1.8	2.0
16	Nitrate Nitrogen, mg/l	10	6.8	5.8
17	Dissolved Phosphate, mg/l	5	0.8	0.6
18	Arsenic, mg/l	0.2	< 0.004	< 0.004
19	Lead, mg/l	0.1	<0.01	<0.01
20	Zinc, mg/l	5	<0.01	<0.01
21	Mercury, mg/l	0.01	<0.004	<0.004
22	Total Chromium, mg/l	2	0.1	0.12

23	Copper, mg/l	3	<0.02	<0.02
24	Nickel, mg/l	3	<0.05	<0.05
25	Manganese, mg/l	2	<0.05	<0.05
26	Vanadium, mg/l	0.2	<0.2	<0.2
27	Selenium, mg/l	0.05	<0.001	<0.001
28	Bio-assay test	90% survival of fish after 96 hr. in 100% effluent	92%	92%

Table F₃:

Sl. No.	PARAMETER	Norm as per Consent Order	Aug. - 2023	Sept. - 2023
			Date of Sampling - 12.08.2023	Date of Sampling - 25.09.2023
1	Colour & Odour	Colourless & Odourless	<5 & Agreeable	<5 & Agreeable
2	Suspended Solid, mg/l	100	48.6	47.9
3	Total Dissolved Solids, mg/l	2100	680.6	711.6
4	pH Value	5.5 to 9.0	7.4	7.6
5	Temperature, 0C	Shall not exceed by + 50C	26.2	26.3
6	Oil & grease, mg/l	10	5.6	5.5
7	Total Res. Chlorine, mg/l	1	ND	ND
8	BOD (3 days at 270C), mg/l	30	15.3	17.2
9	COD, mg/l	250	62.4	86.4
10	Hexavalent chromium (as Cr6+), mg/l	0.1	<0.01	<0.01
11	Cyanide (as CN), mg/l	0.2	<0.02	<0.02
12	Fluoride (as F), mg/l	2	<0.1	<0.1
13	Sulphide (as S) mg/l	2	<1.0	<0.1
14	Phenol (as C6H5OH), mg/l	1	<0.05	<0.05
15	Iron (as Fe), mg/l	3	1.6	1.5
16	Nitrate Nitrogen, mg/l	10	7.1	7.2
17	Dissolved Phosphate, mg/l	5	0.7	0.6
18	Arsenic, mg/l	0.2	< 0.004	< 0.004
19	Lead, mg/l	0.1	<0.01	<0.01
20	Zinc, mg/l	5	<0.01	<0.01
21	Mercury, mg/l	0.01	<0.004	<0.004
22	Total Chromium, mg/l	2	0.1	0.1
23	Copper, mg/l	3	<0.01	<0.02
24	Nickel, mg/l	3	<0.05	<0.05
25	Manganese, mg/l	2	<0.05	<0.055
26	Vanadium, mg/l	0.2	<0.2	<0.2
27	Selenium, mg/l	0.05	<0.001	<0.001
28	Bio-assay test	90% survival of fish after 96 hr. in 100% effluent	92%	92%

G. Fugitive Air Emission

Monitoring Results of Fugitive Air Emission								
Sl. No.	Sampling Stations	Concentration of Particulate Matter Below 10 micron as PM ₁₀ (µg/m ³)						Permissible limits as per CPCB
		Apr.-23	May.-23	Jun.-23	Jul.-23	Aug. -23	Sept. -23	
1	Near Secondary Crusher area of COBP	784.3	734.6	714.5	698.4	764.2	717.6	4000
2	Near Booster Control Room of COBP	794.1	755.8	735.8	712.3	742.9	721.4	
3	Near Battery Coal Tower area of COBP	806.7	782.3	698.7	684.5	627.7	704.6	

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

Location - Near Nursery

Sl. No.	Parameters	Monthly Average concentration						Permissible limits as per SPCB
		April'23	May'23	June'23	July'23	Aug'23	Sept'23	
1	PM ₁₀ (µg/m ³)	58.82	40.12	41.69	45.01	53.82	37.84	100(24 Hrs)
2	PM _{2.5} (µg/m ³)	33.21	30.05	28.84	20.90	30.75	22.38	60 (24 Hrs)
3	SO ₂ (µg/m ³)	31.39	28.55	34.58	37.60	27.32	30.76	80(24 Hrs)
4	NO _x (µg/m ³)	15.75	13.45	14.25	12.53	12.29	13.27	80(24 Hrs)
5	CO (µg/m ³)	1.45	1.07	0.75	0.53	0.48	0.59	02 (08 Hrs)

Location - Near Security Barrack

Sl. No.	Parameters	Monthly Average concentration						Permissible limits as per SPCB
		April'23	May'23	June'23	July'23	Aug'23	Sept'23	
1	PM ₁₀ (µg/m ³)	53.76	42.78	43.36	36.09	63.61	21.35	100(24 Hrs)
2	PM _{2.5} (µg/m ³)	32.17	26.64	22.19	15.47	26.30	18.58	60 (24 Hrs)
3	SO ₂ (µg/m ³)	24.21	23.69	23.05	22.39	23.30	25.49	80(24 Hrs)
4	NO _x (µg/m ³)	30.94	26.04	26.01	26.35	31.17	34.20	80(24 Hrs)
5	CO (µg/m ³)	0.44	0.26	0.28	0.18	0.27	0.23	02 (08 Hrs)

Monitoring Report (April, 2023 –September, 2023)



Location - Near CPP

Sl. No.	Parameters	Monthly Average concentration						Permissible limits as per SPCB
		April'23	May'23	June'23	July'23	Aug'23	Sept'23	
1	PM ₁₀ (µg/m ³)	49.00	38.65	58.74	50.68	35.21	27.48	100(24 Hrs)
2	PM _{2.5} (µg/m ³)	13.88	12.91	14.52	23.62	24.54	24.42	60 (24 Hrs)
3	SO ₂ (µg/m ³)	26.19	27.42	29.14	28.29	29.50	31.08	80(24 Hrs)
4	NO _x (µg/m ³)	21.60	21.49	21.59	21.45	21.48	21.47	80(24 Hrs)
5	CO (µg/m ³)	0.70	0.57	0.50	0.42	0.40	0.51	02 (08 Hrs)

Location - Near Tata Corner

Sl. No.	Parameters	Monthly Average concentration						Permissible limits as per SPCB
		April'23	May'23	June'23	July'23	Aug'23	Sept'23	
1	PM ₁₀ (µg/m ³)	33.69	51.10	41.19	27.40	53.21	30.73	100(24 Hrs)
2	PM _{2.5} (µg/m ³)	14.12	20.58	10.48	17.44	26.71	24.96	60 (24 Hrs)
3	SO ₂ (µg/m ³)	31.29	30.17	32.53	35.57	33.13	33.92	80(24 Hrs)
4	NO _x (µg/m ³)	10.75	11.12	10.56	10.66	11.05	11.06	80(24 Hrs)
5	CO (µg/m ³)	0.45	0.33	0.35	0.31	0.24	0.28	02 (08 Hrs)



Location - Near Admin Building

Sl. No.	Parameters	Monthly Average concentration						Permissible limits as per SPCB
		April'23	May'23	June'23	July'23	Aug'23	Sept'23	
1	PM ₁₀ (µg/m ³)	-	-	-	-	59.82	67.47	100(24 Hrs)
2	PM _{2.5} (µg/m ³)	-	-	-	-	20.81	21.86	60 (24 Hrs)
3	SO ₂ (µg/m ³)	-	-	-	-	7.48	6.69	80(24 Hrs)
4	NO _x (µg/m ³)	-	-	-	-	20.22	17.57	80(24 Hrs)
5	CO (µg/m ³)	-	-	-	-	0.68	0.46	02 (08 Hrs)

NB: The new CAAQMS station of Jindal Coke Limited was commissioned on August' 2023.

B. Continuous Emission Monitoring System (CEMS) report

Sl. No.	Sampling Stations	Parameters	Monthly Average Concentration of PM, SO ₂ and (mg/Nm ³)						Permissible limits as per SPCB
			April'23	May'23	June'23	July'23	Aug'23	Sept'23	
1	Coke Oven Stack	PM	38.76	39.30	41.33	22.25	12.52	20.10	50
		SO ₂	134.89	132.56	215.14	199.62	203.27	204.85	800
		NO _x	-	-	-	33.35	39.58	73.07	500

C. Effluent Quality Monitoring System (EQMS) report:

Location: Coke Oven ETP Out let

Sl.	Parameters	Monthly Average concentration
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Monitoring Report (April, 2023 –September, 2023)



No.		April'23	May'23	June'23	July'23	Aug'23	Sept'23	Permissible limits as per SPCB
1	TSS	23.39	20.92	20.46	22.15	21.48	19.81	0 - 100.0 mg
2	pH	8.06	8.02	8.04	7.97	7.96	7.92	5.5 - 9.0 pH
3	BOD	13.09	8.83	9.63	8.34	9.27	6.73	0 - 30.0 mg/l
4	COD	85.83	85.20	85.43	84.75	71.94	62.94	0 - 250.0 mg/l