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Ministry of Environment & Forests (MOEF)

No. J-11015/301/2009-IA.II(M)

Paryavaran Bhawan,
CGO Complex,
New Delhi-110510.

To

Dated: .. March 2012

Chief General Manager (E&F)
M/s South Eastern Coalfields Ltd.,
Bilaspur,
Chhattisgarh.

Sub: Expansion of Churcha RO Underground Coal Mine Project (0.6 MTPA to 1.35 MTPA normative and 2.10 MTPA peak and ML area from 2240.95 ha to 3590.147 ha) of M/s South Eastern Coalfields Ltd. located in villages Sardi & Shivpur, Tehsil Baikunthpur, district Korea, Chhattisgarh – Environmental Clearance –reg.

Sir,

This has reference to letter No. 43011/40/2009-GRAM dated 29.09.2009 of Ministry of Coal forwarding your application for Terms of Reference (TOR), which was granted vide MOEF letter dated 23.11.2009 and your letter No. SECL/BSF/Env./Churcha RO UG/2467 dated 27.11.2010 for environmental clearance and letters dated 17.12.2011 and 05.04.2012 on the above-mentioned subject. It is noted that the proposal is for **expansion in production from 1 MTPA to 1.35 MTPA (normative) and 2.10 MTPA (peak) and ML area from 2240.952 ha to 3590.147 ha of Churcha RO Underground Coal Mine project.** Churcha West was granted environmental clearance for 0.6 MTPA on 17.02.1995. Churcha RO UG consists of one mine of 4 units – Churcha Underground, Churcha West Underground, Shivpur Incline and Ghughra Incline. Of these, Churcha Underground and Churcha West Underground are two existing operating units and Shivpur Incline and Ghughra Incline are two new underground units. In the proposed reorganisation of mine boundary into one single mine, the only workable seam V will be segregated into 4 units falling in each of these units. There are no ecologically sensitive areas found within 15 km of the core zone (project area). However, the study area around the project has abundant Reserve Forests – Tarra RF, Kachhardand RF, Kathgori RF, Hathbar RF, Temri RF, Pathergawan RF, Damur RF and Sonari RF. Of the total ML area of 3590.147 ha, 1445.48 ha is agricultural land, 1626.407 ha is forestland, 447.27 ha is grazing land (Govt. land), 53.09 ha is water body, and 14 ha is wasteland. Forestry clearance has been obtained for 2600.30 ha on 30.08.2010. A total area of 3501.177 ha is for underground mining. An area of 171.310 ha is required for surface features, which includes 77.547 ha of forestland and the entire of 3590.147 ha of lease which includes 16126.407 ha of forestland is for Mining Rights only. River Kardha forms the main drainage for the block. Gugra Nala, Kardha Nala and Sourubhuru Nala draining from the ML flow into Gagor Godi nala. Almost 90% of the mine is underneath hilly area and the colony and infrastructure are in the flat terrain.

Method of mining is underground by a mix of methods - semi-mechanised Bord and Pillar method by caving and use of SDLs, LHDs and introduction of two continuous miners (eliminating blasting) with SDL/LHD and by caving. Grade of coal grade is A-B. Mining rights involves 3110 ha for UG mining and involves 5 entries- two additional entries. Depth of mining is 150-470m bgl. No subsidence is anticipated

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in view of the fact that the seam V is considerably below the ground level -300m to 490m bgl and there is a 50m thick sandstone layer on the roof of the seam which serves as a safety barrier. Water table in the study area is in the range of 5.30-13.90m bgl (pre-monsoon) and 1.80-8.40m bgl during post-monsoon). Peak water requirement is 3280 m³/day of which 890m³/day is from mine water, 1190 m³/d is from bore wells and 1200 m³/d is from river water for use in mine operations (890 m³/d) and drinking (90 m³/d) and the rest (2300 m³/d) for domestic use for colony. Mine discharge water is 8,050 m³/d in the present project and would be 13,148 m³/d in the expansion project. Mine water is acidic (pH 5.4) and an Acid water treatment Plant of 4.5 million litres per day capacity has been commissioned and acidic mine water is treated with lime dosing. TDS levels are within limits in both surface and ground water. Excess mine water discharged after treatment is discharged into Jhumka Nala for agricultural use. Third Party evaluation of groundwater monitoring has been undertaken by Central Groundwater Board, Central Region.

Coal transportation of 4500 TPD of coal would be by road from the 4 mines to CHP in Churcha West UG and by closed conveyor for a length of 3.3km to railway siding for transport by rail. Black topping of roads has been already completed. Budgetary provisions of Rs 1362.15 lakhs towards capital costs and Rs 38.21 lakhs towards revenue costs for environmental measures has been made. Project does not involve additional and R&R (land acquisition) for the existing project has been completed. Balance life of mine is 22 years. Public Hearing held on 06.07.2010. Project was approved by SECL on 23.06.2008 and on 24.08.2009. Capital Cost of the Project is Rs. 463.2539 crores.

2. The Ministry of Environment & forests hereby accords environmental clearance for the above-mentioned **Expansion of Churcha RO Underground Coal Mine Project of M/s South Eastern Coalfields Ltd. for increase in production from 0.6 MTPA to 1.35 MTPA normative and 2.10 MTPA peak and expansion in ML area from 2240.95 ha to 3590.147 ha under provisions of the Environmental Impact Assessment Notification, 2006** and subsequent amendments thereto and Circulars there under subject to the compliance of the terms and conditions mentioned below:

A. Specific Conditions

DEMO

- (i) Adequate precautionary measures for roofing and bolting shall be taken to ensure that no subsidence takes place till end of mining and adequate precautionary measures for roof support are taken such as roof bolting, shall be taken.
- (ii) A Subsidence Prediction Modelling shall be carried out and compared with actual subsidence and subsidence monitoring shall be regularly carried out and appropriate safety corrective measures taken.
- (iii) A 3-tier plantation shall be developed in areas within surface rights which shall include areas along roads, infrastructure, township, CHP along ML boundary and are vacant/undisturbed, by planting native species in consultation with the local DFO/Agriculture Department. The density of the trees shall be around 2500 plants per ha.
- (iv) Water sprinkling arrangements at transfer points and along main approach roads and coal transportation routes shall be provided. The major approach roads from ML used for mineral transportation shall be black topped and a 3-tier avenue plantation developed using a mix of native species.
- (v) Sufficient coal pillars shall be left unextracted around the air shaft (within the subsidence influence area) to protect from any damage from subsidence, if any.
- (vi) Solid barriers shall be left below the roads falling within the blocks to avoid any damage to the roads.

- (vii) No depillaring operation shall be carried out below the township/colony, nalas.
- (viii) Depression due to subsidence resulting in water accumulating within the low lying areas shall be filled up or drained out by cutting drains.
- (ix) While extracting panels in the lower seam, all water bodies in the subsidence area shall be drained. Dewatering of the old goaves of the upper seam shall be continued as long as the lower seam is worked to prevent accumulation of large water bodies over working area.
- (x) High root density tree species shall be selected and planted over areas likely to be affected by subsidence.
- (xi) Regular monitoring of subsidence movement on the surface over and around the working area and impact on natural drainage pattern, water bodies, vegetation, structure, roads, and surroundings shall be continued till movement ceases completely. In case of observation of any high rate of subsidence movement, appropriate effective corrective measures shall be taken to avoid loss of life and material. Cracks shall be effectively plugged with ballast and clayey soil/suitable material.
- (xii) Garland/surface drains (size, gradient and length) around the safety areas such as mine shaft and low lying areas and sump capacity shall be designed keeping 50% safety margin over an above the peak sudden rainfall and maximum discharge in the area adjoining the mine sites. Sump capacity shall also be provided adequate retention period to allow proper settling of silt material. Sufficient number of pumps of adequate capacity shall be deployed to pump out mine water during peak rainfall.
- (xiii) 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.
- (xiv) Drills shall be wet operated only.
- (xv) Monitoring of water quality after treatment to prescribed limits shall be done and records thereof maintained,
- (xvi) Mine water of 13,148 m³/d from Churcha UGP being acidic shall be treated with lime dosing and continuous monitoring of water quality in terms of pH, TDS shall be regularly undertaken at all discharge points and especially before discharge into Jhumka Nalla. In addition, the water quality of the receiving water (before and after discharge) shall also be monitored and records maintained thereof.
- (xvii) Transport of coal to CHP and to railway siding shall be by belt conveyor and thereafter by rail (100%) to Cement units. Loading of railway wagons shall be through CHP and shall not involve pay loader loading.
- (xviii) 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.

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- (xix) The Company shall put up artificial groundwater recharge measures for augmentation of groundwater resource in case monitoring shows a declining trend of ground water level. The project authorities shall meet water requirement of nearby village(s) in case the village wells go dry due to dewatering of mine.
 - (xx) Sewage treatment plant shall be installed in the township. ETP shall also be provided for treating workshop and CHP effluents. Measures for treatment and safe disposal of sludge precipitated such as calcium sulphate, ferrous carbonate, etc) from the effluent treatment plant (ETP) shall be undertaken. Effluents treated to conform to prescribed norms shall be discharged into surface waters.
 - (xxi) Land losers if any in the expansion project shall be provided compensation as per norms which are not less than the National R&R Policy and the R&R Policy of the State Govt. whichever is higher.
 - (xxii) Budgetary provisions of Rs 1362.15 lakhs towards capital costs and Rs 38.21 lakhs towards revenue costs for environmental measures shall be spent on the specific preventive and mitigative measures, details of which shall be provide din the compliance report and also uploaded on the company website.
 - (xxiii) A detailed CSR Plan for an estimated cost of Rs 98 lakhs shall be drawn with names of villages and activities proposed under CSR. An annual recurring budget of Rs 5/tonne of coal are provided towards CSR. The status of implementation of CSR along with village-wise and activity-wise expenditure shall be regularly uploaded on the company website.
 - (xxiv) A monitoring mechanism for R&R and CSR implementation and which includes a Third Party Social Audit shall be introduced.
 - (xxv) 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 1:1000) 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 Bhopal.
 - (xxvi) 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 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 quantum of mineral coal and waste being produced 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 PM₁₀, PM_{2.5}, SO_x and NO_x. 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, in RSPM etc. shall be carried out at least once in six months.
- (iv) Data on ambient air quality (PM₁₀, PM_{2.5}, SO_x and NO_x and heavy metals such as Hg, As, Ni, Cr, etc) and other monitoring data shall be regularly submitted to the Ministry including its Regional

- Office at Bhopal 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 EP Rules, 1986 shall be furnished as part of the 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, and treated so as to conform to the standards including for heavy metals before discharge prescribed under GSR 422 (E) dated 19th May 1993 and 31st December 1993 or as amended from time to time. 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 transportation of 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 EP 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. 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.
 - (x) 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.
 - (xi) 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 Bhopal.
 - (xii) 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>
 - (xiii) A copy of the environmental clearance letter shall be marked to concerned 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 the company's website.
 - (xiv) A copy of the clearance letter shall 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 Centre and Collector's Office/Tehsildar's Office for 30 days.
 - (xv) The clearance letter shall be uploaded on the company's website. The compliance status of the stipulated EC 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 the public domain. The

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 monitoring data of environmental quality parameters (air, water, noise and soil) and critical pollutants such as PM₁₀, PM_{2.5}, SO₂ and NO_x [ambient and stack (if any)] and critical sectoral parameters shall also be displayed at the entrance of the project premises and mines office and in corporate office and on the company's website.

- (xvi) The project proponent shall submit six monthly reports on the status of compliance of the stipulated environmental clearance conditions (both in hard copy and in e-mail) to the respective Regional Office of the MOEF, the respective Zonal offices of CPCB and the SPCB.
- (xvii) The Regional Office of this Ministry located at Bhopal 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.
- (xviii) The environmental statement for each financial year ending 31st March in Form-V 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 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.

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. 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.T.Chandini)
 Director

Copy to:

1. Secretary, Ministry of Coal, Shastri Bhawan, New Delhi.
2. Secretary, Department of Environment & Forests, Government of Chhattisgarh, Secretariat, Raipur.
3. Chief Conservator of Forests, Regional office (EZ), Ministry of Environment & Forests, E-2/240 Arear Colony, Bhopal ? 462016.
4. Chairman, Chhattisgarh Environment, Conservation Board, 1-Tilak Nagar, Shiv Mandir Chowk, Main Road, Avanti Vihar, RAIPUR-Chhattisgarh 492001.
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. Dr.R.K.Garg, Advisor, Coal India Limited, SCOPE Minar, Core-I, 4t Floor, Vikas Marg, Laxminagar, New Delhi.
8. District Collector, Korea, Government of Chhattisgarh
9. Monitoring File 10. Guard File 11. Record File

(Dr.T.Chandini)