Ref No- MGM/Env/463/26 Date – 29-09-2026

To
The Member Secretary,
Odisha State Pollution Control Board,
Paribesh Bhawan, A/118, Nilakantha Nagar,
Bhubaneswar, Odisha – 751012

Subject: Submission of Annual Environmental Statement in FORM-V for the year ending 31st March 2026 in respect of Joda West Manganese Mine of Tata Steel Ltd.

Reference: Rule-14 under Environment (Protection) Rules,1986 (Amendment vide G.S.R.386(E) dated 22.04.1993)

Dear Sir,

We are hereby submitting the Annual Environmental Statement in "FORM-V" prescribed under the above referenced statute, for the year ending 31st March 2026 in respect of Joda West Manganese Mine of Tata Steel Ltd., At/Po- Joda, Dist.-Keonjhar, Odisha.

This is for your kind information and perusal please. Receipt of the same may please be acknowledged.

Thanking you,
Yours faithfully
F: Tata Steel Limited

Pinku Kumar
Head (Planning)
Manganese Group of Mines

Encl: Annual Environmental Statement (FORM-V) for the Financial Year ending 31st March 2026

Copy to:

1. The Regional Officer, State Pollution Control Board, At: Baniapata, College Road, Keonjhar - 758001, Odisha.
2. Zonal Office Kolkata, Central Pollution Control Board, South end Conclave, Block 502, 5th and 6th Floors, 1582 Rajdanga Main Road, Kolkata, West Bengal 700107.
3. MoEF&CC Eastern Regional Office, A/3, Chandrasekharpur, Bhubaneswar-751023

TATA STEEL

ANNUAL ENVIRONMENT STATEMENT

FOR FY-2025-26

[FORM-V]

For the year ending 31st March 2026

[Rule-14 under The Environmental (Protection) Rules,1986]

(Amendment vide G.S.R.386(E) dtd 22.04.1993)

Submitted By:
Joda West Manganese Mine
M/s. Tata Steel Limited
At/Po: -Bichhakundi, Via -Joda
District -Keonjhar, Odisha-758034

FORM V

[See Rule 14 of Environment (Protection) Amendment Rules, 1993]

ENVIRONMENTAL STATEMENT

for the financial year ending the 31st March 2026

PART -A

i.	**Name and Address of the Owner/ Occupier of the industry operation or process.** **Agent** **Nominated Owner** **Address**	 Mr. Abhaya Kumar Gupta, Head Mines and Agent Mr. T.V. Narendran Managing Director, Tata Steel Ltd. Joda West Manganese Mine, Tata Steel Limited, P.O.: Bichhakundi, Via: Joda, District: Keonjhar, Orissa-758034
ii.	**Industry Category**	Opencast Mining
iii.	**Production Capacity- (Units)**	Mn Ore - 1,80,000 (Tonnes per annum) (As per EC and CTO)
iv.	**Year of Establishment**	1933
v.	**Date of the last environmental Statement submitted**	29-09-2025

PART -B

Water and Raw Material Consumption: Mining is not a manufacturing process thus water is not a raw material essential for production; however, water is used for haul road dust suppression and other support services which are not directly linked with the quantum of production.

(1) **Water consumption m^3/day**

Process : 115.13**m^3**/day (Total for water sprinkling-42024 **m^3**)
Cooling : Nil
Domestic : 788.67 **m^3**/day (Total-286770 **m^3**)

Name of the Products	Process water consumption per unit of product output (Excluding water sprinkling)	
	During the previous year (2024-25)	During the current Financial Financia year (2025-26)
(1) Manganese Ore	Nil	Nil

Remarks: *Manganese Ore is produced by mechanized mining method, which does not involve beneficiation and thus precludes the consumption of water. Unlike manufacturing processes, production from mining doesn't involve water as raw material or any of the operational activities.*

(2) **Raw material consumption**: Unlike manufacturing processes, mining doesn't involve any such raw materials; However, uses various other resources for ancillary services essential to ensure mining such as Diesel, Electricity and Explosives, etc.

The table below reflects the production and dispatch figures for the last two financial year.

Name of the raw materials	Name of the product	Consumption of raw materials per unit	
		During the Previous Financial year (Year 2024-25)	During the current Financial year (Year 2025-26)
-Nil-	Manganese Ore	Production 173933 MT Dispatch 157834.12MT	Production 126688 Dispatch 114211.24 MT

Remarks: -*: Mining is not a manufacturing process. The ore produced from Mine head is used as raw material to produce ferro manganese. Other essential resources used during the reporting period (2025-26) is as follows: Diesel (1674.104KL), Explosive (112250 Kg) Electricity (3282.056 Mwh)*

PART -C

Pollution discharged to environment /unit of output.
(Parameter as specified in the consents issued)

Pollution	Quantity of pollutants discharged (maas/day)	Concentrations of Pollutants in discharge (mass/volume)	Percentage of variation prescribed standards with reasons
(a) Water	-Nil-	-Nil-	Not Applicable
-There are no direct/indirect source for discharge of effluents/pollutants to the environment. Environmental quality parameters are monitored from time to time to assess the water quality of the nearby streams/nallahs and monsoon runoff from the mining areas. The environmental quality parameters are monitored, and reports are submitted to SPCB as well as MoEF&CC along with six monthly compliances.			
(b) (Air)	-Nil-	-Nil-	Not Applicable
-There is no such point source of emission from the mine. Major source of air pollutants is fugitive dust generated mainly due to the movement of vehicles/HEMMs in the haul roads, drilling/blasting activities etc, which is fugitive in nature and thus has not been quantified (mass/day). -The environmental quality parameters are monitored, and reports are submitted to SPCB as well as MoEF&CC along with six monthly compliance reports.			

PART -D

(Hazardous Wastes)

[As specified under the Hazardous and other Waste (Management and Transboundary Movement) Rules, 2016, amended till date]

Hazardous Waste	Total Quantity	
	During the Previous Financial Year (2024-25)	During the Current Financial Year (2025-26)
Used/Spent Oil Schedule-I Stream-5.1(in Liter)	1650L	1050L
Wastes/Residue Containing oil/ Contaminated cotton rags- Schedule-I Stream-3.3, 5.2 & 33.2)	2.5kg	2.5kg
Empty Barrells Schedule-I , Stream-33.1	31 Nos(930kg)	6 Nos (180 kg)
From Pollution Control Devices	Not Applicable since no point source thus no ESP nor any Bag Filters installed	Not Applicable since no point source thus no ESP nor any Bag Filters installed

PART -E
(Solid Wastes)

	Total Quantity	
	During the previous financial year (2024-25)	During the Current financial year (2025-26)
From Process (overburden material)	1909267.55 M3 3818535.1MT	1074898.42 M3 537449.21 MT
From pollution control facilities	Nil	Nil
Quantity recycled or re-utilized within the unit.	Nil	Nil
Sold	Nil	Nil
Disposal	1909267.55 M3 3818535.1MT	1074898.42 M3 537449.21 MT

PART -F

Please specify the characterization (in terms of composition and quantum) of hazardous as well as solid wastes and indicate disposal practice adopted for both these categories of wastes

Characterization of Hazardous Waste: -

- The significant source of hazardous waste is Used oil (HW-5.1) is mainly Hydrocarbons and consist of lubricants, coolants, transformer oil and hydraulic oil. Lead Acetate batteries are also used in HEMM fleet which are mainly of automotive fuel cells.
- Overburden being the only form of significant solid waste contains lateritic morrum, shale and quartzite, etc.

- Horticultural Waste: All the horticultural waste, food waste and biodegradable waste is getting composted at our facilities.

Disposal Practice: -

- SOLID WASTES -OB dumps are maintained as per the approved scheme of mine plan where proper terraces and peripheral drains are constructed supported with gabion wall/retention wall to arrest the silt/sediments during monsoon season. Once the slope of the dumps is stabilized then the dumps are reclaimed by plantation of native varieties of forestry saplings.
- USED OIL -The used oil generated at various sources is collected in leak proof barrels and then is kept on an impervious floor with oil catch pit. It is also ensured that the caps of the barrels remain intact and horizontal. The storage area is properly fenced, and caution board displayed. The used oil collected from sites are centrally auctioned to an SPCB authorized/registered recycler for recycling. At present, used oil generated from the departmental HEMM fleet (TSL's fleet of HEMM) are managed by the company through auctioning; however major chunk of generation is due to the contractual operations, managed by outsourced agencies as per applicable norms.
- Provision of impervious pit for collection of oily waste in the workshop premises in addition to the existing practice of collection at specified barrels.

PART -G

Impact of pollution abatement measures taken on conservation of natural resources and on the cost of production

- Water spraying on haul Roads and Mine Pits is done regularly to suppress the dust.
- All the haul roads in the mining area are made up of morrum & compacted. Regular repair is being done by dozer & grader after spreading the layer of sweet morrum over it.
- Wet drilling is practices along with controlled blasting followed for minimal dust generation and prevent fly rocks.
- Site-specific biodiversity management plan for implementation of measures for protection and conservation of biodiversity in and around the mine. Accordingly, emphasis on the principles of restoration is ensured by following scientific plantation strategies with the help of mixed varieties of native (non-exotic) forestry saplings in the scheme of plantation. So far, around 119.77 hectares of area (including waste dump, safety zone, back filled area and avenue plantation zones) have been covered under plantation with 518379 nos of saplings (approx.). In the process of afforestation, the mine has ensured rehabilitation of around 46.140 hectares over OB dump, 62.88 ha of Avenue Planation and 6.848 ha of Safety zone plantation where the saplings have attained selfsustaining stage. The mine management has also established a centralized nursery over an area of 2000 sq-mtr with a generation potential of around 1 lakh saplings/year within the lease area for promoting greenbelt/ afforestation related measures which caters to all the sapling requirement of all the three leases in Manganese Group of Mines. In addition to the above, 7400 nos. of saplings including gap filling were planted over an area of 0.5 ha(Plan Area) on the dump during FY 2025–26.
- The mine management proactively undertakes various environmental activities for the conservation/protection of environment. The cost incurred towards environmental measures are earmarked in a separate fund center. An abstract environmental expenditure during FY 25-26 is summarized in the table as follows:

Table. Environmental Expenditure for 2025-26

SN.	Environmental Conservation /Protection Measures	Total Expenditure (Lakhs-INR)
1	Afforestation on Dump slopes as per PMCP	**203.88**
2	Pollution Control Measures	
3	Env. Awareness/Mines Environment & Mineral Conservation Week Celebration	
4	Viewpoint Creation/ Remediation Management	
5	Environment Monitoring and Studies Undertaken	
6	Regulatory Payments	

- In addition, Tata Steel Rural Development Society also undertakes the peripheral development activities with a large magnitude such as extending support in agriculture and other livelihood options, Water harvesting ponds etc.

PART-H

Additional measures / investment proposal for environmental protection, abatement of pollution, prevention of pollution

- Garland drains and toe wall around the OB dumping shall be provided to check and channelize surface run-off.
- Plantation of forestry species shall be planted over the inactive waste dump slopes to restore the greenbelt.
- Vetiver Plantation has been done in inactive dump slope.
- Green belt has been developed along colony and mining.
- Soil Conditioning and treatment practices followed for land reclamation.
- In-House nursery for development of native varieties of forestry saplings.

PART-I

Any other for Improving the quality of environment.

1. With compliance to conditions of Environment Clearance obtained from MoEF&CC, the following monitoring is being done at regular interval.
    - Ground Water Level at nearby bore wells.
    - Trace metal in dust fall.
    - Ground water quality at lower level.
    - Meteorological monitoring
    - Trace metals such as Fe, Cr+6, Cu, Se, As, Cd, Hg, Pb, Zn and Mn at specific locations for both surface water (downstream & upstream) and ground water at lower elevation is being periodically monitored by referring to the standards as per BIS: 10500:2012.
2. Topsoil generated during excavation are utilized immediately for nursery development and dump slope plantation.
3. Measures taken to control Air Pollution:
    - Water sprinkling on the haul road.
    - Provision of dust masks to the workmen.
    - Adoption of wet drilling arrangement in the drill machines.
    - Black topped road in the residential colony.
    - Green belt along mining and colony

- Native sapling and vetiver plantation in inactive dumps.

4. Measures taken to control Water Pollution: -
    - Construction of toe wall and garland drain along the dump slope to prevent surface runoff during monsoon.
    - Construction of soak pits for discharge of sanitary sewage.
    - Provision of oil separation pit for effluents coming out of workshop.
    - Native sapling and vetiver plantation in inactive dumps.
    - STP for domestic effluent in Joda West colony.
5. Measures taken to control Noise & Ground Vibration: -
    - Thick plantation has been developed around the mines and office building to provide a canopy cover.
    - Implementation of advance blasting technique (NONEL) to reduce the blast induced ground vibration.
    - Workmen are provided with earmuff while working near heavy earth moving machineries.
6. Measures taken to control Land Degradation: -
    - Afforestation around the non-active dump for stabilization.
    - Reclamation and rehabilitation of mined out area as per approved Scheme of Mining.
7. Surveillance of Occupational Health: Periodical Medical Examination of employees (departmental & contractual) are conducted as per prescribed norms of Mines Rule, 1955. The initial and periodical examination includes blood hematology, blood pressure, detailed cardiovascular assessment, neurological examination etc.
8. The mine is certified with ISO-14001:2015 (Environment Management System).

Green Belt and Afforestation Measures: -







Nursery for Inhouse sapling development







