

# **ENVIRONMENTAL STATEMENT 2012-13**



## **KHONDBOND IRON AND MANGANESE MINE**

**TATA STEEL LIMITED**

**SEPTEMBER, 2013**

FORM – V  
(See rule-14)

Environmental Statement for the financial year ending the 31<sup>st</sup> March 2013

P A R T – A

- i. Name and address of the owner/  
occupier of the industry, operation or  
process
- Khondbond Iron & Manganese Mine,  
Tata Steel Limited  
Joda – 758 034  
Dist. Keonjhar  
Orissa

Agent Mr Anurag Dixit

Nominated Owner Mr H M Nerurkar  
Managing Director  
Tata Steel Limited  
Jamshedpur-831 001

- ii. Date of last Environmental Statement  
submitted.
- September 27, 2012  
Vide our letter no. MD/ENV/1047/120/12

P A R T – B

**WATER AND RAW MATERIALS CONSUMPTION**

1.

Water Consumption m <sup>3</sup> /day	(Average requirement)
Process	Nil
Cooling (Sprinkling)	62.56
Domestic	17.26

Name of products	Water Consumption for unit of products	
	During the previous financial year (2011-12)	During the current financial year (2012-13)
Iron Ore	Nil	Nil

This is a mechanised mine producing iron and manganese ore. The iron ore processing is through dry crushing and screening only. Dust suppression at Crushing & Screening plant is carried out through a scientific way using dry fog system, thus reducing the requirement of water to very minimum level.

There is no colony inside the lease area and water requirement is only for drinking, sanitation and canteen use during the day.

## 2. Raw material consumption

Name of raw materials	Name of products	Consumption of raw materials per unit of products	
		During the previous financial year	During the current financial year
		Nil	Nil

This is an opencast mine producing Iron & Manganese ore. As such, no raw material from outside is required. The mine produced 779431.374 MT of sized iron ore during 2012-13. The production during 2011-12 was 523091.06 MT of sized ore.

Similarly, the production of Manganese ore during 2012-13 was 38,934 MT as compared to 35,985 MT during 2011-12.

### P A R T – C POLLUTION GENERATED

**Water:**

The iron ore excavation is carried out on hill slopes and above the ground water table. Hence, there is no generation of any process water and no industrial effluent is discharged outside.

Pollutants	Qty. of pollutants discharged (Kg/day)	Concentration of pollutants (milligrams/litre)	Standards (milligrams/litre)	Percentage of variation from standards with reasons
Not applicable There is no outside discharge of any industrial effluent.				

**Air:** Results: Average of FY' 13

Pollutants	Qty. of pollutants discharged (Kg/day)	Concentration of pollutants ( $\mu\text{g} / \text{m}^3$ )	Standards ( $\mu\text{g} / \text{m}^3$ )
<b>Near Plant</b>			
1. PM <sub>10</sub>	-	52.76	60
2. PM <sub>2.5</sub>		33.52	40
3. SO <sub>2</sub>	-	9.44	50

4. NO <sub>x</sub>	-	9.46	40
<b>Mining site</b>			
1. PM <sub>10</sub>	-	50.50	60
2. PM <sub>2.5</sub>		31.45	40
3. SO <sub>2</sub>	-	9.20	50
4. NO <sub>x</sub>	-	9.41	40
<b>Near Weighbridge</b>			
1. PM <sub>10</sub>	-	49.97	60
2. PM <sub>2.5</sub>		30.60	40
3. SO <sub>2</sub>	-	9.17	50
4. NO <sub>x</sub>	-	9.38	40
<b>Near Equip. Maint.</b>			
1. PM <sub>10</sub>	-	40.81	60
2. PM <sub>2.5</sub>		21.84	40
3. SO <sub>2</sub>	-	8.46	50
4. NO <sub>x</sub>	-	8.68	40

This is an opencast mine and does not have any single point source of air pollution. Hence, the quantity of air pollutants discharged in Kg/day cannot be ascertained. The above data show the average ambient air quality during FY' 13.

#### **P A R T – D** **HAZARDOUS WASTES**

The mine has been granted authorisation to handle and dispose hazardous materials under Hazardous Waste (Management, Handling & Transboundary Movement) Rules, 2008, vide OSPCB letter no. IND-IV-HW-314-4348, dated 15.03.2010 and is valid up to 31.04.2014.

Hazardous Waste	Total Quantity in Kilograms	
	During the previous financial year	During the current financial year
a) from process		
- used oil in liquid form	9000 litres	14050 litres
- Oily wastes in solid form	2.06 MT	4.5 MT
- Used battery in solid form	54 nos.	20 nos.
b) from pollution control facilities	Nil	Nil

**P A R T – E****SOLID WASTES**

Solid waste is generated as overburden during mining operation.

Solid Waste	Total Quantity in tonnes	
	During the previous financial year	During the current financial year
a) from process - Mining Overburden - Rejects - Spoils  - Mining Overburden - Rejects - Spoils  - Ore washing slimes  b) from pollution control facilities  c) 1. Quantity recycled or reutilised 2. Sold 3. Disposed	<b><u>From Iron ore mining</u></b>	<b><u>From Iron ore mining</u></b>
	549756 MT	
	282289 MT	Nil
	Nil	306600 MT
		Nil
	<b><u>From Mn ore mining</u></b>	<b><u>From Mn ore mining</u></b>
	68000	71604
	2166	2386
	Nil	Nil
	Nil	Nil
Nil	Nil	
Nil	Nil	

**P A R T - F**

**The characteristics (in terms of concentrations and quantum) of hazardous as well as solid waste and disposal practice adopted for both these categories of wastes.**

- Hazardous waste such as used oil and waste containing oil are generated from equipment maintenance process. Used oil is collected in closed barrels and is auctioned to the authorized recyclers. Similarly, oily waste are collected and kept in an impervious pit. It is then regularly handed over to M/s West Bengal Waste Management Ltd. for incineration as advised by OSPCB.
- Solid wastes generated as overburden consists mainly of morum, shell and quartzite. The overburden is systematically and scientifically dumped on a geologically barren area and the dump is reclaimed by afforestation once it becomes inactive. Similarly the sub-grade material (Fe >45% <58%) is stacked separately for future use.

## P A R T – G

The impact of the pollution abatement measures taken on conservation of natural resources and on the cost of production:

- Efforts were made to reduce the consumption of lubricant oil used in Heavy Mining Equipment, by arresting leakages in time and by eliminating spillages.
- Similarly, attempts were made to reduce the consumption of electricity in our operations.
- An amount of ₹ 7.20 lakhs was spent towards monitoring of various environmental parameters during 2012-13.
- Water spraying on mine haul ways by water tankers has reduced the dust levels in the ambient air. The cost of operation and maintenance of water sprinklers during 2012 -13 was ₹ 40.80 lakhs
- Dry Fog Dust suppression at dumper hopper and at strategic points in the crushing & screening plant are provided, which accounted for ₹ 2.80 lakhs during the year.
- To generate awareness among the employees and their families about environment, World Environment Day & MEMC week was celebrated at khondbond. During 2012-13, an amount of ₹ 2.00 lakh was spent on this account.
- Wet drilling arrangement has been provided in each drill machine, which helps in minimizing the dust generation during the drilling activity. During 2012-13, the mine has spent an amount of ₹ 13.54 lakhs for the same purpose.
- An electronic display board was installed at the main gate for viewing the environmental monitoring data by the public. The company has spent ₹ 01.20 lakhs for it maintenance during 2012-13.
- An amount of ₹ 03.30 lakhs was spent towards study of ground vibration by engaging the expertise of CIMFR, Dhanbad.
- An amount of ₹ 29.00 lakhs was spent towards Construction/Maintenance of toe walls and garland drains during 2012-13 to take care of surface run-off management.
- An amount of ₹ 01.50 lakhs was spent towards Construction/Maintenance of check dams during the year.
- An amount of ₹ 01.40 lakhs was spent towards Construction/Maintenance of oil separation pit during the year.
- To reduce the dust generation at equipment maintenance area an amount of ₹ 02.50 lakhs was spent for providing the concrete footpath. Moreover, repairing of earth pits at plant area accounted for ₹ 0.50 lakhs during 2012-13.

- During 2012-13, a total of 47,055 saplings covering 7.75 ha were planted for which the company spent ₹ 11.22 lakhs during the year including horticulture activities.
- An amount of ₹ 04.64 lakhs was spent for pre-feasibility study of rain water harvesting structure with the help of K.R.G. India ltd.

The above abatement measures have resulted in improvement of air and water quality, reduction in noise levels, and improvement greenery within the lease. A total amount of ₹ 121.60 lakhs was spent on environmental related jobs during this year.

In addition to the above, Tata Steel Rural Development Society (TSRDS) is engaged in peripheral developmental activities in villages around the mine. The projects of the Society include irrigation and agricultural extension projects, plantation programmes, creation of SAVE FOREST groups, civic amenities development, medical care and health education, rural sports and skill development, rural cultural promotion, etc.

### **P A R T – H**

Additional investment proposal for environmental protection including abatement of pollution.

- During monsoon 2013, we are having the proposal to plant 5,000 saplings covering 2.0 ha of area within the lease area, with a budgetary provision of ₹ 10.00 lakhs.
- During next financial year, it is planned to spend ₹ 15.00 lakhs for monitoring of various environmental parameters.
- There is a plan to establish a bio gas plant to take care of solid waste of canteen during the year 2013-14 with a budget of ₹ 0.50 lakhs.
- An amount ₹ 10.00 lakhs is proposed for further strengthening the environmental laboratory by procuring more monitoring equipments.
- There is plan to install fixed water sprinklers near plant area with a budgetary provision of ₹ 10.50 lakhs during 2013-14.
- During 2013-14, it is planned to spend ₹ 13.75 lakhs for installation of Effluent treatment plant of capacity 5 KLD to take care of canteen waste water.

### **P A R T – I**

Any other particulars for improving the quality of the environment.

- The Company is having a full-fledged Environmental Management Department with personnel from different backgrounds to take care of all environmental

aspects relating to mines of Tata Steel. This department has in house capabilities for monitoring various environmental parameters and suggesting to the management necessary abatement measures.

- The mine has developed its environmental monitoring and laboratory capability to monitor ambient air quality as required under new National Ambient Air Quality Standard.
- Dry fog system and lechlar made dust gun has been installed in the dry plant to improve the air quality.
- Ground vibration studies are being conducted regularly with the help of CMRI, Dhanbad to minimise blasting effect.
- Several initiatives are taken to generate awareness among employees, children and local people towards environment and how to preserve it.
- The mine is certified to ISO 9001:2008, ISO 14001:2004 & OHSAS 18001:2007. All the three systems have been integrated and implemented since 1st August, 2008. Moreover, the mine has also been recently certified to SA 8000:2008.
- OB is being dumped as per plan and within the earmarked area. Inactive portions of the OB dump are gradually stabilised and reclaimed by plantation.
- There is no wet beneficiation plant in the mine. Further there is no generation of any effluent from dry crushing and the screening plant. Hence there is no chance of any discharge of any industrial effluent from the beneficiation plant.



**Head (Planning), OMQ**