



Ministry of Environment & Forests (MOEF)

No .J-11015/144/08-IA.II (M)

Paryavaran Bhawan,
CGO Complex,
New Delhi-110510.

To

Dated: 27th August 2010

Chief General Manager,
M/s Gujarat Mineral Development Corp. Ltd.,
Khanij Bhawan, 6th Floor, A Tower,
132 Ring Road, Vastrapur,
AHMEDABAD- 380052.

Sub: Expansion of Tadkeshwar Opencast Lignite Mine Project (from 1 MTPA to 2.50 MTPA of Lignite and 1 MTPA of Limestone in an ML area of 964.44 ha.) of M/s Gujarat Mineral Development Corporation, located in village Tadkeshwar, Taluk Mandvi, District Surat, Gujarat – Environmental Clearance-reg.

Sir,

This is with reference to your application vide letter dated GMDC/ENV/MoEF/261147/08 (A) dated 19.03.2008 for Terms of Reference (TOR), which was granted vide this Ministry's letter dated 26.08.2008 and with reference to your application for environmental clearance based on the prescribed TOR vide letter No. GMDC/ENV/MNM/359/09 dated 08.12.2009 on the above-mentioned subject and letters dated 19.03.2008, 08.12.2009, 02.02.2010, 16.02.2010, 20.05.2010 and 07.08.2010. The Ministry of environment & Forests has considered the application. It is noted that the project was granted EC on 20.01.2005 for 1 MTPA production capacity. The present proposal is for expansion of production of lignite from 1 MTPA to 2.50 MTPA and for production of limestone at 1 MTPA production capacity in the exiting ML area of 964.44 ha. Of the total 964.4401 ha ML area, 874.90 ha is agricultural land, 73.10 ha is grazing land, (gauchar land), 5.69 ha is surface water bodies, and 11.64 ha is Govt. land. No forestland is involved. There are no ecologically sensitive areas in the 15km buffer zone. RF is found 9.8 km away from the core zone and PF is about 6.2km distance in the North-West direction from the ML boundary. River Tapi flows 5 Km from east to west and River Kim river is about 6.2 Km distance in the north-west direction from ML boundary. Both rivers ultimately confluence with Arabian Sea. Kakrapar Right Main Canal which adjoins the ML boundary in the east and the Ukai Right Bank Canal coming from the North meets the former near the mine. It is not proposed to modify the natural drainage of the area, except a portion of a nala flowing through the ML.

Of the total 964.4401ha ML area, 565.6 ha is quarry area, 97.59 ha is external OB dumps, 2.0 ha is infrastructure., 80 ha is green belt, and 219.2501 ha is unutilized area. No additional acquisition of land is involved. Ultimate working depth is 94 m. Mining is opencast by mechanised method involving Shovel-dumper combination. Lignite extraction is from two quarry pits namely North Pit and South pit in the initial four years. A garland drain all around and encircling the two quarry pits shall be established to drain the water away from working areas. Entire lignite of 11,364 TPD would be transported by road. No lignite would be stored in stockyard. Water table is in the range of 3.38-8.88 m bgl in the core zone and 3.0-21.86m bgl in the buffer zone during pre-monsoon and in the range of 1.88-6.88m bgl in the core zone and in the range of 1.5-19.86m bgl in the buffer zone during post-monsoon. Peak Water requirement is 439.45 m³/day, of which 58 m³/day will be met from ground water for domestic consumption and the remaining 382 m³/for mining operation will be met from

mine sump water. Total OB accumulated is 13.33 Mm³ and an estimated 308.37Mm³ of OB would be generated over the balance life of the mine. Limestone of 1 MTPA capacity would also be generated as part of OB which would be stored in 25 ha of stack area. No R&R is involved. Amount earmarked for Socio-economic welfare measures for the nearby villages (under CSR) is Rs. 1.25 Crores. Capital and recurring annual cost for environmental protection measures earmarked is Rs. 107.70 lakhs and Rs. 113.58 Lakhs. Balance life of the mine is 14 years. Capital Cost of the project is 37.00 Crores.

2. The Ministry of Environment & Forests hereby accords environmental clearance for the above-mentioned **expansion of Tadkeshwar Opencast Lignite Mine Project (from 1 MTPA to 2.50 MTPA of Lignite and 1 MTPA of Limestone) within the existing ML area of 964.44 ha of M/s Gujarat Mineral Development Corporation Ltd under Section 7 (ii) the Environmental Impact Assessment Notification, 2006 and subsequent amendments thereto and Circulars thereunder subject to the compliance of the terms and conditions mentioned in DFA.**

A. Specific Conditions

- (i) Topsoil shall be stacked properly with proper slope at earmarked site(s) and shall not be kept active and shall be used within a year of its generation for reclamation and development of green belt.
- (ii) OB shall be stacked at earmarked external OB dumpsite within ML area. The ultimate slope of the existing dumps shall not exceed 28°. Monitoring and management of existing reclaimed dumpsites 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 Bhopal on yearly basis.
- (iii) A garland drain all around and encircling the two quarry pits shall be established to drain the water away from working areas. 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 utilized 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.
- (iv) 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.
- (v) A Mine Drainage Plan with a surface drainage design of the mine resulting from surface run-offs and seasonal nalas found within the active mining area and for the mine discharge water based on a peak rainfall data shall be prepared and implemented.
- (vi) 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 (including TDS and acid mine water) 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. Water quality parameter such as TDS, Sulphate, Nitrate etc. and acidic mine water if any, shall be treated to conform to prescribe standards before discharge or use in dust suppression /green belt development. Records of the water quality of the mine discharge water shall be maintained. Recognised institutions such as National Geophysical Research Institute, Hyderabad shall be involved for undertaking such a study.

- (vii) Water quality parameters such as TDS, sulphates, nitrates etc were high and mine water should be treated to conform to prescribed standards before discharge or use in dust suppression/green belt development. Records of the water quality of the mine discharge water shall be maintained.
- (viii) The Company shall put up artificial groundwater recharge measures such as check dams within and adjoining the lease for augmentation of groundwater resource in case monitoring indicates decline in water table, in consultation with the local communities and with the Wildlife Department of the State Government. The project authorities shall meet water requirement of nearby village(s) in case the village wells go dry due to dewatering of mine.
- (ix) No mining shall be carried below 50m depth bgl. No groundwater shall be used for mining operations. Additional water required, if any, shall be met by recycling/reuse of the water from the existing activities and from rainwater harvesting measures.
- (x) Water sprinkling system shall be provided to check fugitive emissions, haulage roads, transfer points, etc and fugitive dust emissions shall be kept under control.
- (xi) All approach roads, major haul roads and road to village shall be black topped.
- (xii) No drilling and blasting shall be carried out. Controlled blasting shall be carried out only where hard strata are encountered.
- (xiii) Transportation of lignite to Vapi and Ankleshwar being critically polluted areas shall be in trucks of 20-T capacity or more covered with tarpaulin.
- (xiv) No stockpile of lignite shall be permitted. The lignite produced from mine face shall be transported immediately.
- (xv) ETP shall also be provided for workshop, and CHP. Effluents shall be treated to conform to prescribed standards, particularly for pH and TDS in case of discharge into any water course outside the lease.
- (xvi) A pre-mining socio-economic survey shall be undertaken and impact of CSR assessed every 3 years and furnished as part of the Monitoring Report. Land oustees, if any, shall be compensated as per norms laid out in the National R&R Policy, 2007.
- (xvii) A one-time capital investment of Rs. 10.08 crores under CSR for the six villages indentified for CSR namely – Rosvad, Togapur, Ushked, Ramkund, Virpor, and Munilav and revenue expensiture of Rs 5/tonne of coal shall be earmarked for CSR. The details of expenditure and various activities shall be drawn up in consultation with the local communities and implemented through VDICs. The socio-economic development of the villages shall be monitored over the life of the project and impact of CSR assessed every 3 years using indices such as the UNDP Human Development Index and furnished as part of the Monitoring Report and also regularly uploaded on the company website.
- (xviii) A 50m wide green belt shall be created along the lease boundary using native species as peripheral plantation. Area brought under pastureland/agricultural land shall not be less than 669.19 ha which includes reclaimed external OB dump area (97.59 ha), backfilled area (491.60 ha including 73 ha of grassland using native species), along ML boundary, along roads, green belt (80 ha) and plantation in undisturbed areas (219.2501 ha) by planting native species in consultation with the local DFO/Agriculture Department.
- (xix) A Progressive Closure Plan shall be implemented of quarry area of which 491.16 ha shall be backfilled and afforested by planting native plant species in consultation with the local DFO/Agriculture Department. The density of the trees shall be around 1500 plants per ha. It shall be ensured that the balance decoaled void of 74 ha being left as a water body, the

upper slopes of which shall be gently sloped and reclaimed with grass and plantation. The quality of the water in the water body shall be regularly monitored and treated to ensure that it is not acidic.

- (xx) 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 Bhopal.
- (xxi) A Final Mine Closure Plan along with details of Corpus Fund shall be submitted to the Ministry of Environment & Forests for approval 5 years in advance of final mine closure for approval. At the Post-mining stage, land should be restored as pastureland/agricultural land use.

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, PM2.5, SO2 and NOx. 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 particulates shall be carried out at least once in six months.
- (iv) Data on ambient air quality (PM10, PM 2.5, SO2 and NOx 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 monitoring data of environmental quality parameters (air, water, noise and soil) and critical pollutants such as PM10, PM2.5, 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 Gujarat, Secretariat, Gandhinagar 382010.
3. Chief Wildlife Warden, Government of Gujarat, Gandhinagar.
4. Chief Conservator of Forests, Regional office (EZ), Ministry of Environment & Forests, A/3 Chandrashekarpur, Bhopal – 751023.
5. Chairman, Gujarat State Pollution Control Board, Paryavaran Bhavan, Sector 10-A, Gandhinagar – 382010.
6. Chairman, Central Pollution Control Board, CBD-cum-Office Complex, East Arjun Nagar, New Delhi -110032.
7. Member-Secretary, Central Ground Water Authority, Ministry of Water Resources, Curzon Road Barracks, A-2, W-3 Kasturba Gandhi Marg, New Delhi.
8. District Collector, Surat, Government of Gujarat.
9. Monitoring File 10. Guard File 11. Record File.