The Additional DG of Forests (Central)
Eastern Regional Office
Ministry of Environment, Forests & Climate Change
Government of India
A/3, Chandrasekharpur,
Bhubaneswar – 751 023, Odisha

TSK/Env/C-05/ ***17*** */2024*
25th May' 2024

Dear Sir,

Sub.: Six monthly Compliance Report for Oct'23 to Mar'24 for Environmental Clearances of Integrated Steel Plant, Tata Steel at Kalinganagar Industrial Complex, Duburi, Dist. Jajpur, Odisha.

Ref.: 1. MoEF&CC EC Letter No. J-11011/7/2006-IA-II(I) dated 7.11.2006 and successive amendments on 10.10.12, 13.05.15 and 20.12.2016.
2. MOEF &CC EC letter No. J-11011/7/2006-IA-II(I) dated 24.12.2020

Kindly find enclosed Six-Monthly Compliance Report for the period from Oct'23 to Mar'24 for the conditions stipulated in Environmental Clearance including amendments granted in EC to 6.0 MTPA and for Environmental clearance granted for expansion from 6 to 8 MTPA Crude Steel and 9 MTPA Finished Steel of Integrated Steel Plant, Tata Steel Kalinganagar for your kind considerations.

We trust the information furnished is in line with your requirement.

Thanking you,

Yours faithfully,

Raju Agrawal
Head, Environment, TSK

Encl. a/a

Copy to MS, OSPCB, Bhubaneswar / CPCB Kolkata /RO OSPCB Kalinganagar

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Six Monthly Environment Compliance Report
Oct' 2023 to Mar' 2024

For

Integrated Steel Plant Project of Tata Steel

At

Duburi, Dist. Jajpur, Odisha

Environment Department
Tata Steel Limited
Kalinganagar Industrial Complex
Duburi- 755026
Dist Jajpur, Odisha

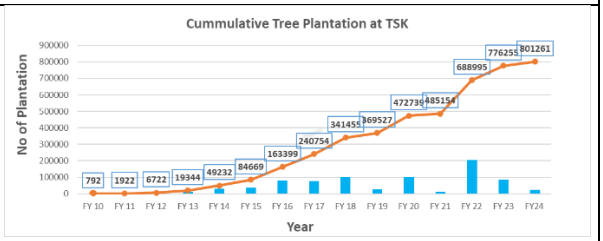
Six Monthly Compliance Status (Oct'23 to Mar'24) of Environmental Clearance including Amendment in EC for 6.0 MTPA Integrated Steel Plant at Kalinganagar, Duburi, District-Jajpur; 7th Nov 2006, 10th Oct 2012, 13th May 2015 and 20th Dec 2016

A	Specific Conditions as per EC dated 7.11.2006	Status as on 31.03.2024
i)	The gaseous emissions from various process units shall conform to the load/mass-based standards notified by this Ministry on 19th May, 1993 and standards prescribed from time to time. The state Boards 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. VOCs from the coke oven shall be monitored and controlled as per CPCB guidelines. The new standards prescribed by the CPCB for coke oven plants shall be strictly followed.	• All the process units, including the Coke Plant (CP), Sinter Plant (SP), Blast Furnace (BF), Steel Melting Shop (SMS), Hot Strip Mill (HSM), Cold Rolling Mill (CRM), and Pellet Plant (PP), have been designed to conform to the load/mass standards notified by the Ministry to have the gaseous emissions under control and below the prescribed limits. • Online continuous stack monitoring systems have been installed at the stacks of CPP Boiler-1, 2, and 3; Coke Plant Battery 1 and 2; Sinter Plant; Blast Furnace; SMS; LCP; CRM-PLTCM; Pellet Plant; and HSM to monitor particulate matter (PM), sulfur oxides (SOx), and nitrogen oxides (NOx) in process stacks. • The units are in operation and emission levels were found within prescribed norms. • Low NOx burners are installed at CPP (8 Nos for each boiler in all three boilers) and in HSM reheating furnace (84 Nos). • VOC from coke plant is controlled by On-main charging by HPLA, Hydraulic doors, Door sealing, Door frame cleaner, etc. as per CPCB guidelines and the systems for both the Battery No. 1 as well as Battery -2 are in operations. • The new standards prescribed by the Central Pollution Control Board (CPCB) as of 31 March 2012 for coke ovens are being followed.
ii.	In-plant control measures for checking fugitive emissions from all the vulnerable sources like coke oven area, Sinter Plant, BF case house, BF stock house, and BOF shop etc. shall be provided. Further, specific measures like water sprinkling and dry fogging (DF) shall be carried out at the stockpiles of raw materials, stacker reclaimer, conveyor transfer points and vibrating screens etc. Dust extraction system and bag filter shall be provided for room air cleaning such as sinter plant stock house, BF stock house and BF cast house, BOF shop and Ferro-alloys handling area in steel melting shop etc. Fume extraction system in steel refining units shall also be provided. Centralized de-dusting system i.e. collection of fugitive	• In-plant control measures, such as Dust Extraction Systems (DES), Dust Suppression Systems (DSS), and Dry Fog Dust Suppression Systems (DFDSS) are being provided to control fugitive emissions from vulnerable sources like the Coke Oven area, Sinter Plant, Blast Furnace (BF) Cast House, BF Stock House, and Basic Oxygen Furnace (BOF) shop etc. • Further specific measures like water sprinkling arrangement, tarpaulin covering etc. at stockpiles of raw material handling unit have been provided. • To control fugitive dusts from conveyor, transfer points and vibrating screens DE, DSS and DFDS are provided at these locations. • Dust extraction system followed by De-dusting ESP has been provided at Sinter

A	Specific Conditions as per EC dated 7.11.2006	Status as on 31.03.2024
	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 for induction furnaces in the industry shall be provided. Fugitive emissions shall be controlled, regularly monitored and records maintained.	Plant. At Cast House and Stock House of Blast Furnace, separate dust extraction systems followed by ESPs have been provided. In SMS, secondary de-dusting unit (Cyclone separator followed by ESP) has been provided. Fume extraction system in steel refining units has been provided. All the stacks have been designed and installed to meet the requirement of stack heights as per guidelines, for proper dispersion and dilution of pollutants. • Mechanized road sweeping machines have been deployed for regular road sweeping. • Speed limits are enforced for movement of vehicles at the site as per the factory limits. • Roads (about 47 km) within the plant site are metaled/ concreted. • Certain areas in plants are paved/ contorted. Water sprinkling on roads is being done through truck mounted water tankers (4-6 nos as per requirement) and fixed water sprinklers are installed to suppress road dust due to vehicular movements.
iii.	ESP shall be provided to Sinter Plant and Blast Furnace. New standards prescribed by the CPCB for coke oven shall be strictly followed. The Company shall install Waste Heat Recovery Boilers (WHRB) to recover the waste heat and generate power from the steam produces by the WHRB. The particulate emissions from the WHRB shall be controlled by installation of ESP as per CPCB specification and particulate emissions shall not exceed 50mg/Nm^3. Further, the company shall install Bag filter, After Burner Chamber (ABC), suction hood, dust extraction device and fume extraction system to control gaseous emissions from the WHRB.	• Higher efficiency ESPs have been provided at Sinter plant, Blast Furnace and SMS. • Coke Oven plant is designed to comply with new standards prescribed by CPCB for Coke Oven. • Waste Heat Recovery Boilers (WHRB) have been installed to recover waste heat which in turn used for in-house power generation from the steam produces by WHRB. • Pollution Control Systems have been designed as per CPCB guidelines to control PM emissions well below 50 mg/Nm3. • Coke Dry Quenching (CDQ) System is provided with bag filters, and it is in operation.
iv.	Total requirement of the water from Brahmani /Kharsua river shall not exceed 26.5 MGD. No ground water shall be drawn and used for the plant. The effluent quantity into the industrial drain leading to the Gonda Nalla shall not exceed 92m^3/hr and shall conform to the prescribed standards. Ammonia, phenol and cyanide in the effluent should	• Make up water requirement for the plant is < 26.5 MGD. Present fresh makeup water consumption is around 7.87 MGD. • Ammonia, Phenol and Cyanide in the effluent from Coke Oven plant is treated separately in BOD plant of Coke Plant. The BOD plant is in operation and the parameters such as Ammonia, Phenol,

A	Specific Conditions as per EC dated 7.11.2006	Status as on 31.03.2024
	be treated separately and discharged only after meeting the norms prescribed by the OSPCB/CPCB/Ministry under E(P) Act. Cyanide shall meet the standard of 0.2 ppm. TDS in the effluent discharged shall not be more than 2,100 mg/I. The domestic wastewater after treatment in STP shall be used for green belt development.	Cyanide and TSS of treated wastewater is well within prescribed limits. • STP having capacity 110 m3/hr is in operation for treatment of domestic wastewater. Treated water from STP is being utilized for green belt development. • No groundwater is used for plant operations.
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 level is monitored, and variations are negligible. • Ground water quality is within the permissible limit. Ground water monitoring report enclosed as annexure 1.
vi.	BF slag shall be sold to the cement manufacturers after granulation. Non-granulated BF slag shall be used in road making. BOF slag shall not be dumped anywhere except used for making cement and road etc. proposed in EIA/EMP. Ammonia and tar shall be recovered and remaining solid waste shall be burnt. Gas cleaning plant sludge and mill scales shall be reused in the sinter plant. Char generated shall be used in FBC boiler. The kiln accretions shall be utilized for filling low lying areas. The entire quantity of fly ash generated during the process shall be utilized for making brick. ESP fly ash shall be made available to the cement plants and brick making plants whereas bottom ash shall be disposed off in a suitably designed landfill as per CPCB guidelines to prevent leaching to the sub-soil and underground aquifer.	• BF slag is sold to cement manufacturers after online slag granulation process (RASA). Majority of BF slag is transported by rail. • Non-granulated BF & BOF slag is used for road making. • BOF Slag is processed in Metal Recovery Plant and metallic portion is recovered and reused. Some portion of Non-metallic slag is also used in sinter plant and remaining portion is used in road making, etc. in construction sites. • In COBPP, Tar and Sulphur is recovered as by-product and are sold. • Gas cleaning plant sludge and mill scales are utilized in sinter plant. • Mill scale from mills is utilized in sinter plant. • CPP boilers are by-product gas-based boilers, hence there is no char generation. As No coal is burned, so there is no generation of fly ash & bottom ash.
vii.	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 run-off during the monsoon is collected and stored in the reservoirs constructed under rainwater harvesting schemes. • Storm water pond with necessary pumping arrangement has been made to recover storm water in raw water system.
viii.	Green belt shall be developed in at least 33% area within and around the plant premises as per the CPCB guidelines in consultation with DFO.	• Green Belt cover is being continuously developed within and around the project site, as well as outside the plant premises including rehabilitation colonies.

Six Monthly Compliance Status (Oct'23 to Mar'24) of Environmental Clearance including Amendment in EC for 6.0 MTPA Integrated Steel Plant at Kalinganagar, Duburi, District-Jajpur; 7th Nov 2006, 10th Oct 2012, 13th May 2015 and 20th Dec 2016

A	Specific Conditions as per EC dated 7.11.2006	Status as on 31.03.2024
		 • Till Mar'24 about 421.05 ha area is under greenery. Survival rate is now achieved about 90%. • Avenue plantation was done at Jajpur town, Kalinganagar and Bhubaneswar.
ix.	Occupational Health Surveillance of the workers shall be done on a regular basis and records maintained as per the factories Act.	• Initial & Periodic medical check-up for workers are carried out and records for the same are maintained as per the Factories Act. • During Oct'23 to Mar'24, 1968 Nos. of Pre/Periodic-Medical Examination of employees has been conducted. • To strengthen the Occupational Health Surveillance, a system has been made, in which, employee's Gate Pass is issued only after ensuring the initial medical check-up. • Well established Occupation Health Centre with qualified doctors and para-medical staff is being engaged for surveillance and data analysis. • Life-style related deficiencies are observed which are treated and followed up with individuals. No occupational related diseases are observed till date.
x.	Recommendations made in the CREP guidelines issued for the steel plants shall be implemented.	• CREP recommendations are being implemented and summarized below: 1. Coke Ovens: Fugitive emissions control system is in place. All the batteries are new one and having coal stamping, charging cum pushing (SCP) machines. 2. SMS: Secondary fume extraction system has been installed. 3. BF: Pulverized Coal injection facilities have been installed in Blast Furnace. TRT, Tar Free Runners, DE system at Cast House, etc. are also provided. 4. Specific water consumption is less than 8 m^3/t of flat product. 5. Online monitoring facilities have been provided for continuous monitoring. 6. Waste management systems are in place.
xi.	Rehabilitation and Resettlement plan shall be implemented as per the revised R&R policy and in collaboration with the	• All 1234 Families have been rehabilitated within the framework of "Tata Steel Parivaar" concept as per R & R policy of

Six Monthly Compliance Status (Oct'23 to Mar'24) of Environmental Clearance including Amendment in EC for 6.0 MTPA Integrated Steel Plant at Kalinganagar, Duburi, District-Jajpur; 7th Nov 2006, 10th Oct 2012, 13th May 2015 and 20th Dec 2016

A	Specific Conditions as per EC dated 7.11.2006	Status as on 31.03.2024
	State Government in a time bound manner and report submitted to the Ministry, it's Regional Office at Bhubaneshwar and OPCB.	Odisha Government in consultation with the local administration. A dedicated team facilitates the resettlement & rehabilitation effectively.
xii.	The environmental clearance for the mining project and forest clearance for the forest land involved in the mining project shall be obtained from the Ministry prior to operation of the integrated Steel Plant. In case, environmental clearance for the mining proposal from State Govt/Govt. of India is not available, Ministry shall be regularly informed about the source of ore and coal.	• The matter is being pursued with State and Central Government. • Coal is being imported. • Source of iron ore is mainly from the mines of Tata Steel in Odisha.

B.	General Conditions as per EC dated 7.11.2006	Status as on 31.03.2024
i.	The project authorities must strictly adhere to the stipulations made by the Orissa Pollution Control Board (OPCB) and the State Government	• During project execution and subsequent operation phases, TSK has strictly adhere to stipulation made by OSPCB and the state Government.
ii.	No further expansion or modification in the plant should be carried out without prior approval of the Ministry of Environment and Forests.	• Amendments in the Environmental Clearance were granted by MoEF&CC on 10.10.2012 and on 13.05.2015 vide letters no. J-11011/7/2006-IA. II. (I). • Environmental Clearance for Expansion of Integrated Steel Plant from 6 to 8 MTPA Crude Steel and 9 MTPA Finished Steel by M/s. Tata Steel Limited has been obtained from MoEF&CC vide letter No. J-11011/7/2006-IA. II. (I).dtd, 24.12.2020.
iii.	At least four ambient air quality-monitoring stations should be established in the downward direction as well as where maximum ground level concentration of SPM, SO_2 and NOx are anticipated in consultation with the OPCB. Data on ambient air quality and stack emission should be regularly submitted to this Ministry including its Regional Office at Bhopal and the OPCB/CPCB once in six months.	• Ambient Air quality monitoring Stations (7 nos.) are established. • Data on Ambient Air Quality and Stack emissions are submitted regularly on monthly basis to OSPCB and Half yearly basis to MoEF&CC. • Data of Online Continuous Ambient Air Quality Monitoring Stations (CAAQMS) as well as Continuous Emission Monitoring Systems (CEMS) of Stacks are also being transmitted to the server of OSPCB through Real Time Data Acquisition System (RTDAS). • Remote calibration check has been done by CPCB.
iv.	Industrial wastewater shall be properly collected, treated so as to conform to the standards prescribed under GSR 422 dated 19th May, 1993 and 31st December	• For Treatment of Industrial wastewater and its recovery & reuse, individual units like Coke Plant, HSM, SMS and BF etc. have

B.	General Conditions as per EC dated 7.11.2006	Status as on 31.03.2024
	1993 or as amended from time to time. The treated wastewater shall be utilized for plantation purpose.	individual Wastewater Treatment units and all are in operation. • Excess treated water from individual treatment plant is sent to Central Effluent Treatment Plant (CETP). CETP is in operation with tertiary treatment. Treated water from CETP is used in process, dust suppression & other uses including plantation purpose.
v.	The overall noise levels in and around the plant area shall be kept well within the standards (85 dBA) by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels should conform to the standards prescribed under EPA Rules, 1989 viz. 75 dBA (daytime) and 70 dBA (nighttime).	• Low noise prone rotary equipment and vibration dampening has been one of the design aspects as a control measure for noise pollution. • Provision of acoustic hoods, silencers in steam ejectors as well as soundproof enclosures have also been made at various internal sites. • Ambient noise levels are well within the prescribed limits.
vi.	The project proponent shall also comply with all the environmental protection measures and safeguards recommended in the EIA/EMP report. Further, the company must undertake socio-economic development activities in the surrounding villages like community development programs, educational programs, drinking water supply and health care etc.	• Environmental protection measures as proposed in the EIA and EMP report is being implemented. • Various socio-economic development activities for Health, Women Empowerment, Education, Sports & culture, Infrastructure development etc. are on-going in 28 villages surrounding the project site. 5 medical mobile units have been added for immediate treatment to the local people. • Multi-specialty, 100 bedded hospitals (***Medica TS***) is functional. It is very close to the plant site for facilitating health service to the community.
vii.	The project authorities shall utilize Rs. 1,525.00 Crores earmarked for the environmental 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 so provided shall not be diverted for any other purpose.	• Funds earmarked for the environmental pollution control measures are not diverted and is being utilized only for the said purpose. • Till date Rs.1999.43 Crs. have been spent for the environmental measures to comply the stipulated conditions.
viii.	The Regional Office of this Ministry at Bhopal/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 reports are being submitted regularly. • Last Report Submitted on 29.11.2023.

Six Monthly Compliance Status (Oct'23 to Mar'24) of Environmental Clearance including Amendment in EC for 6.0 MTPA Integrated Steel Plant at Kalinganagar, Duburi, District-Jajpur; 7th Nov 2006, 10th Oct 2012, 13th May 2015 and 20th Dec 2016

B.	General Conditions as per EC dated 7.11.2006	Status as on 31.03.2024
ix.	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 Environmental 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.	• Complied. • Newspaper advertisement details: - Newspaper — Language — Date New Indian Express — English — 13.06.06 Sambad — Odia — 13.06.06
X	Project authorities should inform 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.	• Complied.

	Additional Conditions vide letter dated 10.10.2012	Status as on 31.03.2024
i)	The company shall install low NOx burners to mitigate NOx emissions from captive power plant.	There are three boilers in the gas-based captive power plant. Each boiler is equipped with eight low-NOx burners to control nitrogen oxide emissions
ii)	Data on ambient air, stack and fugitive emission shall be regularly submitted online to Ministry's Regional Office at Bhubaneswar and Central Pollution Control Board as well as hard copy once in six months and display data on PM10, SO2 and NOx outside the premises at the appropriate place for the general public.	• Six Monthly compliance reports are sent in soft copies to MoEF&CC/ OSPCB. The same is also available at company web site. • AAQ data is displayed at the entrance of the Plant (Plant Main Gate) for information to public through Electronic Display Board. • Seven nos. of CAAQMS (Four Nos. inside and Three Nos. outside plant premises) are in operation. • For monitoring of stack emissions, Online Continuous Emission Monitoring Systems have been installed at all the operating units' viz. Coke Oven Battery#1, Battery #2, CPP, SP, BF, SMS, LCP and HSM and all are in operation and online data transmitting to OSPCB and CPCB server on real-time basis.
iii)	The National Ambient Air Quality Standard issued by the Ministry vide GSR No. 826(E) dated 16th November 2009 shall be followed.	Air Quality standards conforming to NAAQS vide GSR 826 (E) has been referred for air quality monitoring and review.
iv)	The project proponent shall also submit six monthly reports on the status of the	• We are submitting the six-monthly compliance report in stipulated time.

Six Monthly Compliance Status (Oct'23 to Mar'24) of Environmental Clearance including Amendment in EC for 6.0 MTPA Integrated Steel Plant at Kalinganagar, Duburi, District-Jajpur; 7th Nov 2006, 10th Oct 2012, 13th May 2015 and 20th Dec 2016

	Additional Conditions vide letter dated 10.10.2012	**Status as on 31.03.2024**
	compliances of the stipulated environmental conditions including results of monitored data (both in hard copies as well as by e-mail) to the respective Regional Office of MoEF, the respective Zonal Office of CPCB and SPCB. The Regional Office of the Ministry at Bhubaneswar/CPCB/SPCB shall monitor the stipulated conditions.	• Last Six-monthly compliance reports for the period Oct'23 to Mar'24 was submitted to MoEF&CC/ OSPCB Regional Office in soft copy on 29.11.2023. • Soft copy of the half yearly progress report was also being submitted to roez.bsr-mef@nic.in.
v)	The environmental statement for each financial year ending 31 March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (protection Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliances of environmental conditions and shall also be sent to the respective Regional Offices of the MoEF by e-mail.	• Environment Statement for FY 2022-23 was submitted to OSPCB on 29.09.2023 and the same for 2023-24 shall be submitted before 20.09.2024. • Both, Environment Statement and Status of Compliance of EC conditions have been uploaded on company's website https://www.tatasteel.com/corporate/our-organisation/environment/environment-compliance-reports/
vi)	The company shall submit within three months their policy towards Corporate Environment Responsibility which should inter-alia address (i) Standard operating process/ procedure to being into focus any infringement/ deviation/ violation of the environmental or forests norms/ conditions, (ii) Hierarchical system or Administrative order of the Company to deal with environmental issues and ensuring compliances to the environmental clearances conditions and (iii) system of reporting of noncompliance/ violation of environmental norms to the Board of Directors of the Company and/or shareholders.	• Corporate Environmental Policy was submitted to MoEF&CC, New Delhi vide our letter no. TSL/DEL/805/2013 dated 08.01.2013. • Copy of the same was also submitted to MoEF&CC, Bhubaneswar Office.

Six Monthly Compliance Status (Oct'23 to Mar'24) of Environmental Clearance including Amendment in EC for 6.0 MTPA Integrated Steel Plant at Kalinganagar, Duburi, District-Jajpur; 7th Nov 2006, 10th Oct 2012, 13th May 2015 and 20th Dec 2016

	Additional Safeguards vide letter dated 13.5.2015	**Compliance status as on 31.03.2024**
2i	Project proponent should install 24x7 air and water monitoring devices to monitor the air emission and effluent discharge, as provided by Central Pollution Control Board (CPCB) and submit the report to Ministry and its Regional office	• To monitor the ambient air quality, 7 nos. of continuous ambient air quality monitoring station (CAAQMS) have been installed and are in operation. • Continuous Emission Monitoring System (CEMS) have been installed at all the major stacks such as Coke Battery No. 1 & 2, Captive power plant, Sinter Plant, Blast Furnace, Steel Melting Shop, Lime Calcination Plant and Hot Strip Mill. • Online Water quality monitoring stations installed at the outlet of BOD plant of Coke Oven Unit and its real time data transmitting to CPCB and OSPCB.
2ii	For Wet quenching: permission to start the coke ovens with wet quenching till CDQ is stabilized by June 2016, thereafter, maintain wet quenching as a standby and use for 20 days (3 weeks) in a year or per annum for maintenance or operation exigencies	• The CDQ (Coke Dry Quenching) unit for Battery No. 1 and 2 is operational. • The wet quenching system is maintained as a standby.
2iii	For LDO: Use of LDO for generation of power in power plants and DG set till Blast Furnace gas is available for power generation in power plants and there after maintain LDO as "Standby" and use for 15 days (two weeks) per annum for maintenance or operational exigencies.	• BF Gas generated is used for power generation in Captive Power Plant. • LDO is being maintained as standby fuel. • DG sets are operated only in case of exigencies.
	Additional Conditions vide letter dated 20.12.2016	**Compliance status as on 31.03.2024**
7.i	For Wet quenching: permission to start the coke ovens with wet quenching till the CDQ is stabilized by November 2016, thereafter, maintain wet quenching as a standby and use for 20 days (3 weeks) in a year or per annum for maintenance or operational exigencies.	• CDQ unit for Battery No. 1 & 2 is in operation. • Wet quenching system is maintained as standby

Six Monthly Compliance Status of Environmental Clearance for

Expansion of Integrated Steel Plant from 6 MTPA to 8 MTPA Crude Steel and 9 MTPA Finished Steel by Tata Steel Ltd.

At

Kalinganagar Industrial Complex, Jajpur Odisha

(Oct'23 to Mar'24)

Six Monthly Compliance Status (Oct'23 to Mar'24) of Environmental Clearance for expansion of Integrated Steel Plant rom 6 MTPA to 8 MTPA Crude Steel and 9 MTPA Finished Steel by Tata Steel Ltd at Kalinganagar Industrial Complex, Jajpur, Odisha

A.	Specific Conditions as per EC dated 24.12.2020	Compliance status as on 31.03.2024
I	Green belt shall be developed in 33 % of the plant area in first two years and maintained later for gap fillings, casualty replacements and ensuring survival.	• Green Belt cover is being continuously developed within and around the project site. Till Mar'24, 421.05 ha of land is under green cover which is 33.68 % of total plant area. • Qualified/trained staff is engaged to maintain the plantation and ensure survival.
Ii	Biodiversity Park being developed shall have a section on Species that control air pollution. It will also have a section of locally rare and endangered species	• Land of 20 Acres for Bio-diversity Park is identified. • Necessary elements will be ensured in the park.
Iii	Plant shall be ZLD. Reverse Osmosis and Multiple Effect Evaporator (MEE) shall be provided for Coke Oven effluent treatment.	• The unit has established Zero Effluent Discharge (ZED). Reverse Osmosis and Multiple Effect Evaporator (MEE) is under installation for Coke Oven effluent treatment.
Iv	Pollution control systems and equipment shall be upgraded/ designed to achieve less than 30 mg/Nm^3 particulate matter. In existing systems, the bags under scheduled replacement cycle shall be replaced with PTFE bags.	• Pollution control systems and equipment are designed to achieve less than 30 mg/Nm^3 particulate matter emission. • PTFE bags shall be installed.
V	PP shall minimize and control Dioxins/Furan emissions from sinter plants, charging and pushing emissions from Coke Ovens and mercury emissions from power plants. Dioxins and furans shall be monitored half yearly. Monitoring reports shall be submitted regularly to RO.	• Dioxins and furans being monitored on half yearly basis. Monitoring reports submitted to Regional Office regularly. • Complied for existing units and shall be complied for upcoming units.
Vi	Adequate space shall be kept vacant for installation of dioxin control in future	Space provided and kept vacant for installations of dioxin control in future.
Vii	The data acquired through CEMS, shall be used for control of processes to control the stack emissions. This should include the MIS for closing the non-conformity loop.	• The data generated through the Continuous Emission Monitoring System (CEMS) is being used to control processes and manage stack emissions. This data has also been included in the Management Information System (MIS) to close the loop on non-conformities.
Viii	SMS Slag shall be used as soil conditioner in watershed management area to supplement micronutrients.	• Tata Steel undertook studies for use SMS slag as soil conditioner. • Knowledge of same shall be used to supplement micronutrient in greenery development.
Ix	PP shall recover and recycle unburnt carbon from BF flue dust and GCP sludge	• Unburnt carbon from BF flue dust and GCP sludge is completely reused in Sintering process for existing units. It will be followed for upcoming units.
X	PP shall use steam and CO2 to age and fix the SMS slag for use as concrete for road making	• The SMS (Steel Melting Shop) slag is being stabilized using the open steam aging method, which is currently operational. • The design of the closed steam aging process is under development.

		• Weathered slag is being used for road construction.
Xi	100 percent waste utilization shall be ensured. PP shall install a state-of-the-art Waste Recycling Plant (WRP) to process various types of slags and wastes generated in the plant to recover and recycle metallic, fluxes, aggregates and boulders	• Waste is being utilized to the greatest possible extent within the plant. • Metallic recovery and recycling from slag are envisioned to achieve 100% utilization.
Xii	PP Shall use ultra-low NOx burner with three stages, combustion, flue gas recirculation and auto combustion control system in the new plant	• Low-NOx burners have been installed at the CPP, with eight units for each of the three boilers, and in the HSM reheating furnace, with a total of 84 units. • For the upcoming units, there will be a provision for ultra-low NOx burners featuring three stages: combustion, flue gas recirculation, and an automatic combustion control system.
Xiii	Specific water consumption post expansion shall not exceed 4 m^3 per ton of crude steel and specific power consumption shall be less than 620 kwh per ton of crude steel as committed in the reply to ADS points	• Measures have been implemented to optimize water consumption and specific power consumption, ensuring they do not exceed 4 cubic meters per ton of crude steel (m^3/tcs) and 620 kilowatt-hours per ton of crude steel (kWh/tcs), respectively.
B	**General conditions as per EC dated 24.12.2020**	**Compliance status as on 31.03.2024**
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 legislations, etc., as may be applicable to the project	• Noted and shall be complied with the same. • Consent to Establish for 'expansion of integrated steel plant for production of crude steel capacity from 6 MTPA to 8 MTPA and production of finished steel of capacity 9 MTPA' was granted by OSPCB vide letter No. 2249 Ltd 15.02.2021.
II	***Air quality monitoring and preservation***	**Compliance status as on 31.03.2024**
I	The project proponent shall install 24x7 continuous emission monitoring system at process stacks to monitor stack emission as well as 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	• To monitor the ambient air quality, seven Continuous Ambient Air Quality Monitoring Stations (CAAQMS) have been installed and are all operational. • Continuous Emission Monitoring Systems (CEMS) have been provided at operating stacks, and it is proposed that they will be installed at all major stacks for the upcoming units under expansion. • The CEMS and CAAQMS are connected to the Odisha State Pollution Control Board (OSPCB) and the Central Pollution Control Board (CPCB) online servers. • Regular calibration is conducted for both the CEMS and CAAQMS.

ii	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	• Fugitive emissions within the plant premises are being monitored through NABL-accredited laboratories on a monthly basis, and the monitoring reports are being submitted to the OSPCB every month. • Compliance has been achieved for existing units, and it will be ensured for upcoming units as well.
iii	The cameras shall be installed at suitable locations for 24X7 recording of battery emissions on the both sides of coke oven batteries and videos shall be preserved for at least one-month recordings.	• Complied for the existing unit. Additional cameras shall be installed to meet the requirement for upcoming Coke Oven Batteries.
iv	Sampling facility at process stacks and at quenching towers shall be provided as per CPCB guidelines for manual monitoring of emissions.	• Sampling facilities have been provided at all process stacks such as Coke Plant (CP), Sinter Plant (SP), Blast Furnace (BF), Steel Melting Shop (SMS), Hot Strip Mill (HSM), Cold Rolling Mill (CRM), Pellet Plant (PP) for manual monitoring of emissions. • Sampling facility at proposed process stacks shall be provided as per CPCB guidelines for upcoming units.
v	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	• Air pollution control equipment has been installed at all vulnerable sources to ensure emissions remain below the prescribed norms. • To control fugitive dust from conveyors, transfer points, and vibrating screens, Dust Extraction (DE), Dust Suppression Systems (DSS), and Dry Fog Dust Suppression (DFDS) are installed at all vulnerable sources to keep emissions below the stipulated norms. • A dust extraction system followed by a De-dusting Electrostatic Precipitator (ESP) has been installed at the Sinter Plant. Separate dust extraction systems followed by ESPs have been installed at the Cast House and Stock House of the Blast Furnace. In the Steel Melting Shop (SMS), a secondary de-dusting unit (cyclone separator followed by ESP) has been provided. Additionally, a fume extraction system has been installed in the steel refining units. • Air pollution control equipment will be installed at all vulnerable sources for the upcoming units to ensure emissions are controlled and remain below the prescribed norms.
vi	The project proponent shall provide leakage detection and mechanized bag cleaning facilities for better maintenance of bags	• Compliance has been achieved for existing units. Provisions for leakage detection and

		mechanized bag cleaning are envisaged for upcoming facilities.
vii	Secondary emission control system shall be provided at SMS Converters.	• The secondary emission control system is operational at the SMS (Steel Melting Shop) converters and will be extended to additional facilities.
viii	Sufficient number of mobile or stationery vacuum cleaners shall be provided to clean plant roads, shop floors, roofs, regularly	• Mechanized mobile or stationary vacuum cleaners are deployed for regular cleaning of plant roads, shop floors, and roofs. • Compliance with this practice will be ensured for upcoming units.
ix	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	• All fines such as coal, iron ore, lime fines, and coke fines collected through pollution control devices are recycled and reused in the process. • The same practice will be adopted for upcoming units.
x	The project proponent use leak proof trucks/dumpers carrying coal and other raw materials and cover them with tarpaulin	• Leak-proof trucks/dumpers with tarpaulin covers are used to transport raw materials.
xi	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).	• Facilities for spillage collection are available and shall also be provided for upcoming units.
xii	Land-based APC system shall be installed to control coke pushing emissions.	• Land-based APC to control coke pushing emission are available for operating coke plant.
xiii	Monitor CO, HC and O2 in flue gases of the coke oven battery to detect combustion efficiency and cross leakages in the combustion chamber.	• Online monitoring system has been installed to monitor CO, HC, and O2 levels in the flue gases of the coke oven battery, which helps in detecting combustion efficiency and cross leakages in the combustion chamber.
xiv	Vapour 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 and shall be complied.
xv	In case concentrated ammonia liquor is incinerated, adopt high temperature incineration to destroy Dioxins and Furans. Suitable NOx control facility shall be provided to meet the prescribed standards.	• Noted and shall be envisaged.
xvi	The coke oven gas shall be subjected to desulphurization if the Sulphur content in the coal exceeds 1%.	• Desulphurization of coke oven gas is being recovered as pellets and same is sold as by-product. • Same practice shall be adopted for upcoming units.
xvii	Wind shelter fence and chemical spraying shall be provided on the raw material stockpiles.	• Suitable system is being studied and designed and shall be provided.
xviii	Design the ventilation system for adequate air changes as per prevailing norms for all tunnels, motor houses, Oil Cellars.	• Noted and shall be complied.

xix	The project proponent shall install Dry Gas Cleaning Plant with bag filter for Blast Furnace and SMS converter.	• Dry Gas Cleaning Plant with bag filter for Blast Furnace and SMS converter proposed in new BF and SMS converter.
xx	Dry quenching (CDQ) system shall be installed along with power generation facility from waste heat recovery from hot coke	• Dry quenching (CDQ) is in operation for existing unit, and 2 no's CDQ is under commissioning for new coke oven units.
III.	***Water quality monitoring and preservation***	
i	The project proponent shall install 24x7 continuous effluent monitoring system with respect to standards prescribed in Environment (Protection) Rules 1986 vide G.S.R 277 (E) dated 31st March 2012 (Integrated iron & Steel); G.S.R 414 (E) dated 30th May 2008 (Sponge Iron) as amended from time to time; S.O. 3305 (E) dated 7th December 2015 (Thermal Power Plants) as amended from time to time and connected to SPCB and CPCB online servers and calibrate these system from time to time according to equipment supplier specification through labs recognized under Environment (Protection) Act, 1986 or NABL accredited laboratories.	• Continuous Effluent Monitoring System (CEQMS) has been installed at the ETP of BOD plant. Uninterrupted Online data being transmitted to CPCB and OSPCB. • Suitable systems will be installed in proposed units wherever it its required as per guidelines of OSPCB and CPCB.
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 is being monitored on regular basis through NABL accredited laboratories. • Six monthly compliance reports are being submitted regularly. Last Report Submitted on 29.11.2024.
iii	The project proponent shall provide the ETP for coke oven and by-product to meet the standards prescribed in G.S.R 277 (E) dated 31st March 2012 (Integrated iron & Steel); G.S.R 414 (E) dated 30th May 2008 (Sponge Iron) as amended from time to time; S.O. 3305 (E) dated 7th December 2015 (Thermal Power Plants) as amended from time to time as amended from time to time;	• The Effluent Treatment Plant for the coke oven and by-products is in operation for the existing unit, and it is currently being commissioned for the new units of the coke plant.
iv	Adhere to 'Zero Liquid Discharge'	• Zero Effluent Discharge (ZED) has been maintained
v	Sewage Treatment Plant shall be provided for treatment of domestic wastewater to meet the prescribed standards	• Sewage Treatment Plant having capacity 110 m3/hr is in operation for treatment of domestic wastewater to meet the prescribed standards.
vi	Garland drains and collection pits shall be provided for each stockpile to arrest the runoff in the event of heavy rains and to	• Toe walls and garland drains at the RMHS Ore & Flux yard have been installed to contain runoff during heavy rainfall and to prevent water pollution from surface runoff.

	check the water pollution due to surface run off.	
vii	Tyre washing facilities shall be provided at the entrance of the plant gates.	• Four no's tyre washing facilities are operational at the Ore & Flux yard, MRP area near the entrance of the plant gates, inside the Transport Park, and at the SMS filter press area.
viii	CO2 injection shall be provided in GCP of SMS to reduce pH in circulating water to ensure optimal recycling of treated water for converter gas cleaning	• Noted and shall be studied.
ix	The project proponent shall practice rainwater harvesting to maximum possible extent	• Rainwater harvesting system in place that captures water from the rooftops of all ECR buildings of BF and other units.
x	Treated water from ETP of COBP shall not be used for coke quenching	• Treated water from ETP of COBP is being further treated in CETP for reuse. • Same practice shall be adopted for upcoming units.
xi	Water meters shall be provided at the inlet to all unit processes in the steel plants	• Water meters has been provided at the inlet of all process units.
xii	The project proponent shall make efforts to minimize water consumption in the steel plant complex by segregation of used water, practicing cascade use and by recycling treated water	• We continuously monitor our water usage and quality to ensure that we not only comply with regulatory standards but also strive for industry-leading practices in water conservation. We are also exploring new technologies and methodologies to further enhance our water management system.
IV.	***Noise monitoring and prevention***	
I	Noise quality 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.	• Noise levels are regularly monitored, and the reports are submitted along with the six-monthly compliance reports. • The noise level monitoring report for the period from October 2023 to March 2024 is attached as Annexure-1.
V.	***Energy Conservation measures***	
I	The project proponent shall provide TRTs to recover energy from top gases of Blast Furnaces.	• Top Recovery Turbines (TRTs) to recover top gases from the Blast Furnace are available for the operating unit, and it has also been provided for the expansion unit, which is currently under commissioning.
ii	Coke Dry Quenching (CDQ) shall be provided for coke quenching for the coke oven plant	• CDQ is provided for operating coke plant and is also envisaged for upcoming units which is currently under commissioning.
iii	Waste heat shall be recovered from Sinter Plants coolers and Sinter Machines	• Waste Heat Recovery System is envisaged for the Sinter Cooler.
iv	Use torpedo ladle for hot metal transfer as far as possible. If ladles not used, provide covers for open top ladles	• Torpedo ladles are used for transfer of hot metals.
v	Use hot charging of slabs and billets/blooms as far as possible	• Noted and being followed.

vi	Waste heat recovery systems shall be provided in all units where the flue gas or process gas exceeds 300°C.	• Waste Heat Recovery System is envisaged for all units where the flue gas or process gas exceeds 300°C.
vii	Explore feasibility to install WHRS at Waste Gases from BF stoves; Sinter Machine; Sinter Cooler, and all reheating furnaces and if feasible shall be installed.	• WHRS is envisaged at Sinter Cooler.
viii	Restrict Gas flaring to < 1%.	• Most of the by-product gases shall be utilized as fuel and flaring shall be restricted, except during shutdowns.
ix	Provide solar power generation on roof tops of buildings, for solar light system for all common areas, streetlights, parking around project area and maintain the same regularly.	• Physical installation of the PV solar modules has been completed on the rooftop of the RWTP with a capacity of 1.05 MWp, 0.516 MWp at the Steelenium shed, and 2.5 MWp at the HSM (North-South). • Four solar lights have been installed at Gate -3 and 1. Solar power systems will be installed in other areas.
xi	Provide LED lights in their offices and residential areas	• In offices and residential areas LED lights has been provided.
xii	Ensure installation of regenerative type burners on all reheating furnaces	• Regenerative type burners on reheating furnace shall be provided.
VI	***Waste management***	
i	An attrition grinding unit to improve the bulk density of BF granulated slag from 1.0 to 1.5 Kg/l shall be installed to use slag as river sand in construction industry	• Shall be studied for feasibility.
ii	Tar Sludge and waste oil shall be blended with coal charged in coke ovens	• Tar Sludge is blended with coal charged in coke ovens.
iii	Carbon recovery plant to recover the elemental carbon present in GCP slurries for use in Sinter plant shall be installed	• GCP sludge is being used in Sinter plant
iv	Waste recycling Plant shall be installed to recover scrap, metallic and flux for recycling to sinter plant and SMS	• Metal Recovery Plant is in operation.
v	Used refractories shall be recycled as far as possible	• Used refractories shall be reused and recycled to maximum possible extent.
vi	SMS slag after metal recovery in waste recycling facility shall be conditioned and used for road making, railway track ballast and other applications. The project proponent shall install a waste recycling facility to recover metallic and flux for recycle to sinter plant. The project proponent shall establish linkage for 100% reuse of rejects from Waste Recycling Plant	• SMS slag after metal recovery is being reused in process and after conditioned used for road making.
vii	100% utilization of fly ash shall be ensured. All the fly ash shall be provided to cement and brick manufacturers for further utilization and Memorandum of Understanding in this regard shall be submitted to the Ministry's Regional Office	• There is no generation of fly ash as we have Gas based power plant.

viii	Oil Collection pits shall be provided in oil cellars to collect and reuse/recycle spilled oil. Oil collection trays shall be provided under coils on saddles in cold rolled coil storage area	• Oil collection pits has been provided in oil cellars and oil collection trays under coils on saddles in cold rolled coil storage area for collection and reuse/recycle of spilled oil and shall be complied for upcoming units.
ix	Kitchen waste shall be composted or converted to biogas for further use	• We are in the advanced stages of commissioning a Polycrack unit. Kitchen waste will be separately processed to convert it into syn gas and biochar.
VII	***Green Belt***	
i	Green belt shall be developed in an area equal to 33% of the plant area with a native tree species in accordance with CPCB guidelines. The greenbelt shall inter alia cover the entire periphery of the plant	• 33.68 % area is under Green Belt as per CPCB guideline to inter alia cover the entire periphery of the plant.
ii	The project proponent shall prepare GHG emissions inventory for the plant and shall submit the program for reduction of the same including carbon sequestration including plantation	• GHG inventory as WSA method done every year. • CO2 emission reduction activities are being implemented.
VII/	***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 Hazard identification and risk assessment and Disaster Management plan is on place and shall be modified with expansion implemented.
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 of Factory Act.	• Personal Protective Equipment (PPE) is mandatory for all workmen, as per the norms of the Factory Act. Heat stress analysis is being conducted in specific areas.
iii	Occupational health surveillance of the workers shall be done on a regular basis and records maintained	• Occupational health surveillance for all workers is conducted annually, and the records are maintained accordingly.
IX.	***Corporate Environment Responsibility***	**Compliance status as on 31.03.2024**
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	• Noted and shall be complied.
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	• Corporate Environmental Policy was submitted to MoEF&CC; New Delhi vide our letter no. TSL/DEL/805/2013 dated 8.1.2013.

	submitted to the MoEF&CC as a part of six-monthly report.	
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	• Separate Environmental cell with well qualified personnel is in place both at project and company head quarter level.
X	***Miscellaneous***	**Compliance status as on 31.03.2024**
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.	• Newspaper advertisement details: - Newspaper — Language — Date Orissa Post — English — 30.12.20 Sambad — Odia — 30.12.20
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	Copies of environmental clearance has been submitted vide our letter No. Proj/TSK/ 2021 /033 dtd. 06.01.2021
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.	• Status of Compliance of EC conditions along with monitoring data are uploaded on company's website https://www.tatasteel.com/corporate/our-organisation/environment/environment-compliance-reports/
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.	• Environmental monitoring is carried out on regular basis and monitoring data is also submitted along with six monthly compliance reports. • The monitoring data is displayed at main gate of company for disclosure to the public.
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	• We are submitting the six-monthly compliance report of ECs in stipulated time. • Last Six-monthly compliance reports for the period Oct'23 to Mar'24 was submitted to MoEF&CC/OSPCB Regional Office in soft copy on 29.11.2023. • Soft copy of the half yearly progress report was also being sent to roez.bsr-mef@nic.in
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,	• Environment Statement for FY 2022-23 was submitted to OSPCB on 20.09.2023 and the same for 2023-24 will be submitted before 30.09.2024.

	as amended subsequently and put on the website of the company.	• Both, Environment Statement and Status of Compliance of EC conditions have been uploaded on company's website https://www.tatasteel.com/corporate/our-organisation/environment/environment-compliance-reports/
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 and shall be complied.
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	• We shall abide by our commitments and recommendations made in the EIA/EMP report.
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. Necessary approval shall be taken prior to any expansion of modification in the plant.
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.
xi	The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.	• Noted.
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 and shall be complied.
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 and shall be complied.
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.

Annexure:1

AMBIENT AIR QUALITY (INSIDE PLANT) Period: Oct'23 to Mar'24														
Sl. No	**Sampling Stations**	**Month**	**PM 10 µg/m3**	**PM 2.5 µg /m3**	**SO2 µg/ m3**	**NOX µg / m3**	**CO mg/m3**	**Ozone (O3) µg/m3**	**Lead (Pb) µg/m3**	**Ammonia (NH3) µg/m3**	**Benzene (C6H6)**	**Benzo (a) Pyrene ng /m3**	**Arsenic (As) ng /m3**	**Nickel (Ni) ng/m3**
1	Coke Oven	**Oct'23 to Mar'24**	88.7	47.5	7.9	44.2	0.6	27.8	0.02	50.8	<4.2	<0.5	<1.0	<5.0
2	Sinter Plant		85.9	46.0	7.6	38.0	0.6	26.4	0.02	48.4	<4.2	<0.5	<1.0	<5.0
3	Gate-1		88.2	49.6	7.9	44.7	0.6	27.8	0.02	38.4	<4.2	<0.5	<1.0	<5.0
4	HSM		78.9	43.9	7.2	36.5	0.5	26.5	<0.01	48.3	<4.2	<0.5	<1.0	<5.0
5	Gate No:4		86.3	46.8	7.6	41.9	0.6	28.5	0.02	49.8	<4.2	<0.5	<1.0	<5.0
6	SMS		82.8	46.2	7.4	37.5	0.6	27.8	0.02	48.1	<4.2	<0.5	<1.0	<5.0
C.P.C.B Standard			**100 (24 Hrs.)**	**60 (24 Hrs.)**	**80 (24 Hrs.)**	**80 (24 Hrs.)**	**2 (8 Hrs.)**	**100 (8 Hrs.)**	**1 (24 Hrs.)**	**400 (24 Hrs.)**	**05 (Annual)**	**01 (Annual)**	**06 (Annual)**	**20 (Annual)**

Noise Monitoring Report Period: Oct'23 to Mar'24																	
Sl. No	Noise Monitoring Locations	Oct'23		Nov'23		Dec'23		Jan'24		Feb'24		Mar'24		Average			
		in dBA (Day Time) 06.00am to 10.00pm	in dBA (Night Time) 10.00pm to 06.00am	in dBA (Day Time) 06.00am to 10.00pm	in dBA (Night Time) 10.00pm to 06.00am	in dBA (Day Time) 06.00am to 10.00pm	in dBA (Night Time) 10.00pm to 06.00am	in dBA (Day Time) 06.00am to 10.00pm	in dBA (Night Time) 10.00pm to 06.00am	in dBA (Day Time) 06.00am to 10.00pm	in dBA (Night Time) 10.00pm to 06.00am	in dBA (Day Time) 06.00am to 10.00pm	in dBA (Night Time) 10.00pm to 06.00am	**in dBA (Day Time) 06.00am to 10.00pm**	**NOISE STANDARDS Day time (in dBA)**	**in dBA (Night Time) 10.00pm to 06.00am**	**NOISE STANDARDS Night time (in dBA)**
1	**Sinter Plant**	73.1	55.3	75.3	59.9	70.2	61.0	74.2	61.6	72.2	59.5	73.4	61.5	**73.1**	**75**	**59.8**	**70**
2	**Blast Furnace**	72.6	63.4	73.3	61.4	68.2	57.0	70.0	57.9	73.7	62.4	71.2	62.3	**71.5**	**75**	**60.7**	**70**
3	**SMS**	66.4	54.8	71.5	60.2	72.7	64.4	68.4	51.5	69.4	58.2	71.6	61.8	**70.0**	**75**	**58.5**	**70**
4	**Gate-1**	69.6	55.5	68.3	60.2	67.4	57.5	68.7	56.8	70.6	57.7	68.1	55.2	**68.8**	**75**	**57.1**	**70**
5	**RMHS**	74.5	55.5	72.3	61.3	68.7	62.0	69.3	57.5	68.7	57.5	71.4	58.8	**70.8**	**75**	**58.8**	**70**
6	**HSM**	74.0	66.3	72.6	64.4	71.7	63.9	70.4	62.6	67.9	59.3	70.8	64.4	**71.2**	**75**	**63.5**	**70**
7	**LCP**	74.3	65.6	69.3	60.2	73.8	66.9	70.6	62.9	69.1	58.4	70.4	65.1	**71.2**	**75**	**63.1**	**70**

GROUND WATER QUALITY REPORT Period: Oct'23 to Mar'24									
Sl. No.	**Parameter**	**Standard as per BIS: 10500**	**Oct'23**	**Nov'23**	**Dec'23**	**Jan'24**	**Feb'23**	**Mar'24**	**Average**
1	pH Value	6.5-8.5	7.28	7.31	7.29	7.25	7.3	7.31	7.3
2	Colour	5	Colorless	Colorless	Colorless	Colorless	Colorless	Colorless	CL
3	Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	AL
4	Taste	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	AL
5	Turbidity (NTU), max	5	3.1	2.8	2.3	2	1.9	1.8	2.3
6	Anaionic Detergents, mg/l, max	0.2	ND	ND	ND	ND	ND	ND	BDL
7	Aluminium as Al, mg/l, max	0.03	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
8	Alkalinity , mg/l, max	200	132	138	141	138	133	128	135.0
9	Total Hardness (as CaCO3), mg/l, max	300	163	175	178	158	152	148	162.3
10	Electrical Conductivity at 250C, µmho/cm	-	556.4	560.7	561.6	558.6	562.3	554.7	559.1
11	Calcium (as Ca), mg/l, max	75	32.9	31.8	30.6	30.5	31.5	30.9	31.4
12	Magnesium as Mg, mg/l, max	-		23.23	24.69	19.89	17.82	17.21	20.6
13	Sodium as Na, mg/l, max	-	8.7	8.4	7.6	7.7	7.2	7.5	7.9
14	Potassium as K, mg/l, max	-	5.6	5.4	5.2	4.6	4.7	4.8	5.1
15	Copper (as Cu), mg/l, max	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02

16	Iron (as Fe), mg/l, max	0.3	0.31	0.32	0.29	0.23	0.21	0.2	0.3
17	Manganese (as Mn), mg/l, max	0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
18	Chloride (as Cl), mg/l, max	250	27.4	24.8	22.9	23.1	24.5	23.7	24.4
19	Sulphate (as SO4), mg/l, max	200	11.7	11.9	11.3	11.8	11.3	11.6	11.6
20	Nitrate (as NO3), mg/l, max	45	7.3	7.1	6.3	5.8	5.2	5.1	6.1
21	Fluoride (as F), mg/l, max	1	0.2	0.21	0.2	0.22	0.2	0.2	0.2
22	Phenolic Compounds (as C6H5OH), mg/l, max	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
23	Mercury (as Hg), mg/l, max	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
24	Cadmium (as Cd), mg/l, max	0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
25	Selenium (as Se), mg/l, max	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
26	Arsenic (as As), mg/l, max	0.05	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
27	Cyanide (as CN), mg/l, max	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
28	Lead (as Pb), mg/l, max	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
29	Zinc (as Zn), mg/l, max	5	0.41	0.43	0.39	0.37	0.38	0.37	0.4
30	Nickel as Ni, mg/l, max	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

31	Total Chromium as Cr, mg/l, max	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
32	Chromium (as Cr+6), mg/l, max	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
33	Mineral Oil, mg/l, max	0.01	ND	ND	ND	ND	ND	ND	BDL
34	Total Coliform, MPN/ 100 ml	-	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
35	E-coli , MPN/ 100 ml	-	Absent	Absent	Absent	Absent	Absent	Absent	Absent
36	Total Dissolved Solids, mg/l, max	500	174	178	180	172	158	152	169
37	Residual, free Chlorine, mg/l, min	0.2	ND	ND	ND	ND	ND	ND	BDL
38	Boron mg/l, max	1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

#CL- Colorless

#BDL- Below Detection Limit

#AL- Agreeable

VOC Monitoring Report of Coke Oven

(Monthly average from Oct'23 to Mar'24)

Sl. No	Monitoring Location	Month	Benzene (C6H6) µg/m3	Benzo (a) Pyrene ng/m3
1	Coke Oven Plant	**Oct'23 to Mar'24**	1.36	0.20
2	Near Coke Oven Battery#1		1.86	BDL
3	Near Coke Oven Battery#2		1.77	0.22
4	Near CDQ Area		1.78	BDL
C.P.C.B Standard			**05 µg/m3 (Annual)**	**01 ng/m3 (Annual)**

Fugitive Visible Emission Monitoring Report of Coke Oven

(Monthly average from Oct'23 to Mar'24)

Sl. No	Parameters	Month	C.P.C.B Standard	Fugitive Emission Level
Coke Oven Battery-1				
1	- Leakage from door (PLD)	**Oct'23 to Mar'24**	5 %	3.8 %
2	- Leakage from charging lids (PLL)		1 %	0.7 %
3	Leakage from AP covers (PLO)		4 %	2.0 %
4	Charging emission (HPLA)		16 second/charge	13 seconds (with HPLA)
Coke Oven Battery-2				
1	- Leakage from door (PLD)	**Oct'23 to Mar'24**	5 %	3.7 %
2	- Leakage from charging lids (PLL)		1 %	0.7 %
3	Leakage from AP covers (PLO)		4 %	1.9 %
4	Charging emission (HPLA)		16 second/charge	12 seconds (with HPLA)

Stack Monitoring Report									
Period: Oct'23 to Mar'24									
Sl. No.	Stack Name	Norms mg/Nm3	Oct'23	Nov'23	Dec'23	Jan'24	Feb'24	Mar'24	Average
1	Boiler-1 of CPP	50	5.9	6.9	7.1	6.1	7.4	5.8	6.5
2	Boiler-2 of CPP	50	6.8	8.2	8.9	8.9	9.3	8.6	8.5
3	Bag Filter attached to LCP Kiln-1	150	7.3	8.6	11.7	9.2	8.4	10.5	9.3
4	Bag Filter attached to LCP Kiln-2	150	6.7	6.4	7.3	11.3	11.2	11.6	9.1
5	ESP of Blast Furnace Cast House-1	50	32.2	35.7	37.5	39.3	32.6	33.6	35.2
6	ESP of Blast Furnace Cast House-2	50	36.3	31.3	32.6	38.2	33.2	37.6	34.9
7	ESP of Blast Furnace Stock House	50	26.3	34	27.6	28.4	34.7	29.4	30.1
8	Blast Furnace Stove	50	8.6	7.7	9.3	8.3	3.4	9.6	7.8
9	Coke Oven Battery-1	50	37.2	32.6	35.7	38.3	23.3	36.7	34.0
10	Coke Oven Battery-2	50	36.6	35.2	37.1	35.8	38.3	38.2	36.9
11	ESP of Sinter Plant Waste Gas	50	42.8	42.8	41.9	43.3	42	44.2	42.8
12	ESP of Sinter Plant De-dusting	50	27.9	28.1	24.5	31.6	19.9	31.7	27.3
13	Bag Filter attached to Coke Oven Battery-1 De-dusting	50	7.5	7.8	8.3	6.9	8	6.7	7.5
14	Bag Filter attached to Coke Oven Battery-2 De-dusting	50	5.9	6.9	6.4	7.4	8.1	6.9	6.9
15	Bag filter attached to Coke Dry Quenching	50	28.4	29.8	27.6	32	27.9	26.9	28.8
16	SMS Secondary Emission ESP	50	30.4	34.9	32.6	33.2	32.8	34.7	33.1
17	HSM Furnace-1	100	6.4	6.8	8.7	6.8	6.9	7.7	7.2
18	HSM Furnace-2	100	7.3	8.9	9.2	8	8.4	9.1	8.5

Dioxins & Furans Monitoring Report				
Sinter Plant Waste Gas Chimney				
Compound	**Method**	**Unit of measurement**	**Limit of Quantitation**	**Results (ng-TEQ)**
1,2,3,4,6,7,8-HpCDD	USEPA 23A/QA.16.4.73	ng-TEQ/Nm3	N/A	<0.00024
1,2,3,7,8,9-A18	USEPA 23A/QA.16.4.73	ng-TEQ/Nm3	N/A	<0.0024
1,2,3,7,8-PeCDD	USEPA 23A/QA.16.4.73	ng-TEQ/Nm3	N/A	<0.024
2,3,7,8-TCDD	USEPA 23A/QA.16.4.73	ng-TEQ/Nm3	N/A	<0.005
1,2,3,6,7,8-HxCDD	USEPA 23A/QA.16.4.73	ng-TEQ/Nm3	N/A	<0.0024
1,2,3,4,7,8-HxCDD	USEPA 23A/QA.16.4.73	ng-TEQ/Nm3	N/A	<0.0024
OCDD	USEPA 23A/QA.16.4.73	ng-TEQ/Nm3	N/A	<0.000015
2,3,4,7,8-PeCDF	USEPA 23A/QA.16.4.73	ng-TEQ/Nm3	N/A	<0.0072
1,2,3,4,6,7,8-HpCDF	USEPA 23A/QA.16.4.73	ng-TEQ/Nm3	N/A	<0.00024
1,2,3,4,7,8,9-HpCDF	USEPA 23A/QA.16.4.73	ng-TEQ/Nm3	N/A	<0.00024
1,2,3,4,7,8-HxCDF	USEPA 23A/QA.16.4.73	ng-TEQ/Nm3	N/A	<0.0024
1,2,3,6,7,8-HxCDF	USEPA 23A/QA.16.4.73	ng-TEQ/Nm3	N/A	<0.0024
1,2,3,7,8,9-HxCDF	USEPA 23A/QA.16.4.73	ng-TEQ/Nm3	N/A	<0.0024
1,2,3,7,8-PeCDF	USEPA 23A/QA.16.4.73	ng-TEQ/Nm3	N/A	<0.00072
2,3,4,6,7,8-HxCDF	USEPA 23A/QA.16.4.73	ng-TEQ/Nm3	N/A	<0.0024
2,3,7,8-TCDF	USEPA 23A/QA.16.4.73	ng-TEQ/Nm3	N/A	<0.0005
OCDF	USEPA 23A/QA.16.4.73	ng-TEQ/Nm3	N/A	<0.000015
Total Dioxins & Furans	USEPA 23A/QA.16.4.73	ng-TEQ/Nm3	0.01	<0.01

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Some Photographs

Polycrack unit is under commissioning

MVR System at CETP

Plantation inside Plant

Mobile Vacuum Cleaner in operation

PV Solar Panel installed at HSM Roof top

Barrel Storage Shed

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