



**The Member Secretary
State Pollution Control Board
Paribesh Bhawan
A/118, Nilakantha Nagar
Unit: VIII, BHUBANESWAR-751012**

MD/ENV/601/120/17
Date: 26.09.2017

Sub: Environment Statement of Manmora Manganese Mine, Tata Steel Ltd. for 2016-17

Dear Sir,

As required under "Environmental (Protection) Amendment Rules, 1992", we are submitting here with the Environmental Statement for our Khondbond Iron Mine for your kind perusal.

Thanking you,
Yours faithfully,

F: Tata Steel Limited

f Head (Planning), OMQ

Encl: As above.

**Copy to: Regional Officer, State Pollution Control Board, At: Baniapat, College Road,
Dist: Keonjhar – 758001, Orissa.**

TATA STEEL LIMITED

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Registered Office Bombay House 24 Homi Mody Street Fort Mumbai 400 001 India
Tel 91 22 66658282 Fax 91 22 66657724

Corporate Identity Number L27100MH1907PLC000260 Website www.tatasteel.com

ENVIRONMENTAL STATEMENT

2016-17

MANMORA MANGANESE MINE

TATA STEEL LIMITED

FORM V

[See Rule 14 of Environment (Protection) Rules, 1986]

**ENVIRONMENTAL STATEMENT
FOR THE FINANCIAL YEAR ENDING THE 31ST MARCH 2016**

PART - A

- (i) Name and Address of the Owner / occupier of the industry operation or process. : **MANMORA MANGANESE MINE**
Nominated Owner :-
Mr.T.V.Narendran.
Managing Director, M/s TATA Steel Ltd.
Jamshedpur, Dist- East Singhbhum
Jharkhand - 831 001
Agent :-
Sri. Debashis Jena
Chief, Joda
OMQ, TATA Steel
P.O.: Joda, Via : Joda
Dist : Keonjhar, Orissa - 758 034
- (ii) Industry Category : Opencast Mining
- (iii) Production Capacity - Units : 12,000TPA (Manganese Ore)
- (iv) Year of Establishment : 1956
- (v) Date of the last environmental statement submitted : 20th Sept'2016

PART - B

Water and Raw Material Consumption

- (1) Water Consumption m³/day
Process : Nil
Cooling : Nil
Domestic : Nil *

*Domestic water is not required within the lease area as the employees are residing at Joda East Township which is situated under Joda East land lease.

Name of the Products	<u>Process water consumption per unit of product output</u>	
	During the previous Financial year	During the current Financial year
	(1)	(2)
(1) Manganese Ore	Nil	Nil

Remarks: Manganese Ore is produced by semi mechanized Mining method, which does not involve beneficiation and thus precludes the consumption of water.

- (2) Raw material consumption

Name of the raw materials	Name of the product	<u>Consumption of raw materials per unit</u>	
		During the previous Financial year	During the current Financial year
Manganese Ore	Manganese Ore	<u>Year: 2015-16</u> Production :- NIL Despatch :- NIL	<u>Year: 2016-17</u> Production :- NIL Despatch :- NIL

Remarks : As the entire mineable resource has been depleted, no further mining activities shall be undertaken within the lease hold area is envisaged. However, the production of finished ore will be continued by manual screening and processing of sub-grade mineral and mineral rejects already available at pit head during dry season only

PART - C

Pollution discharged to environment / unit of output

(Parameter as specified in the Consents issued)

Pollution	Quantity of pollutants discharged (mass/day)	Concentrations of Pollutants in discharges (mass/volume)	Percentage of variation from prescribed standards with reasons
(a) Water	The process of Manganese Ore production includes blasting, removal of overburden, breaking and sizing of ore to required size and then transportation to the customer does not require consumption of water. Thus, there is no process discharge from the mine.		
	The six month average surface water quality data is enclosed as Annexure - I. It shows that the concentrations of the pollutants are well within the permissible standards.		
(b) Air	Since this is an open cast Mine, the dust generation is mainly due to the movement of vehicles in the haul roads, drilling activities etc, which is fugitive in nature and cannot be quantified. The fugitive dust is allayed by sprinkling of water by mobile tanker and development of green barrier by plantation around the residential area.		
	The monthly average ambient air quality data is enclosed as Annexure - II. It shows that the concentrations of the pollutants are well within the permissible standards.		

PART - D
Hazardous Wastes
[As specified under the Hazardous & Other wastes (Management & Transboundary Movement) Rules, 2016]

Hazardous Wastes	Total Quantity	
	During the previous Financial year <u>Year 2015-16</u>	During the current Financial year <u>Year - 2016-17</u>
(i) From Process		
Waste Oil (in Ltrs.)	} Nil*	} Nil*
Used Oil (in Ltrs.)		
Cotton Waste (in Kgs)		
Duster (in Nos.)		
Filters (in Nos.)		
(ii) From pollution control facilities	Nil	Nil

* The mine has no facility for maintenance of equipment deployed at the mine itself. Viewing the close proximity and same management control, the equipment of Manmora Mn. Mine are being maintained at Joda East Iron Mine

PART - E
Solid Wastes

	Total Quantity	
	During the previous Financial year <u>Year : 2015-16</u>	During the current Financial year <u>Year : 2016-17</u>
(a) From Process (Overburden rejects)	Nil	Nil
(b) From pollution control facilities	Nil	Nil
(c)		
(1) Quantity recycled or re-utilized within the unit	Nil	Nil
(2) Sold		
(3) Disposal	Nil	Nil
	Nil	Nil

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 composition of hazardous wastes like Waste Oil & used oil are Hydrocarbons, lead and used acids. The composition of the solid wastes (Overburden and rejects) contains lateritic morrum, shale and quartzite.

- **Disposal Practice:-**

- SOLID WASTES -The overburden is systematically and scientifically dumped on a geologically barren area and the same will be reclaimed by plantation after being declared inactive.

The mine has no facility for maintenance of equipment deployed at the mine itself. Viewing the close proximity and same management control, the equipment of Manmora Mn. Mine are being maintained at Joda East Iron Mine .

- WASTE OIL -The waste 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. During transfer of waste oil to barrels, a trough is placed underneath in order to prevent land contamination due to oil spillage. Then at a fixed interval, these barrels are returned to Joda East Mines Stores for final disposal through auction to the authorized party.
- USED COTTON WASTES - The used cotton wastes generated at various locations are kept in designated barrels and at a fixed interval; these wastes are handed over to the Joda East Iron Mine stores Dept. for handing it over to authorized party for disposal.
- 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.

1. 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 sweat morrum over it.
2. 10250 nos. of saplings of various forestry species were planted covering an area of 1.5 hectare within the leasehold area of Manmora Manganese mines with a survival rate of 85% during the year 2016-17.
3. In addition, Tata Steel Rural Development Society also undertakes the peripheral development activities with a large magnitude.
4. An amount of ₹ 0.75 lakhs was spent as a part of Manpower Engagement in the Environment Department in the year 2016-17.
5. To maintain tailing disposal system, the company has incurred an expenditure of ₹ 40.00 lakhs.
6. An amount of ₹ 1.80 lakhs was spent towards monitoring of various environmental parameter.

7. To generate awareness among the employees and their families about environment, World Environment Day was celebrated at Joda. During 2016-17 an amount of ₹ 2.10 lakh was spent on this account.
8. For maintenance/ evacuation of slime dam, the company has incurred an expenditure of ₹ 180.00 lakhs.
9. Environment Management Department is in function to manage regular environmental monitoring jobs and to ensure operation of environmental safeguards. The administrative expenditure of the department for year 2016-17 was ₹5.00 lakhs

PART - H


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

- a) Garland drains and toe wall maintenance around the OB dump and tailing dam slopes to check and channelize surface run-off.
- b) Gap filling plantation of forestry species shall be done over the inactive waste dump and tailing dam slopes.

PART - I

Any other particulars for improving the quality of environment:

1. Top soils generated during excavation were utilized for dump slope plantation.
2. Measures taken to control Air Pollution :-
 - Water sprinkling on the haul road,
3. Measures taken to control Water Pollution :-
 - Construction of toe wall and garland drain along the dump slope to prevent surface run-off during monsoon.
4. Measures taken to control Noise & Ground Vibration :-
 - Thick plantation has been developed around the mines to provide a canopy cover
 - No drilling and blasting being carried out due to no operational mine.
5. Measures taken to control Land Degradation :-
 - Afforestation around the non-active dump and tailing dam slope for stabilization.
6. The mine is certified with ISO-14001 (Environment Management System)


f **Head (Planning), OMQ**

Annexure -I

Water Pollution: Not applicable as there is no outside discharge of any industrial effluent.

Annexure -II**POLLUTION DISCHARGED TO ENVIROMENT/ UNIT OF OUTPUT**

(Parameters as specified in the consent issued)

Air Pollution:

Average Air Quality of FY' 17:

Pollutants	Concentration of pollutants ($\mu\text{g}/\text{m}^3$)	Standards ($\mu\text{g}/\text{m}^3$)
Near Manmora Slime Dam		
1. PM ₁₀	51.50	100
2. PM _{2.5}	25.99	60
3. SO ₂	4.58	80
4. NO _x	11.11	80
Near Rain Water Harvesting		
1. PM ₁₀	48.91	100
2. PM _{2.5}	24.44	60
3. SO ₂	4.48	80
4. NO _x	11.09	80
Near Slime Dam		
1. PM ₁₀	54.77	100
2. PM _{2.5}	27.68	60
3. SO ₂	5.05	80
4. NO _x	12.16	80
Near Equipment Maintenance		
1. PM ₁₀	59.85	100
2. PM _{2.5}	31.29	60
3. SO ₂	5.60	80
4. NO _x	13.80	80