

No. J-11015/518/2008-IA.II(M)

Government of India
Ministry of Environment & Forests

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

Dated the 21st October, 2010

To

✓ M/s Minerals & Minerals Limited
P.O. Lohardaga,
District Lohardaga,
Jharkhand-835 302

Subject: New Pakhar Bauxite Mining Project of M/s Minerals & Minerals Limited located in Village Pakhar, Tehsil Kisko, District Lohardaga, Jharkhand - environmental clearance regarding.

Sir,

This has reference to your letter No. M&M/LHD/V.P(M)/MoEF/896 dated 05.01.2010 and subsequent letters dated 03.03.2010, 18.05.2010 and 28.07.2010 on the subject mentioned above. The project was earlier prescribed Terms of Reference (TORs) by the Ministry of Environment and Forests on 23.02.2009 for undertaking detailed EIA study for the purpose of obtaining environmental clearance. The proposal is for opening of a new mine for production of 2,80,000tonnes per annum(TPA) (0.28million TPA) of bauxite. It has been reported that the Government of Jharkhand granted mining lease to the project on 16.05.2008.

2. The total mine lease area of the project is 109.507ha, out of which 102.475ha is an agricultural land, 1.618ha is wasteland and 5.414ha is others (2.974ha old pit and 2.44ha is road). No forestland is involved. Area proposed for mining is 16.228ha, an area 2.44ha kept for roads, 1.7ha for green belt and 89.139ha is others(88.339ha for possible future mining and 0.8ha undisturbed safety zone). The Kisko Nadi, the Sankh Nadi, the Surang River and the Chaupat Nadi are located in the buffer zone of the mine at a distance of 4.4km(SE), 6km(E), 7km(N) and 7.6km(W) respectively from the mine lease boundary. No modification/ diversion in the existing natural drainage pattern at any stage has been envisaged.

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 the mine and that the area does not report to form corridor for Schedule-I fauna. In support of this the proponent has provided a map duly certified by the DFO, Ranchi West Division, Lohardaga.

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4. The mine working will be opencast by semi-mechanized method involving drilling and blasting. The targeted production capacity of the mine is 2,80,000TPA of bauxite and the life of mine is 9years. Approximately 900TPD of mineral will be transported through the road. The topography of the area is a plateau top. The Pakhar plateau is 'V' shaped hillock. The plateau slopes gradually towards North. Steep gradients with cliff faces are characteristics of South, East and West of hillocks. The link of Western plateau is known as Banglapat. The bauxite lease area of the Company is mostly covers in Banglapat. The elevation ranges from 1057m to 1068m AMSL. The top is table land(plateau). The ultimate working depth of mine will be 1057.5m AMSL(10.5m below the plateau top). The groundwater table is reported at 971m AMSL. The mine working will not intersect the groundwater table. The peak water requirement of the project is estimated as 15m³ per day, which will be sourced from the natural spring. It has been reported that there is no population in the core zone, displacement of population and R&R has not been envisaged, therefore. It is estimated that 20,24,856 tonnes of over burden will be generated during the life of the mine, which will be used for backfilling. Backfilling will start after one year. There will be no waste dump at the end of the mine life. Plantation will be raised in an area of 6.3ha at the end of the mine life and an area of 0.41 ha will be converted into water body.

5. The public hearing of the project was held on 10.10.2009 for production of 2.8LTPA bauxite over mine lease area of 109.07ha. The Indian Bureau of Mines had approved the mining plan of the project on 22.04.2008 for mine lease area of 109.507ha. The capital cost of the project is Rs.330Lakhs and the capital cost for the environmental protection measures is proposed as Rs.12Lakhs. The annual recurring cost towards the environmental protection measures is proposed as Rs.9.5Lakhs. It has been stated that there is no court case to the project or related activity.

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 New Pakhar Bauxite Mining Project of M/s Minerals & Minerals Limited for an annual production capacity of 2,80,000tonnes(0.28million tones) of bauxite by the opencast semi-mechanized method involving total mine lease area of 109.507ha, subject to implementation of the following conditions and environmental safeguards.

A. Specific conditions

- (i) The project proponent shall obtain Consent to Establish and Consent to Operate from the Jharkhand State Pollution Control Board and effectively implement all the conditions stipulated therein.
- (ii) The environmental clearance is subject to approval of the State Landuse Department, Government of Jharkhand for diversion of agricultural land for non-agricultural use.

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- (iii) The mining operations shall be confined to the hill tops only and 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.
- (iv) 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 for protection of seasonal channels, if any emanating from the mine lease, during the course of mining operation.
- (v) 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.
- (vi) The over burden (OB) generated shall be temporarily stacked in the earmarked area for a period of one year and thereafter concurrently backfilled. There shall be no external over burden dump. The backfilled area shall be progressively afforested. Monitoring and management of rehabilitated areas should continue until the vegetation becomes self-sustaining. Compliance status shall be submitted to the Ministry of Environment & Forests and its Regional Office located at Bhubaneswar on six monthly basis.
- (vii) The void left unfilled in an area of 0.41ha shall be converted into water body. The higher benches of excavated void/mining pit shall be terraced and plantation done to stabilize the slopes. The slope of higher benches shall be made gentler for easy accessibility by local people to use the water body. Peripheral fencing shall be carried out along the excavated area.
- (viii) Catch drains and siltation ponds of appropriate size shall be constructed around the mine working, soil and mineral dumps to prevent run off of water and flow of sediments directly into the agricultural fields, the Kisko Nadi, the Sankh Nadi, the Surang River, the Chaupat Nadi 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 dumps and the mineral dumps to prevent run off of water and flow of sediments directly into the agricultural fields, the Kisko Nadi, the Sankh Nadi, the Surang River, the Chaupat Nadi 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

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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 the OB benches within the mine to check run-off and siltation should be based on the rainfall data.
- (x) Plantation shall be raised in an area of 6.3ha including a 7.5m wide statutory barrier all around the mining lease, reclaimed and rehabilitated areas, around water body, roads etc. by planting the native species in consultation with the local DFO/Agriculture Department. The density of the trees should be around 2000 plants per ha. Greenbelt shall be developed all along the mine lease area in a phased manner and shall be completed within first five years.
- (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) Regular monitoring of the flow rate of the springs and perennial nallahs flowing in and around the mine lease shall be carried out and records maintained.
- (xiii) 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.
- (xiv) 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 constructing new piezometers during the mining 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 Bhubaneswar, 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.
- (xv) Appropriate mitigative measures shall be taken to prevent pollution of the Kisko Nadi, the Sankh Nadi, the Surang River and the Chaupat Nadi in consultation with the State Pollution Control Board.

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- (xvi) The project proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of surface water(from natural spring) required for the project.
- (xvii) Suitable rainwater harvesting measures on long term basis shall be planned and implemented in consultation with the Regional Director, Central Ground Water Board.
- (xviii) 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 lease up to the stockyard. 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.
- (xix) 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.
- (xx) Drills shall either be operated with dust extractors or equipped with water injection system.
- (xxi) 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.
- (xxii) Sewage treatment plant shall be installed for the colony. ETP shall also be provided for the workshop and wastewater generated during the mining operation.
- (xxiii) The project authorities should undertake sample survey to generate data on pre-project community health status within a radius of 1 km from proposed mine.
- (xxiv) 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.
- (xxv) The land oustees and land losers/affected people shall be compensated/rehabilitated as per the National Policy on Resettlement and Rehabilitation of project Affected Families (NPRR).
- (xxvi) Door to door sample survey should be undertaken within the impact zone to assess the family based need of the tribals and it should be appropriately addressed in the CSR activities to be undertaken in the area. An action plan in this regard should be prepared and submitted.

- (xxvii) Provision shall be made for the housing of construction labour with the site with all necessary infrastructure and facilities such as fuel cooking, mobile toilets, mobile STP, safe drinking water, medical 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 flora and fauna (python etc.) found in the study area. Action plan for conservation of flora and fauna prepared shall be implemented in consultation with the State Forest and Wildlife Department. All the safeguard measures brought out in the Wildlife Conservation Plan prepared specific to this project site shall be effectively implemented. Necessary allocation of funds for implementation of the conservation plan shall be made and the funds so allocated shall be included in the project cost. A copy of action plan shall be submitted to the Regional Office of the Ministry of Environment and Forests, Bhubaneswar.
- (xxix) The critical parameters such as RSPM (Particulate matter with size less than 10micron i.e., PM₁₀) 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 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.

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 minerals bauxite and waste should be made.
- (iii) At least 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., PM₁₀) 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.

- (iv) Data on ambient air quality [(RSPM (Particulate matter with size less than 10 micron i.e., PM₁₀) and NO_x] 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) Fugitive dust emissions from all the sources should be controlled regularly. Water spraying arrangement on haul roads, loading and unloading and at transfer points should be provided and properly maintained.
- (vi) 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.
- (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 19th May, 1993 and 31st December, 1993 or as amended from time to time. Oil and grease trap should be installed before discharge of workshop effluents.
- (viii) 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.

- (ix) 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.
- (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 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.
- (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.

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- (xiii) 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 Bhubneswar, 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, Bhubneswar, the respective Zonal Officer of Central Pollution Control Board and the State Pollution Control Board.
- (xiv) A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zila Parisad/ 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.
- (xv) 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.
- (xvi) The environmental statement for each financial year ending 31st March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of environmental clearance conditions and shall also be sent to the respective Regional Office of the Ministry of Environment and Forests, Bhubneswar by e-mail.
- (xvii) 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 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.

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

10. 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.


 (SATISH C. GARKOTI)
 Scientist 'E'

Copy to:

- (i) The Secretary, Ministry of Mines, Government of India, Shastri Bhavan, New Delhi.
- (ii) The Secretary, Department of Environment, Government of Madhya Pradesh, Secretariat, Bhopal.
- (iii) The Secretary, Department of Mines, Government of Jharkhand, Secretariat, Ranchi.
- (iv) The Secretary, Department of Forests, Government of Jharkhand, Secretariat, Ranchi.
- (v) The Chief Conservator of Forests, Ministry of Environment & Forests, Regional Office (EZ), A/3, Chandra Shekar, Bhubneshwar-751 023.
- (vi) The Chairman, Central Pollution Control Board, CBD-Cum-Office Complex, East Arjun Nagar, New Delhi-110 032.
- (vii) The Member Secretary, Central Ground Water Authority, A2, W3 Curzon Road Barracks, K.G. Marg, New Delhi-110001.
- (viii) The Chairman, Jharkhand State Pollution Control Board, T.A. Division Building (Ground Floor), HEC Campus, P.O. Dhurwa, Ranchi - 834004, Jharkhand.
- (ix) The Member Secretary, Central Ground Water Authority, A2, W3 Curzon Road Barracks, K.G. Marg, New Delhi-110001.
- (x) The Controller General, Indian Bureau of Mines, Indira Bhavan, Civil Lines, Nagpur-440 001.

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- (xi) The District Collector, Lohardaga District, Jharkhand.
- (xii) EI Division, Ministry of Environment & Forests, EI Division, New Delhi.
- (xiii) Monitoring File.
- (xiv) Guard File.
- (xv) Record File.