

F. No. J-11011/380/2008- IA II (I)  
Government of India  
Ministry of Environment and Forests  
(I.A. Division)

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Dated 4<sup>th</sup> November, 2009

To. ✓ M/s Hindustan Zinc Limited  
Yashad Bhawan  
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Rajasthan

E-mail : [csr.mehta@vedanta.co.in](mailto:csr.mehta@vedanta.co.in) ; Fax. No. ??? ;

Subject : Zinc smelter (5,00,000 TPA), Lead smelter (1,25,000 TPA), Captive power plant (255 MW) and expansion of Rajpura Dariba Mine (6,31,000 to 9,00,000 TPA) alongwith Beneficiation Plant (9,00,000 to 12,00,000 TPA) at Village Dariba, Tehsil Relmagra, District Rajsamand, Rajasthan by M/s Hindustan Zinc Limited Environment clearance - reg.

Ref. : Your letter no. AVP/RD Complex/ENV/2009 dated 2<sup>nd</sup> June, 2009.

Sir,  
This has reference to your letter no. AVP/RD Complex/ENV/2009 dated 2<sup>nd</sup> June, 2009 along with application, EIA/EMP, public hearing report and related project documents for environmental clearance of the above mentioned project.

2.0 The Ministry of Environment and Forests has examined your application. It is noted that the proposal is for the Zinc smelter (5,00,000 TPA), Lead smelter (1,25,000 TPA), Captive power plant (255 MW) and expansion of Rajpura Dariba Mine (6,31,000 to 9,00,000 TPA) alongwith Beneficiation Plant (9,00,000 to 12,00,000 TPA) at Village Dariba, Tehsil Relmagra, District Rajsamand, Rajasthan by M/s Hindustan Zinc Limited. Total land acquired for mines is 554.19 ha. and no additional land will be required. Proposed smelter complex will be built in 162 ha. located adjacent to the HZL mining facilities and is already owned by HZL. At present, only mining and beneficiation plant exist and no Zn and Pb smelter plants exist. About 106 ha of land will be acquired for railway line and railway siding. The site is located at the intersection of longitude 74°07' and latitude 24°57'. No forest land is involved. No rehabilitation & resettlement (R & R) is involved. No national park / wildlife sanctuary / reserve forest is located within 10 km radius. Total cost of the proposed project including mining and beneficiation plant is Rs. 3,852.00 Crores. Following will be the products and by-products from the proposed smelter complex: ✓

S. N.	Products	Proposed Production Capacity (TPA)
<b>Zn Smelter :</b>		
	Zinc (SHG)	5,00,000 (2 x 2,50,000)
	Continuous Galvizing Grade (CGG) Zinc	80,000
<b>Lead Smelter :</b>		
	Lead	1,25,000 (1x1,25,000)
	Lead Alloy (Pb-Sb & Pb-Ca) (Out of 1,25,000 TPA Lead)	50,000
<b>Captive Power Plant :</b>		
	Power	255 MW (3x85 MW)
<b>Mines &amp; Beneficiation Enhancement :</b>		
	Pb-Zn Ore Production	6,31,000 to 9,00,000
	Pb-Zn Ore Beneficiation	9,00,000 to 12,00,000
<b>By-Products :</b>		
1	Sulphuric acid	7,44,000
2	Lead-Silver compound	80,000
3	Zinc Oxide compound	20,000
4	Lead concentrate (Oxide)	5,000
5	Anode slime	4,000
6	Copper as copper cement/sulphate/matte/concentrate (equivalent metal)	1,900
7	Cadmium metal / Sponge (equivalent metal)	1,600
8	Antimony as Antimony compounds (equivalent metal)	850
9	Silver	400
10	Calomel	44
11	Bismuth as Bismuth compounds	16

3.0 Zinc will be produced from the Zinc concentrate received from RD mines through hydro-metallurgical smelting process comprising of roast-leach-electro winning operations. Lead will be produced by using SKS technology.  $\text{SO}_2$  generated during Zn and Pb smelting process will be converted into  $\text{H}_2\text{SO}_4$  by DCDA process. Slag from the furnace will be treated to recover lead in blast furnace and Lead bullion will be sent to refinery for further processing. Slag will be further processed in electric arc furnace (EAF) followed by slag fuming furnace to recover Zinc and lead in the fumes. Copper dross produced at the lead refinery shall be treated for converting the same to the saleable copper compounds. Slime from the refinery will be further processed to recover Silver, Antimony and Bismuth. Coal based captive power plant (255 MW) will be installed.

4.0 Underground mining will be carried out in existing mine using Vertical Retreat Mining (VRM) and Blast Hot Stopping (BHS) with back filling. Blast vibration will be assessed and ground subsidence and mine stability will be monitored. The ore will be treated in the beneficiation plant for concentration and separation of Lead and Zinc minerals. Life of the mine will be 18 years. Mining Lease of Rajpura Dariba Lead Zinc deposit (ML-2/89) is in 1142.2 ha in Rajsamand, Rajasthan, and Govt. of Rajasthan has granted mining lease of Rajpura Dariba Lead Zinc deposit to HZL vide letter no. F-3(2)/Khanij/68 dated 30<sup>th</sup> May, 1970 for a period of 20 ✓

years with first renewal vide order no. P/2/36/khan/Gr-2/90 dated 17<sup>th</sup> September, 1992. Validity of mining lease is upto 29<sup>th</sup> May, 2010 only.

5.0 Electrostatic precipitators (ESPs), bag filters, fume extraction and dust suppression systems to be installed to control particulate matters from various plants. SO<sub>2</sub> emissions from sulphuric acid plant will be restricted to 1.5 kg/ton of acid. Off gas from the sulphuric acid plant, blast and fuming furnace plant, copper recovery plant will be treated in the ETP followed by two-stage RO Plant. Zinc sulphate solution from the scrubbing process will be treated in the leaching section of the Zinc smelter. Acid mist emission from the stack will be within 50 mg/Nm<sup>3</sup>. NOx emissions will be restricted to 750 mg/Nm<sup>3</sup> by using low NOx burners. In the mine area, water spraying will be used for reducing the dust. Total water requirement from all the 3 sources viz. existing water supply from Matrikundia dam, Gosunda dam and Mansiwakal dam will be 42,050 m<sup>3</sup>/day and agreements have been signed between the Govt. of Rajasthan for the supply of water. All the effluents from different plants will be treated in effluent treatment plant (ETP) and recycled in the process and/or for de-dusting and green belt. 'Zero' discharge will be maintained. The mine seepage will be used/recycled in mining & beneficiation process. Decanted water from tailing dam will be recycled in the beneficiation plant to ensure 'zero' discharge. Tailings from beneficiation plant will be sent to tailing thickener for dewatering. ETP cake, spent catalyst, cooler cake and lead silver will be disposed in the captive secured landfill (SLF). Jarosite will be treated to produce Jarofix and disposed in dedicated disposal yard. Anode mud, cobalt cake and purification cake will be recycled back in the process and, if surplus, will be sold to authorized recyclers or disposed in SLF after treatment. Lead smelter slag after fuming will be stored in designated area. The fly ash will be sold to cement manufacturers. Bottom ash and mine waste will be suitably disposed. Overburden will be dumped at a designated place. Tailings from the beneficiation plant will be disposed off in tailing dam. Out of 554.19 ha, green belt will be developed in 33 %.

6.0 The public hearing / public consultation meeting was held on 12<sup>th</sup> February, 2009.

7.0. The Ministry of Environment and Forests hereby accords environmental clearance to the above project under the provisions of EIA Notification dated 27<sup>th</sup> January, 1994 as amended subsequently subject to strict compliance of the following specific and general conditions.

#### A. SPECIFIC CONDITIONS:

- i) No construction work related to expansion at the proposed project site shall be started without obtaining prior clearances / approvals for the linked mining component from the Indian Bureau of Mines (IBM) and State Govt. of Rajasthan. A copy of the mining lease approval from the Indian Bureau of Mines (IBM) and State Govt. of Rajasthan shall be submitted to the Ministry and its Regional Office at Lucknow before initiating any construction work at site related to mining.
- ii) The project proponent shall obtain 'Consent to Establish' and 'Consent to Operate' from the Rajasthan State Pollution Control Board (RSPCB) and effectively implement all the conditions stipulated therein.
- iii) The environmental clearance is subject to approval of the State Landuse Department, Government of Rajasthan for diversion of agricultural land for non-agricultural use. ✓

- iv) The project proponent shall develop fodder plots in the non-mineralized area in lieu of use of grazing land. Monitoring of land use pattern shall be carried out once in three years by digital processing of the area using multi-data computer compatible tape.
- v) The gaseous emissions from various process units shall conform to the standards prescribed by the concerned authorities from time to time. The State Board may specify more stringent standards for the relevant parameters keeping in view the nature of the industry and its size and location. At no time the emissions level shall go beyond the prescribed standards. In the event of failure of any pollution control system adopted by the unit, the respective unit should not be restarted until the control measures are rectified to achieve the desired efficiency.
- vi) High efficiency electrostatic precipitators (ESPs) of not less than 99.87 % efficiency shall be provided to captive power plant to limit particulate matter within  $50 \text{ mg/Nm}^3$ . The height of the stacks shall be as per the standards prescribed under the Environment (Protection) Act, 1986. Low NO<sub>x</sub> burners shall be provided to control NO<sub>x</sub> emissions. NO<sub>x</sub> emissions shall be restricted to  $750 \text{ mg/Nm}^3$  by using low NO<sub>x</sub> burners. On-line stack emission monitoring equipments for continuous monitoring of SO<sub>2</sub>, NO<sub>x</sub>, SPM and O<sub>2</sub> shall be provided to the stacks of captive power plant and sulphuric acid plant and all the pollution control measures shall be inter-locked. The company shall install fume extractors and bag filters to control the emissions from all melting and casting units. Off gas from the sulphuric acid plant, blast and fuming furnace plant, copper recovery plant shall be treated in the calcine based scrubbing plant where the SO<sub>2</sub> shall be removed before letting out to the atmosphere. Adequate stack height shall be provided for proper dispersion of pollutants like SO<sub>2</sub>, NO<sub>x</sub> etc.
- vii) As reflected in the EIA/EMP, Double Conversion Double Adsorption (DCDA) plant for sulphuric acid recovery from SO<sub>2</sub> shall be provided. The company shall ensure that SO<sub>2</sub> emissions from the Zn and lead smelter plant are taken to existing sulphuric acid plant properly and converted to sulphuric acid. The stack from the Sulphuric acid plant shall be provided with on-line stack emission monitoring equipment for continuous monitoring of SO<sub>2</sub>.
- viii) SO<sub>2</sub> emissions shall be controlled less than 1.5 kg/ton of Sulphuric acid (H<sub>2</sub>SO<sub>4</sub>) produced. Acid mist emissions from the stack shall conform to the statutory limit of  $50 \text{ mg/Nm}^3$  by providing candle filter system and reports submitted to the Ministry including its Regional Office at Lucknow, CPCB and RSPCB.
- ix) The critical parameters such as SPM, RSPM, NO<sub>x</sub>, SO<sub>2</sub> and acid mist 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. Analysis reports for the ambient, stack and fugitive emission shall be submitted to the Ministry's Regional Office at Lucknow, CPCB and RSPCB.

- x) Ash content in the coal shall not exceed 12 %. Sulphur content in coal shall be restricted to 2% to contain SO<sub>2</sub> emissions.
- xi) The company shall install continuous air quality monitoring stations. Data monitored shall be submitted to the Ministry and CPCB/SPCB once in six months.
- xii) Fugitive dust emissions in the Zinc, Lead and Copper concentrate handling area and at various transfer points shall be minimized by provision of dust suppression system. The trucks carrying concentrate shall be fully covered. The Company shall improve overall house keeping by asphaltting the internal roads and to reduce the generation of fugitive dust from vehicle movements.
- xiii) Fugitive emissions, acid mist vapours, fumes and SO<sub>2</sub> shall be controlled and work environment monitored for prevailing contaminants regularly. Bag filters shall be provided to calcine handling plant, zinc dust plant, melting plant, dross milling plant, each coal transfer point, crushers and fly ash silos to control dust emissions. Bag filters shall be provided in fume extraction and melting and casting operations of smelter. SPM emissions from crusher house in beneficiation plant shall be controlled. Covered coal conveyors with water sprinkling system using wastewater to avoid dust emissions. Coal storage area shall be provided with water sprinkling stem to arrest dust. Dust extraction system shall be provided to mineral handling area, loading and unloading areas including all the transfer points. Black top paves roads shall be made within the mine boundary. The trucks carrying concentrate shall be fully covered. Asphaltting/concreting of roads and water spray all around the critical areas prone to air pollution and having high levels of SPM and RPM shall be ensured.
- xiv) The project proponent shall carry out conditioning of the ore with water to mitigate fugitive dust emission, without affecting flow of ore in the ore processing and handling areas. Water sprinkling shall be done to minimize the dust during transportation.
- xv) Secondary fugitive emissions (particularly below 5 micron) from all the sources including Roaster plant shall be controlled, regularly monitored alongwith ambient dust in dry day and still air condition on 24 hour basis and data submitted to the Regional Office of the Ministry at Lucknow, RSPCB and CPCB. 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) Vehicular emissions shall be kept under control and regularly monitored. Measures shall be taken for maintenance of vehicles used in mining operation and in transportation of mineral. The vehicles carrying the mineral shall be covered with a tarpaulin and shall not be overloaded.
- xvii) Total water requirement for the proposed smelter complex including the mining and beneficiation plants from Matrikundia dam, Gosunda dam and Mansiwakal dam shall not exceed 42,050 m<sup>3</sup>/day as per the agreements signed with Govt. of Rajasthan. As proposed, water requirement shall not exceed 184 litre/ton of Sulphuric acid produced. No ground water shall be used. Closed circuit cooling system with cooling towers shall be provided to captive power plant. All the effluent generated from gas cleaning plant, sulphuric acid plant, anode and cathode washing, lead smelter, DM

plant, cooling towers and power plant shall be neutralized and metallic elements present shall be precipitated and removed. Effluents from the proposed smelters, acid plant and other associated services shall be treated in effluent treatment plant (ETP). Zinc sulphate solution from the scrubbing process shall be treated in the leaching section of the Zinc smelter. Cooling tower blow down and boiler blow down from CPP shall be neutralized and reused in dust suppression, green belt development etc. The treated effluent shall conform to the prescribed standards and recycled in the process i.e. in gas cleaning plant, preparation of lime milk, dust suppression and green belt development. The effluents from sulphuric acid plant, scrubber, general floor washings of electro-refinery plant shall also be sent to ETP for further treatment followed by two-stage Reverse Osmosis (RO) Plant. Sewage shall be treated in septic tank followed by soak pit. The rejects from the RO plant shall be evaporated in a solar evaporation pond to be constructed within smelter premises. 'Zero' discharge shall be maintained and no effluent shall be discharged outside the premises. Sewage generated shall be treated in septic tank followed by soak pit.

- xviii) The mine seepage water shall be collected in underground sumps and reused/recycled in mining and beneficiation process to minimize the fresh water consumption. Decanted water from the tailings dam shall be recycled in the beneficiation plant to ensure 'zero' discharge. Tailings from beneficiation plant after recovery of Lead and Zinc concentrates shall be sent to tailing thickener for dewatering. Water recovered from tailing thickener shall be recycled to beneficiation plant for use in the process. Tailing thickener underflow shall be partly used as backfill for mines and remaining part shall be disposed to tailing dam. Water in the tailing dam shall be allowed to settle out and pumped to the water reservoir for reuse in the process.
- xix) Acid mine water, if any, has to be treated and use in plantation and existing mining activity after conforming to the standard prescribed by the competent authority.
- xx) Sewage treatment plant shall be installed for the colony. ETP shall also be provided for the mine workshop for the wastewater generated.
- xxi) The effluent from the ore beneficiation plant shall be treated to conform to the prescribed standards and the tailings slurry shall be transported through a closed pipeline to the tailing dam. The decanted water from the tailing dam shall be re-circulated and there shall be 'zero' discharge from the tailing dam. Acid mine water, if any, shall be neutralized and reused within the plant.
- xxii) Detailed hydrological study shall be carried out and implementation of recommendations of the detailed hydrological study shall be ensured.
- xxiii) The project proponent shall ensure that no natural watercourse and/or water resources shall be obstructed due to any mining operations.
- xxiv) 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. ✓

- xxv) Regular monitoring of ground water level and quality shall be carried out in and around the project area (mine lease, beneficiation plant and tailing dam) by establishing a network of existing wells and installing new piezometers during the 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 Lucknow, 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.
- xxvi) Groundwater and surface water in and around the mine shall be regularly monitored at strategic locations for heavy metals such as Ni, Co, Cu, Pb, Zn and Cd. Data should be reviewed and analyzed time to time to detect changes in the quality of ground water and surface water, if any. The monitoring stations shall be established in consultation with the Regional Director, Central Ground Water Board and the Rajasthan Pollution Control Board.
- xxvii) The project proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of water required for the project.
- xxviii) Suitable rainwater harvesting measures on long term basis shall be planned and implemented in consultation with the Regional Director, Central Ground Water Board.
- xxix) Catch drains and siltation ponds of appropriate size shall be constructed around the mineral and over burden dumps to prevent run off of water and flow of sediments directly into the Banas 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.
- xxx) Garland drains, settling tanks and check dams of appropriate size, gradient and length shall be constructed around the mineral and over burden dumps to prevent run off of water and flow of sediments directly into the Banas River and other water bodies 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 desilted at regular intervals.
- xxxi) Underground mining shall be carried out using Vertical Retreat Mining (VRM) and Blast Hole Stoping (BHS) with back filling. Concentration and separation of Lead and Zinc minerals shall be carried out in the beneficiation plant.
- xxxii) Controlled blasting practice shall be adopted. The mitigative measures for control of ground vibrations and to arrest fly rocks and boulders shall be implemented.
- xxxiii) Wet drilling blasting method and provision for the control air emissions during blasting using dust collectors etc. shall be used. ✓

- xxxiv) Blast vibration shall be assessed from proposed operation. Ground subsidence and mine stability shall also be monitored on regular basis.
- xxxv) Regular monitoring of subsidence movement on the surface over working area and impact on water bodies/vegetation/ structures/ surrounding shall be continued till movement ceases completely. In case of observation of any high rate of subsidence movement, appropriate measures shall be taken to avoid loss of life and material. Cracks shall be effectively plugged with ballast and clayey soil/suitable material.
- xxxvi) All the mine entries shall be above the highest flood level to avoid any anticipated flooding of mine from the surface water during the rainy season.
- xxxvii) In areas where subsidence is anticipated in shallow mineral occurrence, such areas be identified and provided with garland drains to ensure draining of water and avoid ingress of the same in to the underground mine.
- xxxviii) The project authorities shall check the possibility of existence of fault(s) before deciding about the thickness of safe barrier required to be maintained between the working face and the water bodies, if any, in consultation with the Director General Mines & Safety (DGMS). De-pillaring shall also be carried out after taking prior approval of the DGMS.
- xxxix) All the fly ash shall be utilized as per Fly Ash Notification, 1999 subsequently amended in 2003. Fly ash shall be provided to cement / brick manufacturing units for further use in making Pozollona Portland Cement (PPC).
- xl) Mine waste shall be dumped in mine voids. Overburden due to mine expansion shall be dumped at a designated place. Waste rocks generated due to mining activity shall be utilized in construction and enhancement of tailing dam. In beneficiation plant, existing tailing dam shall be used for disposal of tailings.
- xli) The solid waste generated in the form Jarosite shall be stabilized as Jarofix and disposed off in Jarofix disposal yard inside the plant premises. Cobalt cake, cooler cake, anode mud, enrichment cake, ETP sludge and spent catalyst etc. shall be disposed off in secured landfill (SLF). Waste/used oil shall be sold to registered recyclers.
- xl ii) ETP Sludge in the form of cake shall be disposed to the captive SLF. Jarosite shall be treated by mixing lime and cement to produce Jarofix, a stable product. After stabilization, Jarofix shall be disposed in dedicated disposal yard. Cooler cake and part of lead silver residue shall be neutralized and stabilized before disposal in SLF. Anode mud, cobalt cake and purification cake shall be recycled back in the process and, if surplus, shall be sold to authorized recyclers or disposed in SLF after neutralization. Spent catalyst shall be disposed in SLF after neutralization. Lead smelter slag after fuming shall be stored in designated area and alternatives shall be explored for usage in road construction and cement manufacturing.
- xl iii) Column Leachate Studies of the stock piles of Run-of the-mine (ROM) ore, crushed ore, tailings, Jarofix shall be carried out to ascertain the pollution potential as per details given below: ✓

- Temperature fluctuation and sunlight exposure under confined and unconfined conditions.
- Buried conditions
- Air circulation.
- Dry – wet conditions in both confined and unconfined situations.
- Temperature episodes and leachate release conditions.
- Leachate environmental residence study.

The leachate shall be measured for heavy metals for cations viz. As, St, Ni, Cu, Sb, Cr, Hg, Fe, Al, Pb, Zn, Au and Ag and anions viz. Sulfate, Chloride, Fluorine, Carbonate, Bicarbonate, Phosphate. The primary and secondary organics (Poly Aromatic Hydrocarbons) shall also be monitored in Zarofix and fresh tailings. Reports prepared shall be submitted to the Ministry within 6 months of operation of the plant.

- xliv) The tailing dam shall be provided with HDPE lining. Tailing dam stability, risk assessment and disaster risk mitigation & planning studies shall be conducted in the likely affected zone.
- xliv) A complete hazards and risk assessment, and mitigation studies of the areas where hazardous substances are stored shall be carried out by approved agencies having qualified personnel. All plants identifiable hazardous areas like Sulfuric acid plants shall be color coded in "Red" and shall be made safe from any eventual spill or leakage. Regular inspection of the site shall be carried out.
- xlvi) In the mine sites, proper delineation of the confined and unconfined aquifers, permanent surface water bodies (having more than 1 ft standing water for at least 240 days in a year) within the lease hold area and within 3 kms radius of any potential mine site have to be shown in a map. Action plan shall be prepared for the protection of aquifers in the mine area during process of mining and submitted to the Ministry and its Regional Office at Lucknow.
- xlvi) 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.
- xlvi) The over burden generated during the mining operation shall be stacked at earmarked dump site(s) only and it shall not be kept active for a long period of time and its phase-wise stabilization shall be carried out. There shall be one external over burden dump. Proper terracing of the OB dump shall be carried out so that the overall slope of the dump shall be maintained to 28°. The over burden dump 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 and its Regional Office located at Lucknow on six monthly basis.
- xlix) 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 shall be drawn and followed accordingly. ✓

- i) As proposed, plantation shall be raised in an area of 33 % ha. including a 7.5 m wide green belt in the safety zone around the mining lease, over burden dump, around beneficiation plant, around tailing dam, roads etc. as per Central Pollution Control Board guidelines by planting the native species around the periphery of plant and township, canopy based green belt shall be developed in consultation with the local DFO/Agriculture Department. The density of the trees shall be around 1,500 plants per ha.
- ii) Action plan for the mining, management of over burden (removal, storage, disposal etc.), reclamation of the mined out area etc. shall be submitted to the Ministry and its Regional Office at Lucknow. A final mine closure plan alongwith details of Corpus Fund shall be submitted to the Ministry of Environment & Forests 5 years in advance of final mine closure for approval.
- iii) Conservation Plan for Schedule-I animals as per Wildlife Protection Act, 1972, if found in the study area shall be prepared and implemented on priority before commission the project for the conservation of wild fauna in consultation with the State Forest & Wildlife Department.
- iv) Regular medical examination and health monitoring of all the employees for Lead (Pb) and Cadmium (Cd) shall be carried out and if cases of presence of Lead (Pb) and Cadmium (Cd) are detected, necessary compensation shall be arranged under the existing laws. A competent occupational health physician shall be appointed to carry out medical surveillance. Occupational health of all the workers shall be monitored for relevant parameters and records maintained for at least 40 years from the beginning of the employment or 15 years after the retirement or cessation of employment whichever is later.
- lv) All the recommendations made in Charter for Corporate Responsibility for Environment Protection (CREP) for Zinc smelters shall be implemented.
- lv) Overall proper house keeping shall be ensured in all the plant areas viz. Zinc an Lead smelter, Beneficiation plant, Captive power plant and other processing plant areas. The Company shall improve overall house keeping by asphaltting the internal roads and to reduce the generation of fugitive dust from vehicle movements.
- lvi) Adequate funds shall be earmarked towards capital cost and recurring expenditure per annum and a break up shall be submitted to the Ministry covering all aspects of the environment pollution control measures including extensive tree plantation on the mine and plant sites with an objective to achieve 33 % green cover within 3 years of project completion and recurring expenditure/annum for adequate pollution control measures with on-line motoring systems, ETPs, SWTPs, sound and vibration control, social forestry, rain water harvesting, occupational health, employment of environmental cadre personnel for continuous improvement etc.
- lvii) Rehabilitation and Resettlement Plan for the project affected population including tribals, if applicable, as per the policy of the State Govt. in consultation with the State Govt. of Rajsthan shall be implemented. Compensation paid in any case shall not be less than the norms prescribed under the National Resettlement and Rehabilitation Policy, 2007. ✓

- lviii) All the safety norms stipulated by the Director General, Mine & Safety (DGMS) shall be implemented.
- lix) All the recommendations made in the Charter on Corporate Responsibility for Environment Protection (CREP) for the Smelters, thermal power plants and mining shall be implemented.
- lx) The company shall comply with the commitments made during public hearing / consultation meeting held.
- lxi) No change in mining technology and scope of working shall be carried out without prior approval of the Ministry.
- lxii) The company shall provide housing for 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.

**B. GENERAL CONDITIONS:**

- i. The project authorities must strictly adhere to the stipulations made by the Rajasthan State Pollution Control Board (RSPCB) and the State Government.
- ii. No expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment and Forests.
- iii. Adequate number of ambient air quality-monitoring stations shall be established in the downward direction as well as where maximum ground level concentration of SPM, SO<sub>2</sub> and NO<sub>x</sub> are anticipated in consultation with the Rajasthan State Pollution Control Board. Data on ambient air quality and stack emission shall be regularly submitted to this Ministry including its Regional Office at Lucknow and the State Pollution Control Board/Central Pollution Control Board once in six months.
- iv. Industrial wastewater shall be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19<sup>th</sup> May, 1993 and 31<sup>st</sup> December, 1993 or as amended from time to time. The treated wastewater should be recycled in the plant as well as utilization for plantation purposes.
- v. The project authorities must strictly comply with the rules and regulations with regard to handling and disposal of hazardous wastes in accordance with the Hazardous Wastes (Management and Handling) Rules, 2003. Authorization from the State Pollution Control Board must be obtained for collection, storage, treatment and disposal of hazardous wastes.
- vi. The overall noise levels in and around the plant area shall be kept well within the standards (85 dBA) by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels should conform to the standards prescribed under EPA Rules, 1989 viz. 75 dBA (daytime) and 70 dBA (nighttime). ✓

- vii. Occupational Health Surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.
- viii. The project proponent shall also comply with all the environmental protection measures and safeguards recommended in the EIA / EMP / risk analysis and DMP report.
- ix. As proposed, Rs. 230.00 Crores and Rs. 1.20 Crores shall be earmarked towards total capital cost and recurring cost/annum for environmental pollution control measures to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so provided should not be diverted for any other purposes.
- x. A copy of 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 web site of the company by the proponent.
- xi. The project proponent shall upload the status of compliance of the stipulated environment 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 MOEF at Lucknow, the respective Zonal Office of CPCB and the RSPCB. The criteria pollutant levels namely; SPM, RSPM, SO<sub>2</sub>, NO<sub>x</sub> (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the projects shall be monitored and displayed at a convenient location near the main gate of the company in the public domain.
- xii. The project proponent shall also submit six monthly reports on the status of the compliance of the stipulated environmental conditions including results of monitored data (both in hard copies as well as by e-mail) to the Regional Office of MOEF, the respective Zonal Office of CPCB and the RSPCB. The Regional Office of the Ministry at Lucknow / CPCB / RSPCB shall monitor the stipulated conditions.
- xiii. The environmental statement for each financial year ending 31<sup>st</sup> 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 alongwith the status of compliance of environmental conditions and shall also be sent to the respective Regional Offices of the MOEF by e-mail.
- xiv. The Project Proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the RSPCB and may also be seen at Website of the Ministry of Environment and Forests at <http://envfor.nic.in>. This shall be advertised within seven days from the date of issue of the clearance letter, at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same should be forwarded to the Regional office.

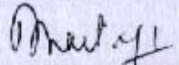
- xv. Project authorities shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of commencing the land development work.

8.0 The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.

9.0 The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.

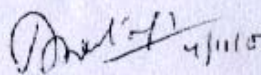
10.0 Any appeal against this environmental clearance shall lie with the National Environment Appellate Authority, if preferred within a period of 30 days as prescribed under Section 11 of the National Environment Appellate Act, 1997.

11.0 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, Hazardous Wastes (Management and Handling) Rules, 2003 and the Public (Insurance) Liability Act, 1991 along with their amendments and rules

  
(Dr. P. B. Rastogi)  
Director

Copy to :-

1. Chairman, Central Pollution Control Board, Parivesh Bhavan, CBD-cum-Office Complex, East Arjun Nagar, Delhi - 110032.
2. Chairman, Rajasthan State Pollution Control Board, 4, Institutional area, Jhalana, Doongri, Jaipur, Rajasthan.
3. Chief Conservator of Forests (Central), Ministry of Environment and Forests, Central Region, Kendriya Sadan, Sector H, Aliganj, Lucknow - 226 024, U.P.
4. Secretary, Department of Environment and Forests, Government of Rajasthan, Jaipur, Rajasthan.
5. Joint Secretary (CCI-I), Ministry of Environment and Forests, Paryavaran Bhawan, CGO Complex, New Delhi.
6. Monitoring Cell, Ministry of Environment and Forests, Paryavaran Bhawan, CGO Complex, New Delhi.
7. Guard File.
8. Monitoring File.
9. Record File.

  
(Dr. P. B. Rastogi)  
Director