

No.J-11015/865/2007-1A.II(M)
Government of India
Ministry of Environment & Forests

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

Dated: 27th October 2008

To
General Manger (Env. & Forests),
M/s Central Coalfields Ltd.,
Ranchi, Jharkand.

Sub: **Magadh Opencast Expansion Coal Mine Project (12 MTPA to 20 MTPA) of M/s Central Coalfields Ltd. located in villages Saradhu, Delgorah Ara Chamatil, Ganeshpur Phulbasia, Tehsil Tandwa in District Chatra, Jharkand - environmental clearance - reg.**

Sir,

This has reference to letter No. 43011/90/2007-CPAM dated 27.06.2007 of Ministry of Coal forwarding the application and letters dated 07.03.2008, 09.05.2008, 31.07.2008 and 1st 8.08.2008 on the above-mentioned subject. The Ministry of Environment & Forests has considered your application. It has been noted that the project is for expansion in production of the existing Magadh Opencast Coalmine Project from 12 MTPA to 20 MTPA. Environmental clearance was obtained for 12 MTPA project on 19.07.2006. The total lease area is 1769 ha of which 900 ha is agricultural land, 244 ha is forestland, 280 ha is wasteland, 111 ha is surface water bodies and 234 ha includes settlements. Forestry clearance has been applied for. There are no National Parks, Wildlife Sanctuary, Biosphere Reserves found in the 10 km buffer zone. Nallah flows within 60m of the ML boundary. It is proposed to modify the natural drainage of the area diversion of the nallah of 1.5 km length flowing thorough the lease and construction of an embankment along side the lease boundary adjoining the nallah. The project involves R&R involving 998 PAFs from 5 villages - Dereo large (32), Ara (216), Chamatu (168), Ganeshpur (360), Phulbesia (220). Of the total mining lease area, 1146 ha is quarry area, 194.71 ha is for OB dumps, 11.09 ha is for infrastructure including buildings, 34 ha is for roads, 140 ha is for green belt, 17.25 ha is for CHP, 44 ha is for township and 321.95 ha is for safety zone and nallah diversion. Mining will be opencast by mechanised method and involves drilling and blasting. Rated capacity of the mine is 20 million tonnes per annum (MTPA). Mineral transportation of 54,800 TPD of coal from the mine in the expansion project would be by MGR (27,400 TPD) and by rail (27,400 TPD). Water table in the study area is in the range of 3-12m bgl during pre-monsoon and 1-6m during post monsoon. Ultimate working depth of the mine is 110m below ground level (bgl). Peak water requirement is 2132 m³/d of which will be met from ground water (250 m³/d), mine pit water (3000 m³/d) and from recycled water. Peak mine water discharge form the mine during monsoon is 20,794 m³/d. An estimated 529 Mm³ of OB will be generated over the life of mine, of which 75% would be backfilled and the balance stored in 2 external OB dumps of a max. of 90m height consisting of 3 benches of 30m each. Life of mine at the rated capacity of 20 MTPA is 26 years. Public Hearing was held on 17.08.2007. The project has been approved by M/s. CCCL on 23.08.2008. Capital cost of the project is Rs. 63.146 cores.

NIPENDRA NATH
Project Officer
Magadh Project

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Project Officer
Magadh Project

2. The Ministry of Environment & Forests hereby accords environmental clearance for the above-mentioned Magadh Opencast Expansion Coal Project of M/s Central Coalfields Limited for production of coal from at 20 MTPA rated capacity in a total lease area of 1769 ha under the provisions of Section 12 of the Environmental Impact Assessment Notification, 2006 and subsequent amendments thereto and under Para 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) No mining operations shall be undertaken in the forestland until clearance has been obtained under the provisions of FC Act, 1980.
- (ii) Mining shall be carried out as per statuette from the streams/nallahs flowing within the lease and the along the diverted nallah along the lease boundary. The embankment being constructed adjoining the nallah shall be
- (iii) Topsoil 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.
- (iv) OB shall be stacked at earmarked two external OB dumpsites of 86.04 ha and 108.87 ha within ML area and shall be a maximum height of 90m only and consist of three benches of 30m each. The ultimate slope of the dump shall not exceed 28°. Monitoring and management of 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) Mineral transportation for the entire 20 MTPA capacity from mine to CHP and from CHP to railway siding (10 MTPA) and to MGR (10 MTPA) shall be by conveyor which shall be commissioned by the year 2010. MGR shall be provided with Silo loading facility.
- (viii) Conveyor system for mineral transportation shall be closed with high efficiency water sprinkling system provided to check fugitive emissions at the transfer points, haulage roads, etc. Dry fogging shall be provided for crushing/loading operations for dust control at the CHP with Rapid Loading System.
- (ix) Drills shall be wet operated only.

NIRPENDRA NATH
Project Officer
Magadh Project

Project Officer
Magadh GCP

- (x) Controlled blasting shall be practiced with use of delay detonators. The mitigative measures for control of ground vibrations and to arrest the fly rocks and boulders shall be implemented.
- (xi) The total area that shall be brought under afforestation at the time of mine closure shall not be less than 1223 ha which includes reclaimed external OB dump (195 ha), and backfilled area (558 ha), 268 ha of steep quarry which is not being backfilled, along ML boundary, safety zone and vacant/undisturbed area, along roads and infrastructure, green belt (202 ha) and in township outside the lease by planting native species in consultation with the local DFO/Agriculture Department. The density of the trees shall be around 2500 plants per ha.
- (xii) A Progressive Mine Closure Plan shall be implemented by reclamation of 558 ha of quarry area by backfilling and afforestation by planting native plant species in consultation with the local DFO/Agriculture Department. The density of the trees shall be around 2500 plants per ha. Quarry area of 268 ha which is too steep for backfilling shall be bio-reclaimed by plantation using geotextile material in critical patches. About 320 ha of decolled area/void which is being converted into a water reservoir shall be gently sloped and the upper benches of the reservoir shall be terraced and stabilised with plantation.
- (xiii) Prior approval of the CGWB/CGWA shall be obtained in cases of use of groundwater for mining operations.
- (xiv) 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.
- (xv) The project authorities shall meet water requirement of nearby village(s) in case the village wells go dry due to dewatering of mine.
- (xvi) Sewage treatment plant of adequate capacity shall be installed in the colony. ETP shall also be provided for workshop and CHP wastewater. Treated wastewater meeting prescribed norms only shall be permitted to be discharged in to the natural water courses.
- (xvii) 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.
- (xviii) A detailed R&R Plan including for all the PAFs including tribals to be displaced from the project area shall be prepared and implemented in a stipulated time frame. The compensation shall be not less than that specified in the National R&R Policy. A detailed Socio-economic survey shall be carried out and based on the same an effective R&R package shall be given to ensure restoration of income of

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NIPENDRA NATH
Project Officer
Magadh Project

Project Officer
Magadh Project

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project affected persons (PAP). Provision shall also be made in the R&R Plan to take care of the land less labourers and the tribals.

- (xix) 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.
- (xx) 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 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 monitoring SPM, RSPM, SO₂, NO_x, Hg and other heavy metals such as Pb, Cr, As, etc. 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, NO_x, Hg and other heavy metals) 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 (SPM, RSPM, Hg and other heavy metals) 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.

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NIRPENDRA NATHI
Project Officer
Nagadhi Project

Project Officer
Nagadhi CCR

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- (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

Project Officer
Magadh OCP

NIRPENDRA NATH
Project Officer
Magadh Project
Magadh Project

Copy to:

1. Secretary, Ministry of Coal, New Delhi.
2. Secretary, Department of Environment & Forests, Government of Jharkhand, Secretariat, Ranchi.
3. Chief Conservator of Forests, Regional office (EZ), Ministry of Environment & Forests, A-31, Chandrashekarapur, Bhubaneswar - 751023.
4. Chairman, Jharkhand State Pollution Control Board, T.A. Division Building (Ground Floor), H.E.C., Dhurwa, Ranchi - 834004.
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, 4th Floor, Vikas Marg, Laxminagar, New Delhi.
8. District Collector, Chatra, Government of Jharkhand.
9. Monitoring File 11. Guard File 12. Record File


NIRPENDRA NATH
Project Officer
Magadh Project