



J-11015/577/2007- IA. II (M)
Government of India
Ministry of Environment & Forests

Paryavaran Bhavan, C.G.O. Complex,
Lodi Road, New Delhi-110003.
Dated: February 05, 2009

To

M/s Bhilai Steel Plant/ M/s Steel Authority of India Ltd.
Hirri-Dolomite Mine,
Distt. Bilaspur - 495222
Chhattisgarh.

Sub: Expansion of Hirri Dolomite Mine (ML area 128.77 ha) from 1.0 to 2.0 MTPA, at village Hirri, in Takhtpur Taluk, in Bilaspur Distt, in Chhattisgarh - reg. Environmental Clearance

Sir,

The undersigned is directed to refer to your letter dated 06.11.2008, on the above mentioned subject. The Ministry of Environment and Forests has examined the application.

2. It has been noted that the proposal is for expansion of Dolomite mining capacity from 1.0 to 2.0 MTPA. The mine has been in operation since the last 1959 and is captive to M/s Bhilai Steel Plant which is located 135 Kms away. The proposal is for expansion of Dolomite mining from 1.0 MTPA to 2.0 MTPA. The mining lease area is 128.77 ha, out of which 65.89 ha is govt. revenue land and 62.88 ha is acquired private land. Out of total lease area of 128.77 ha, mining will be carried out in 69.50 ha only. An area of 4.73 ha is kept for waste dump; 24.42 ha for roads; green belt 142.50 ha; and 82.80 ha for infrastructure. The area is almost flat with gentle slope towards Maniyān & Shivnath river basin in the west and south east directions. The highest elevation is 269 m above MSL. There are no nallahs /streams running across or near the lease. There are no Wildlife Sanctuaries, National Parks, Tiger / Elephant Reserves, Heritage sites etc. within 10 km of the lease boundary. There are no reserve forests within 10 km from the lease boundary. No relocation and rehabilitation of population will be involved. The mineable reserves are 20.92 MT. At proposed rate of production life of the mine will be about 10 years. Method of mining will be open cast mechanised involving drilling and blasting. Ultimate depth of mining will be at 236 m above MSL. Water table is at 248 m above MSL. Mining will intersect ground water table. Hydro geological study has been carried out and the study indicates the following: (i) the radius of influence due to mine pit dewatering is 111.47 m; (ii) the stage of ground water development is 17.46 %; (iii) adverse impact on ground water quality is anticipated; (iv) there is no dearth of ground water potential in the area. The report recommends systematic monitoring network of ground water regime and accordingly remedial measures commensurate with the extent of likely contamination. Water requirement will be 380 KLD, which will be met from ground water source. Solid waste of about 7020 m³/month will be generated. Approval for Mining Plan (including mine closure plan) was obtained from IBM on 13.06.2007. Public hearing was conducted on 26.08.2008. Cost of the project will be Rs 13.0 Crores.

3. The project has been considered in accordance with the provisions of the EIA notification issued by the Ministry of Environment & Forests vide S.O. 1533 (E), dated September 14, 2006.

4. Based on the information submitted by you, as at Para 2 above and others, the Ministry of Environment and Forests hereby accords environmental clearance to the above project under the provisions of EIA notification dated September 14, 2006, subject to the compliance of the following Specific and General conditions:

A. Specific conditions:

- i) No two pits shall be simultaneously worked i.e before the first pit is exhausted and reclamation work completed, no mineral bearing area shall be worked.
- ii) After exhausting the first mine pit and before starting mining operations in the next pit, reclamation and plantation works in the exhausted pit shall be completed so as to ensure that reclamation, forest cover and vegetation are visible during the first year of mining operations in the next pit. This process will follow till the last pit is exhausted. **Adequate rehabilitation of mined pit shall be completed before any ore bearing area is worked.**
- iii) Adequate buffer zone shall be maintained between two consecutive mineral bearing deposits.
- v) Blast vibrations study shall be conducted and submitted to the Ministry within six months. The study shall also provide measures for prevention of blasting associated impact on nearby houses and agricultural fields.
- vi) 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.
- vii) Shelter belt i.e Wind Break of 30 m width and consisting of at least 5 tiers around lease facing the school / agricultural fields (if any in the vicinity) shall be raised.
- viii) Hydro-geological study of the area shall be reviewed annually. In case adverse effect on ground water quality and quantity is observed mining shall be stopped and resumed only after mitigating steps to contain any adverse impact on ground water is implemented.
- ix) Socio-economic survey on house hold basis for the nearest three revenue villages (including its hamlets if any) shall be carried out and economic package containing sustainable income generating schemes/ packages shall be formulated and submit the same to the Ministry within six months to the

This will be in addition to vocational training for individuals imparted to take up self employment and jobs.

- xi) Land-use pattern of the nearby villages shall be studied and action plan for abatement and compensation for damage to agricultural land/ common property land (if any) in the nearby villages, due to mining activity shall be submitted to the Regional office of the Ministry within six months. Annual status of implementation of the plan and expenditure thereon shall be reported to the Regional Office of the Ministry from time to time.
- xii) 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.
- xiii) Rain water harvesting shall be undertaken to recharge the ground water source. Status of implementation shall be submitted to the Regional Office of the Ministry within six months and thereafter every year from the next consequent year.
- 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) 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.

Garland drain of appropriate size, gradient and length shall be constructed for both mine pit and for waste dump and 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 de-silted at regular intervals.
- xvi) Ground water in the core zone shall be regularly monitored for contamination and depletion due to mining activity and records maintained. The monitoring data shall be submitted to the regional office of the Ministry regularly. Further, monitoring points shall be located between the mine and drainage in the direction of flow of ground water shall be set up and records maintained.
- xvii) Cultivable waste land (within 5 km of the lease) shall be identified and fodder farming or other suitable productive use of waste land shall be taken up in phased manner. Status of implementation shall be submitted to the Regional office of the Ministry
- xviii) Adequate protection against dust and other environmental pollution arising due to mining activity shall be made so that human habitation located near the lease (as applicable) are not adversely affected. The status of implementation shall be reported to the Ministry and work shall be completed before start of mining.

- xix) Monitoring of soil samples for assessment of transformation to acidic state or contamination due to mining activity (as applicable) shall be regularly conducted and records maintained.
- xx) 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.
- xxi) 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.
- xxii) 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.
- xxiii) 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.
- xxiv) Slope of the mining bench and ultimate pit limit shall be as per the mining scheme approved by Indian Bureau of Mines.
- xxv) Adequate plantation shall be raised in the ML area, haul roads, OB dump sites etc. Green belt development shall be carried out considering CPCB guidelines including selection of plant species and in consultation with the local DFO / Agriculture Department. Herbs and shrubs shall also form a part of afforestation programme besides tree plantation. The density of the trees shall not be less than 2500 plants per ha. The company shall involve local people with the help of self help group for plantation programme. Details of year wise afforestation programme including rehabilitation of mined out area shall be submitted to the Regional Office of the Ministry every year.
- xxvi) Regular monitoring of ground water level and quality shall be carried out by establishing a network of existing wells and constructing new piezometers during the

mining operation. The monitoring shall be carried out four times in a year – pre-monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January) and the data thus collected shall be regularly sent to the Regional Office of the Ministry, Central Ground Water Authority and Regional Director, Central Ground Water Board.

xxvii) Adequate air monitoring stations shall be installed in areas of human habitations near the mine and the results of ambient air quality shall be maintained and regularly submitted to the Regional Office of the Ministry.

xxviii) 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.

xxix) 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.

xxx) Prior permission from the Competent Authority shall be obtained for extraction of ground water, if any.

xxxi) 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.

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.

xxxiii) M/s BHP / M/s SAIL shall facilitate a visit of a Sub-Group (to be constituted by the Expert Appraisal Committee) to assess the implementation of the socio economic packages under implementation in atleast three revenue villages as mentioned at specific condition Sl. No. (ix) above.

xxxiv) M/s BHP / M/s SAIL shall provide advance intimation (for a visit of the Sub-Group) to the Ministry atleast three months before completion of two years from the date of issues of this environmental clearance.

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 Bhopal and the State Pollution Control Board / Central Pollution Control Board once in six months.
- (v) 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.
- (vi) 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.
- (vii) 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.
- (viii) 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.
- (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 project authorities shall inform to the Regional Office of the Ministry located at Bhopal regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.
- (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 the Ministry and its Regional Office located at Bhopal.
- (xii) The project authorities shall inform to the Regional Office located at Bhopal regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.

- (xiii) The Regional Office of the Ministry located at Bhopal 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.
- (xiv) 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.
- (xv) State Pollution Control Board shall display a copy of the clearance letter at the Regional office, District Industry Centre and Collector's office / Tehsildar's Office for 30 days.
- (xvi) 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 the Ministry located in Bhopal.

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

6. 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.

7. 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.

8. 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.

Yours faithfully,


(W. Bharat Singh)
Deputy Director

Copy to:

1. Secretary, Ministry of Mines, Government of India, Shastri Bhawan, New Delhi.
2. Secretary, Department of Environment, Government of Chhattisgarh, Raipur.
3. Secretary, Department of Mines and Geology, Government of Chhattisgarh, Raipur
4. Secretary, Department of Forests, Government of Chhattisgarh, Raipur.

5. Chief Wildlife Warden, Government of Chhattisgarh, Raipur.
6. Chief Conservator of Forests, Ministry of Environment & Forests, Regional Office, C-5, Arera Colony, Bhopal.
7. Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-Cum-Office Complex, East Arjun Nagar, New Delhi-110 032.
8. Chairman, Chhattisgarh Environment Conservation Board, Nanak Niwas, Civil Lines, Raipur - 421 001, Chhattisgarh.
9. Member Secretary, Central Ground Water Authority, A2, W -3 Curzon Road Barracks, K.C. Marg, New Delhi-110001.
10. Controller General, Indian Bureau of Mines, Indira Bhavan, Civil Lines, Nagpur- 440 001.
11. District Collector, Bilaspur, Govt. Chhattisgarh.
12. EI Division, Ministry of Environment & Forests, Paryavaran Bhawan, New Delhi.
13. Monitoring File.
14. Guard File.
15. Record File.

(W. Bharat Singh)
Deputy Director