

**BY SPEED POST**

**No. J-11015/418/2008-IA.II(M)**  
 Government of India  
 Ministry of Environment & Forests  
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534, Paryavaran Bhavan,  
 C.G.O. Complex, Lodi Road,  
 New Delhi-110 003.

Dated 21<sup>st</sup> December, 2012

To

M/s Steel Authority of India Ltd.  
 20<sup>th</sup> Floor, Scope Minar  
 Laxmi Nagar, Ditt. Centre  
 Delhi - 110092

**Subject: Bolani Iron Ore Mine along with Beneficiation and Pellet Plant of M/s SAIL located at village Bolani, Tehsil Barbil, District Keonjhar, Odisha - (5.1 Sq. mile) - environmental clearance - regarding.**

Sir,

This has reference to your letter No. RMD/K/E&L/11/265 dated 14.12.2011 on the subject mentioned above. The proposal is for enhancement of production of iron ore from 5.65 million TPA to 12.0 million TPA (ROM) along with installation of a new beneficiation plant of 12 million TPA throughput and pellet plant of 4.0 million TPA capacity. The project was prescribed Terms of Reference (TOR) on 9.2.2009 for undertaking detailed EIA study for the purpose of obtaining environmental clearance (EC) in accordance with the provisions of the EIA Notification.

2. The mine is located between latitudes 22°05'N & 22°08'N and longitudes 85°17' & 85°20'E. The mine lease area is 1321.45 ha, which includes 1225.78 ha of forestland. Stage-I forestry clearance has been obtained on 12.11.2010 for an area of 1152.58 ha. Mine working will be opencast semi-mechanised involving drilling and blasting. The ultimate working depth in the area will be 452 m AMSL. The groundwater table is 451 m AMSL. The mine working will not intersect with the ground water table. The peak water requirement is estimated as 13,400 kld, which will be met from Karo river and Jhikaria and Chapua nallah. No groundwater will be drawn for the project. Partly, recycled water will be utilized. No groundwater will be withdrawn.

3. No National park / Wildlife sanctuary / Biosphere reserve / Tiger reserve / Elephant reserve, etc., are reported to be located in the core and buffer zone of within 10 km of the periphery of the project site. However, Karo Karampada Elephant Corridor is reported at a distance of 8 km from the mine lease and it was reported that leopard, sloth bear, elephant, barking deer, etc. have been observed.

4. It is estimated that 7.5 million m<sup>3</sup> of waste is existing. During the expansion phase 13.729 million m<sup>3</sup> of waste will be generated. Part of it will be re-handled and a part will be dumped in the existing active dump and as well as two new dumps to be created. It is estimated that 17.73 million m<sup>3</sup> of tailings will be generated. Out of this, 2.75 million m<sup>3</sup> will

be beneficiated and utilized, 9.25 million m<sup>3</sup> will be sold off and balance 5.73 million m<sup>3</sup> of tailings will be stored in the tailing pond. The old tailing pond in this mine was discontinued while the new tailing pond will be in the adjoining mine lease. At the end of the mine life an area of 1033.56 ha will be covered under plantation and an area of 10 ha will be covered under water body. It has been reported that there is no population in the core zone, therefore, displacement of population and R&R has not been envisaged.

5. Public hearing has been held on 24.10.2011. It was reported that there is no court case pending against the project. An amount of Rs. 54 lakhs has been earmarked for drinking water supply, an amount of Rs. 902 lakhs has been earmarked for roads, Rs. 17.2 lakhs per annum for education, Rs. 208 lakhs per annum for employment, Rs. 100 lakhs have been earmarked for health and hygiene.

6. The Ministry of Environment and Forests has examined the application in accordance with the EIA Notification, 2006 and hereby accords environmental clearance under the provisions thereof to the above mentioned Bolani Iron Ore Mine along with Beneficiation and Pellet Plant of M/s SAIL located at village Bolani, Tehsil Barbil, District Keonjhar, Odisha (5.1 Sq. mile) subject to implementation of the following conditions and environmental safeguards:

- (i) Environmental clearance is subject to obtaining clearance under the Wildlife (Protection) Act, 1972 from the competent authority, as applicable.
- (ii) The project proponent shall obtain Consent to Establish and Consent to Operate from the State Pollution Control Board, Orissa and effectively implement all the conditions stipulated therein.
- (iii) Forest clearance for 73.20 ha of Safety Zone has not been obtained by the project proponent. This environmental clearance subject to the grant of forest clearance for diversion of 73.20 ha of safety zone within one year.
- (iv) The Company shall submit within 3 months their policy towards Corporate Environment Responsibility which should inter-alia provide for (i) Standard operating process / process to bring into focus any infringement / deviation / violation of the environmental or forest norms / conditions, (ii) Hierarchical system or Administrative order of the company to deal with the environmental issues and for ensuring compliance with the EC conditions and (iii) System of reporting of non compliances / violations of environmental norms to the Board of Directors of the company and / or shareholders or stakeholders.
- (v) The mining operations shall be restricted to above ground water table and it should not intersect the groundwater table. In case of working below the ground water table, prior approval of the Ministry of Environment and Forests and the Central Ground Water Authority shall be obtained, for which a detailed hydro-geological study shall be carried out.
- (vi) Mitigation measures to control RSPM levels shall continue to be implemented and air quality data will also be collected during operation of the mines. The data so collected shall be analysed to see the effectiveness of the mitigation measures implemented.

Based on the same, additional safeguard measures, as may be required shall be implemented in the project.

- (vii) The biological survey shall be repeated during October – December and mid May month to see the existence of wildlife corridors, if any. Based on the same, necessary Wildlife Conservation Plan as may be required shall be prepared and implemented in consultation with the State Forest and Wildlife Department.
- (viii) The biological survey shall also be undertaken to identify the trees with orchids, if any. Such trees, so identified shall be protected and if need be, these trees may be relocated.
- (ix) The project proponent shall ensure that no natural watercourse and/or water resources shall be obstructed due to any mining operations.
- (x) The top soil, if any shall temporarily be stored at earmarked site(s) only and it should not be kept unutilized for long. The topsoil shall be used for land reclamation and plantation.
- (xi) The over burden (OB) generated during the mining operation shall be stacked at earmarked dump site(s) only and should not be kept active for long period. In critical areas, use of geo textiles shall be undertaken for stabilization of the dump. Monitoring and management of rehabilitated areas should continue until the vegetation becomes self-sustaining. Compliance status should be submitted to the Ministry of Environment & Forests and its Regional Office located at Bhubaneswar on six monthly basis.
- (xii) Catch drains and siltation ponds of appropriate size should be constructed to arrest silt and sediment flows from mine working, soil, OB and mineral dumps. The water so collected should be utilized for watering the mine area, roads, green belt development etc. The drains should be regularly desilted particularly after monsoon and maintained properly.  
  
Garland drain of appropriate size, gradient and length shall be constructed for both mine pit and OB dump and sump capacity should be designed keeping 50% safety margin over and above peak sudden rainfall (based on 50 years data) 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. Sedimentation pits should be constructed at the corners of the garland drains and desilted at regular intervals.
- (xiii) Dimension of the retaining wall at the toe of dumps and OB benches within the mine to check run-off and siltation should be based on the rainfall data.
- (xiv) Plantation shall be raised in an area of 33.487 ha including a 7.5m wide green belt in the safety zone around the mining lease by planting the native species around OB dump, reclaimed area, mine benches, along the roads etc. in consultation with the local DFO/Agriculture Department. The density of the trees should be around 2500 plants per hectare. Greenbelt shall be developed all along the mine lease area in a phased manner and shall be completed within first five years.
- (xv) Effective safeguard measures such as regular water sprinkling shall be carried out in

critical areas prone to air pollution and having high levels of particulate matter such as around crushing and screening plant, loading and unloading point and transfer points. Extensive water sprinkling shall be carried out on haul roads. It should be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.

- (xvi) The project authority should implement suitable conservation measures to augment ground water resources in the area in consultation with the Regional Director, Central Ground Water Board.
- (xvii) Regular monitoring of ground water level and quality shall be carried out in and around the mine lease by establishing a network of existing wells and installing new piezometers during the operation. The periodic monitoring [(at least four times in a year- pre-monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January); once in each season)] shall be carried out in consultation with the State Ground Water Board/Central Ground Water Authority and the data thus collected may be sent regularly to the Ministry of Environment and Forests and its Regional Office Bhubneswar, the Central Ground Water Authority and the Regional Director, Central Ground Water Board. If at any stage, it is observed that the groundwater table is getting depleted due to the mining activity, necessary corrective measures shall be carried out.
- (xviii) The project proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of surface water, if any, required for the project.
- (xix) The safeguard measures as suggested by the Central Groundwater Board vide letter No.21-4(231)/CGWA/SER/2010-1010 dated 11.06.2010 shall be effectively implemented.
- (xx) The project proponent shall practice suitable rainwater harvesting measures on long term basis and work out a detailed scheme for rainwater harvesting in consultation with the Central Groundwater Authority and submit a copy of the same to the Ministry of Environment and Forests and its Regional Office, Bhubneswar.
- (xxi) Vehicular emissions shall be kept under control and regularly monitored. Measures shall be taken for maintenance of vehicles used in mining operations and in transportation of mineral. The vehicles should be covered with a tarpaulin and shall not be overloaded.
- (xxii) No blasting shall be carried out after the sunset. Blasting operation shall be carried out only during the daytime. Controlled blasting shall be practiced. The mitigative measures for control of ground vibrations and to arrest fly rocks and boulders should be implemented.
- (xxiii) Drills shall either be operated with the dust extractors or equipped with water injection system.
- (xxiv) Mineral handling area shall be provided with adequate number of high efficiency dust

extraction system. Loading and unloading areas including all the transfer points should also have efficient dust control arrangements. These should be properly maintained and operated.

- (xxv) Sewage treatment plant shall be installed for the colony. ETP shall also be provided for the workshop and wastewater generated during the mining operation.
- (xxvi) Pre-placement medical examination and periodical medical examination of the workers engaged in the project shall be carried out and records maintained. For the purpose, schedule of health examination of the workers should be drawn and followed accordingly.
- (xxvii) Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.
- (xxviii) The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered fauna namely elephant, sloth bear etc. spotted in the study area. All the safeguard measures brought out in the Wildlife Conservation Plan so prepared specific to this project site and approved by the Chief Conservator of Forests (Wildlife) shall be effectively implemented. A copy of Wildlife Conservation Plan shall be submitted to the Ministry of Environment and Forests and its Regional Office, Bhubaneswar.
- (xxix) The critical parameters such as RSPM (Particulate matter with size less than 10micron i.e.,  $PM_{10}$ ) and  $NO_x$  in the ambient air within the impact zone, peak particle velocity at 300m distance or within the nearest habitation, whichever is closer shall be monitored periodically. Further, quality of discharged water shall also be monitored [(TDS, DO, PH and Total Suspended Solids (TSS)]. The monitored data shall be uploaded on the website of the company as well as displayed on a display board at the project site at a suitable location near the main gate of the Company in public domain. The Circular No. J-20012/1/2006-IA.II(M) dated 27.05.2009 issued by Ministry of Environment and Forests, which is available on the website of the Ministry [www.envfor.nic.in](http://www.envfor.nic.in) shall also be referred in this regard for its compliance.
- (xxx) A Final Mine Closure Plan along with details of Corpus Fund shall be submitted to the Ministry of Environment & Forests 5 years in advance of final mine closure for approval.
- (xxxi) No change in mining technology and scope of working should be made without prior approval of the Ministry of Environment & Forests and no change in the calendar plan including excavation, quantum of mineral iron ore and waste should be made.
- (xxxii) Atleast four ambient air quality-monitoring stations should be established in the core zone as well as in the buffer zone for RSPM (Particulate matter with size less than 10micron i.e.,  $PM_{10}$ ) and  $NO_x$  monitoring. Location of the stations should be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets and frequency of monitoring should be undertaken in

consultation with the State Pollution Control Board.

- (xxxiii) 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.
- (xxxiv) 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.
- (xxxv) 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.
- (xxxvi) 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.
- (xxxvii) 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.
- (xxxviii) The project proponent shall submit six monthly reports on the status of compliance of the stipulated environmental clearance conditions including results of monitored data (both in hard copies as well as by e-mail) to the Ministry of Environment and Forests, its Regional Office Bhubaneswar, the respective Zonal Office of Central Pollution Control Board and the State Pollution Control Board. The proponent shall upload the status of compliance of the environmental clearance conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of the Ministry of Environment and Forests, Bhubaneswar, the respective Zonal Officer of Central Pollution Control Board and the State Pollution Control Board.
- (xxxix) A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zila Parishad/ Municipal Corporation, Urban Local Body and the Local NGO, if any, from whom suggestions/ representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the Company by the proponent. The State Pollution Control Board should display a copy of the clearance letter at the Regional office, District Industry Centre and the Collector's office/ Tehsildar's Office for 30 days.
- (xl) The project authorities should advertise at least in two local newspapers of the District or State in which the project is located and widely circulated, one of which shall be in the vernacular language of the locality concerned, within 7 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 also at web site of the Ministry of Environment and 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.

7. The Ministry or any other competent authority may alter/modify the above conditions or stipulate any further condition in the interest of environment protection.
8. Failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of the Environment (Protection) Act, 1986.
9. 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 made thereunder and also any other orders passed by the Hon'ble Supreme Court of India/ High Court of Orissa and any other Court of Law relating to the subject matter.
10. Any appeal against this environmental clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.

  
(Dr. Saroj)  
Director

**Copy to:**

- (i) The Secretary, Ministry of Mines, Government of India, Shastri Bhawan, New Delhi.
- (ii) The Secretary, Department of Environment, Government of Orissa, Secretariat, Bhubaneswar.
- (iii) The Secretary, Department of Mines and Geology, Government of Orissa, Secretariat, Bhubaneswar.
- (iv) The Secretary, Department of Forests, Government of Orissa, Secretariat, Bhubaneswar.
- (v) The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-cum-Office Complex, East Arjun Nagar, Delhi-110032.
- (vi) The Chief Conservator of Forests, Regional Office (EZ), Ministry of Environment and Forests, A-3 Chandrashekharpur, Bhubaneswar-751023.
- (vii) The Chairman, Orissa State Pollution Control Board, Parivesh Bhawan, A/118 Nilakantha Nagar, Unit-VIII, Bhubaneswar-751012.
- (viii) The Member Secretary, Central Ground Water Authority, A2, W3 Curzon Road Barracks, K.G. Marg, New Delhi-110001.
- (ix) The District Collector, District Keonjhar, Government of Orissa.
- (x) EI Division, Ministry of Environment & Forests, EI Division, New Delhi.
- (xi) Monitoring File.
- (xii) Guard File.
- (xiii) Record File.

  
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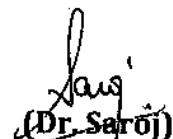
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- (iv) The Secretary, Department of Forests, Government of Orissa, Secretariat, Bhubaneswar.
- (v) The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-cum-Office Complex, East Arjun Nagar, Delhi-110032.
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