

103-440/EPE

No. J-11015/482/2008-IA-II(M)
GOVERNMENT OF INDIA
MINISTRY OF ENVIRONMENT AND FORESTS
IA-II (Coal-Mining) Division

Paryavaran Bhawan
CGO Complex, Lodhi Road
New Delhi- 110 003
Dated: 08 January, 2014

To,

General Manager (Env. & Forests)
M/s Central Coalfields Ltd.,
Darbhanga House,
RANCHI - 834 001
Jharkhand

Subject : Kathara Opencast Expansion Coal Mine Project (0.96 MTPA normative and 1.90 MTPA peak in an ML area of 792.81 ha (Latitude 23°45'19" to 23°46'22" North & Longitude 85°51'16" to 85°52'32" East) of M/s Central Coalfields Ltd. located in Block Bermo, District Bokaro, Jharkhand - Environment Clearance reg.

Sir:

This is with reference to letter no. 43011/110/2008-CPAM dated 03.11.2008 along with the application for Terms of Reference (TOR) and this Ministry's letter dated 31.12.2008 granting TOR. Reference is also invited to the letter No. CIL/DLI/EMP-TOR/2009/16 dated 11.08.2009 and subsequent letters dated 30.12.2009; 19.06.2013; 23.09.2013; 17.10.2013 for environmental clearance on the above-mentioned subject.

2. The Ministry of Environment & Forests has considered the application. The proposal was considered in the 55th EAC meeting held on 22-23 September, 2009, 4th EAC meeting held on 30-31 August, 2010, 21st EAC meeting held on 28-29th March, 2011 and 2nd EAC meeting held during 3rd -4th October, 2013 which recommended the project for the Environmental Clearance to the project. It is noted that the proposal is for grant of Environmental Clearance for **Kathara Opencast Expansion Coal Mine Project (0.96 MTPA normative and 1.90 MTPA peak in an ML area of 792.81 ha) of M/s Central Coalfields Ltd. located in Block Bermo, District Bokaro, Jharkhand.** The proponent informed that:

- i. It is an expansion of existing old mine project of M/s CCL to which Ministry accorded TOR vide letter no. J-11015/482/2008-IA.II (M) dated 31.12.2008.
- ii. The land usage of the project will be as follows:

Pre-mining:

S No.	Particulars	Area (Ha)
1.	Active Internal OB Dump	31.25
2.	Stabilised Internal OB Dump	48.34
3.	Stabilised External OB Dump	112.11

4.	Planted External OB Dump	42.99
5.	Quarry	62.09
6.	Mine Lagoon	20.58
7.	Coal Stock	8.90
8.	Surface Water Bodies	17.69
9.	Infrastructure	39.21
10.	Road	40.00
11.	Rail	10.00
12.	Green Belt	24.79
13.	Colony	67.12
14.	Washery reject	3.43
15.	Vacant & Safety Zone	264.31
Total		792.81

Post mining:

S No.	Particulars	Area (Ha)
1.	Active Internal OB Dump	-
2.	Planted Internal OB Dump	146.24
3.	Planted External OB Dump	142.48
4.	Void	19.43
5.	Mine Lagoon	9.17
6.	Plantation	8.90
7.	Surface Water Bodies	17.69
8.	Infrastructure	39.21
9.	Road	40.00
10.	Rail	10.00
11.	Green Belt	24.79
12.	Colony	67.12
13.	Plantation	2.67
14.	Vacant & Plantation	265.11
Total		792.81

Core Area:

S No.	Particulars	Area (Ha)
1	Quarry	184.20
2	OB Dump	85.76
3	Plantation	66.00
4	Built-up	122.87
5	Infrastructure	84.03
6	Vacant Land & Green Belt	249.95
TOTAL		792.81

- iii. The extractable reserve is 57.67 MT (Extracted 2.1 MT balance as on 01.04.2013). The per cent of extraction would be 80 %.
- iv. The coal grades is W-III having stripping ratio of 4.02 m³/t . The average Gradient is 12-25 degree. There will be total five seams with thickness ranging from 0.91-44.81 m.
- v. The total estimated water requirement is 1500 m³/day which of 1000 m³/day for domestic and

500 m³/day for industrial. The level of ground water ranges from 1.90 to 11.30 m. Konar river drains the northern side of the block and joins river Damodar. Damodar River is located south of the project flowing towards east. No nallah diversion is required for this project.

- vi. The Method of mining would be opencast mining with shovel- dumper combination.
- vii. There are six external OB dump covering an area of 149.99 ha having a height upto 39 m (max) with the quantity of 230.592 mm³. The final mine voids will have an area of 19.43 Ha with 145 m depth bgl. There are five internal dumps having an area of 146.24 ha and height 50 m agl . Out of total quarry area 187.43 Ha. backfilled quarry area will be 146.24 Ha which shall be reclaimed with plantation. A void of 41.19 ha with depth of about 120 m, which is proposed to be converted into water body.
- viii. The seasonal data for ambient air quality has been documented and all results at all stations are within prescribed limits.
- ix. No additional land is required
- x. The life of mine is 3 Years.
- xi. **Transportation:** Transportation of coal in pit by dumper. Surface to siding by truck, siding to loading by railway.
- xii. There is no R & R involved. There are no PAFs.
- xiii. **Cost:** Total capital cost of the project is Rs. 103.06 Crore. The cost of production would be Rs. 1083.12 /tonnes for 100 %. CSR Cost (Capital cost: Rs.5 / tonne of Coal production. R&R Cost Rs. nil. Environmental Management Cost is Rs. 49.94 crore.
- xiv. **Approvals:** The Mine Closure approval obtained on July, 1988. Date of approval of mine plan is July, 1988. Board's approval obtained on July, 1988.
- xv. **Wildlife issues:** There are no national Parks, wildlife sanctuary, biosphere reserves found in the 10 km buffer zone.
- xvi. **Forestry issues:** There is no forest area involved in mining.
- xvii. Total afforestation plan shall be implemented covering an area of 275.68 ha at the end of mining where reclaimed external OB dump is 149.99 Ha and Internal OB Dump 146.24 ha. Green Belt over an area of 24.79 ha. Density of tree plantation 2500 trees/ ha of plants
- xviii. **Public Hearing:** The ToR was issued vide no J-11015/482/2008-IA.II(M), dated 31st Dec 2008. It was recommended by EAC (ToR) that PH was not required to be conducted for the project. Accordingly, the EIA-EMP was prepared and submitted to MoEF. This was considered by the EAC in its meeting on 22nd September 2009 and 28th / 29th January 2010. The project was recommended for EC by the EAC in its 21st meeting on 28th – 29th March 2011. MoEF, vide letter no J-11015/482/2008-IA.II(M), dated 17th May 2011, asked the proponent for conducting the Public Hearing for the project as per the provisions under EIA Notification , 2006. The Public Hearing was conducted on 4th November 2011. The issues raised during the Public Hearing include air pollution due to coal-fly ash transportation, air and water pollution problem, damages due to heavy blasting etc. The Project Proponent had given assurances to address the issues raised during the Public Hearing.
- xix. There are no court cases/violation pending with the project proponent.

3. The proposal was considered in the 55th EAC meeting held on 22-23 September, 2009, 4th EAC meeting held on 30-31 August, 2010, 21st EAC meeting held on 28-29th March, 2011 and 2nd EAC meeting held on 3-4 October, 2013 and recommended for granting Environmental Clearance. The Ministry of Environment & Forests has examined the application in accordance with the EIA Notification 2006 and under the provisions thereof, hereby recommends for environmental clearance for the above-mentioned **Kathara Opencast Expansion Coal Mine Project (0.96 MTPA normative and 1.90 MTPA peak in an ML area of 792.81 ha) of M/s Central Coalfields Ltd. located in Block Bermo, District Bokaro, Jharkhand** under the provisions of the EIA Notification, 2006 and amendments thereto and Circulars issued thereon and subject to the compliance of the following specific and general conditions.

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A. Specific Conditions:

- i. The maximum production from the mine at any given time shall not exceed the limit as prescribed in the EC.
- ii. Stone revetment be provided up to HFL level in the portions where loose material was visible (about 50 m to 100 m length)
- iii. Strengthening of slopes be done by stones in wire mesh in certain portions on the slope of the dumps (about 30-40m length)
- iv. Bigger size stone support of slopes in some portions of the dump are required to be put in the overhanging portion
- v. Grassing / vegetation be done in patches specially on denuded areas of the slopes in consultation with expert agencies
- vi. Toe wall with provision of weep holes be provided along the loose parts of the dump along the river side
- vii. Slope stability study to be got done through CMPDI for safety aspects and the recommendations be implemented.
- viii. The Plantation be made in the slopes of Dump No 1 mixed with native species.
- ix. The proponent may consider implementing reclamation measures taken by M/s Neyveli Lignite Corporation.
- x. The commitment made by the Proponent to the issue raised during Public Hearing shall be implemented by the Proponent..
- xi. Transportation of coal in pit shall be by dumper; Surface to siding by truck, siding to loading shall be by rail.
- xii. The production shall be within the same Mining Lease area.
- xiii. The depth of the internal void shall be 35 m from the ground level and should be adequate for fishery purpose.
- xiv. The OB shall be completely re-handled at the end of the mining.
- xv. Final mine void depth will not be more than 40 m. The void area will be converted into water body. The rest of the area will be back filled upto the ground level and covered with about a meter thick top soil and put to use.
- xvi. Garland drains be provided.
- xvii. Appropriate embankment shall be provided along the side of the river/nallah flowing near or adjacent to the mine.
- xviii. The land after mining shall be brought back for agriculture purpose.
- xix. Mine water should be treated for discharge into the lagoon. The quality of lagoon water shall be regularly monitored and mitigation measures taken.
- xx. The CSR cost should be Rs 5 per Tonnes of Coal produced which should be adjusted as per the annual inflation.
- xxi. There shall be no overflow of OB into the river and into the agricultural fields and massive plantation of native species shall be taken up in the area between the river and the project.
- xxii. 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 provide adequate retention period to allow proper settling of silt material.
- xxiii. 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.

- xxiv. Crushers at the CHP of adequate capacity for the expansion project 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.
- xxv. Drills shall be wet operated.
- xxvi. The project authorities shall undertake regular repairing and tarring of roads used for mineral transportation. A 3-tier green belt comprising of a mix of native species shall be developed all along the major approach roads,
- xxvii. Controlled blasting shall be practiced with use of delay detonators and only during daytime. The mitigative measures for control of ground vibrations and to arrest the fly rocks and boulders shall be implemented.
- xxviii. A Progressive afforestation plan shall be implemented covering an area of 275.68 ha at the end of mining, which includes reclaimed external OB dump (149.99 ha), internal dump area (146.24 ha) and Green belt (24.79 ha) and in township located 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. Massive plantation shall be carried out in open spaces in and around the mine and a 3-tier avenue plantation along the main approach roads to the mine.
- xxix. An estimated 240.592 Mm³ of OB will be generated during the entire life of the mine. Out of which 230.592 Mm³ of OB will be dumped in six external OB Dump in an earmarked area covering 149.99 ha of land. 10 Mm³ of OB will be dumped in five internal OB dump in embankment covering an area of 146.24 ha. The maximum height of external OB dump for hard OB will not exceed 90 m and that for soft OB shall not exceed 60 m. The maximum slope of the dump shall not exceed 28 degrees. Monitoring and management of reclaimed dump sites shall continue till the vegetation becomes self- sustaining and compliance status shall be submitted to MOEF and its Regional Office on yearly basis.
- xxx. The proponent should prepare restoration and reclamation plan for the degraded area. The land be used in a productive and sustainable manner.
- xxxi. Compensatory Ecological & Restoration of waste land, other degraded land and OB dumps in lieu of breaking open the land be carried out.
- xxxii. The mining should be phased out in sustainable manner. No extra over burden dumps are permitted.
- xxxiii. Of the total quarry area of 187.43 ha, the backfilled quarry area of 146.24 ha shall be reclaimed with plantation. Final mine void of 41.90 ha at a depth shall not be more than 40 m. The void area will be converted into fish pond. The rest of the area will be back filled upto the ground level and covered with about a meter thick top soil and put to use. The water body shall be gently sloped and the upper benches shall be terraced and stabilised with plantation/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.
- xxxiv. No groundwater shall be used for mining operations.
- xxxv. Regular monitoring of groundwater level and quality shall be carried out by establishing a network of existing wells and construction of new peizometers. 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.
- xxxvi. The Company shall put up artificial groundwater recharge measures for augmentation of groundwater resource in case monitoring indicates a decline in water table. The project authorities shall meet water requirement of nearby village(s) in case the village wells go dry due to dewatering of mine.
- xxxvii. Sewage treatment plant shall be installed in the existing colony. ETP shall also be provided for workshop and CHP wastewater.

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- xxxviii. 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 specialised agency /institution within the District/State and the results reported to this Ministry and to DGMS.
 - xxxix. For monitoring land use pattern and for post mining land use, a time series of landuse 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 in the region.
 - xl. 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 Environmental Clearance.
 - xli. The project authorities shall in consultation with the Panchayats of the local villages and administration identify socio-economic and welfare measures under CSR to be carried out over the balance life of the mine.
 - xlii. The commitment made by the Proponent to the issue raised during Public Hearing shall be implemented by the Proponent.
 - xliii. Corporate Environment Responsibility:
 - a) The Company shall have a well laid down Environment Policy approved by the Board of Directors.
 - b) The Environment Policy shall prescribe for standard operating process/procedures to bring into focus any infringements/deviation/violation of the environmental or forest norms/conditions.
 - c) The hierarchical system or Administrative Order of the company to deal with environmental issues and for ensuring compliance with the environmental clearance conditions shall be furnished.
 - d) To have proper checks and balances, the company shall have a well laid down system of reporting of non-compliances/violations of environmental norms to the Board of Directors of the company and/or shareholders or stakeholders at large.

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 of production for quantum of mineral coal 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 PM₁₀, PM_{2.5}, 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. Monitoring of heavy metals such as Hg, As, Ni, Cd, Cr, etc carried out at least once in six months.
- iv. Data on ambient air quality (PM₁₀, PM_{2.5}, SO₂ and NO_x) and heavy metals such as Hg, As, Ni, Cd, Cr and other monitoring data 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. Random verification of samples through analysis from independent laboratories recognised under the EPA rules, 1986 shall be furnished as part of compliance report.
- v. 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.
- vi. 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.

- vii. Vehicular emissions shall be kept under control and regularly monitored. Vehicles used for transporting the mineral shall be covered with tarpaulins and optimally loaded.
- viii. Monitoring of environmental quality parameters shall be carried out through establishment of adequate number and type of pollution monitoring and analysis equipment in consultation with the State Pollution Control Board and data got analysed through a laboratory recognised under EPA Rules, 1986.
- ix. 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.
- x. 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 and records maintained thereof. The quality of environment due to outsourcing and the health and safety issues of the outsourced manpower should be addressed by the company while outsourcing.
- 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 concerned Regional Office.
- xiii. 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>.
- xiv. A copy of the environmental clearance letter shall be marked to concern Panchayat/Zila Parishad, Municipal Corporation or Urban local body and local NGO, if any, from whom any suggestion/representation has been received while processing the proposal. A copy of the clearance letter shall also be displayed on company's website.
- xv. A copy of the environmental clearance letter shall be shall also be displayed on the website of the concerned State Pollution Control Board. The EC letter shall also be displayed at the Regional Office, District Industry Sector and Collector's Office/Tehsildar's Office for 30 days.
- xvi. The clearance letter shall be uploaded on the company's website. The compliance status of the stipulated environmental clearance conditions shall also be uploaded by the project authorities on their website and updated at least once every six months so as to bring the same in public domain. The monitoring data of environmental quality parameter (air, water, noise and soil) and critical pollutant such as PM₁₀, PM_{2.5}, SO₂ and NO_x (ambient) and critical sectoral parameters shall also be displayed at the entrance of the project premises and mine office and in corporate office and on company's website.
- xvii. The project proponent shall submit six monthly compliance reports on status of compliance of the stipulated environmental clearance conditions (both in hard copy and in e-mail) to the respective Regional Office of the Ministry, respective Zonal Office s of CPCB and the SPCB.
- xviii. The Regional Office of this Ministry located in the Region shall monitor compliance of the stipulated conditions. The Project authorities shall extend full cooperation to the office(s) of the Regional Office by furnishing the requisite data/ information/monitoring reports.
- xix. The Environmental statement for each financial year ending 31 March in For -V is mandated to be submitted by the project proponent for the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be uploaded on the company's website along with the status of compliance of EC conditions and shall be sent to the respective Regional Offices of the MoEF by e-mail.

4. The proponent shall abide by all the commitments and recommendations made in the EIA/EMP report so also during their presentation to the EAC.

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5. The proponent is required to obtain all necessary clearances/approvals that may be required before the start of the project. The Ministry or any other competent authority may stipulate any further condition for environmental protection.

6. The Ministry or any other competent authority may stipulate any further condition for environmental protection.

7. 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.

8. 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. The proponent shall ensure to undertake and provide for the costs incurred for taking up remedial measures in case of soil contamination, contamination of groundwater and surface water, and occupational and other diseases due to the mining operations.

(Dr. Manoranjan Hota)
Director

Copy to:

1. Secretary, Ministry of Coal, Shastri Bhawan, 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, Chandrashekarpur, Bhubaneswar - 751023.
4. Member Secretary, Jharkhand State Pollution Control Board, T.A. Division Building (Ground Floor), H.E.C., Dhurwa, Ranchi - 834004.
5. Member Secretary, 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. District Collector, dist. Bokaro, Government of Jharkhand.
8. Dr. R. K. Garg, Advsiior, M/s Coal India Limited, SCOPE Minar, Core-I, 4th Floor, Vikas Marg, Laxmi Nagar, New Delhi.
9. Monitoring File-10. Guard-File 11. Record File 12. Notice Board.

(Dr. Manoranjan Hota)
Director