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Government of India
Ministry of Environment & Forests

Paryavaran Bhavan
C.G.O. Complex, Lodi Road
New Delhi-110 003

Dated: the 11th September 2013

To

M/s Bharat Process and Mechanical Engineers Ltd.,
C/o The Orissa Minerals Development
Co. Ltd. FD-350, Sector - III, Salt Lake
Kolkata - 700016

Subject: Dalki Manganese Ore Mine of M/s Bharat Process and Mechanical Engineers Ltd., Villages Dalki, Soyabahal, Sading and Thakurani R.F., Tehsil Barbil, Distt. Keonjhar, Orissa - environmental clearance -regarding.

Sir,

This has reference to your letter dated 27.06.2011 on the subject mentioned above. The proposal is for enhancement of production of Manganese ore from 31,000 to 2,40,000 TPA (ROM) located in Villages Dalki, Soyabahal, Sading and Thakurani R.F., Tehsil Barbil, Distt. Keonjhar, Orissa. The project was prescribed Terms of Reference (TORs) by the Ministry of Environment and Forests on 08.06.2009 for undertaking detailed EIA study for the purpose of obtaining environmental clearance. The Expert Appraisal Committee recommended the proposal for Environmental Clearance in its meeting held during 20-22 July 2011.

2. The total mine lease area of the project is 266.77 ha, out of which 4.6 ha is an agricultural land, 232.936 ha is forestland, 9.024 ha is wasteland and 20.210 ha is non forest land. Forestry clearance for diversion of 167.815 ha forest land is granted by MoEF vide letter no. 8-93/98-FC dated 03.08.1998 which is valid till 30.09.2014. The Indian Bureau of Mines has approved the scheme of mining along with PMCP vide letter no. SM/OTF.MECH/07-ORI/BHU/2011-12 on 29.06.2011 over an area of 266.77 ha. The targeted production capacity of the mine is 2,40,000 TPA (ROM) of Mn Ore. The life of mine is 18 yrs. It has been reported that approx. 800 TPD of mineral will be transported through the road to a distance of 7 km.

3. No National Park/ wildlife sanctuary/biosphere reserve/tiger reserve etc. are reported to be located in the core and buffer zone of the mine and that the area does not report to form corridor for Schedule-I fauna.

4. The mine working will be opencast by semi-mechanised method involving drilling and blasting. The topography of the area is hilly and reported to lie between 22°05'08" to 22°05'57" N Latitude and 85°24'26" to 85°25'36"E Longitude and at topography of 590 m AMSL to 515 m AMSL. The ultimate working depth shall be up to 470 AMSL and the ground water level is at 370 AMSL. The ultimate depth of quarry shall not intersect the ground water table. The peak water requirement for the project is estimated as 100 m³/day, which will be sourced from Karo river. A total of 29.318.36 m³/month of solid waste will be generated. A total of 47027.50 Mm³ of OB has already been accumulated and another 6285738.5 Mm³ of OB is proposed to be generated during the entire life span of the mine. Initially, there will be 3 external dumps having maximum projected height of 20 m. At the end of the mine life, no waste will be left at the earmarked dump area. Plantation shall cover an area of 110.763 ha.

5. The public hearing of the project was held on 25.02.2011., the Proponent has committed to address the issues raised in pH during implementation of the project. The capital cost of the project is Rs. 355.80 lakhs and the capital cost for the environment protection measures is proposed as Rs. 90 lakhs. The annual recurring cost towards the environment protection measures is Rs.25 lakhs.

6. It was noted that it is a violation case as the production from the mine was enhanced after the EIA Notification, 1994 coming into force, without obtaining requisite prior environmental clearance. The proponent has submitted the board resolution stating that such violations of Environment (protection) Act, 1986 will not be repeated in the future the Board Resolution has been passed at the 17th Board meeting of the OMDC held on 28th April 2012. The prosecution report has also been filed in the Court of Chief Judicial Magistrate, Barbil, Keonjhar on 20.10.2012 vide Case No. 2(C) C.C. No. 121/2012 to take cognizance of offence by the said court under section 15 of Environment (Protection) Act, which has been committed by the offending project.

7. The Ministry of Environment and Forests has examined the application in accordance with the EIA Notification, 2006 and hereby accords environmental clearance under the provisions thereof to the above mentioned Dalki Manganese Ore Mine of M/s Bharat Process and Mechanical Engineers Ltd., Villages Dalki, Soyabahal, Sading and Thakurani R.F., Tehsil Barbil, Distt. Keonjhar, Orissa for enhancement of production from 31,000 TPA to 2,40,000 TPA (ROM) of Manganese ore over an area of 201.649 ha [266.74 ha - 65.121 ha (for which FC is not available)]. This environmental clearance is subject to implementation of the following conditions and environmental safeguards:

A. Specific Conditions

- (i) The project proponent shall obtain Consent to Establish and Consent to Operate from the State Pollution Control Board, Orissa and effectively implement all the conditions stipulated therein.

- (ii) Environmental clearance is subject to final order of the Hon'ble Supreme Court of India in the matter of Goa Foundation Vs. Union of India in Writ Petition (Civil) No. 460 of 2004, as may be applicable.
- (iii) Environmental clearance is subject to obtaining clearance under the Wildlife (Protection) Act, 1972 from the competent authority, as may be applicable.
- (iv) No mining activities are allowed in forest area for which the FC is not available.
- (v) As per the guidelines issued by the Forest Conservation Division in this Ministry vide F. No. 11-362/2012-FC dated 1st February, 2013 the project proponent shall seek and obtain approval under the forest (Conservation) Act, 1980 for diversion of the entire forest land located within the mining lease on or before 31st January 2015, failing which the mining lease area will be reduced to the non forest area plus the forest area for which the project proponent has been able to obtain the FC at the end of this time period. In the case of reduction in mine lease area, the project proponent will need to get a revised mining plan approved from the Competent Authority for reduced area and enter into a new mining lease as per reduced lease area. The EC will be construed to be available for the mining lease area as per the revised mining lease deed.
- (vi) Mining in the 167.815 hectares of forest land after expiry of the present forest clearance on 30th September 2014 shall be undertaken only if the project proponent obtains approval under the Forest (Conservation) Act, 1980 for its diversion or Temporary Working Permission (TWP). In case the project proponent fails to obtain approval under the afore-mentioned Act for diversion of the said 167.815 hectares of forest land or TWP, mining in the said lease during the period from 1st October 2014 to 31st January 2015 shall be restricted to be non-forest land and, the forest land, if any, for which the project proponent has been able to obtain the FC or TWP. In such case, the project proponent will need to get a revised mining plan approved from the competent authority for working in the non-forest land and the forest land for which he has been able to obtain FC or TWP.
- (vii) The Proponent shall submit within 3 months their policy towards Corporate Environment Responsibility which should inter-alia provide for (i) Standard operating process / process to bring into focus any infringement / deviation / violation of the environmental or forest norms / conditions, (ii) Hierarchical system or Administrative order of the company to deal with the environmental issues and for ensuring compliance with the EC conditions and (iii) System of reporting of non compliances / violations of environmental norms to the Board of Directors of the company and / or shareholders or stakeholders.
- (viii) The project proponent shall carry out conditioning of the ore with water to mitigate fugitive dust emission.

- (ix) The project proponent shall ensure that no natural watercourse and/or water resources shall be obstructed due to any mining operations. Adequate measures shall be taken for conservation and protection of the first order and the second order streams, if any, emanating from the mine lease area during the course of mining operation.
- (x) The top soil, if any shall temporarily be stored at earmarked site(s) only and it shall not be kept unutilized for long. The topsoil shall be used for land reclamation and plantation.
- (xi) The subgrade material, if any shall be stacked at the earmarked sites.
- (xii) The over burden (OB) generated during the mining operations shall be temporarily stacked at earmarked dump site(s) only. There shall be no external overburden at the end of mine life.
- (xiii) Garland drains, settling tanks, catch drains, siltation ponds and check dams of appropriate size shall be constructed around the mine working, sub-grade, over burden and mineral dump(s) to prevent run off of water and flow of sediments directly into the Karo River and other water bodies. The water so collected shall be utilized for watering the mine area, roads, green belt development etc. The drains shall be regularly desilted particularly after the monsoon and maintained properly. The sump capacity shall be designed keeping 50% safety margin over and above peak sudden rainfall (based on 50 years data) 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. Sedimentation pits shall be constructed at the corners of the garland drains and desilted at regular intervals.
- (xiv) Over burden dump(s) shall be provided with retaining wall of appropriate dimensions to check run-off from the dumps.
- (xv) Plantation shall be raised in an area of 110.763 ha including a 7.5m wide green belt in the safety zone around the mining lease, over burden dump(s), backfilled and reclaimed area, mine benches, around water body, roads etc. in consultation with the local DFO/ Agriculture Department. The density of the trees shall be around 2500 plants per hectare. Greenbelt shall be developed all along the mine lease area in a phased manner and shall be completed within first five years.
- (xvi) The higher benches of excavated void/mining pit shall be terraced and plantation done to stabilize the slopes. The slope of higher benches shall be made gentler for easy accessibility by local people to use the water body. Peripheral fencing shall be carried out all along the excavated area.
- (xvii) Effective safeguard measures such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of particulate matter such as around crushing and screening plant, loading and unloading points and transfer points so as to ensure that AAQ .. prescribed by CPW are met.

- (xviii) Regular monitoring of the flow rate of the springs and perennial nallahs flowing in and around the mine lease shall be carried out and records maintained.
- (xix) The project authority shall implement suitable conservation measures to augment ground water resources in the area in consultation with the Regional Director, Central Ground Water Board.
- (xx) Regular monitoring of ground water level and quality shall be carried out in and around the mine lease by establishing a network of existing wells and installing new piezometers during the mining operation. The periodic monitoring [(at least four times in a year- pre-monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January); once in each season)] shall be carried out in consultation with the State Ground Water Board/Central Ground Water Authority and the data thus collected may be sent regularly to the Ministry of Environment and Forests and its Regional Office Bhubaneswar, the Central Ground Water Authority and the Regional Director, Central Ground Water Board. If at any stage, it is observed that the groundwater table is getting depleted due to the mining activity, necessary corrective measures shall be carried out.
- (xxi) Appropriate mitigative measures shall be taken to prevent pollution of the Karo River.
- (xxii) The project proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of surface water required for the project. The project proponent shall take effective measures for conservation of water.
- (xxiii) Suitable rainwater harvesting measures on long term basis shall be planned and implemented in consultation with the Regional Director, Central Ground Water Board.
- (xxiv) Vehicular emissions shall be kept under control and regularly monitored. Measures shall be taken for maintenance of vehicles used in mining operations and in transportation of mineral. The mineral transportation shall be carried out through the covered trucks only and the vehicles carrying the mineral shall not be overloaded.
- (xxv) No blasting shall be carried out after the sunset. Blasting operation shall be carried out only during the daytime. Controlled blasting shall be practiced. The mitigative measures for control of ground vibrations and to arrest fly rocks and boulders shall be implemented.
- (xxvi) Drills shall either be operated with the dust extractors or equipped with water injection system.
- (xxvii) Mineral handling area shall be provided with adequate number of high efficiency dust extraction system. Loading and unloading areas including all the transfer points shall also have efficient dust control arrangements. These shall be properly maintained and operated.

- (xxviii) The waste water from the mine working 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. Oil and grease trap should be installed before discharge of workshop effluents.
- (xxix) Trace metals such as Fe, Cr +6, Cu, Se, As, Cd, Hg, Pb, Zn and Mn shall be periodically monitored at specific locations in both surface water downstream and in ground water at lower elevations from mine area, in consultation with the OSPCB and State Ground Water Board. Suitable treatment measures shall be undertaken in case levels are found to be higher than permissible limits.
- (xxx) Pre-placement medical examination and periodical medical examination of the workers engaged in the project shall be carried out and records maintained. For the purpose, schedule of health examination of the workers should be drawn and followed accordingly.
- (xxxi) Occupational health surveillance program of the workers shall be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed. Health records of the workers shall be maintained.
- (xxxii) The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered flora and fauna, if any. Action plan for conservation of flora and fauna prepared shall be implemented in consultation with the State Forest and Wildlife Department. All the safeguard measures brought out in the Wildlife Conservation Plan prepared specific to this project site shall be effectively implemented. Necessary allocation of funds for implementation of the conservation plan shall be made and the funds so allocated shall be included in the project cost. A copy of action plan shall be submitted to the Regional Office of the Ministry of Environment and Forests, Bhubaneswar.
- (xxxiii) Digital processing of the entire lease area using remote sensing technique shall be done regularly once in three years for monitoring land use pattern and report submitted to MoEF and its Regional office.
- (xxxiv) Revenue land owners shall be compensated as per the compensation policy of the State Government.
- (xxxv) The critical parameters such as RSPM (Particulate matter with size less than 10micron i.e., PM₁₀) and NO_x in the ambient air within the impact zone, peak particle velocity at 300 m distance or within the nearest habitation, whichever is closer shall be monitored periodically. Further, quality of discharged water shall also be monitored [(TDS, DO, PH and Total Suspended Solids (TSS)]. The monitored data shall be uploaded on the website of the company as well as displayed on a display board at the project site at a suitable location near the main gate of the Company in public domain. The Circular No. J-20012/1/2006-IA.II(M) dated 27.05.2009 issued by Ministry of Environment and Forests, which

is available on the website of the Ministry www.envfor.nic.in shall also be referred in this regard for its compliance.

B. General conditions

- (i) No change in mining technology and scope of working shall be made without prior approval of the Ministry of Environment & Forests.
- (ii) No change in the calendar plan including excavation, quantum of mineral Manganese ore and waste shall be made.
- (iii) Atleast four ambient air quality-monitoring stations shall be established in the core zone as well as in the buffer zone for RSPM (Particulate matter with size less than 10micron Le., PM₁₀) and NO_x monitoring. Location of the stations shall be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets and frequency of monitoring shall be undertaken in consultation with the State Pollution Control Board.
- (iv) Data on ambient air quality [(RSPM(Particulate matter with size less than 10micron i.e., PM₁₀) and NO_x] shall be regularly submitted to the Ministry including its Regional office located at Bhubaneswar and the State Pollution Control Board / Central Pollution Control Board once in six months.
- (v) Fugitive dust emissions from all the sources shall be controlled regularly. Water spraying arrangement on reject yards and haul roads, loading and unloading and at transfer points shall be provided and properly maintained.
- (vi) Measures shall be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in operations of HEMM, etc. shall be provided with ear plugs / muffs.
- (vii) All the applicable safety procedures will be adhered and Personal Protective Equipments like nose masks, safety shoes, hand gloves, apron, ear plug, ear muff, safety goggles, safety belt, etc., shall be provided to ensure that people working during construction and operational phase are protected.
- (viii) 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 program of the workers shall be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.
- (ix) 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 Organization.
- (x) 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 the Ministry and its Regional Office located at Bhubaneswar.
- (xi) The project authorities shall inform to the Regional Office located at Bhubaneswar regarding date of financial closures and final approval

of the project by the concerned authorities and the date of start of land development work.

- (xii) The Regional Office of this Ministry located at Bhubaneswar shall monitor compliance of the stipulated conditions. The project authorities shall extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information / monitoring reports.
- (xiii) The project proponent shall submit six monthly reports on the status of compliance of the stipulated environmental clearance conditions including results of monitored data (both in hard copies as well as by e-mail) to the Ministry of Environment and Forests, its Regional Office Bhubaneswar, the respective Zonal Office of Central Pollution Control Board and the State Pollution Control Board. The proponent shall upload the status of compliance of the environmental clearance conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of the Ministry of Environment and Forests, Bhubaneswar, the respective Zonal Officer of Central Pollution Control Board and the State Pollution Control Board.
- (xiv) A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zila Parisad/ Municipal Corporation, Urban Local Body and the Local NGO, if any, from whom suggestions/ representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the Company by the proponent.
- (xv) The State Pollution Control Board shall display a copy of the clearance letter at the Regional office, District Industry Centre and the Collector's office/ Tehsildar's Office for 30 days.
- (xvi) The environmental statement for each financial year ending 31st March in Form-Vas 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 put on the website of the company along with the status of compliance of environmental clearance conditions and shall also be sent to the respective Regional Office of the Ministry of Environment and Forests, Bhubaneswar by e-mail.
- (xvii) The project authorities shall advertise at least in two local newspapers widely circulated, one of which shall be in the vernacular language of the locality concerned, within 7 days of the issue 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 also at web site of the Ministry of Environment and Forests at <http://envfor.nic.in> and a copy of the same shall be forwarded to the Regional Office of this Ministry located at Bhubaneswar.

8. The Ministry or any other competent authority may alter/modify the above conditions or stipulate any further condition in the interest of environment protection.

9. Failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of the Environment (Protection) Act, 1986.

10. The above conditions shall 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 made there under and also any other orders passed by the Hon'ble Supreme Court of India/ High Court of Orissa and any other Court of Law relating to the subject matter.

11. Any appeal against this environmental clearance shall lie with the National Green Tribunal, if preferred within a period of 30 days as prescribed under Section 16 of the National green Tribunal Act, 2010.

(Dr. Saroj)
Director

Copy to:

- (i) The Secretary, Ministry of Mines, Government of India, Shastri Bhawan, New Delhi.
- (ii) The Secretary, Department of Environment, Government of Orissa, Secretariat, Bhubaneswar.
- (iii) The Secretary, Department of Mines and Geology, Government of Orissa, Secretariat, Bhubaneswar.
- (iv) The Secretary, Department of Forests, Government of Orissa, Secretariat, Bhubaneswar.
- (v) The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-cum- Office Complex, East Arjun Nagar, Delhi-110032.
- (vi) The Chief Conservator of Forests, Regional Office (EZ), Ministry of Environment and Forests, A-3 Chandrashekharpur, Bhubaneswar-751023.
- (vii) The Chairman, Orissa State Pollution Control Board, Parivesh Bhawan, A/118 Nilakantha Nagar, Unit-VIII, Bhubaneswar-751012.
- (viii) The Controller General, Indian Bureau of Mines, Indira Bhavan, Civil Lines, Nagpur-440 001.
- (ix) The Member Secretary, Central Ground Water Authority, A2, W3 Curzon Road Barracks, K.G. Marg, New Delhi-110001.
- (x) The District Collector, Keonjhar District, Government of Orissa.
- (xi) Guard File.

(Dr. Saroj)
Director