

2. The proposal is for Manganese Ore mining at capacity of 0.04 million TPA (ROM) on an area of 53.75 ha. Out of 53.75 ha, 25 ha area is private agricultural land and 28.75 ha is waste land (barren Land). Further, out of 53.75 ha, an area of 1.75 ha area will be excavated, 0.25 ha is overburden dump, 0.10 ha is for roads, 3.0 ha is earmarked for green belt, 1.0 ha for other site services and 47.65 ha will remain undisturbed.
3. The method of mining will be by opencast semi-mechanized method involving drilling and blasting. The life of the mine at proposed capacity is 8 years. Ultimate working depth in is 37.5 m bgl. The mine working will intersect the groundwater table. The ground water table in the lease area varies from 290 m RL to 295 m RL. Mining will be done 10 m below the ground water table. The water requirement of the Project is estimated as 17 m³/day, which will be sourced from bore well and mine pit water. The mineral will be transported through road using dumpers.
4. The mine lease (ML) area is at a distance of around 45 kms from Nagpur via Munsar and approachable from Nagpur by NH-7. It is 4 km from Munsar Village on Munsar-Tumsar State Highway. The geographical co-ordinates of the mine lease are (1) 21° 23' 24.7" N, 79° 17' 42.6" E (2) 21° 23' 12.5" N, 79° 17' 39.9" E (3) 21° 23' 16.1" N, 79° 18' 03.0" E (4) 21° 22' 58.0" N, 79° 18' 00.2" E. No forest land is reported in the ML area. No National Park/Wildlife Sanctuary/Biosphere Reserve/Corridor of Animals etc. reported within core and buffer zone of the mine. The Ghuskhri Reserve Forest is in the buffer zone of the mine at a distance of 2.7 km from the mine lease. The Kindsi Reservoir is reported to be located at a distance of 6 km from the mine lease.
5. The Public Hearing of the project was held on 06.02.2010, for production of 0.4 million TPA of manganese ore. The Indian Bureau of Mines had approved mining plan vide letter no. NAG/Mn/MPLN-1035/NGP, on dated 06.07.2009 for lease area of 53.75 ha. The matter was examined in the Ministry and it was noted that Public Hearing was chaired at the level of SDO, Ramtek. Therefore, the District Magistrate, Nagpur was requested to re-conduct the Public Hearing as per EIA Notification 2006. Accordingly the Public Hearing was re-conducted on 05.03.2015 as per EIA Notification 2006.
6. The capital cost of the project is Rs. 482.00 Lakhs and a budget for environmental protection measures is Rs. 19.50 lakhs towards capital cost and Rs. 10 lakhs/annum towards recurring cost. An amount of Rs. 3.00 lakhs earmarked towards socio-economic welfare measures for the nearby Villages other than R&R plans and Rs. 1.50 lakhs /annum towards recurring cost.
7. The Ministry of Environment, Forest and Climate Change has examined

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the application based on the information furnished by the project proponent and presentation made during the EAC meeting and in accordance with the EIA Notification, 2006. The Ministry accords environmental clearance under the provisions thereof to **M/s Manganese Ore (India) Ltd. for production of 0.4 million TPA (ROM) manganese ore at Village Parsoda, Taluk- Ramtek, District -Nagpur, Maharashtra** subject to implementation of the following conditions and environmental safeguards.

A. Specific Conditions

- i. Environmental clearance is subject to obtaining clearance under the Wildlife (Protection) Act, 1972 from the competent authority, as may be applicable to this project.
- ii. The project proponent shall obtain Consent to Establish and Consent to Operate from the State Pollution Control Board, Maharashtra and effectively implement all the conditions stipulated therein.
- iii. 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 to this project.
- iv. As part of ambient air quality monitoring during operational phase of the project, the air samples shall also be analyzed for their mineralogical composition and records maintained.
- v. The ground water table in the lease area varies from 290 m RL to 295 m RL. Mining will be done 10 m below the ground water table. The water requirement of the Project will not exceed more than 17 m³/day which will be sourced from bore well and mine pit water.
- vi. The Blasted material will be loaded in to the dumpers by loaders and will be transported to the destination dump yard. Handling of waste rock will be done by excavators of 0.9 to 3.2 cum & dumpers of 10 t to 35 t capacity. Mine area overland flow of rainwater is drained by south flowing small seasonal nallahs. The ultimate dump slope will be maintained at 28° with individual terrace slopes not exceeding 30°. Each slope will have catch drains of the individual terrace connected to the garland drain
- vii. To stabilize the slopes of the waste dumps, proper stonewall shall be built along the toe ends.
- viii. The ore shall be transported through road on trucks covered with tarpaulin.
- ix. Effective safeguard measures such as conditioning of ore with water, 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 point and transfer points. It should be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.

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- x. 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.
- xi. 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, Forest and Climate Change and its Regional Office Nagpur, 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.
- xii. The project proponent shall ensure that no natural watercourse and/or water resources shall be obstructed due to any mining operations. The Khindsi Reservoir, Ramtek Canal, Pench Irrigation Canal and any other water bodies shall be left undisturbed and protected.
- xiii. There shall be no external over burden dumps at the end of the mine life. The reclaimed and rehabilitated area shall be afforested. Monitoring and management of rehabilitated areas shall continue until the vegetation becomes self-sustaining. Compliance status shall be submitted to the Ministry of Environment, Forest and Climate Change and its Regional Office located at Nagpur on six monthly basis.
- xiv. Dimension of the retaining wall at the toe of temporary over burden dumps and OB benches within the mine to check run-off and siltation shall be based on the rain fall data.
- xv. 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 RPM such as haul road, loading and unloading point and 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.
- xvi. Mine water discharge and/or any waste water shall be properly treated to meet the prescribed standards before reuse/discharge. The run off from temporary OB dumps and other surface run off shall be analyzed for manganese and in case its concentration is found higher than the permissible limit, the waste water should be treated before discharge/reuse.
- xvii. The decanted water from the plant and slime/tailing pond shall be re-circulated within the mine and there shall be zero discharge from the mine.
- xviii. Regular monitoring of the flow rate of the springs and perennial nallahs shall be carried out and records maintained.

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- xix. Regular monitoring of water quality upstream and downstream of Khindsi Reservoir, Ramtek Canal, Pench Irrigation Canal and any other water bodies shall be carried out and record of monitoring data should be maintained and submitted to Ministry of Environment, Forest and Climate Change, its Regional Office, Nagpur, Central Groundwater Authority, Regional Director, Central Ground Water Board, State Pollution Control Board and Central Pollution Control Board.
- xx. Appropriate mitigative measures shall be taken to prevent pollution of River, if any, in consultation with the State Pollution Control Board.
- xxi. The project proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of water for the project.
- xxii. Suitable rainwater harvesting measures on long term basis shall be planned and implemented in consultation with Regional Director, Central Ground Water Board.
- xxiii. 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 from mine face to the beneficiation plant. The vehicles shall be covered with a tarpaulin and shall not be overloaded.
- xxiv. 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.
- xxv. Drills shall either be operated with dust extractors or equipped with water injection system.
- xxvi. Mineral handling plant 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.
- xxvii. Sewage treatment plant shall be installed for the colony. ETP shall also be provided for workshop and wastewater generated during mining operation.
- xxviii. Digital processing of the entire lease area using remote sensing technique shall be carried out regularly once in three years for monitoring land use pattern and report submitted to Ministry of Environment, Forest and Climate Change and its Regional Office, Nagpur.
- xxix. Regular monitoring of ambient air quality including free silica shall be carried out and records maintained.
- 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 with special reference to manganese poisoning. Occupational health and safety measures for workers who are having some ailments like BP,

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diabetes, or are habitual smokers, should have health check-up once in six months.

- xxxi. The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered flora and fauna, if any, in the core and buffer zone of the mine and contribute towards the cost of implementation of the plan and/or Regional Wildlife Management Plan for conservation of flora and fauna so prepared by the State Forest and Wildlife Department. The amount so contributed shall be included in the project cost. A copy of action plan shall be submitted to the Ministry and its Regional Office, Nagpur within 3 months.
- xxxii. A Final Mine Closure Plan along with details of Corpus Fund shall be submitted to the Ministry of Environment, Forest and Climate Change 5 years in advance of final mine closure for approval.
- xxxiii. Constitution of four Member Committee consisting of Sarpanch of Village for monitoring the progress of work/action taken by the Proponent.

B. General Conditions

- (i) No change in mining technology and scope of working should be made without prior approval of the Ministry of Environment, Forest and Climate Change.
- (ii) No change in the calendar plan including excavation, quantum of mineral manganese ore and waste should be made.
- (iii) At least four ambient air quality-monitoring stations should be established in the core zone as well as in the buffer zone for RSPM (Particulate matter with size less than 10 micron i.e., PM₁₀) and 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. The data so recorded should be regularly submitted to the Ministry including its Regional office located at Nagpur and the State Pollution Control Board / Central Pollution Control Board once in six months.
- (iv) The critical parameters such as PM₁₀ (size less than 10 micro meter), PM_{2.5} (size less than 2.5 micro meter), NO_x 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 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, Forest and Climate Change, which is available on the website of the Ministry www.envfor.nic.in shall also be referred in this

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- regard for its compliance.
- (v) The top soil, if any, 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. The over burden (OB) generated during the mining operations shall be stacked at earmarked dump site(s) only and it should not be kept active for a long period of time. The maximum height of the dumps shall not exceed 8m and width 20 m and overall slope of the dumps shall be maintained to 45°. The OB dumps 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. The entire excavated area shall be backfilled and afforested. Monitoring and management of rehabilitated areas should continue until the vegetation becomes self-sustaining. Compliance status shall be submitted to the Ministry of Environment, Forest and Climate Change and its Regional Office located at Nagpur on six monthly basis.
 - (vi) Catch drains and siltation ponds of appropriate size shall be constructed around the mine working, mineral and OB dumps to prevent run off of water and flow of sediments directly into the river 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 monsoon and maintained properly. The drains, settling tanks and check dams of appropriate size, gradient and length shall be constructed both around the mine pit and over burden dumps to prevent run off of water and flow of sediments directly into the river 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.
 - (vii) 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.
 - (viii) There will be zero waste water discharge from the plant.
 - (ix) 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.
 - (x) 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.
 - (xi) 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.
 - (xii) The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose.

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- Year wise expenditure should be reported to the Ministry and its Regional Office located at Nagpur.
- (xiii) The project authorities should inform to the Regional Office of the MoEF located at Nagpur regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.
- (xiv) The Regional Office of this Ministry located at Nagpur 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.
- (xv) 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, Forest and Climate Change, its Regional Office Nagpur, 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, Nagpur, the respective Zonal Officer of Central Pollution Control Board and the State Pollution Control Board.
- (xvi) 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.
- (xvii) 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.
- (xviii) 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 environmental clearance conditions and shall also be sent to the respective Regional Office of the Ministry of Environment, Forest and Climate Change, Nagpur by e-mail.
- (xix) The project authorities should advertise at least in two local newspapers of the District or State in which the project is located and 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, Forest and Climate Change at <http://envfor.nic.in>

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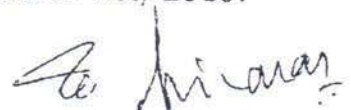
and a copy of the same should be forwarded to the Regional Office of this Ministry located at Nagpur.

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. Concealing factual data or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986.

10. 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 there under and also any other orders passed by the Hon'ble Supreme Court of India/ High Court of Maharashtra 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.

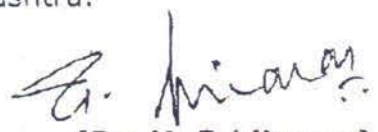

(Dr. U. Sridharan)
Director

Copy to:

- 1). The Secretary, Ministry of Mines, Government of India, Shastri Bhawan, New Delhi.
- 2). The Secretary, Department of Environment, Govt. of Maharashtra, Mantralaya, Mumbai.
- 3). The Secretary, Department of Forests, Government of Maharashtra, Mumbai.
- 4). The Secretary, Department of Mines and Geology, Government of Maharashtra, Mumbai.
- 5). The Secretary, Department of Industries and Commerce (M-III), Govt of Maharashtra, Mumbai.
- 6). The Chairman, Maharashtra Pollution Control Board, Kalpatru Point, Sion Circle, Sion (East), Mumbai-400 022, Maharashtra
- 7). The Additional Principal Chief Conservator of Forests, Regional Office, Nagpur.
- 8). The Member Secretary, Central Ground Water Authority, A-2, W3, Curzon Road Barracks, K.G. Marg, New Delhi 110001.

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- 9). The Controller General, India Bureau of Mines, Indira Bhavan, Civil Lines, Nagpur - 440001.
- 10). The District Collector, Nagpur- District, Maharashtra.
- 11). Guard File.
- 12). MoEFCC Website.


(Dr. U. Sridharan)
Director