

No.J-11015/87/2004-IA.II(M)  
Government of India  
Ministry of Environment & Forests

Paryavran Bhawan,  
C.G.O.Complex, Lodi Road,  
New Delhi-110003.

Dated: 17<sup>th</sup> November 2005

To  
Shri Chanakya Choudhary,  
Chief Resident Executive,  
M/s The Tata Iron & Steel Company Limited  
(M/s Tata Steel Ltd.),  
Jeevan Bharati Building Tower1, 10<sup>th</sup> Floor,  
124, Connaught Circus,  
New Delhi -110001.

**Sub:** Expansion of Tiringpahar Manganese Mine (0.43 LTPA to 0.85 LTPA) of M/s The Tata Iron & Steel Company Limited located in villages Guruda, Plasha, Khondbond & Jaribahal, Tehsil Barbil, District, Keonjhar, Orissa - Application for Environmental clearance -reg.

Sir,

This has reference your letter dated 23.11.2004 enclosing the application and subsequent letters dated 03.12.2004, 27.01.2005, 01.04.2005, 28.04.2005 and 08.06.2005 on the subject mentioned above. The Ministry of Environment and Forests has examined the application. It is noted that the proposal is for expansion in production of manganese ore in the **Tiringpahar Manganese Mine**. The total lease area of the mine is 169 ha of which 70.514 ha is forestland, 49.696 ha is wasteland, 5.653 ha is grazing land and 41.826 ha is fallow land and 1.311ha is agricultural land. Forestry clearance has been obtained on 26.05.2005 for 52.34ha. There are no ecologically sensitive areas such as National Parks, Tiger Reserves, Biosphere Reserves within 10 km of mine site. The ML is located within the Baitarni RF and the Chamakpur RF. Of the total lease area of 169 ha, area to be excavated is 80.667 ha, 21.996 ha is for OB dumps, 11.560 ha is for mineral storage, 0.450 ha is for infrastructure, 3.778 ha is for roads, 6.774 ha is for greenbelt and 43.775 ha is for future exploration. The targeted expansion in annual production capacity of the mine is from 0.43 lakh tonnes per annum (LTPA) to 0.85 LTPA. The project does not involve displacement of people. Baitarini river flows at a distance of 4.5km and Kundra Nala at 6.6 km from ML boundary. Mining is opencast by semi-mechanised method and involves drilling and blasting. 50 vehicles per day will transport an estimated 183 TPD of manganese ore. Approx. 0.70 mill. m<sup>3</sup> of OB has been already accumulated and an estimated 0.99 Mm<sup>3</sup>/annum of OB will be generated. Partial backfilling is proposed from year 2006-07. Peak water requirement of 56 m<sup>3</sup>/d will be met from Kundra Nala through existing facilities. Water table is in the range of 5.5-9.5 m below ground level (bgl) during pre-monsoon and 2.5 m- 5.0 m bgl (post-monsoon). Mining is for a depth of 60m in the hill and will not encounter ground water table. Life of the mine at the rated capacity is 20 years. NOC from the Orissa Pollution Control Board has been obtained on 17.11.2004. Approval of IBM for Modification of Mining Scheme was obtained on 24.03.2005. Public hearing was held on 29.09.2004. The capital project cost is Rs. 190 lakhs.

2. The Ministry of Environment and Forests hereby accords environmental clearance to the above mentioned **Tiringpahar Manganese Mine** of **M/s The Tata Iron and Steel Co. Ltd.** to enhance production of Manganese ore from **0.43 lakh tonnes per annum (LTPA) to 0.85 LTPA** involving a lease area of **169 ha** under the provisions of the Environmental Impact Assessment Notification, 1994 and amendments thereto subject to strict compliance of the terms and conditions mentioned below:

**A. Specific conditions**

- (i) Mining shall not be undertaken in areas of forestland within the lease for which forestry clearance has not been obtained.
- (ii) Top soil generated should be stacked properly with proper slope at earmarked site(s) with adequate measures and should be used for reclamation and rehabilitation of mined out area.
- (iii) OB and other wastes should be stacked at earmarked sites only and should not be kept active for long periods of time.  
Plantation should be taken up for soil stabilisation along the slopes of the dump and terraced after every 5-6 m of height and overall slope angle shall be maintained not exceeding 28°. Sedimentation pits shall be constructed at the corners of the garland drains. Retention/Toe walls shall be provided at the base of the dumps.
- (iv) Catch drains and siltation ponds of appropriate size should be constructed to arrest silt and sediment flows from soil, OB and mineral dumps. The drains should be regularly desilted and maintained properly.  
Garland drains (size, gradient & length) and sump capacity should be designed keeping 50% safety margin over and above the peak sudden rainfall and maximum discharge in the area adjoining the mine site. Sump capacity should also provide adequate retention period to allow proper settling of silt material.  
Storm water return system should be provided. Storm water should not be allowed to go to the effluent treatment plant during high rainfall/super cyclone period. A separate storm water sump for this purpose should be created.
- (v) Dimension of retaining wall at the toe of OB dumps and benches within the mine to check run-off and siltation should be based on the rainfall data.
- (vi) Trace Metals such as Ni, Co, As, and Hg should be analysed in dust fall and soil samples for at least one year during summer, monsoon and winter seasons. If concentrations of these metals are found below the standards then with prior approval of MOEF this specific monitoring could be discontinued.
- (vii) Mineral and OB transportation shall be in trucks/dumpers covered with tarpaulins. Vehicular emissions should be kept under control and regularly monitored. Suitable measures should be taken to check fugitive emissions from haulage roads, transfer points, etc.
- (viii) A green belt of adequate width and area of 1.9 ha should be raised by planting the native species around ML area, and in addition plantation should also be carried out along roads, OB dump sites (21.996 ha) and in other areas within the lease (47.774 ha) covering a total area of 71.67 ha in consultation with the

- local DFO/Agriculture Department. The density of the trees should be around 2500 plants per ha.
- (ix) Groundwater shall not be used for mine operations. Prior approval of CGWA shall be obtained for using groundwater.
  - (x) Mining will not intersect groundwater. Prior permission of the MOEF and CGWA shall be taken to mine below water table.
  - (xi) Regular monitoring of ground water level and quality should be carried out by establishing a network of existing wells and constructing new piezometers. The monitoring should be done for quantity four times a year in pre-monsoon (April /May), monsoon (August), post-monsoon (November) and winter (January) seasons and for quality in May. Data thus collected should be submitted to the Ministry of Environment & Forests and the Central Ground Water Authority quarterly.
  - (xii) Trace metals such as Fe, Cr+6, Cu, Se, As, Cd, Hg, Pb, Zn and Mn at specific locations for both surface water downstream and in ground water at lower elevations from mine area, shall be periodically monitored in consultation with the OSPCB and State Ground Water Board. Suitable treatment measures shall be undertaken in case levels are found to be higher than permissible limits
  - (xiii) "Consent to Operate" should be obtained from SPCB before expanding mining activities.
  - (xiv) A Conservation Plan for conservation of endangered fauna including the Indian Elephant found in and around the mine area shall be prepared and implemented in consultation with identified agencies/institutions and with the State Forest Department. The Plan should be dovetailed with that prepared/under implementation/proposed for the endangered fauna found in the Reserve Forest in the buffer zone of the project site. The costs for the specific activities/tasks should be earmarked in the Conservation Plan and shall not be diverted for any other purpose. Year-wise status of the implementation of the Plan and the expenditure thereon should be reported to the Ministry of Environment & Forests, RO, Bhubaneswar.
  - (xv) A Final Mine Closure Plan along with details of Corpus Fund should be submitted to the Ministry of Environment & Forests 5 years in advance of final mine closure for approval.

#### **B. General Conditions**

- (i) No change in mining technology and scope of working should be made without prior approval of the Ministry of Environment & Forests.
- (ii) No change in the calendar plan including excavation, quantum of manganese ore and waste should be made.
- (iii) Four ambient air quality-monitoring stations should be established in the core zone as well as in the buffer zone for RPM, SPM, SO<sub>2</sub>, NO<sub>x</sub> monitoring. Location of the stations should be decided based on the meteorological data, topographical features, and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board.

Data on ambient air quality (RPM, SPM, SO<sub>2</sub>, NO<sub>x</sub>) should be regularly submitted to the Ministry including its Regional office at Bhubaneswar and the State Pollution Control Board / Central Pollution Control Board once in six months.

- (iv) Drills should be wet operated or with dust extractors and controlled blasting should be practiced.
- (v) Fugitive dust emissions from all the sources should be controlled regularly monitored and data recorded properly. Water spraying arrangements on haul roads, wagon loading, dumpers/ trucks, loading & unloading points should be provided and properly maintained.
- (vi) Adequate measures should be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in blasting and drilling operations, operations of HEMM, etc should be provided with ear plugs / muffs.
- (vii) Industrial waste water (workshop and waste water from the mine) should be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19<sup>th</sup> May, 1993 and 31<sup>st</sup> December, 1993 or as amended from time to time. Oil and grease trap should be installed before discharge of workshop effluents.
- (viii) Environmental laboratory should be established with adequate number and type of pollution monitoring and analysis equipment in consultation with the State Pollution Control Board.
- (ix) Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects.  
Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.
- (x) A separate environmental management cell with suitable qualified personnel should be set-up under the control of a Senior Executive, who will report directly to the Head of the Organization.
- (xi) The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to the Ministry and its Regional Office located at Bhubaneswar.
- (xii) The Regional Office of this Ministry located at Bhubaneswar 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.
- (xiii) A copy of clearance letter will be marked to concerned Panchayat / local NGO, if any, from whom and suggestion / representation has been received while processing the proposal.
- (xiv) The State Pollution Control Board should display a copy of the clearance letter at the Regional office, District Industry Centre and Collector's office/ Tehsildar's Office for 30 days.

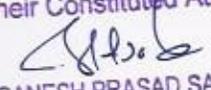
- (xv) The project authorities should advertise at least in two local newspapers widely circulated around the project, one of which shall be in the vernacular language of the locality concerned within seven days of the issue of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and may also be seen at Web Site of the Ministry of Environment & Forests at <http://envfor.nic.in> and a copy of the same should be forwarded to the Regional Office of this Ministry located at Bhubaneswar.
3. The Ministry or any other competent authority may stipulate any further condition for environmental protection.
4. Failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance.
5. The above conditions will be enforced, inter alia, under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986 and the Public Liability Insurance Act, 1991 along with their amendments and rules.



(Dr. T. Chandini)  
Additional Director

**Copy to:**

1. Secretary, Ministry of Steel, Shastri Bhawan, New Delhi
2. Secretary, Department of Steel and Mines, Government of Orissa, Secretariat, Bhubaneswar.
3. Secretary, Department of Environment & Forests, Government of Orissa, Secretariat, Bhubaneswar.
4. Principal CCF and Chief Wildlife Warden, Government of Orissa, Prakruti Bhawan, Nilakantha Nagar, Bhubaneswar - 751012.
5. Chairman, Orissa Pollution Control Board, Parivesh Bhawan, A/118, Nilkanthanagar, Unit VIII, Bhubaneswar-751012.
6. Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-cum-Office Complex, East Arjun Nagar, Delhi-32
7. Chief Conservator of Forests, Regional Office (EZ), Ministry of Environment and Forests, A-31, Chandrasekharapur, Bhubaneswar - 751 023
8. Member-Secretary, Central Ground Water Authority, Ministry of Water Resources, A-3 W-3 Curzon Road Barracks, Kasturba Gandhi Marg, New Delhi.
9. Collector, Keonjhar District, Government of Orissa.
10. EI Division, Ministry of Environment and Forests, New Delhi.
11. Monitoring File      12. Guard file.      13. Record file.

**FOR TATA STEEL LTD.**  
By their Constituted Attorney  
  
(GANESH PRASAD SAHU)  
Head (Ferro Alloys Production)  
Ferro Alloys & Minerals Division)