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No.J-11015/799/2007-IA.II(M)
Government of India
Ministry of Environment and Forests

Paryavaran Bhawan
CGO Complex, Lodi Road,
New Delhi-110 003

Dated the 31st July, 2009

To

Sri Rudra Sen Sindhu
M/s Rohtak Engineering Co.,
P.O. Barbil, District-Keonjhar
Orissa-758 035

Subject: Bhanjapalli, Koira & Teherai Manganese Ore Mining Project of M/s Rudra Sen Sindhu located in Village(s) Teherai, Koira & Bhanjapalli, Tehsil Bonai, District Sundergarh, Orissa - environmental clearance regarding.

Sir,

This has reference to your letter No. RS/MoEF/121/07-08 dated 25.06.2007 and subsequent letters dated 22.04.2009, 30.05.2009 and 18.06.2009 on the subject mentioned above. The proposal is for opening of a new mine for production of 6,000 tonnes per annum (TPA) of manganese ore. Although, it is a new mine for the purpose of the present lessee, however, it is a worked out mine having a broken up area of 9.42 ha. The total mine lease area of the project is 65.71ha, out of which 15.1ha is an agricultural land, 44.95ha is forestland (23.94ha + 21.01ha Dungri & pahar), 1.66ha is wasteland, 3.05ha is grazing land and 0.55ha is others. Area proposed for mining is 7.42ha, an area of 2ha is kept for over burden dumps and 29.57ha is others (future exploration/untouched area). The Suna Nadi is flowing in the buffer zone of the mine at a distance of 1.4km NE from the mine lease boundary. In addition, three nallahs namely the Tehrai nallah (2km E), the Karo nallah (4.5km W-SW) and the Samaj nallah (8.3km NW) are flowing in the buffer zone of the mine. Modification/diversion in the existing natural drainage pattern at any stage has not been proposed. No national park/wildlife sanctuary/biosphere reserve/tiger reserve/elephant reserve etc. is 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. In support of this, a map duly authenticated by DFO cum Wildlife Warden, Bonai Division has been furnished. Five Reserve Forests namely the Kajurdihi RF (2km South), the Kathamala RF (2km West), the Mendhamaruni RF (3km North), the Sarkanda RF (5.5 km SW) and the Karo RF (6km NW) are located in the buffer zone of the mine. The mine working will be opened by manual method involving drilling and blasting. The targetted production capacity of the mine is 6000TPA of manganese ore and the life of mine is 9 years. Approximately 20TPD of mineral will be transported through the road. The topography of the area is undulated and hilly at an elevation above mean sea level ranging from 610m - 800m.

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635m. The present working depth of mine varies between 615.9m AMSL to 609m AMSL in different pits and the ultimate working depth of mine will be 606m AMSL. The groundwater table is at 604.3 m AMSL. Mine working will not intersect groundwater table. The water requirement of the project is estimated as 25m³ per day, out of which 22m³ per day will be obtained from the Teherai Nallah and remaining 3m³ per day will be met from the ground water. There is no population in the core zone, therefore, displacement of population and R&R has not been envisaged. It is estimated that a total of 1,25,209m³ of over burden will be generated during the mine life, out of which 15,476m³ of OB will be backfilled and the remaining 1,09,733m³ of OB will be disposed of in the form of an external over burden dump. Backfilling will commence from the 7th year onward. Plantation will be raised in an area of 7.439ha at the end of the mine life and an area of 8.935ha will be developed as water body during the post mining stage. The State Pollution Control Board, Orissa had issued Consent to Establish to the project on 28.09.2007 for production of 6000TPA of manganese ore over mine lease hold area of 65.71ha. The Public hearing of the project was held on 06.05.2007, as per the EIA Notification 2006, for production of manganese ore up to 6000TPA over an area of 65.71ha. The Indian Bureau of Mines had approved mining plan of the project on 18.07.2001 over an area of 65.71ha. The Ministry of Environment and Forests had conveyed its in-principle forestry clearance for diversion of 41.839 ha forestland on 23.11.2004. The capital cost of the project is Rs.1Crore.

2. 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 Bhanjapali, Koira & Teherai Manganese Ore Mining Project of M/s Rudra Sen Sindhu for an annual production capacity of 6,000tonnes of manganese ore by opencast manual method involving total mine lease area of 65.71ha, subject to implementation of the following conditions and environmental safeguards.

A. Specific Conditions

- (i) All the conditions stipulated by the State Pollution Control Board, Orissa in their Consent to Establish shall be effectively implemented.
- (ii) Necessary forestry clearance under the Forest (Conservation) Act, 1980 for an area of 44.95ha forestland involved in the project shall be obtained before starting mining operation in that area. Environmental clearance is subject to grant of forestry clearance. No mining shall be undertaken in the forest area without obtaining requisite prior forestry clearance.
- (iii) The environmental clearance is subject to approval of the State Land Use Department, Government of Orissa for diversion of agricultural land for non-agricultural use.

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- (iv) The mining operations shall be restricted to above ground work table and it should not intersect the groundwater table. In case of working below the ground water table, prior approval of the Ministry of Environment and Forests and the Central Ground Water Authority shall be obtained, for which a detailed hydro-geological study shall be carried out.
- (v) The project proponent shall develop fodder plots in the non-mineralised area in lieu of the use of the grazing land.
- (vi) 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 seasonal streams, if any emanating from the mine lease area during the course of mining operation.
- (vii) The top soil shall temporarily be stored at earmarked site(s) only and it should not be kept unutilized for long. The topsoil shall be used for land reclamation and plantation.
- (viii) The over burden (OB) generated during the mining operations shall be stacked at earmarked dump site only and it should not be kept active for a long period of time and its phlo-so-wise stabilization shall be carried out. Backfilling shall commence from the 7th year onwards and there shall be only one external dump. Proper terracing of OB dump shall be carried out so that the overall slope shall not exceed 28 degree. The OB dump should be scientifically vegetated with suitable native species to prevent erosion and surface run off. In critical areas, use of geo textiles shall be undertaken for stabilization of the dump. Monitoring and management of rehabilitated areas 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 six monthly basis.
- (ix) Catch drains and siltation ponds of appropriate size shall be constructed around the mine working, soil mineral and OB dumps to prevent run off of water and flow of sediments directly into the Suna Nadi, the Tehrai nallah, the Karo nallah, the Samij nallah and other water bodies. The water so collected should 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.

Garland drains, settling tanks and check dams of appropriate size, gradient and length shall be constructed both around the mine pit and the over burden dump to prevent run off of water and flow of sediments directly into the Suna Nadi, the Tehrai nallah, the Karo nallah, the Samij nallah and other water bodies and sump capacity should 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 should 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.

- (x) Dimension of the retaining wall at the toe of the over burden dump and the OB benches within the mine to check run-off and siltation shall be based on the rainfall data.
- (xi) The void left unfilled in an area of 6.935ha shall be converted into water body. 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. Peripherical fencing shall be carried out along the excavated area.
- (xii) Plantation shall be raised in an area of 7.439ha including a 7.5m wide green belt in the safety zone around the mining lease, backfilled and reclaimed area, around over burden dump, mine benches, along the roads etc. by planting the native species in consultation with the local DFO/Agriculture Department. The density of the trees should be around 2500 plants per hectare.
- (xiii) Effective safeguard measures such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of SPM and RSPM such as haul road, loading and unloading point and all transfer points. It shall be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.
- (xiv) 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.
- (xv) Regular monitoring of water quality upstream and downstream of the Tehrai Nallah, the Karo Nallah, the Samij Nallah shall be carried out and record of monitored data should be maintained and submitted to the Ministry of Environment and Forests, its Regional Office, Bhubaneswar, the Central Groundwater Authority, Regional Director, the Central Ground Water Board, the State Pollution Control Board and the Central Pollution Control Board.
- (xvi) The project authority should implement suitable conservation measures to augment ground water resources in the area in consultation with the Regional Director, Central Ground Water Board.

- (xvii) 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 Bhubneswar, 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.
- (xviii) Appropriate mitigative measures shall be taken to prevent pollution of the Suna Nadi, in consultation with the State Pollution Control Board.
- (xix) The project proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of water (surface water and ground water) required for the project.
- (xx) Suitable rainwater harvesting measures on long term basis shall be planned and implemented in consultation with the Regional Director, Central Ground Water Board.
- (xxi) 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.
- (xxii) 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 should be implemented.
- (xxiii) Drills shall either be operated with the dust extractors or equipped with water injection system.
- (xxiv) Mineral handling area shall be provided with adequate number of high efficiency dust extraction system. Loading and unloading areas including all the transfer points should also have efficient dust control arrangements. These should be properly maintained and operated.
- (xxv) Sewage treatment plant shall be installed for the colony. ETP shall also be provided for the works op and wastewater generated during the mining operation.

- (xxvi) Consent to operate shall be obtained from State Pollution Control Board prior to start of production from the mine.
- (xxvii) The project authorities shall undertake sample survey to generate data on pre-project community health status within a radius of 1 km from proposed mine.
- (xxviii) 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.
- (xxix) The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered fauna namely leopard, sloth bear etc. spotted in the study area. 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.
- (xxx) Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.
- (xxxi) The critical parameters such as SPM, RSPM, NOX in the ambient air within the impact zone, peak particle velocity at 300m 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 web site 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.
- (xxxii) 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 should be made without prior approval of the Ministry of Environment & Forests.

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- (ii) No change in the calendar plan including excavation, quantum of mineral manganese ore and waste should be made.
- (iii) Atleast four ambient air quality-monitoring stations should be established in the core zone as well as in the buffer zone for RSPM, SPM, SO₂ & NO_x monitoring. Location of the stations should be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets and frequency of monitoring should be undertaken in consultation with the State Pollution Control Board.
- (iv) Data on ambient air quality (P₁₀PM, SPM, SO₂ & NO_x) should 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 should be controlled regularly. Water spraying arrangement on haul roads, loading and unloading and at transfer points should be provided and properly maintained.
- (vi) Measures should be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in operations of HEMM, etc. should be provided with ear plugs / muffs.
- (vii) Industrial waste water (workshop and waste water from the mine) should 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.
- (viii) Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects.

Occupational health surveillance program of the workers should 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 should 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 should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to the Ministry and its Regional Office located at Bhubaneswar.

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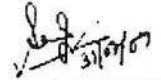
- (xi) The project authorities should inform to the Regional Office located at Bhubaneswar regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.
- (xii) The Regional Office of this Ministry located at Bhubaneswar shall monitor compliance of the stipulated conditions. The project authorities should 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 EC 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 CPCB and the SPCB. The proponent shall upload the status of compliance of the EC 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 CPCB and the SPCB.
- (xiv) A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zila Parishad/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 should 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-V as 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 EC conditions and shall also be sent to the Regional Office of the Ministry of Environment and Forests, at Bhubaneswar by e-mail.
- (xvii) The project authorities should 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 should be forwarded to the Regional Office of this Ministry located at Bhubaneswar.

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

4. 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.

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 made thereunder 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.

6. Any appeal against this environmental clearance shall lie with the National Environment Appellate Authority, if preferred within a period of 30 days as prescribed under Section 11 of the National Environment Appellate Authority Act, 1997.


(SATISH C. GARKOTI)
Additional Director (S)

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 Chief Wildlife Warden, Government of Orissa, Bhubaneswar.
- (vi) The Chairman, Central Pollution Control Board, Parivesh Bhawan, CED-cum-Office Complex, East Arjun Nagar, Delhi-110032.
- (vii) The Chief Conservator of Forests, Regional Office (EZ), Ministry of Environment and Forests, A-3 Chandrashekharpur, Bhubaneswar-751023.
- (viii) The Chairman, Orissa State Pollution Control Board, Parivesh Bhawan, A/118 Nilakantha Nagar, Unit-VIII, Bhubaneswar-751012.

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