

By Speed Post

No.J-11015/406/2007-IA.II (M)
Government of India
Ministry of Environment & Forests

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

Dated the 27th November, 2012

To

M/s Hindalco Industries Ltd.
UCO Bank Building,
4th Floor, Parliament Street,
New Delhi-110001

Subject: Expansion of Pakhar Bauxite Mining Project (115.13ha) of M/s Hindalco Industries Ltd. located in Village Pakhar, Tehsil Kisko, District Lohardaga, Jharkhand - environmental clearance - reg.

Sir,

This has reference to your letter No. HIL/LHD/V.P.(M)/MoEF/901 dated 05.01.2010 and subsequent letters dated 12.02.2011, 09.06.2011 and 14.10.2011 on the subject mentioned above. The project was earlier prescribed Terms of Reference (TORs) by the Ministry of Environment and Forests on 14.09.2007. The proposal is for enhancement of production of bauxite from 73,000 tonnes per annum (TPA)(0.073million TPA) to 0.3million TPA. This project was earlier accorded environmental clearance by the Ministry vide letter No.J-11015/21/95-IA.II(M) dated 11.09.1997 for lease area of 117.52ha.

2. The total mine lease area of the project is 115.13ha, spread over two non contiguous blocks i.e. Block A and Block B (76.6 ha in Block A and 38.53 ha in Block B). Out of the total mine lease area of 115.13ha, an area of 112.98ha is an agricultural land and 2.15ha is wasteland. No forestland and grazing land is involved. Area proposed for mining is 50.4ha, an area of 1.26ha is kept for storage of topsoil, 0.05ha for infrastructure, 0.7ha for roads, 0.62ha for green belt, 0.09ha for check dams, retaining walls etc. and 62.01ha is unutilized area. The Chaupat Nadi (6km West), the Kisko Nadi (7km ESE) and the Shankh Nadi (9.5km East) are located in the buffer zone of the mine. In addition, the Kisko Nallah and the Narachiya Nallah are reported in the valley area. 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. Six Reserve Forests namely the Pakhar RF (adjoining), the Kocha RF(adjoining), the Semardih RF (1.8km), the Kekrang RF (2km S), the Banri RF (5km SW) and the Onegara RF (7km West) are reported to be located in the buffer zone of the mine.

4. The mine working will be opencast by semi-mechanized method involving drilling and blasting. The targetted production capacity of the mine is 0.3million TPA of bauxite and the life of mine is 7years. Approximately 1000TPD of bauxite will be transported through the road. The mine lease is located on plateau locally known as Pakhar Pat occupy the Eastern Part of highlands, overlooking an extension plain extending East ward. The Block A is reported to lies between 23°32'18" N Latitude to 84°36'52" E Longitude, 23°32'38" N Latitude to 84°36'45.5" E Longitude, 23°33'24" N Latitude to 84°37'13" E Longitude, 23°33'33.5" N Latitude to 84°37'23" E Longitude and the Block B is reported to lies between 23°32'08" N Latitude to 84°36'14" E Longitude, 23°32'39.5" N Latitude to 84°35'45.5" E Longitude, 23°32'43.5" N Latitude to 84°35'48" E Longitude, 23°32'23" N Latitude to 84°36'16" E Longitude, in Survey of India topo sheets No. 73 A/10. The elevation above mean sea level is ranging from 1053m to 1065m. The ultimate working depth of mine will be 1042m AMSL. The groundwater table varies between 912m-942m AMSL. The mine working will not intersect the groundwater table. The water requirement of the project is estimated as 49 m³ per day, which will be obtained from the mine sump and the groundwater. It has been reported that there is no population in the core zone, therefore, displacement of population and R&R has not been envisaged. It is estimated that 3.147million m³ of waste will be generated. The existing dump in an area of 1.9ha will be utilized for dumping for next two years and thereafter it will be simultaneously backfilled. Backfilling will start from the 3rd year onwards and at the end of the conceptual period a total of 16.39ha of the worked out pit will be backfilled and reclaimed. An area of 4.5ha has been identified for creation of water bodies. It is proposed that an area of 24.09ha will be afforested during the plan period.

5. The Consent to Establish from the Jharkhand State Pollution Control Board obtained on 03.06.2010 for enhancement of production of bauxite from 0.073million TPA to 0.3million TPA over mine lease area of 115.13ha. The public hearing of the project was held on 10.10.2009 for production of 3lakh TPA of bauxite over mine lease area 115.13ha. The Indian Bureau of Mines had approved scheme of mining alongwith PMCP of the project on 31.08.2010 over an area of 115.13ha. The capital cost of the project is Rs.543Lakhs and the capital cost for the environmental protection measures is proposed as Rs.64.8 Lakhs. The annual recurring cost towards the environmental protection measures is proposed as Rs.39.52Lakhs. The proponent has prepared a comprehensive Wildlife Conservation Plan with a capital cost of Rs.48.24lakhs and annual recurring cost of Rs.10 lakhs.

6. It has been noted that the mine has continued to operate after it fell due for renewal in 2007 without obtaining requisite prior environmental clearance. The proponent had submitted an affidavit cum declaration on non judicial stamp paper that violation under the Environment (Protection) Act, 1986 will not be repeated. Office of the Deputy Secretary, Environment & Forests Dept., Govt. Of Jharkhand, dated 11.08.2012 informed that the prosecution report has been filed in the Court of Chief Judicial Magistrate, Lohardaga on 07-08-2012 vide Complaint No. C-III-03/2012 by taking a *cognizance of offence* by the said court under Section 15 of Environment (Protection) Act, which has been committed by the offending project proponent and the same has been taken on record.

7. 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 Pakhar Bauxite Mining Project of M/s Hindalco Industries Ltd. for an annual production capacity of 3,00,000 tonnes(0.3 million tonnes) of bauxite by the opencast semi-mechanized method involving total mine lease area of 115.13 ha, subject to implementation of the following conditions and environmental safeguards.

A. Specific conditions

- (i) The project proponent shall obtain Consent to Operate from the Jharkhand State Pollution Control Board and effectively implement all the conditions stipulated therein.
- (ii) All the conditions stipulated by the Jharkhand State Pollution Control Board in their NOC shall be effectively implemented.
- (iii) Corporate Environment Policy and hierarchical system for ensuring adherence to the policy and compliance with environmental regulation in accordance with the office memorandum dated 26.4.2011 issued by MoEF should be put in place.
- (iv) The Company shall submit within 3 month their policy towards Corporate Environment Responsibility which should inter-alia address (i) Standard operating process/procedure to bring into focus any infringements/ deviation/ violation of environmental or forest norms/conditions, (ii) Hierarchical system or Administrative order of the company to deal with environmental issues and ensuring compliance EC conditions and (iii) System of reporting of non compliance/violation environmental norms to the Board of Directors of the Company and/or stakeholders or shareholders.
- (v) The environmental clearance is subject to approval of the State Landuse Department, Government of Jharkhand for diversion of agricultural land for non-agricultural use.
- (vi) The critical habitat in the area including dens of python, fox and bear should be protected by adopting appropriate wildlife conservation measures.
- (vii) 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.
- (viii) The project proponent shall ensure that no natural watercourse and/or water resources shall be obstructed due to any mining operations. Adequate measures

shall be taken for conservation and protection of the 1st and 2nd order streams, if any emanating or passing through the mine lease during the course of mining operation.

- (ix) 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.
- (x) The over burden (OB) generated during the mining operation shall be temporarily stacked at earmarked dump site(s) only for the purpose of backfilling. Backfilling shall commence from the third year onwards and thereafter the waste generated shall be concurrently backfilled in the mined out area. There shall be no external OB dump. An area of 16.39ha of the worked out pit shall be backfilled and reclaimed by plantation during the plan period. Monitoring and management of rehabilitated areas shall continue until the vegetation becomes self-sustaining. Compliance status should be submitted to the Ministry of Environment & Forests and its Regional Office, Bhubneshwar on six monthly basis.
- (xi) Catch drains and siltation ponds of appropriate size shall be constructed for the working pit, temporary soil, OB and mineral dumps to arrest flow of silt and sediment directly into the agricultural fields, the Chaupat Nadi, the Kisko Nadi, the Shankh Nadi, Kisko Nallah, the Narachiya Nallah and other water bodies. 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 the monsoon and maintained properly.

Garland drains, settling tanks and check dams of appropriate size, gradient and length shall be constructed both around the mine pit and temporary over burden dumps to prevent run off of water and flow of sediments directly into the agricultural fields, the Chaupat Nadi, the Kisko Nadi, the Shankh Nadi, Kisko Nallah, the Narachiya Nallah and other water bodies 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.
- (xii) Dimension of the retaining wall at the toe of the temporary OB dumps and the OB benches within the mine to check run-off and siltation should be based on the rain fall data.
- (xiii) The void left unfilled in an area of 4.5ha 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 all along the excavated area.
- (xiv) Plantation shall be raised in an area of 24.09ha including a 7.5m wide green belt in

the safety zone around the mining lease by planting the native species around reclaimed area, mine benches, around water body, along the roads etc. in consultation with the local DFO/Agriculture Department. The density of the trees should be around 1500 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) Appropriate mitigative measures should be taken to prevent pollution of the Chaupat Nadi, the Kisko Nadi and the Shankh Nadi in consultation with the State Pollution Control Board.
- (xix) The project proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of ground water, required for the project.
- (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 mineral transportation shall be carried out through the covered trucks only and the vehicles carrying the mineral shall not be

overloaded.

- (xxii) Drills shall either be operated with the dust extractors or equipped with water injection system.
- (xxiii) Blasting operation should be carried out only during the daytime. Controlled blasting should be practiced. The mitigative measures for control of ground vibrations and to arrest fly rocks and boulders should be implemented.
- (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) It shall be ensured that the fluoride level in the drinking water to be used by the workers in the project as well as to be provided to the public, if any, should meet the prescribed norms in this regard.
- (xxviii) The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered fauna namely python, leaf monkey (*Presbyits phayrei*) etc. spotted in the study area. The critical habitats in the area including dens of python, fox and bear should be protected by adopting appropriate wildlife conservation measures and the conservation plan prepared specific to this project in consultation with the State Forest and Wildlife Department should effectively address the same. All the safeguard measures brought out in the Wildlife Conservation Plan prepared specific to this project site shall be effectively implemented in consultation with the State Forest and Wildlife Department. A copy of approved wildlife conservation plan shall be submitted to the Ministry and its Regional Office, Bhubaneswar within 3 months.
- (xxix) 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.
- (xxx) 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.

- (xxxii) 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 mineral bauxite and waste should be made.
- (iii) 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., 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 10micron 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.
- (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 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.
8. The Ministry or any other competent authority may alter/modify the above conditions or stipulate any further condition in the interest of environment protection.
9. 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.
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 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.
11. 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.


(Neeraj Khatri)
Dy. Director

Copy to:

1. Secretary, Ministry of Mines, Government of India Shastri Bhawan, New Delhi.

2. Secretary, Department of Environment, Government of Jharkhand, Secretariat, Ranchi.
3. Secretary, Department of Mines, Government of Jharkhand, Secretariat, Ranchi.
4. Secretary, Department of Forests, Government of Jharkhand, Secretariat, Ranchi.
5. The CWLW, Government of Jharkhand, Secretariat, Ranchi.
6. The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-cum-Office Complex, East Arjun Nagar, Delhi-110032.
7. The Chief Conservator of Forests, Regional Office (EZ), Ministry of Environment and Forests, A-3 Chandrashekharapur, Bhubaneswar-751023.
8. Chairman, Jharkhand State Pollution Control Board, T.A. Division Building (Ground Floor), HEC Campus, P.O. Dhurwa, Ranchi - 834004, Jharkhand
9. Member Secretary, Central Ground Water Authority, A2, W3 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, Lohardaga District, Jharkhand.
12. EI Division, Ministry of Environment & Forests, EI Division, New Delhi.
13. Monitoring File.
14. Guard File.
15. Record File.


(Neeraj Khatri)
Dy. Director