



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

MD/ENV/598/120/17
Date: 26.09.2017

Dear Sir,

Sub: Environment Statement of Katamati Iron Mine, Tata Steel Ltd. for 2016-17

As required under "Environmental (Protection) Amendment Rules, 1992", we are submitting here with the Environmental Statement for our Katamati 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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Tel 91 22 66658282 Fax 91 22 66657724

Corporate Identity Number L27100MH1907PLC000260 Website www.tatasteel.com

**ENVIRONMENT STATEMENT
2015-16**

KATAMATI IRON MINE

TATA STEEL LIMITED

FORM - V
(See Rule -14)

ENVIRONMENT STATEMENT FOR THE FINANCIAL YEAR ENDING THE 31st MARCH, 2017

KATAMATI IRON MINE, TATA STEEL LIMITED

PART-A

- 1 Name and address of the owner/ occupier of the industry, operation or process : Katamati Iron Mine,
Tata Steel Limited,
Noamundi, Dist.-West Singhbhun,
Jharkhand-833217
- Agent : Mr R P Mali
Nominated Owner : Mr T V Narendran,
Managing Director,
Tata Steel India & SEA,
Jamshedpur-831001
- 2 Industry Category : Major
- 3 Production Capacity : 8 MTPA Iron Ore
- 4 Year of Establishment : 1933
- 5 Date of last Environmental Statement submitted. : 29th September, 2016

PART-B

Water and Raw Material Consumption

(i) Water Consumption:

<u>Consumption Head:</u>	2015-16 (in cum/day) (Annual average)	2016-17 (in cum/day) (Annual average)
Process	Nil	Nil
Spraying in mine pit , services	Nil	Nil
Domestic	Nil	Nil
Name of the product	Process water consumption per product output (m³/MT)	
	During the Previous financial Year (2015-16)	During the current financial Year (2016-17)
Washed Iron Ore	NA	NA

This is a mechanised mine producing iron ore and the process does not require water for mining. Also no ore processing is done.

There is no colony inside the lease area and water requirement is only for drinking during the shift.

(ii) Raw Material Consumption

The following items have been consumed/ utilized:

Name of Raw materials	Consumption of Raw Material	
	During previous financial year (2015-16)	During current financial year (2016-17)
High Speed Diesel	2620570 Litres	3408316 Litres
Lubricants	3570 Litres	24133 Litres
Grease	182 kgs.	4805 kgs.
Explosives of all types (Explosive, codex, detonator)	1006512 Kgs.	1345828 Kgs.
Electric Power:		
Consumed	0 KWH	377842 KWH
Generated	0 KWH	0 KWH
Gas	312 Cum	90 Cum
Tyres	0 Nos.	29 Nos.
Drill rods	11 Nos.	59 Nos.

PART-C **POLLUTION DISCHARGED TO ENVIROMENT/ UNIT OF OUTPUT** **(Parameters as specified in the consent issued)**

Water Pollution: The iron ore excavation does not require water for any process and hence there is no discharge from the mine. Even, there is no colony inside the lease area

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 Slime Dam		
1. PM ₁₀	53.29	100
2. PM _{2.5}	26.84	60
3. SO ₂	4.61	80
4. NO _x	11.61	80
Office Area		
1. PM ₁₀	51.85	100
2. PM _{2.5}	26.35	60
3. SO ₂	4.62	80
4. NO _x	11.27	80
Near Plant		
1. PM ₁₀	55.79	100
2. PM _{2.5}	28.74	60
3. SO ₂	4.82	80
4. NO _x	12.08	80
Mining Area		
1. PM ₁₀	56.71	100
2. PM _{2.5}	28.97	60
3. SO ₂	4.95	80
4. NO _x	12.55	80

This is an opencast mine and does not have single point source of air pollutants. Hence, the quantity of air pollutants discharged in Kg/day cannot be ascertained. The above data shows the average ambient air quality during 2016-17.

PART-D
HAZARDOUS WASTES

As specified under the Hazardous & Other Waste (Management & Trans boundary Movement) Rules, 2016 and amendment thereof

Hazardous Wastes	Total Quantity	
	During the Previous Financial Year (2015-16)	During the Current Financial Year (2016-17)
I) From Process: <ul style="list-style-type: none"> ▪ Used Oil ▪ Waste containing Oil ▪ Waste Battery 	Not applicable As the mine neither generates nor handles any hazardous/toxic substances specified under Hazardous Waste (Management, Handling and Transboundary Movement) Rules, 2008. There is common facility for maintenance of vehicles at Noamundi Iron Mine. Hence, the hazardous waste such as, used oil & waste containing oil are counted under Noamundi Iron Mine of the Steel Company.	
II) From Pollution Control Facility: <ul style="list-style-type: none"> ▪ Waste oil from oil & grease separation pit ▪ Sludge from oil and grease separation pit 		

PART-E
SOLID WASTES

Solid waste from this mine is generally of two categories i.e. Overburden/rejects removed during mining operations and slime generated in the process of iron ore washing.

Sources	TOTAL QUALITY	
	During the Previous Year (2015-16)	During the Current Year (2016-17)
a) From Process: <ul style="list-style-type: none"> ▪ From Mining as Overburden ▪ Rejects ▪ From OB plant as Tailing 	421500 MT 449400 MT NA	1284958 MT 364105 MT NA
b) From Pollution Control Facility	Not Applicable	Not Applicable
c) i. Quantity recycled or reused within the unit	Study under Progress	Study under Progress
ii. Quantity sold <ul style="list-style-type: none"> ▪ General Office Waste 	Nil	Nil
iii. Quantity disposed <ul style="list-style-type: none"> ▪ Mining overburden ▪ Rejects ▪ Canteen and colony waste 	421500 MT 449400 MT Organic wastes are disposed of in dumps	1284958 MT 364105 MT Organic wastes are disposed of in dumps

PART-F

THE CHARACTERISTICS (in terms of composition and quantum) OF HAZARDOUS ASWELL AS SOLID WASTES AND INDICATE DISPOSAL PRACTICE ADOPTED FOR BOTH THESE CATEGORIES OF WASTES.

No hazardous wastes are generated during the operations. The mining equipment's are maintained in the workshop of nearby Noamundi Iron Mine of the Company.

Solid wastes generated as overburden consists mainly of lateritic morum. Solid waste generated as overburden, sub-grade mineral and slime are inert. The average chemical composition are as follows:

	Overburden/Sub-grade (in %)
Fe	51.40
SiO ₂	10.90
Al ₂ O ₃	6.50
Phos	0.058

DISPOSAL PRACTICE:-

a) SOLID WASTES:

The overburden is systematically and scientifically dumped on a geologically barren area and properly supported with hard material and the same is being reclaimed by plantation after being declared inactive.

b) HAZARDOUS WASTE:

As the mine neither generates nor handles any hazardous/toxic substances specified under Hazardous Waste (Management, Handling and Transboundary Movement) Rules, 2008. There is common facility for maintenance of vehicles at Noamundi Iron Mine. Hence, the hazardous waste such as, used oil & waste containing oil are counted under Noamundi Iron Mine of the Steel Company.

PART-G

IMPACT OF POLLUTION ABATEMENT MEASURES TAKEN ON CONSERVATION OF NATURAL RESOURCES AND ON THE COST OF PRODUCTION

- Efforts have been made with expenditure of Rs. 300 lakhs for operation and maintenance of slime dam during the year 2014-15 as a mineral conservation measure.
- Efforts have been made to reduce the consumption of lubricant oil used in Heavy Mining equipment, by arresting leakages in time and by eliminating spillages.
- Approx. Rs.30 lakhs has been spent for spillage control for mineral conservation in dry plant during the year 20165-17.
- Approximately Rs. 50 lakhs has been spent for the use of binder and flocculent to minimize the waste and to maximize the water recycling from the slime to wet plant.
- An amount of Rs. 8.50 lakhs was spent towards monitoring of various environmental parameters.
- To reduce the water consumption in HEMM we have replaced the coolant with water combination with only coolant.
- Conventional lights in mining area have been replaced with LED lights with an expenditure of Rs. 5.00 lakhs during the year 2016-17 which will save 5000 KWH of electricity per annum.
- An amount of Rs. 10.00 lakhs has been spent for the scientific mine planning for the mineral conservation.
- To reduce water pollution and also for its conservation Rs. 10.00 lakhs has been spent during 2015-16.
- An amount of Rs. 1.00 lakhs was spent as a part of Manpower Engagement in the Environment Department in the year 2016-17.
- An amount of Rs. 17.50 lakhs were spent on the use of dust ban chemical for DS & DE system.

- Towards the Maintenance and operation of mobile water sprinkler an expenditure of 28.88 lakhs were spent.
- An amount of 25.00 lakhs was spent towards the use of fuel additive.
- An amount of Rs. 1.72 lakhs was spent for the Electronic Display Board Installation & Maintenance.
- An amount of Rs. 2.00 lakhs was incurred towards conducting Ground vibration studies.
- An amount of Rs.0.30 lakhs was incurred towards maintenance of Wet drill.
- An amount of Rs. 10.00 lakhs was incurred towards Environment Management Plan.
- An amount of Rs. 1.80 lakh was incurred for engaging an outside party for monitoring the different environmental parameters.
- An amount of Rs.8.00 lakhs was incurred towards plantation and Horticultural development.
- A total of 2981 nos. of tree saplings have been planted as a part of Horticultural development process in Katamati during the year 2016-17.
- An amount of Rs. 6.00 lakhs have been incurred as a part of plantation and Horticultural development activities in mining area of as plantation and maintenance in Mine area during the year 2016-17.
- To generate awareness among the employees and their families about environment, World Environment Day was celebrated and an amount of Rs. 0.50 Lakh was spent on this account.
- To generate awareness about Bio Diversity among school children, villagers, several programmes have been conducted with approximate expense of Rs. 25 lakh in 2016-17.
- Annual Flower and Vegetable Show was conducted in the month of January 2017 to make the public appreciate the importance of greening efforts. An amount of Rs. 3.25 lakh was spent for the show.
- Environment Management Department is functioning at Noamundi to manage monitoring and other required activities. The administrative expenditure of the department for year 2016-17 was Rs.7.20 lakhs.

The above abatement measures have resulted in improvement of air and water quality, reduction in noise exposure, development of greenery within the lease area. In addition to the above, Tata Steel Rural Development Society (TSRDS) is engaged in peripheral developmental activities in villages

around the mine, on various civil amenities projects, illuminating villages by tapping renewable source of energy with the installation of solar lights, digging ponds in support to provision of irrigation water and for other domestic use irrigation and agricultural extensions and in recharging groundwater by arresting the flow of rainwater in downstream, plantation programmes, medi-care and health, education, rural sports and skill development, rural cultural promotion activities taken up in these villages, and an amount of 117.30 lakhs was spent on these.

PART-H

ADDITIONAL MEASURES/ INVESTMENT PROPOSAL FOR ENVIRONMENTAL PROTECTION INCLUDING ABATEMENT OF POLLUTION, PREVENTION OF POLLUTION

- Additional expenditure of Rs. 8.50 lakhs is proposed during next financial year for monitoring different environmental parameters.
- Rs. 2.50 core will be spent towards peripheral development during the next year.

- Rs. 10 lakhs have been proposed to spent towards buying environmental monitoring equipment's as required under new National Ambient Air Quality Standard.
- Rs. 10,000/- will be spent towards monitoring of free silica in ambient air samples.

PART-I

ANY OTHER PARTICULARS FOR IMPROVING THE QUALITY OF THE ENVIRONMENT

The mine has adopted the Integrated Management System (ISO 9001: 2015, ISO 14001: 2015 & OHSAS 18001: 2007) and have been certified in 1st August 2008.

The Company is having a full-fledged Environmental Management Department with personnel from science background to take care of all environmental aspects relating to mines of TATA STEEL. This department is based at Noamundi, Jharkhand, Mines Division's headquarters, which is adjacent to Katamati Iron Mine. This department has in-house capabilities for monitoring various environmental parameters and suggesting to the management necessary abatement measures.

To check run - offs during the during monsoon season from the mine lease, four check dams are provided across Balijhore Nalla, which is passing through the lease. An amount of Rs.80 lakhs were spent during 2016-17 for de-siltation of the check dam.

Old mining benches have been reclaimed by afforestation and these areas are now converted to forest like.


f Head (Planning), OMQ