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REF. No.

ATT. OF Mr.



J-11015/1241/2007- IA. II (M)
Government of India
Ministry of Environment & Forests

Paryavaran Bhawan
CGO Complex, Lodhi Road
New Delhi – 110 003
E mail: plahujarai@yahoo.com
Telefax: 011 – 2436 3973
Dated: December 24, 2009

To

M/s Sesa Goa Ltd.
Sesa Gor
20 EDC Complex, Patto
Panaji, Goa- 403 001

Sub: Expansion of Mareto Sodo Iron Ore Mine (0.5 MTPA to 1.0 MTPA; ML area - 26.6770 ha; TC No. 06/55) in Onda Vill., Sattari Taluka, North Goa District, Goa by M/s Sesa Goa Ltd- Environmental clearance reg

Sir,

The undersigned is directed to refer to your letter no. Nil dated 16.7.2009 on the above mentioned subject seeking environmental clearance under the provisions of EIA Notification, 2006.

2. It has been noted that the proposal is for expansion of production of iron Ore from the above mentioned mine located at village Onda, Taluka Sattari in District North Goa in Goa. The lease area of the mine is 26.6770 ha which is a private and non-forest land. The depth of ground water table is 40m MSL and ultimate pit limit will be below 38m MSL. The mine will intersect the ground water table. The radius of influence due to mine pit dewatering would be 417m. The Madoi wildlife Sanctuary is located at a distance of 4.0km from the mine lease boundary. The method of mining will be opencast mechanized. No drilling and blasting is involved. Water requirement of 128m³/d will be met from the accumulated rain water and well water. Anticipated life of the mine is more than 10 years. Approval from IBM for mining plan and mine closure plan was obtained on 24.9.2008. Public hearing was conducted on 23.6.2009.

3. The proposal has been considered by the Expert Appraisal Committee -2 (Mining) in its 1st meeting held during 29th – 30th September, 2009. The Ministry of Environment & Forests hereby accords environmental clearance to the said project under the provisions of Environment Impact Assessment Notification, 2006 subject to implementation of the following terms and conditions:-

A. Specific Conditions:

- i. Environmental clearance is subject to obtaining clearance under the wildlife (Protection) Act, 1972 from the National Board for Wildlife. Further, grant of environmental clearance does not necessarily implies that wildlife clearance shall be granted to the project and the proposal shall be considered by the National Board for Wildlife on merits. The investment made in the project, if any, based on environmental clearance so granted, in anticipation of clearance from the wildlife angle shall be entirely at the cost and the risk of the company and MoEF in this regard shall not be responsible in any matter.
- 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 to this project.
- iii. The company shall comply with the conditions stipulated in the environmental clearance accorded to the project for the existing capacity.
- iv. Wildlife Conservation Plan shall be prepared in consultation with the office of the Chief Wildlife warden and implemented within six months. The plan shall comprise of in-built monitoring mechanism with special emphasis to protection of Schedule- I species. The status of implementation shall be submitted to the Ministry.
- v. A 50 m barrier no mining zone on the side(s) of the nallahs flowing across or adjacent the lease shall be demarcated and the barrier shall be thickly vegetated with native species of trees and shrubs.
- vi. The company shall ensure that no silt originating due to mining activity is transported in the surface water course and nearby agricultural fields.
- vii. Need based assessment for the nearest two villages shall be conducted to study economic measures which can help in upliftment of poor section of society. Income generating projects consistent with the traditional skills of the people besides development of fodder farm, fruit bearing orchards, vocational training etc. can form a part of such programme. Company shall provide separate budget for community development activities and income generating programmes. This will be in addition to vocational training for individuals imparted to take up self employment and jobs.
- viii. Maintenance of village roads through which transportation of ores are undertaken shall be carried out by the company regularly at its own expenses. The roads shall be black topped.
- ix. Fugitive dust generation shall be controlled. Fugitive dust emission shall be regularly monitored at locations of nearest human habitation (including schools and other public amenities located nearest to sources of dust generation as applicable) and records submitted to the Ministry.
- x. Transportation of ore shall be done by covering the trucks with tarpaulin or other suitable mechanism so that no spillage of ore / dust takes place. Transportation shall be done only during day time.

- xi. Rain water harvesting shall be undertaken to recharge the ground water source. Status of implementation shall be submitted to the Ministry within six months.
- xii. Permission from the competent authority for extraction of ground water (if any) shall be obtained.
- xiii. Monitoring of ground and surface water quality shall be regularly conducted and records maintained and data submitted to the Ministry regularly. Further, monitoring points shall be located between the mine and drainage in the direction of flow of ground water and records maintained. Monitoring for Arsenic in ground water shall be undertaken.
- xiv. Measures for prevention and control of soil erosion and management of silt shall be undertaken. Protection of dumps against erosion shall be carried out with geo textile matting or other suitable material, and thick plantations of native trees and shrubs shall be carried out at the dump slopes. Dumps shall be protected by retaining walls.
- xv. The design of the check dam shall be so as to prevent downstream flow of the silt and regular desiltation of the check dam shall be carried to prevent impact on the downstream water bodies and agricultural land.
- xvi. Provision shall be made for the housing the labourers 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.
- xvii. Trenches / garland drains shall be constructed at foot of dumps and coco filters installed at regular intervals to arrest silt from being carried to water bodies. Adequate number of Check Dams and Gully Plugs shall be constructed across seasonal/perennial nallahs (if any) flowing through the ML area and silts arrested. De-silting at regular intervals shall be carried out.
- xviii. Occupational health and safety measures for the workers including identification of work related health hazards, training on malaria eradication, HIV, and health effects on exposure to mineral dust etc. shall be carried out. The company shall engage a full time qualified doctor who is trained in occupational health. Periodic monitoring for exposure to respirable mineral dust on the workers shall be conducted and records maintained including health records of the workers. Awareness programme for workers on impact of mining on their health and precautionary measures like use of personal equipments etc. shall be carried out periodically. Review of impact of various health measures undertaken (at interval of five years or less) shall be conducted followed by follow up action wherever required.
- xix. Green belt development and selection of plant species shall be as per CPCB guidelines. Herbs and shrubs shall also form a part of afforestation programme besides tree plantation. Details of year wise afforestation programme including rehabilitation of mined out area shall be submitted to the Ministry within six months.
- xx. Top soil / solid waste shall be stacked properly with proper slope and adequate safeguards and shall be utilized for backfilling (wherever applicable) for reclamation and rehabilitation of mined out area. Top soil shall be separately stacked for utilization later for reclamation and shall not be stacked along with over burden.

- xxi. Over burden (OB) shall be stacked at earmarked dump site(s) only and shall not be kept active for long period. The maximum height of the dump shall not exceed 30 m, each stage shall preferably be of 10 m and overall slope of the dump shall not exceed 28°. The OB dump shall be backfilled. The OB dumps shall be scientifically vegetated with suitable native species to prevent erosion and surface run off. 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 on six monthly basis.
- xxii. Slope of the mining bench and ultimate pit limit shall be as per the mining scheme approved by Indian Bureau of Mines.
- xxiii. The waste water from the mine shall be treated to conform to the prescribe standards before discharging in to the natural stream. The discharged water from the Tailing Dam (if any) shall be regularly monitored and report submitted to the Ministry of Environment & Forests, Central Pollution Control Board and the State Pollution Control Board.
- xxiv. Action plan with respect to suggestions/improvements and recommendations made during public consultation/hearing shall be submitted to the Ministry and the State Govt within six months.
- xxv. 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.
- xxvi. Vehicular emissions shall be kept under control and regularly monitored. Vehicles used for transportation of ores and others shall have valid permissions as prescribed under Central Motor Vehicle Rules, 1989 and its amendments. Transportation of ore shall be done only during day time. The vehicles transporting ores shall be covered with a tarpaulin or other suitable enclosures so that no dust particles / fine matters escape during the course of transportation. No overloading of ores for transportation shall be committed. The trucks transporting ore shall not pass through wild life sanctuary.
- xxvii. The environmental clearance is subject to the condition, if any, stipulated by the IBM on the mining scheme submitted by the project proponent for its approval.
- xxviii. Adequate buffer zone shall be maintained between two consecutive mineral bearing deposits.

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 and waste shall be made.
- iii. Fugitive dust emissions from all the sources shall be controlled regularly. Water spraying arrangement on haul roads, loading and unloading and at transfer points shall be provided and properly maintained.

- iv. Four ambient air quality-monitoring stations shall be established in the core zone as well as in the buffer zone for RPM, 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.
- v. Data on ambient air quality (RPM, SPM, SO₂, NO_x) should be regularly submitted to the Ministry including its Regional office located at Bangalore and the State Pollution Control Board / Central Pollution Control Board once in six months. The monitored data of criteria pollutants mentioned above shall be regularly uploaded on the company's website and also displayed at project site.
- 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 earplugs / 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 shall be installed before discharge of workshop effluents.
- viii. Personnel working in dusty areas shall be provided with protective respiratory devices and they shall also be imparted adequate training and information on safety and health aspects.
- ix. Provision shall be made for the housing the labourers 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.
- 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 Organization.
- xi. The project authorities shall inform to the Regional Office of the Ministry located at Bangalore 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 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 Bangalore.
- xiii. The project authorities shall inform the Regional Office located at Bangalore 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 the Ministry located at Bangalore 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.
- xv. The project proponent shall submit six monthly reports on the status of the implementation of the stipulated environmental safeguards to the Ministry of Environment and Forests, its Regional Office, Bangalore, Central Pollution Control Board and State Pollution Control Board. The project proponent shall upload the status of compliance of the environment of the environmental clearance conditions on their website and update the same periodically and simultaneously send the same by e-mail to the Regional Office, Ministry of Environment and Forests, Bangalore.
- xvi. The project proponent shall advertise in at least two local newspapers widely circulated in the region around the project, one of which shall be in the vernacular language of the locality, / office of Municipal Corporation/Gram Panchayat concerned and on the company's web site within seven days from the date of this clearance letter, informing that the project has been accorded environmental clearance and copies of clearance letter are available with the State Pollution Control Board/Committee and may also be seen at Website of the Ministry of Environment and Forests at <http://envfor.nic.in>.
- xvii. A copy of clearance letter will be marked to concerned Panchayat / local NGO, if any, from whom suggestion / representation has been received while processing the proposal. The clearance letter shall also be put on the website of the company.
- xviii. State Pollution Control Board shall display a copy of the clearance letter at the Regional office, District Industries Centre and Collector's office / Tehsildar's Office for 30 days.
- xix. The environmental statement for each financial year ending 31st March in Form-V as is mandated shall be submitted to the State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and shall also be put on the website of the company along with the status of compliance of environmental clearance conditions. The same shall also be sent to the Regional Office of Ministry by e-mail.

5. The Ministry of Environment and Forests reserves the right to revoke the clearance if conditions stipulated are not implemented to the satisfaction of the Ministry. MOEF may impose additional environmental conditions or modify the existing ones, if necessary.

6. In case of any deviation or alteration in the project proposed from those submitted to this Ministry for clearance, a fresh reference should be made to the Ministry to assess the adequacy of the condition(s) imposed and to add additional environmental protection measures required, if any.

7. 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.

8. 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.


9. 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 Goa and any other Court of Law relating to the subject matter.

Yours faithfully,


(Dr. P.L. Ahujarai)
Director

Copy to:

1. Secretary, Ministry of Mines, Government of India, Shastri Bhawan, New Delhi.
2. Secretary, Department of Environment, Government of Goa, Panaji.
3. Secretary, Department of Mines and Geology, Government of Goa, Panaji.
4. Secretary, Department of Forests, Government of Goa, Panaji.
5. Chief Wildlife Warden, Government of Goa, Panaji.
6. Chief Conservator of Forests, Regional Office (SZ), Kendriya Sadan, 4th Floor E&F, Wings 17th Main Road, 1 Block, Koranmangala, Bangalore-560 034.
7. Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-Cum-Office Complex, Eas Arjun Nagar, New Delhi-110 032.
8. Chairman, Goa State Pollution Control Board, Dempo Tower, EDC Plaza, 1st Floor, Panaji, Goa ? 403 001
9. Member Secretary, Central Ground Water Authority, A2, W- 3 Curzon Road Barracks, K.G. Marg, New Delhi-110001.
10. Controller General, Indian Bureau of Mines, Indira Bhavan, Civil Lines, Nagpur- 440 001.
11. IGF (WL), MoEF
12. The Chief Wildlife Warden, Goa, Govt of Goa, Panjim, Goa
13. District Collector, North Govt. of Goa.
14. EIC vision, Ministry of Environment & Forests, Paryavaran Bhawan, New Delhi.
15. Monitoring File.
16. Guard File.
17. Record File.


(Dr. P.L. Ahujarai)
Director

