

E.C. for 35.6ha

Mr. Raju  
Asst  
17.5.08

No.J-11015/328/2007-IA.II (M)  
Government of India  
Ministry of Environment and Forests

Paryavaran Bhawan,  
C.G.O. Complex, Lodi Road,  
New Delhi - 110 003

Dated the 17<sup>th</sup> April, 2008

To ✓  
M/s Balasore Alloys Limited  
At/PO : Kaliapani-755 047,  
District- Jajpur,  
Orissa

**Subject: Ispat Sukinda Chromite Mining Project of M/s Balasore Alloys Limited located in Village Kaliapani, Tehsil Sukinda, District Jajpur, Orissa - environmental clearance reg.**

Sir,

This has reference to your letter No. BAL/Mines/80 dated 30.3.2007 and subsequent letters dated 26.09.2007, 26.11.2007, 05.12.2007 and 20.12.2007 on the subject mentioned above. The proposal is for opening of a new mine for production of 30,000tonnes per annum (TPA) of chromite ore for company's captive use in it's Ferro Alloys Plant. The total mine lease area of the project is 35.6ha, which is a forest land. Area proposed for mining is 10.5ha, an area of 8.7ha is kept for over burden dump, 3.2ha is for mineral storage, 0.5ha is for roads, 4ha for green belt and 8.7ha is others (undisturbed). The Damsal Nallah is located at a distance of 3km from the mine lease boundary. No ecologically sensitive area such as National park/wildlife sanctuary/biosphere reserve etc. is reported to be located in the core and buffer zone of the mine and that the area does not report to form corridor for Schedule-I fauna. The mine working will be opencast by semi-mechanized method involving blasting. The targetted production capacity of the mine is 30,000TPA (0.03million TPA) of chromite ore and life of mine is 49years. Approximately 100TPD of mineral will be transported through road. The topography of the area is undulated and hilly at an elevation ranging from 155m to 320m RL. The general ground level is at 155m RL. The ultimate working depth of mine will reach upto 212mRL starting from 236mRL during the sixth year of operation. The ground water table in the core zone varies from 42m to 48m bgl (107m-113m RL) during pre-monsoon and post-monsoon. The mine working will not intersect ground water table. There is no population in the core zone, therefore, no displacement of population and R&R is involved. The peak water requirement of the project is estimated as 29.3m<sup>3</sup> per day, out of which 2m<sup>3</sup> per day will be obtained from ground water and remaining 27.3m<sup>3</sup> per day will be sourced from the lessee's adjoining mine. It is estimated that 15,30,400m<sup>3</sup> of over burden will be generated upto the sixth year of operation, which will be accommodated in an area of 8.7ha earmarked for this purpose. No backfilling has been proposed.

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There will be one external over burden dump. The maximum height of the dump will be 60m, having four terraces of 15m height at each stage. Plantation will be raised in an area of 12.7ha upto the sixth year of operation. The State Pollution Control Board, Orissa had issued Consent to Establish to the project on 28.01.2006 for production of 2500TPM of chromite ore involving lease area of 35.6ha. The Public hearing of the project was held on 22.09.2005. The Indian Bureau of Mines had approved mining plan of the project on 31.10.2000 for lease area of 35.6ha. The Ministry of Environment and Forests, Regional Office, Bhubaneswar has accorded in principle forestry clearance for diversion of 35.285ha forestland on 10.10.2006. The capital cost of the project is Rs.450Lakhs.

2. The Ministry of Environment and Forests has examined the application in accordance with Section 12 of the EIA Notification 2006 read with para 2.2.1(i)(a) of Circular No.J-11013/41/2006-IA.II(I) dated 13.10.2006 and hereby accords environmental clearance for a period of six year only, under the provisions thereof to the above mentioned Ispat Sukinda Chromite Mining Project of M/s Balasore Alloys Limited for an annual production capacity of 30,000tonnes (0.03million tonnes) of chromite ore by opencast semi-mechanized method involving mining lease area of 35.6ha, subject to implementation of the following conditions and environmental safeguards.

#### **A. Specific conditions**

- (i) Environmental Clearance is granted for a period of six years only. The project proponent shall modify the mining plan accordingly and get it approved by the Indian Bureau of Mines, before commencement of mining operation at site.
- (ii) All the conditions stipulated by the State Pollution Control Board in their consent to establish shall be effectively implemented.
- (iii) Necessary forestry clearance under the Forest (Conservation) Act, 1980 for an area of 35.6ha forestland shall be obtained before starting mining operation in that area. Environmental clearance is subject to grant of forestry clearance.
- (iv) The top soil should temporarily be stored at earmarked site(s) only and it should not be kept unutilized for a period more than 3years. The topsoil should be used for land reclamation and plantation.
- (v) The mining operations shall be restricted to above ground water table and it should not intersect groundwater table. In case of working below ground water table, prior approval of the Ministry of Environment & Forests and Central Ground Water Authority shall be obtained for which a detailed hydro-geological study shall be carried out.

- (vi) The project proponent shall ensure that no natural watercourse /water body shall be obstructed due to any mining operations.
- (vii) The over burden generated shall be stacked at earmarked dump site only and it should not be kept active for a long period of time. The total height of the dump should not exceed 60m, in four terraces of 15m each, keeping overall slope of the dump below  $28^{\circ}$ . The proponent shall carry out slope stability study and submit report to the Ministry. The OB dumps should be scientifically vegetated with suitable native species to prevent erosion and surface run off. 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 on six monthly basis.
- (viii) Catch drains and siltation ponds of appropriate size shall be constructed for the working pit, soil, OB and mineral dumps to arrest flow of silt and sediment. The water so collected should be utilized for watering the mine area, roads, plantation etc. The drains should be regularly desilted and maintained properly.

Garland drain of appropriate size, gradient and length shall be constructed for both mine pit and the waste 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.

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.

- (ix) Dimension of retaining wall at the toe of over burden dump and OB benches within the mine to check run-off and siltation should be based on the rainfall data.
- (x) Effluents containing  $Cr^{+6}$  shall be treated to meet the prescribed standards before reuse/discharge. Effluent Treatment Plant should be provided for treatment of mine water discharge and wastewater generated from the workshop and mineral separation plant.

Run off from OB dumps and other surface run off should be analysed for  $Cr^{+6}$  and in case its concentration is found higher than the permissible limit the water should be treated before reuse/discharge.

- (xi) Separate impervious concrete pits for disposal of sludge shall be provided for the safe disposal of sludge generated from the mining operations.
- (xii) The project proponent shall ensure that the quality of decanted effluents from the tailing pond, if any, conform to the prescribed standards before discharge.
- (xiii) The project proponent shall explore the possibility to reduce concentration of  $Cr^{+6}$  in the tailing pond, if any, in consultation with an expert scientific institution like NEERI.
- (xiv) Plantation shall be raised in an area of 12.7ha including a 7.5m wide green belt in the safety zone around the mining lease by planting the native species around ML area, over burden dump, roads etc. in consultation with the local DFO/Agriculture Department. The tree density should be thousand trees per hectare. At least 1500 trees per year shall be planted.
- (xv) Regular water sprinkling should be carried out in critical areas prone to air pollution and having high levels of SPM and RPM such as haul road, loading and unloading point and transfer points. 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 should be carried out by establishing a network of existing wells and constructing new piezometers in and around the mine lease. The monitoring should be carried out four times in a year - pre-monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January) and the data thus collected may be sent regularly to the Ministry of Environment and Forests, its Regional Office located at Bhubaneswar, Central Ground Water Authority and Regional Director, Central Ground Water Board.
- (xviii) Permission from the competent authority should be obtained for drawal of ground water if any, required for the project.
- (xix) Suitable rainwater harvesting measures on long term basis shall be planned and implemented in consultation with Regional Director, Central Ground Water Board.
- (xx) Vehicular emissions should 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.

- (xxi) Blasting operation should be carried out only during the daytime. Controlled blasting should be practiced. The mitigative measures for control of ground vibrations and arrest fly rocks and boulders should be implemented.
- (xxii) Drills shall either be operated with dust extractors or equipped with water injection system.
- (xxiii) Consent to operate should be obtained from SPCB before starting production from the mine.
- (xxiv) Sewage treatment plant should be installed for the colony. ETP should also be provided for workshop and wastewater generated from mining operations.
- (xxv) 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 mineral chromite ore and waste should be made.
- (iii) Conservation measures for protection of flora and fauna in the core & buffer zone should be drawn up in consultation with the local forest and wildlife department.
- (iv) Periodic monitoring of ambient air quality should be carried out for RPM, SPM, SO<sub>2</sub> and NO<sub>x</sub>. Location of the monitoring 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. The data so collected should be regularly submitted to the Ministry including its Regional office located at Bhubaneswar and the State Pollution Control Board / Central Pollution Control Board once in six months.
- (v) Measures should be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in operations of HEMM, etc should be provided with ear plugs / muffs.

- (vi) 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.
- (vii) 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.

- (viii) 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.
- (ix) The project authorities should inform to the Regional Office located at Bhubaneswar regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.
- (x) 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.
- (xi) 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.
- (xii) The project proponent shall submit six monthly report on the status of the implementation of the stipulated environmental safeguards to the Ministry of Environment and Forests, its Regional Office, Bhubaneswar, Central Pollution Control Board and State Pollution Control Board.
- (xiii) A copy of clearance letter will be marked to concerned Panchayat / local NGO, if any, from whom suggestion / representation, if any, was received while processing the proposal.
- (xiv) 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.

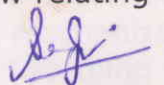
(xv) The project authorities should advertise at least in two local newspapers widely circulated, one of which shall be in the vernacular language of the locality concerned, within 7 days of the issue of the clearance letter informing that the project has been accorded environmental clearance and a copy 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 Bhubaneswar.

3. The Ministry or any other competent authority may alter/modify the above conditions or stipulate any further condition in the interest of environment protection.

4. Failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986.

5. Any appeal against this environmental clearance shall lie with the National Environment Appellate Authority, if preferred within a period of 30 days as prescribed under Section 11 of the National Environment Appellate Act, 1997.

6. 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 Rajasthan and any other Court of Law relating to the subject matter.

  
(SATISH C. GARKOTI)  
Additional Director (S)

**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 Chief Wildlife Warden, Government of Orissa, Bhubaneswar.

- (vi) The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-cum-Office Complex, East Arjun Nagar, Delhi-110032.
- (vii) The Chief Conservator of Forests, Regional Office (EZ), Ministry of Environment and Forests, A-3 Chandrashekharpur, Bhubaneshwar-751023.
- (viii) The Chairman, Orissa State Pollution Control Board, Parivesh Bhawan, A/118 Nilkantha Nagar, Unit-VIII, Bhubaneshwar-751012.
- (ix) The Member Secretary, Central Ground Water Authority, A2, W3 Curzon Road Barracks, K.G. Marg, New Delhi-110001.
- (x) The District Collector, Jajpur District, Orissa.
- (xi) EI Division, Ministry of Environment & Forests, EI Division, New Delhi.
- (xii) Monitoring File.
- (xiii) Guard File.
- (xiv) Record File.