

F.No.J-11015/37/2010- IA. II (M)
Government of India
Ministry of Environment & Forests

Tel no. 24363973

E mail: plahujarai@yahoo.com
Paryavaran Bhavan, C.G.O. Complex,
Lodi Road, New Delhi-110003

Dated April 9, 2010

To

M/s Bharat Aluminum Company Limited
Aluminum Sadan, Core – 6
Scope Office Complex, 7 Lodi Road
New Delhi-110 003

Sub: Bodai Daldali Bauxite Mines of M/s Bharat Aluminium Company Limited located at Villages Mundadadar, Keshmarda, Rabda & Semsata, Post Daldali, Tehsil Bodla, District Kawardha, Chhattisgarh. (Enhancement of Production capacity of bauxite from 0.3 MTPA to 1.25 MTPA) Reg. Environmental Clearance

Sir,

The undersigned is directed to refer to your communication no. BALCO/Delhi/BD/2009 dated 10.-02.2010 along with application in the form of form-1 and pre-feasibility report and subsequent communication dated 12.03.2010 along with EIA report seeking environmental clearance under the provisions of EIA Notification, 2006.

2. The Ministry of Environment and Forests has examined your application. It has been noted that the proposal is for expansion of existing Bodai-Daldali Bauxite mine from 0.3 MTPA to 1.25 MTPA in Kawardha District, Chhattisgarh. Environmental clearance for 0.3 MTPA capacity was accorded on 4.12.2003. The mine lease area is 626.117 ha. No forest land is involved. Out of 626.117 ha of mine lease area, at present, 6.0 ha is for top soil dump, 2.0 ha for water reservoir, 14 ha for road, 4.0 ha for built-up area, 37 ha for afforestation, 25 ha of backfilled area and 538 ha of undisturbed area. The area after mine closure under water reservoir will be 20 ha, 18 ha for road, 4.0 ha of built-up area, 335 ha under afforestation, 20 ha of water recharge area, 229 ha of undisturbed area. No ecologically sensitive area such as a National Park/wildlife sanctuary, wildlife corridors, tiger/elephant reserve and biosphere reserve is located within 15 km radius of the mining lease. Total mineable reserves are 5.72 MT. The mine is operating since 2004 at a capacity of 0.3 MTPA. The balance mineable reserve is 4.16 MT. Life of mine is 5 years. The proposed expansion to 1.25 MTPA will cater to the need of aluminum plant at Korba. Topography of the area is hilly. No perennial water course is present in the ML area. Mining will be carried out by opencast semi-mechanized method involving drilling and blasting. Working of the mine will be confined to a depth of 10 m bgl. Water table in the lease area is 20m to 25m bgl. Working will not intersect the ground water table. Water requirement will be 354m³/day and will be sourced from River Katai. About 14.63 Million Tonnes of over burden will be generated which will be

completely backfilled in the mined out area. Public hearing was held on 28.8.2006. IBM has approved the modified mining scheme on 25.03.2009. Cost of the project is Rs. 38.00 Crores.

3. It is also noted that the project involves resettlement of 261 families located in five Villages in the core zone. Land acquisition and compensation process through State Government has been completed. Land for resettlement sites purchased in line with project affected families' preference. About 182 project affected families have been resettled at six villages. The balance families are in process of shifting and will be resettled by May, 2010.

4. The proposal has been considered by the Expert Appraisal Committee-2 (Mining) in its meetings held during 25th – 26th March, 2010. The Committee recommended the proposal for environmental clearance. Public hearing of the project has been exempted as per Para 7 (ii) of EIA Notification, 2006.

5. Based on the information submitted by the project proponent, the Ministry of Environment and Forests hereby accords environmental clearance to above project under the provisions of EIA Notification, dated 14th September 2006 subject to the compliance of the following Specific and General Conditions:

A. Specific Conditions:

- i. The Company shall pay compensation for acquisition of private land and rehabilitation of displaced families at rates not less than those prescribed in the applicable Central Government/State Government norms. The Resettlement of all the affected families should be completed as per their commitment, i.e. early 2010.
- ii. The top soil 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.
- iii. The Company shall collect baseline data through field survey of the existing prevalent occupational diseases in the locality and facilities shall be provided for preventive and curative measures for the same.
- iv. Need based assessment for the nearby villages shall be conducted to study economic measures with action plan which can help in upliftment of poor section of society. Income generating projects consistent with the traditional skills of the people besides development of fodder farm, fruit bearing orchards, vocational training etc. can form a part of such programme. Company shall provide separate budget for community development activities and income generating programmes. This will be in addition to vocational training for individuals imparted to take up self employment and jobs.

- 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 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. The project proponent shall ensure that no natural watercourse and/or water resources are obstructed due to any mining operations. Adequate measures shall be taken while diverting first order streams, if any, emanating from the mine lease, during the course of mining operation.
- vii. The project proponent shall take adequate environmental safeguard measures for control of rolling down of silt and sediments and protection of the catchment area of katai River during the course of mining operation.
- viii. Catch drains and siltation ponds of appropriate size shall be constructed around the mine working, mineral and temporary OB dumps to prevent run off of water and flow of sediments directly into the Katai River and other water bodies. The water so collected shall be utilized for watering the mine area, roads, green belt development etc. The drains shall be regularly desilted, particularly after the monsoon, and maintained properly. Garland drains, settling tanks and check dams of appropriate size, gradient and length shall be constructed around the mine pit, topsoil dump, temporary over burden dumps and mineral dumps to prevent run off of water and flow of sediments directly into the Katai River and other water bodies and sump capacity shall 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 shall also provide adequate retention period to allow proper settling of silt material. Sedimentation pits shall be constructed at the corners of the garland drains and desilted at regular intervals.
- ix. Dimension of the retaining wall at the toe of temporary OB dump(s) and the over burden benches within the mine to check run-off and siltation shall be based on the rainfall data.
- x. The void left unfilled shall be converted into the water body. The higher benches of the excavated void/mine pit shall be terraced and plantation done to stabilize the slopes. The slopes of higher benches shall be made gentler for easy accessibility by the local people to use the water body. Peripheral fencing shall be carried out all along the excavated area.

- xi. Regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of SPM and RSPM such as around crushing and screening plant, loading and unloading point and all transfer points. Extensive water sprinkling shall be carried out on haul roads. It shall be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.
- xii. The project authority shall implement suitable conservation measures to augment ground water resources in the area in consultation with the Regional Director, Central Ground Water Board.
- xiii. Regular monitoring of ground water level and quality shall be carried out by establishing a network of existing wells and constructing new piezometers in and around the project area during the beneficiation process. 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 at Bhopal, 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.
- xiv. Appropriate mitigative measures shall be taken to prevent pollution of the Katai River in consultation with the State Pollution Control Board.
- xv. The project proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of water (surface water and ground water, if any) required for the project.
- xvi. Suitable rainwater harvesting measures on long term basis shall be planned and implemented in consultation with the Regional Director, Central Ground Water Board.
- xvii. 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 within the mine lease. The mineral transportation within the mine lease shall be carried out through the covered trucks only and the vehicles carrying the mineral shall not be overloaded.
- xviii. Drills shall either be operated with dust extractors or equipped with water injection system.

- xix. 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.
- xx. Sewage treatment plant shall be installed for the colony. ETP shall also be provided for the workshop and wastewater generated during the mining operation.
- xxi. Occupational Health Cell shall be created at the company under the charge of an officer of adequate seniority who is a qualified person in occupational health.
- xxii. Particle analysis of the dust shall be carried and measures shall be undertaken to prevent impacts on the health of the workers. Personnel exposure monitoring for dust shall be carried out for the workers.
- xxiii. 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.
- xxiv. The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered flora and fauna spotted in the study area.
- xxv. Data on ambient air quality (PM_{10} , SO_2 , NO_x) shall be regularly submitted to the Ministry including its Regional office located at Bhopal and the State Pollution Control Board / Central Pollution Control Board once in six months. The critical parameters such as PM_{10} , SO_2 , 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 2.5.2009 issued by the Ministry of Environment and Forests, which is available on the website of the Ministry www.envfor.nic.in shall also be referred in this regard for its compliance.
- xxvi. Green belt development shall be done and selection of plant species shall be as per CPCB guidelines. Herbs and shrubs shall also form a part of afforestation programme besides tree plantation. Details of year wise afforestation programme including rehabilitation of mined out area shall be submitted to the Ministry within six months.

- xxvii. 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.
- xxviii. 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.

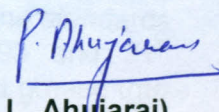
B. General conditions:

- i. No change in mining technology and scope of working shall be made without prior approval of the Ministry of Environment & Forests.
- ii. No change in the calendar plan including excavation, quantum of mineral and waste shall be made.
- iii. Fugitive dust emissions from all the sources shall be controlled regularly. Water spraying arrangement on haul roads, loading and unloading and at transfer points shall be provided and properly maintained.
- iv. Ambient air quality-monitoring stations shall be established in the core zone as well as in the buffer zone for PM₁₀, SO₂, 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.
- v. Measures shall be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in operations of HEMM, etc. shall 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 19th May, 1993 and 31st December, 1993 or as amended from time to time. Oil and grease trap shall be installed before discharge of workshop effluents.
- vii. Personnel working in dusty areas shall be provided with protective respiratory devices and they shall also be imparted adequate training and information on safety and health aspects.
- viii. Provision shall be made for the housing the labourers 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.

- ix. A separate Environmental Management Cell with suitable qualified personnel shall be set-up under the control of a Senior Executive, who will report directly to the Head of the Organization.
- x. The project authorities shall inform to the Regional Office of the Ministry located at Bhopal regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.
- xi. The funds earmarked for environmental protection measures shall be kept in separate account and shall not be diverted for other purpose. Year wise expenditure shall be reported to the Ministry and its Regional Office located at Bhopal.
- xii. The Regional Office of the Ministry located at Bhopal shall monitor compliance of the stipulated conditions. The project authorities shall extend full cooperation to the officer(s) of the Regional Office by furnishing the requisite data / information / monitoring reports.
- xiii. The project proponent shall submit six monthly reports on the status of the implementation of the stipulated environmental safeguards to the Ministry of Environment and Forests, its Regional Office, Bhopal, Central Pollution Control Board and State Pollution Control Board. The project proponent shall upload the status of compliance of the environment of the environmental clearance conditions on their website and update the same periodically and simultaneously send the same by e-mail to the Regional Office, Ministry of Environment and Forests, Bhopal.
- xiv. The project proponent shall advertise in at least two local newspapers widely circulated in the region around the project, one of which shall be in the vernacular language of the locality, / office of Municipal Corporation/Gram Panchayat concerned and on the company's web site within seven days from the date of this clearance letter, informing that the project has been accorded environmental clearance and copies of clearance letter are available with the State Pollution Control Board/Committee and may also be seen at Website of the Ministry of Environment and Forests at <http://envfor.nic.in>.
- xv. A copy of clearance letter will be marked to concerned Panchayat / local NGO, if any, from whom suggestion / representation has been received while processing the proposal. The clearance letter shall also be put on the website of the company.
- xvi. State Pollution Control Board shall display a copy of the clearance letter at the Regional office, District Industries Centre and Collector's office / Tehsildar's Office for 30 days.

- xvii. The environmental statement for each financial year ending 31st March in Form-V as is mandated shall be submitted to the State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and shall also be put on the website of the company along with the status of compliance of environmental clearance conditions. The same shall also be sent to the Regional Office of Ministry by e-mail.
6. The Ministry of Environment and Forests reserves the right to revoke the clearance if conditions stipulated are not implemented to the satisfaction of the Ministry. MOEF may impose additional environmental conditions or modify the existing ones, if necessary.
7. In case of any deviation or alteration in the project proposed from those submitted to this Ministry for clearance, a fresh reference should be made to the Ministry to assess the adequacy of the condition(s) imposed and to add additional environmental protection measures required, if any.
8. Concealing factual data or submission of false/fabricated data and 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.
9. 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 Authority Act, 1997.
10. 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.

Yours faithfully,


(Dr. P.L. Ahujara)
Director

Copy to:

1. Secretary, Ministry of Mines, Government of India, Shastri Bhawan, New Delhi.
2. Secretary, Department of Environment, Government of Chhattisgarh, Raipur.
3. Secretary, Department of Mines and Geology, Government of Chhattisgarh, Raipur
4. Secretary, Department of Forests, Government of Chhattisgarh, Raipur.
5. Chief Wildlife Warden, Government of Chhattisgarh, Raipur.
6. Chief Conservator of Forests, Ministry of Environment & Forests, Regional Office, Kendriya Paryavaran Bhawan, E-5, Arera Colony, Link Road, Ravishankar Nagar, Bhopal- 462 016.
7. Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-Cum-Office Complex, East Arjun Nagar, New Delhi-110 032.
8. Chairman, Chhattisgarh Environment Conservation Board, Nanak Niwas, Civil Lines, Raipur - 421 001, Chhattisgarh.
9. Member Secretary, Central Ground Water Authority, A2, W -3 Curzon Road Barracks, K.G. Marg, New Delhi-110001.
10. Controller General, Indian Bureau of Mines, Indira Bhavan, Civil Lines, Nagpur- 440 001.
11. District Collector, Kawardha Govt. Chhattisgarh.
12. EI Division, Ministry of Environment & Forests, Paryavaran Bhawan, New Delhi.
13. Monitoring File,.
14. Guard File.
15. Record File.

(Dr. P.L.Ahujarai)
Director