

No.J-11015/638/2007-IA.II(M)
Government of India
Ministry of Environment & Forests

Paryavaran Bhawan,
C.G.O.Complex,
New Delhi -110510.

Dated: 2nd July 2008

To
Chief General Manager,
M/s Mahanadi Coalfields Ltd.,
PO Jagriti Vihar, Burla,
Dist. Sambalpur - 768020.
Orissa.

Sub: Lakhanpur Opencast Epxn. Project (10 MTPA to 15 MTPA and lease area from 1467 ha to 2485 ha) of M/s Mahanadi Coalfields Ltd. (MCL), located in villages Khairakuni, Tingismal, Ubuda, Khuntamahul, Kariori, Khallapalli, Soladia, Lakhanpur, Kudaloi, Kusaraloi, and Banjipali, Tehsil Jharsuguda, Orissa- environmental clearance - reg.

Sir,

This has reference to letter No. 43011/96/2007 dated 29.06.2007 forwarding your application dated 26.06.2007, and your subsequent letters dated 09.10.2007, 16.10.2007, and 24.10.2007, 15.05.2008 and 16.06.2008 and letter dated 11.03.2008 of M/s CIL on the above-mentioned subject. The Ministry of Environment & Forests has considered your application. The project obtained EC vide letter dated No. J-11015/44/96-IA.II(M) dated 24.10.1996 for 10 MTPA over an ML area of 1572 ha. It has been noted that the project is for expansion of the existing Lakhanpur Opencast Coal Project in terms of production capacity from 10 MTPA to 15 MTPA and lease area from 1467 ha to 2485 ha (an increase of 1018 ha). The 1018 ha increase in the ML area consists of 506.18. ha of agricultural land, 95.40 ha of ha of forestland, 398.18 ha of grazing land, and 18.24 ha of homesteads and tenancy land. Forestry clearance has been obtained on 08.10.1990. The extent of R&R also increased from the 216 PAFs assessed from the 5 villages of Khairakuni (107), Bhanjipalli (29), Khuntamahul (22), Ubuda (30), Tingismal (28), with an additional 1039 PAFs from the 8 villages of Khairakuni, Tingismal, Ubuda, Karlajori, Khaliapali, Kusaraloi, Kudaloi, Lakhanpur, and Soldia comprising of a total of 4825 PAFs. Of the total mining lease area, 1441.64 ha is area for excavation, 38.40 ha is for ext. OB dumps, 188 ha is for infrastructure, 148.96 ha is for rationalisation of ML boundary, 668 ha is area for township.

There are no National Parks, Wildlife Sanctuary, Biosphere Reserves found in the 10 km buffer zone. A number of Reserve Forests (RF) are found within 10km of the buffer zone. The Hirakud Reservoir is at a distance of 4km from the ML boundary. The Lilari Nallah flows at a distance of 500m and River Ib flows 3.25 km distance from the western and eastern sides the lease boundary. It is proposed to modify the existing drainage by diverting the Phuljari nallah and realigning it in due course. Mining will be opencast by mechanised method and involves use of surface miner and belt conveyors to transport the coal to the CHP. Mineral transportation of 15151 TPD of coal is by rail. Ultimate working depth of the mine is 165m below ground level (bgl). Present working depth is 72 m bgl. Water table is in the range of 4.35 m - 8.03 bgl during pre-monsoon and 1.95 m- 4.20 m bgl during post-monsoon. Peak water requirement is 2970 m³/d of which 470 m³/d would be from IWSS for

township (430 m³/d) and drinking (30 m³/d) and 2500 m³/d from mine pit water, which includes 1476 m³/d is for dust suppression, 277m³/d is for mine operation. An estimated 23892 m³/d of mine water is discharged from the mine premises during peak monsoon, which is treated before discharge. The entire amount of OB of 838.51 Mm³, estimated that would be generated in the expansion project over the balance life of mine would be backfilled. No new OB dumps will be created for the expansion project. OB accumulated have been stored in one external OB dump which been stabilised and 20.90 ha is to be reclaimed. Balance life of mine at the rated capacity of 15 MTPA is 25 years. Public Hearing was held on 27.07.2007. The project has been approved by M/s MCL on 19.01.2006 for expansion to 15 MTPA. Capital cost of the project is Rs. 391.35 lakhs.

2. The Ministry of Environment & forests hereby accords environmental clearance for the above-mentioned Lakhanpur Opencast (Expansion) Coal Project of M/s MCL for expansion in production of coal to 15 MTPA rated capacity and expansion to 2485 ha under the provisions of Section 12 of the Environmental Impact Assessment Notification, 2006 and subsequent amendments thereto and under 2.1.1 of MOEF Circular dated 13.10.2006 subject to the compliance of the terms and conditions mentioned below:

A. Specific Conditions

- (i) Topsoil, if any, shall be stacked properly with proper slope at earmarked site(s) and shall not be kept active and shall be used for reclamation and development of green belt.
- (ii) OB shall be simultaneously backfilled in the decoaled area. No new OB dumps shall be created for the OB to be generated in the balance life of mine.
- (iii) A detailed hydrological study shall be carried out on the impact of diversion of the Phuljari nala and its realignment prior to its diversion.
- (iv) Monitoring and management of existing reclaimed dumpsite shall 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 yearly basis.
- (v) Catch drains and siltation ponds of appropriate size shall be constructed to arrest silt and sediment flows from soil, OB and mineral dumps. The water so collected shall be utilised for watering the mine area, roads, green belt development, etc. The drains shall be regularly desilted and maintained properly.
Garland drains (size, gradient and length) and sump capacity shall be designed keeping 50% safety margin over and above the peak sudden rainfall and maximum discharge in the area adjoining the mine site. Sump capacity shall also provided adequate retention period to allow proper settling of silt material.
- (vi) Dimension of the retaining wall at the toe of the dumps and OB benches within the mine to check run-off and siltation shall be based on the rainfall data.
- (vii) Crushers at the CHP shall be operated with high efficiency bag filters, water sprinkling system shall be provided to check fugitive emissions from crushing operations, conveyor system, haulage roads, transfer points, etc.

- (ix) Drills shall be wet operated. Roads shall be metal topped and mechanical sweepers shall be regularly deployed to clear the dust off the main approach and mineral transportation roads. Water sprinkling (fixed and mist type, mobile) shall be regularly done along the main haul roads.
- (x) Mining operations for the expansion project shall not involve drilling, blasting and rushing operations as a result of use of surface miner.
- (x) The total area brought under afforestation shall be not less than 1268.07 ha which includes backfilled area (1239.22 ha), existing OB dumps (20.90 ha), along ML boundary, infrastructure, safety zone (175.84 ha) and vacant area including avenue plantation (173.75 ha), and area in township by planting native species found within the study area in consultation with the local DFO/Agriculture Department. The density of the trees shall be around 2500 plants per ha.
- (xi) A Progressive Mine Closure Plan shall be implemented and OB generated shall be simultaneously backfilled so as to backfill and reclaim 1239.22 ha of decoaled area and the balance 69.42 ha being converted into a water reservoir shall be protected by peripheral fencing and the upper benches of the reservoir shall be gently sloped and stabilised with plantation.
- (xii) The steep slope of the mine face along the dip side of the quarry shall be stabilised with geotextile matting.
- (xii) Regular monitoring of groundwater level and quality shall be carried out by establishing a network of existing wells and construction of new piezometers. The monitoring for quantity shall be done four times a year in pre-monsoon (May), monsoon (August), post-monsoon (November) and winter (January) seasons and for quality in May. Data thus collected shall be submitted to the Ministry of Environment & Forests and to the Central Pollution Control Board quarterly within one month of monitoring.
- (xiv) The use of water in the mining operations shall be reduced by recycling and reuse. The Company shall put up artificial groundwater recharge measures for augmentation of groundwater resource if the water table shows a declining trend. The project authorities shall meet the water requirement of nearby village(s) in case the village wells go dry due to dewatering of mine.
- (xv) Sewage treatment plant shall be installed in the existing colony. ETP shall also be provided for workshop and CHP wastewater to meet the capacity of the expansion project. Mine water from the ML shall be treated to meet the prescribed norms before discharge into the natural water courses.
- (xvi) Besides carrying out regular periodic health check up of their workers, 10% of the workers identified from workforce engaged in active mining operations shall be subjected to health check up for occupational diseases and hearing impairment, if any, through an agency such as NIOH, Ahmedabad within a period of one year and the results reported to this Ministry and to DGMS.
- (xvii) For monitoring land use pattern and for post mining land use, a time series of land use maps, based on satellite imagery (on a scale of 1: 5000) of the core zone and

buffer zone, from the start of the project until end of mine life shall be prepared once in 3 years (for any one particular season which is consistent in the time series), and the report submitted to MOEF and its Regional office at Bhubaneswar.

- (xviii) A detailed Final Mine Closure Plan along with details of Corpus Fund shall be submitted to the Ministry of Environment & Forests within 6 months of grant of this letter for approval.
- (xix) R&R for the 1255 PAFs from 5 villages - Khairakuni (107), Bhanjipalli (29), Khuntamahul (22), of Tingismal (28), and Ubuda (30) of the existing project and an additional 1039 PAFs from the 8 villages of Khairakuni, Tingismal, Ubuda, Karlajori, Khaliapali, Kusuraloi, Kudaloi, Lakhanpur, and Soldia for the expansion project shall be prepared and implementation within a specified time-frame. R&R norms shall be not less that of the National R&R Policy.

B. General Conditions

- (i) No change in mining technology and scope of working shall be made without prior approval of the Ministry of Environment and Forests.
- (ii) No change in the calendar plan including excavation, quantum of mineral coal and waste shall be made.
- (iii) Four ambient air quality monitoring stations shall be established in the core zone as well as in the buffer zone for SPM, RSPM, SO₂ and NO_x monitoring. Location of the stations shall be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board.
- (iv) Data on ambient air quality (SPM, RSPM, SO₂ and NO_x) shall be regularly submitted to the Ministry including its Regional Office at Bhubaneswar and to the State Pollution Control Board and the Central Pollution Control Board once in six months.
- (v) Fugitive dust emissions from all the sources shall be controlled regularly monitored and data recorded properly. Water spraying arrangement on haul roads, wagon loading, dump trucks (loading and unloading) points shall be provided and properly maintained.
- (vi) Adequate measures shall be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in blasting and drilling operations, operation of HEMM, etc shall be provided with ear plugs/muffs.
- (vii) Industrial wastewater (workshop and wastewater from the mine) shall 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 before discharge. Oil and grease trap shall be installed before discharge of workshop effluents.
- (viii) Vehicular emissions shall be kept under control and regularly monitored. Vehicles used for transporting the mineral shall be covered with tarpaulins and optimally loaded.

- (ix) Environmental laboratory shall be established with adequate number and type of pollution monitoring and analysis equipment in consultation with the State Pollution Control Board.
- (x) Personnel working in dusty areas shall wear protective respiratory devices and they shall also be provided with adequate training and information on safety and health aspects.
Occupational health surveillance programme of the workers shall be undertaken periodically to observe any contractions due to exposure to dust and to take corrective measures, if needed.
- (xi) 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 company.
- (xii) 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 this Ministry and its Regional Office at Bhubaneswar.
- (xiii) A copy of the environmental clearance letter shall be marked to concerned Panchayat/ local NGO, if any, from whom any suggestion/representation has been received while processing the proposal.
- (xiv) State Pollution Control Board shall 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 shall advertise at least in two local newspapers widely circulated around the project, one of which shall be in the vernacular language of the locality concerned within seven days 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 may also be seen at the website of the ministry of Environment & Forests at <http://envfor.nic.in>.
3. The Ministry or any other competent authority may stipulate any further condition for environmental protection.
4. Failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract the provisions of the Environment (Protection) Act, 1986.
5. 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.



(Dr.T.Chandini)
Director

Copy to:

1. Secretary, Ministry of Coal, New Delhi.
2. Secretary, Department of Environment & Forests, Government of Orissa, Secretariat, Bhubaneswar.
3. Chief Conservator of Forests, Regional office (EZ), Ministry of Environment & Forests, A-31, Chandrashekarpur, Bhubaneswar - 751023.
4. Chairman, Orissa State Pollution Control Board, Parivesh Bhawan, A/118, Nilkanthanagar, Unit VIII, Bhubaneswar - 751012.
5. Chairman, Central Pollution Control Board, CBD-cum-Office Complex, East Arjun Nagar, New Delhi -110032.
6. Member-Secretary, Central Ground Water Authority, Ministry of Water Resources, Curzon Road Barracks, A-2, W-3 Kasturba Gandhi Marg, New Delhi.
7. Shri M.K. Shukla, CGM, Coal India Limited, SCOPE Minar, Core-I, 4t Floor, Vikas Marg, Laxminagar, New Delhi.
8. District Collector, Jharsuguda, Government of Orissa.
9. Monitoring File 10. Guard File 11. Record File

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