

No. J-11015/7/2017-IA.II (M)

Government of India

**Ministry of Environment, Forest and Climate Change**

Impact Assessment Division

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Aliganj, Jor Bag Road,  
New Delhi-110 003

Dated: 31<sup>st</sup> May, 2018

To,

**M/s Hindustan Zinc Limited**

Sindesar Khurd Mine

P.O. Dariba, Tehsil-Relmagra

District- Rajsamand

Rajasthan – 313 211

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**Sub.: Expansion of Sindesar Khurd Lead – Zinc underground mines of M/s Hindustan Zinc Limited (HZL) from 4.5 Million TPA to 6.0 Million TPA (ROM) Ore production and Beneficiation from 5.0 Million TPA to 6.5 Million TPA, located at Sindesar Khurd Village, Tehsil: Relmagra, District Rajsamand, Rajasthan (ML No.07/95, MLA 199.8425 Ha)- Environmental Clearance regarding.**

**Reference: Online Application IA/RJ/MIN/62174/2017.**

Sir,

This is regarding EC proposal of M/s Hindustan Zinc Limited (HZL) for enhancement of lead-zinc ore production capacity from 4.5 Million TPA to 6.0 Million TPA (ROM) and beneficiation from 5.0 Million TPA to 6.5 Million TPA in respect of Sindesar Khurd Lead – Zinc underground mines in M.L. Area of 199.8425 Ha. The mine is located at Sindesar Khurd Village, Tehsil: Relmagra, District Rajsamand, Rajasthan. The Mining lease area reportedly falls in Survey of India Topo sheet No. 45L/1 and 45K/4 and lies between Latitudes 24°59'N-25°01'N and Longitudes 74°09'E-74°10'E. The elevation above M.S.L. is 510m – 546m. The area falls in Seismic zone-II.

2. The ToR was considered and recommended by the EAC in its meeting held during February 20-21, 2017. The Ministry issued Terms of Reference (ToRs) for the preparation of the Environmental Impact Assessment (EIA) Report and Environmental Management Plan (EMP), vide letter of even no. dated 03.04.2017. The Proponent submitted the EIA/ EMP Report online to Ministry for seeking Environmental Clearance after conducting Public Hearing.

3. The Proposal of EC was earlier appraised in the EAC meeting held during December 21-22, 2017 wherein the Committee deferred the proposal and sought the information/clarifications. In this regard, the PP vide letter dated 29.01.2018, has submitted the information/clarification and accordingly the proposal was re-considered in EAC meeting held during 26<sup>th</sup> – 27<sup>th</sup> February, 2018 wherein the Committee recommended the proposal for grant of Environmental Clearance for enhancement of lead-zinc ore production capacity from 4.5 Million TPA to 6.0 Million TPA (ROM) and beneficiation from 5.0 Million TPA to 6.5 Million TPA.

4. The Mining lease was granted on 11.06.1998 and executed on 20.03.1999 for a period of 30 years which was subsequently extended for additional 20 years by Government of Rajasthan vide letter no. M.E.-II/Raj/CC-Major/ML7/1995/5308 dated 26.11.2015 in line with Rule 8A of MMDR Amendment Act, 2015. The lease is now valid up to 19.03.2049. The PP submitted that as per the latest estimates the in-situ ore reserves & resources in Sindesar Khurd deposit is 122.79 million tons with grades of 4.52% Zinc and 2.70% Lead. The mining plan is approved by Indian Bureau of Mines, Udaipur vide its letter no. 662(23)664/2008-Kh.Ni.Kh.Sa.(U)Udai dated 30.09.2016 for 2016-17 to 2017-18. The mining plan shows that out of the total lease area, 39 Ha is agricultural land and 6.5 Ha is Grazing land.

5. Project Proponent reported that total Lease area of SK mine is 199.84 Ha, out of which the acquired area is 125.52 Ha and the proposed expansion activities are planned within this acquired area only and no activity of proposed expansion is planned in agricultural/grazing land falling within lease area. Hence, the said area will not be disturbed for the proposed expansion. PP reported that they are in the process of relocating settlement about 2 km away from the lease area. Break up of balance 74.3225 ha is shown under:-

Particulars	Lease Area (ha)	Acquired (ha)	Balance Area(ha)
Waste Land	148.8425	125.52	23.3225
Grazing Land	6.5	-	6.5
Agriculture Land	39	-	39
Others (Settlements)	5.5	-	5.5
Total	199.8425	125.52	74.3225

6. Project proponent submitted that resettlement has been planned as per request raised by villagers in Public Hearing. No family is directly affected because the significant part of settlement is outside of the ML area, only small portion i.e. 5.5 ha area is falling inside the ML area of 199.84 ha. Project Proponent reported that R&R plan has been made as per The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act 2013 and Land equal to existing plot sizes will be given to all families. 300 % compensation to all 581 identified families for land and construction cost, i.e. 3 times of DLC rate for land and 3 times of PWD rate for construction will be provided. Rehabilitation site with construction of roads, community centre, school, hospital and other infrastructures will be provided. Employment to all eligible villagers has been given, which is a prerequisite. The Proponent explained that out of the total land required for R & R of 100 Bigha, 72 Bigha is in place and balance 28 Bigha will be acquired. The committee asked the proponent to confirm that equal land will be given as a part of displacement and the same was confirmed by the proponent. The Proponent also explained that the compensation details in line with the act and also the common facilities being provided and the same was deliberated by the Committee.

7. The mining method adopted is blast hole stoping method wherein slot is opened at the widest portion of ore-body and rings are retreated towards the end of the stope. The muck is withdrawn at extraction level through LHDs and then directly loaded into mine trucks for hauling through ramps from underground to surface stock yard. From stock yard, ore is fed to the primary crusher using surface dumpers through haul road after sizing with hydraulic breakers. Mining is proposed to be done using trackless operations up to (-)55mRL level using 2 declines for hauling. Mining is proposed to be done using shaft hoisting system below (-) 55mRL. The extracted ore is sent to beneficiation plant for ore

concentration and the tailings generated from existing beneficiation plants are pumped to the existing lined tailing dam. The tailings are mixed with cement binder to form 77%-79% solid paste and the same is utilized in filling the underground mine voids. The Committee noted the submissions of PP and mentioned that mining operations shall be carried out strictly in accordance with the approved mining plan dated 30.09.2016.

8. Project Proponent reported that no forest land is involved in the lease and the same was certified by DFO, Rajsamand, vide its letter no. Letter Survey/DFO/2014-15/2760, dated 09.06.2014. The mine lease neither form part of nor fall within the distance of 10 km boundary of any Wildlife Sanctuary/ National Park/ Biosphere Reserve/ Tiger or Elephant Corridor as certified by DFO, Rajsamand vide its letter no. Letter Survey/DFO/2017-18/3721 dated 22.09.2017. The list of authenticated flora and fauna along with approve Wildlife Conservation Plan of ₹40 lakhs for 5 years in respect of Schedule-I species found in the study area viz. Indian Grey Hornbill, Indian Peafowl, White Eye Buzzard, Black Shouldered Kite, Monitor Lizard, Indian Flapshell Turtle and Indian Leopard was noted by the Committee. Project Proponent submitted that Indian Python has been included in the Sch. I Conservation Plan and revised plan submitted to DFO – Rajsamand for approval vide letter no. SKM/ENV/DFO/2018/01 dated 09.01.2018 with budgetary provision of Rs. 2 Crore. PP reported that Other Schedule-I species listed by DFO like Marsh Crocodile (*Crocodylus palustris*), European bat (*Pipistrellous pigemous*), Gangetic Soft Shell Turtle (*Gangeticus species*), avifauna belonging to raptors like Tawny Eagle (*Aquillarepax*), vulture species and ungulate species like Four Horned Antelope and Chinkara were not found in the study area. The proponent committed that the conservation plan will be implemented in consultation with DFO. The PP presented the KML file during the presentation to indicate the location of mine lease on Google Earth/ DSS.

9. Project Proponent reported that the additional water requirement for proposed expansion is 2000 KLD. The existing water requirement for 4.5 Million TPA of mining & 5.0 Million TPA of ore beneficiation capacity is 14,000 KLD. The PP submitted that the arrangements for existing as well as proposed water requirement have been made with Udaipur Sewage Treatment Plant & Matrikundia dam. It was also submitted that Zero discharge is being maintained from mining operations. The mine seepage dewatering generated in the mining activity is suitably treated and reused in wet drilling operations, dust suppression in underground operation and in sprinkling on surface roads for dust suppression. due to intersection is also consumed in operations and no separate groundwater withdrawal is made for meeting water requirement. The power requirement for current expansion is 6.0 MW (totaling to 46 MW) which will be met through captive generation & Ajmer Vidyut Vitaran Nigam Limited.

10. The primary baseline data for site specific micro meteorology data, ambient air quality, water quality, noise level, soil and flora & fauna was collected during Winter Season i.e. from March, 2017 – May, 2017. The baseline monitoring results of ambient air, surface water, soil, ambient noise and ground water have been reported and the same were compared with respective prescribed ranges viz. NAAQS-2009 (for air monitoring), CPCB Water Quality Criteria & IS:10500-2012 (for surface water & ground water) and ambient noise limits prescribed by CPCB. The air quality is within NAAQS, 2009 whereas the Surface water quality confirms to Class D i.e. Propagation of Wildlife and Fisheries. The groundwater quality compared with IS:10500-2012 permissible limit (in absence of water source). The Committee observed that due to expansion activities, the underground road transportation and involvement of heavy machineries will increase thereby increasing diesel consumption and associated air pollution. The Committee is of the

view that PP is required to make adequate ventilation arrangements and present the adequacy of ventilation system vis-a-vis anticipated diesel particulate, NO<sub>x</sub>, SO<sub>2</sub> and CO levels. PP submitted that it has worked out the ventilation requirements in consultation with ISM, Dhanbad and the existing system meets the requirements of minimum air velocity of 30 meter/min, relative humidity of 33°C (WBT) and temperature of 30.5 (WBT). The measured levels of CO and NO<sub>x</sub> in underground atmosphere are less than 50ppm and 5ppm respectively. PP reported that the detailed action plan of remedial and preventive actions for lead contamination on human health has been prepared. The PP informed that the NIOH study was done in Ajmer district and all the actions have been captured and the same will be implemented. The PP also explained that they will do a fresh baseline and based on the outcome of this study will implement the actions for the community in consultation with experts. PP also confirmed that it has kept a budget of Rs 50 Lakhs for conducting various programs in connection to Lead.

11. Public Hearing for the project was conducted on 01.11.2017 at Mine premises, Village-Sindesar Khurd, Tehsil-Relmagra, Dist.-Rajsamand (Rajasthan), under the Chairmanship Additional District Magistrate, Rajsamand, Rajasthan. The representatives of Rajasthan State Pollution Control Board attended and coordinated the meeting. The proceedings of the Public hearing indicated that the local villagers have given mixed responses on the expansion proposal during Public hearing. The issues raised by villagers were directly related to the development of the area. The PH highlighted issues related to employment to locals, training to local villagers for skill improvement, repairing and maintenance of damaged road to nearby villages, opening of health centre/ hospital in the area, improving the status of educational facility and providing infrastructural support, providing Protective equipments to mine workers, acidic wastewater runoff/ drainage from mines, local development related issues like improved infrastructure, taking up plantation drive in the area to control air pollution, development of model village panchayat etc. One of the major issues raised in the PH related to relocation of the village Sindesar wherein the houses have started developing cracks due to blasting during mining operation. Other nearby villages also expressed concern over the expansion proposal and mentioned that the company is operating for the last 10 years or more; however, it has not fulfilled its promises of providing basic amenities and uplifting the socio-economic status of the area through concerted development initiatives. Apart from the proceedings of PH, three representations for suggestion/ objection in respect of the proposed enhancement proposal have been received namely from Yuva Group (NGO), Mata Kheda Village; Yuvamandal, village – Amarpura and Shri Samar Singh Bundela, Sub-state Head and Incharge, Udaipur Division, Shiv Sena wherein the major issues are related to priority in employment to local people/ villagers. PP submitted that its current proposal already involves the relocation of Sindesar Khurd village. Further, PP mentioned that it is committed for social upliftment of the area and shall provide the basic amenities to nearby villagers like drinking water, infrastructural support to schools, hospitals, road construction etc. which will ultimately add to the economic benefits to the locals of the area. Similarly, 70% employees are from Rajsamand district and 80% from Rajasthan, hence, it would continue to give priority to locals for employment based on skill set.

12. The Total project cost is ₹1051 Crores and anticipated direct manpower requirement is 300 (approx.). It was submitted by the PP that it has made a CSR plan of ₹50.24 Crores for 3 years (up to 2019-20) covering issues related to health & hygiene, education, social mobilisation, infrastructure development, animal husbandry etc. Similarly, an amount of ₹150 Crores (towards capital expenditure) and ₹12 Crores (towards recurring expenditure per annum) is earmarked for implementation of the environmental management plan. PP reported that the

Enterprise Social Commitment (ESC) Cost Break up over a period of 3 years covering the various program like skill development, community welfare, model village, animal husbandry, roads, plantation in villages and monitoring and control measures to ensure village environment. PP also confirmed that these were the points raised during public hearing. PP also explained that the cost estimated and presented will be spent to facilitate smooth R & R of Village. PP reported that Time bound progressive plan with selection of species has been made and greenbelt development (46 ha) is already done in existing operation and remaining 4 ha is proposed to be completed by 2018-2019 within acquired area. More than 15,000 numbers of fruits bearing plant saplings have been planted in the surrounding villages covering over 15 ha. Further, plantation of 30,000 nos. of native & orchard species is being planned in financial year 2018-19 and its maintenance for next two years with budgetary provision of Rs.2.00 Crores.

13. Project Proponent has reported that since underground mining would be carried out, no obstruction/ interruption shall be made to streams/ nallahs passing through the mining lease. PP reported that there is no court case/ litigation pending against the project. The Committee took note of the Compliance Report of MoEFCC R.O. Lucknow dated 08.11.2017 and noted that no major issues have been reported in the report except presence of lead in blood samples and zinc in trace quantities in vegetables. PP submitted that action plan regarding presence of lead in blood samples has been explained in previous point and also informed that Zinc is essential element for human nutrition. Zinc content in vegetable and other crops depends on variety of fertilizers being used by farmers, type of soil and crop species etc. To control airborne dust measures like dust extraction/suppression are in place as per the EMP. The Committee deliberated the issues.

14. Project Proponent submitted that, as per EIA notification 1994 (Sr. No. 2, III (c)), validity of Environmental Clearance is for a period of five years for commencement of the construction or operation. Accordingly, Sindesar Khurd Mine has commenced the mine construction activities in 2001-02. Environmental Clearance and Consent to Establish for the said project was obtained vide letter no. J-11015/16/99- IA(M) dated 02.12.1999 and F-12(30-243) RPCB/Gr III/224 dated 25.02.2000 respectively. Consent to Establish was further renewed in 2001, 2003 and 2005. Diligent efforts were made for executing mine construction activities which are pre requisite for commencement of production from an underground mine. The construction activities comprised of infrastructure development for establishing access to the deposit, working levels & ventilation for developing mining blocks. Also exploration from surface and underground were carried out from 2001 onwards to define the extents and configuration of ore body at various levels. In 2005, under valid CTE, when mine became ready for production, CTO was obtained vide letter no. F:12 (30-243) RPCB/Gr III/2438 dated 04.01.2006. Ore production was commenced in 2005-06 and is continuing. With focused exploration from 2006 to 2008, reserve of the deposit was enhanced from 13.5 million tons to 37.2 million tons as on 01-04-2008. The increased reserve of the deposit enabled to enhance the production from 0.3 to 2.0 Million TPA and accordingly EC was obtained for 2.0 MTPA in 2009. PP submitted that development and consequent ore production at SK Mines have been carried out as per EIA notification 1994 and/or 2006. During 2000 to 2006, there was no change in approved production capacity as per EC; hence there was no increase in pollution load. Thereby Hon'ble Supreme Court judgment has not been violated. It is noted that PP has got 1<sup>st</sup> EC on 02.12.1999 for 0.3 million TPA. Lease deed was executed on 20.03.1999. Since it is an underground mine and took more time to start the actual production of Ore which was commenced in 2005-06. PP has not increased the production capacity from 2005-06 to 2008-09 [consented EC capacity was 0.3 million TPA]. Further PP has obtained 2<sup>nd</sup> EC for 2.0 Million TPA in 2009 and has

not increased the production capacity from 2009-10 to 2014-15 [consented EC capacity was 2 million TPA]. Further, PP has got 3<sup>rd</sup> EC in 2016 for 3.75 million TPA and has not increased the production capacity from 2015-16 to 2017-18 (Oct 2017) [consented EC capacity was 3.75 million TPA]. Further PP has got amendment in EC on 21.12.2016 w.r.t. production capacity of 4.5 million TPA. In view of the above, PP has never enhanced the production capacity from the approved EC capacity.

15. The Ministry of Environment, Forest and Climate Change has examined the proposal in accordance with the Environmental Impact Assessment Notification, 2006 and further amendments thereto and hereby accords the environmental clearance under the provisions thereof to the above mentioned proposal of **M/s Hindustan Zinc Limited (HZL) for Expansion of Sindesar Khurd Lead – Zinc underground mines with of production capacity from 4.5 Million TPA to 6.0 Million TPA (ROM) Ore production and Beneficiation from 5.0 Million TPA to 6.5 Million TPA in the mine lease area of 199.8425 ha, located at Sindesar Khurd Village, Tehsil: Relmagra, District Rajsamand, Rajasthan,** subject to compliance of the followings terms and conditions and environmental safeguards mentioned below :

**A. Specific conditions**

- 1) Environmental clearance is granted subject to final outcome of Hon'ble Supreme Court of India, Hon'ble High Court of Rajasthan and any other Court of Law, if any, as may be applicable to this project.
- 2) This Environmental Clearance is subject to obtaining requisite NBWL Clearance from the Standing Committee of National Board for Wildlife, if any, applicable for this Mining project.
- 3) No mining activities will be allowed in forest area, if any, for which the Forest Clearance is not available.
- 4) The project proponent shall obtain Consent to Operate from the State Pollution Control Board, Rajasthan and effectively implement all the conditions stipulated therein.
- 5) The Proponent should install online Ambient Air Quality Monitoring System and there should be system for display of digital AAQ data within 03 months at least at three locations as per wind direction. Online provisions of pH and turbidity meters at discharge points of STP and ETP and also at water storage ponds in the mining area may be made. Project Proponent should display the result digitally in front of the main Gate of the mine site.
- 6) The Project Proponent has to take care of gullies formed on slopes. Dump mass should be consolidated with proper filling/leveling with the help of dozer/compactors. The report on slope and stability monitoring should be sent to MoEF&CC and its Regional office every six-months.
- 7) The reclamation at waste dump sites shall be ecologically sustainable. Scientific reclamation has been followed. The local species may be encouraged and species are so chosen that the slope, bottom of the dumps and top of the dumps are able to sustain these species. The aspect of the dump is also a factor which regulates some climatic parameters and allows only species adopted to that micro climate. This may be recommended to be studied by hiring Expert Ecology Group.

- 8) There is need for regular monitoring of invertebrates and aquatic life of water bodies including the reservoir located close to the mining lease to establish that fish and other animals including the water is not contaminated with heavy metal. There could be a research on "bio accumulation of heavy metals in invertebrates" to completely establish that there is no impact of mining.
- 9) A specialized Institution may be hired to carry out ecological survey on the plant species to evaluate their growth in terms of stunted, deformed and seed viability. The sensitive species and indicator species to heavy metal pollution may be screened out and plantation accordingly designed. Similarly, uptake of Zinc, Cadmium and lead etc. by crops and vegetables grown in the crop lands around the mining lease may be studied. Bottom sediment analysis of ponds, wells and Rivers to ascertain the level of accumulation of heavy metal may be done.
- 10) The Proponent shall conduct an Occupational health study with respect to the pressure impact on ear drums as person goes underground and implement the recommendations.
- 11) Project Proponent shall carry out vibration studies well before approaching any such habitats or other buildings to evaluate the zone of influence and impact of blasting on the neighborhood. Within 500 meters of such sites vulnerable to blasting vibrations, avoidance of use of explosives and adoption of alternative means of mineral extraction. A provision for monitoring of each blast should be made so that the impact of blasting on nearby habitation and dwelling units could be ascertained. The covenant of lease deed under Rule 31 of MCR 1960 provides that no mining operations shall be carried out within 50 meters of public works such as public roads and buildings or inhabited sites except with the prior permission from the Competent Authority.
- 12) Main haulage road in the mine should be provided with permanent water sprinklers and other roads should be regularly wetted with water tankers fitted with sprinklers. The material transfer points should invariably be provided with Bag filters and or dry fogging system. Belt-conveyors should be fully covered to avoid air borne dust; Use of effective sprinkler system to suppress fugitive dust on haul roads and other transport roads shall be ensured.
- 13) The monitoring of PM<sub>2.5</sub> in the vehicle emission shall be conducted to improve the mine environment and report submitted to the Regional Office of the MoEFCC.
- 14) Project proponent shall compensate all 581 identified families for land and construction cost, i.e. 3 times of DLC rate for land and 3 times of PWD rate for construction will be provided. Rehabilitation site with construction of roads, community centre, school, hospital and other infrastructures will be provided. The PP has confirmed that equal land will be given as a part of displacement.
- 15) Implementation of conservation of all Schedule-I species as per revised plan submitted to DFO-Rajasamand for approval vide letter no. SKM/ENV/DFO/2018/01 dated 09.01.2018 with budgetary provision of Rs. 2 Crore. The Proponent shall implement the Wildlife Conservation Plan along

with the funds so allocated with consultation of Chief Wild Life Warden of the State Govt. A copy of action plan shall be submitted to the Ministry of Environment, Forest and Climate Change and its Regional Office, Lucknow and the Chief Wild Life Warden of the State Govt.

- 16) Implementation of action plan on remedial and preventive actions for lead contamination on human health for the community in consultation with experts with budgetary provisions of Rs 50 Lakhs for conducting various programs in connection to Lead.
- 17) PP shall run an awareness campaign on sanitation for women and utilization of Sanitary Napkin and also to distribute the Sanitary Napkin/pads to the women and provide the training for proper disposal.
- 18) Implementation of Action Plan on the issues raised during the Public Hearing shall be ensured. The Project Proponent shall complete all the tasks as per the Action Plan submitted with budgetary provisions during the Public Hearing.
- 19) Implementation of the outcome of study with regard to "optimization of blast design parameter for the safety and stability of surface structures and subsequent monitoring of vibration on the surface structures for their long term stability" which was carried out by Central Institute of Mining and Fuel Research should be ensured.
- 20) Continuous monitoring of radioactive elements, if any, shall be undertaken till entire mine is dewatered and report has to be submitted to MoEFCC Regional Office. Periodic monitoring of any adverse impact of Radon and its daughter products on any worker should be included in the Occupational Health Monitoring Programme.

**B. Standard conditions**

- 1). 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.
- 2). No change in mining technology and scope of working should be made without prior approval of the Ministry of Environment, Forest and Climate Change.
- 3). No change in the calendar plan including excavation, quantum of mineral and waste should be made.
- 4). The project proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of water (surface water and ground water) for the project.
- 5). Mining shall be carried out as per the provisions outlined in mining plan approved by Indian Bureau of Mines (IBM) as well as by abiding to the guidelines of Directorate General Mines Safety (DGMS).
- 6). The lands which are not owned by Proponent, mining will be carried out only after obtaining the consents from all the concerned land owners as per the provisions of the Mineral Concession Rules, 1960 and MMDR Act, 1957.



- 7). 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 its Regional Office.
- 8). The critical parameters as per the Notification 2009 such as PM<sub>10</sub>, PM<sub>2.5</sub>, NO<sub>x</sub>, and SO<sub>x</sub> etc. 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 shall also be referred in this regard for its compliance.
- 9). Effective safeguard measures such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of PM<sub>10</sub> and PM<sub>2.5</sub> such as haul road, loading and unloading point and transfer points. Fugitive dust emissions from all the sources shall be controlled regularly. It shall be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard. Monitoring of Ambient Air Quality to be carried out based on the Notification 2009, as amended from time to time by the Central Pollution Control Board.
- 10). 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 constructing new piezometers during the mining operation. The project proponent shall ensure that no natural water course and/or water resources shall be obstructed due to any mining operations. 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 may be sent regularly to Ministry of Environment, Forest and Climate Change and its Regional Office, Central Ground Water Authority and Regional Director, Central Ground Water Board.
- 11). Regular monitoring of the flow rate of the springs and perennial nallahs flowing in and around the mine lease shall be carried out and records maintain. The natural water bodies and or streams which are flowing in an around the village, should not be disturbed. The Water Table should be nurtured so as not to go down below the pre-mining period. In case of any water scarcity in the area, the Project Proponent has to provide water to the villagers for their use. A provision for regular monitoring of water table in open dug wall located in village should be incorporated to ascertain the impact of mining over ground water table.
- 12). Regular monitoring of water quality upstream and downstream of water bodies shall be carried out and record of monitoring data should be maintained and submitted to the Ministry of Environment, Forest and Climate Change and its Regional Office, Central Ground Water Authority, Regional Director, Central Ground Water Board, State Pollution Control Board and Central Pollution Control Board.

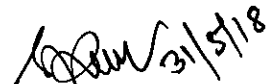
- 13). Transportation of the minerals by road passing through the village shall not be allowed. A 'bypass' road should be constructed (say, leaving a gap of at least 200 meters) for the purpose of transportation of the minerals so that the impact of sound, dust and accidents could be mitigated. The project proponent shall bear the cost towards the widening and strengthening of existing public road network in case the same is proposed to be used for the Project. No road movement should be allowed on existing village road network without appropriately increasing the carrying capacity of such roads.
- 14). The illumination and sound at night at project sites disturb the villages in respect of both human and animal population. Consequent sleeping disorders and stress may affect the health in the villages located close to mining operations. Habitations have a right for darkness and minimal noise levels at night. PPs must ensure that the biological clock of the villages is not disturbed; by orienting the floodlights/ masks away from the villagers and keeping the noise levels well within the prescribed limits for day light/night hours.
- 15). Main haulage road in the mine should be provided with permanent water sprinklers and other roads should be regularly wetted with water tankers fitted with sprinklers. The material transfer points should invariably be provided with Bag filters and or dry fogging system. In case of Belt-conveyors facilities the system should be fully covered to avoid air borne dust; Use of effective sprinkler system to suppress fugitive dust on haul roads and other transport roads shall be ensured.
- 16). Sufficient number of Gullies to be provided for better management of water. Regular Monitoring of pH shall be included in the monitoring plan and report shall be submitted to the Ministry of Environment, Forest and Climate Change and its Regional Office on six monthly basis.
- 17). There shall be planning, developing and implementing facility of rainwater harvesting measures on long term basis and implementation of conservation measures to augment ground water resources in the area in consultation with Central Ground Water Board.
- 18). The Project Proponent has to take care of gullies formed on slopes. Dump mass should be consolidated with proper filling/leveling with the help of dozer/compactors.
- 19). The reclamation at waste dump sites shall be ecologically sustainable. Scientific reclamation shall be followed. The local species may be encouraged and species are so chosen that the slope, bottom of the dumps and top of the dumps are able to sustain these species. The aspect of the dump is also a factor which regulates some climatic parameters and allows only species adopted to that micro climate.
- 20). 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 60m and width 20 m and overall slope of the dumps shall be maintained to 45<sup>0</sup>. 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 on six monthly basis.
- 21). 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.
  - 22). Plantation shall be raised in a 7.5m wide green belt in the safety zone around the mining lease, backfilled and reclaimed area, around water body, along the roads etc. by planting the native species in consultation with the local DFO/Agriculture Department and as per CPCB Guidelines. The density of the trees should be around 2500 plants per ha. Greenbelt shall be developed all along the mine lease area in a phased manner and shall be completed within first five years.
  - 23). Project Proponent shall follow the mitigation measures provided in Office Memorandum No. Z-11013/57/2014-IA.II (M), dated 29th October, 2014, titled "Impact of mining activities on Habitations-Issues related to the mining Projects wherein Habitations and villages are the part of mine lease areas or Habitations and villages are surrounded by the mine lease area", if any, applicable to the project.
  - 24). The Project Proponent shall make necessary alternative arrangements, where required, in consultation with the State Government to provide alternate areas for livestock grazing, if any. In this context, Project Proponent should implement the directions of the Hon'ble Supreme Court with regard to acquiring grazing land. The sparse trees on such grazing ground, which provide mid-day shelter from the scorching sun, should be scrupulously guarded against felling and plantation of such trees should be promoted.
  - 25). The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered fauna, if any, spotted in the study area. Action plan for conservation of flora and fauna shall be prepared and implemented in consultation with the State Forest and Wildlife Department. A copy of action plan shall be submitted to the Ministry of Environment, Forest and Climate Change and its Regional Office.
  - 26). As per the Company Act, the CSR cost should be 2 % of average net profit of last three years. Hence CSR expenses should be as per the Company

Act/Rule for the Socio Economic Development of the neighborhood Habitats which could be planned and executed by the Project Proponent more systematically based on the 'Need based door to door survey' by established Social Institutes/Workers. The report shall be submitted to the Ministry of Environment, Forest and Climate Change and its Regional Office on six monthly basis.

- 27). The Ministry has issued a circular vide no. 22-65/2017-IA.III, dated 1<sup>st</sup> May 2018 on Corporate Environment Responsibility (CER). Accordingly, PP shall comply the circular w.r.t. details of budget and its activities.
- 28). Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.
- 29). 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.
- 30). 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 19<sup>th</sup> May, 1993 and 31<sup>st</sup> December, 1993 or as amended from time to time. Oil and grease trap should be installed before discharge of workshop effluents.
- 31). 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.
- 32). 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.
- 33). The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to the Ministry and its Regional Office.
- 34). The project authorities should inform to the Regional Office regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.
- 35). The project proponent shall submit six monthly reports on the status of the implementation of the stipulated environmental safeguards to the Ministry of Environment, Forest and Climate Change, its Regional Office, Central Pollution Control Board and State Pollution Control Board.
- 36). The Regional Office of this Ministry 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.
- 37). 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.

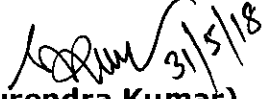
- 38). State Pollution Control Board should display a copy of the clearance letter at the Regional office, District Industry Centre and Collector's office/ Tehsildar's Office for 30 days.
- 39). The project authorities should advertise at least in two local newspapers widely circulated, one of which shall be in the vernacular language of the locality concerned, within 7 days of the issue of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and also at web site of the Ministry of Environment, Forest and Climate Change at [www.environmentclearance.nic.in](http://www.environmentclearance.nic.in) and a copy of the same should be forwarded to the Regional Office.
16. The Ministry or any other competent authority may alter/modify the above conditions or stipulate any further condition in the interest of environment protection.
17. 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 the Environment (Protection) Act, 1986.
18. 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 Rajasthan and any other Court of Law relating to the subject matter.
19. 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.

  
(Surendra Kumar)  
Advisor

**Copy to:**

- 1). **The Secretary**, Ministry of Mines, Government of India, Shastri Bhawan, New Delhi.
- 2). **The Secretary**, Department of Mines & Geology, Government of Rajasthan, Secretariat, Jaipur.
- 3). **The Secretary**, Department of Environment, Government of Rajasthan, Secretariat, Jaipur.
- 4). **The Secretary**, Department of Forests, Government of Rajasthan, Secretariat, Jaipur.
- 5). **The Addl. Principal Chief Conservator of Forests**, Ministry of Environment, Forest and Climate Change, Regional Office (CZ), Kendriya Bhawan, 5<sup>th</sup> Floor, Sector "H", Aliganj, Lucknow-226020.
- 6). **The Chairman**, Central Pollution Control Board, Parivesh Bhawan, CBD-Cum-Office Complex, East Arjun Nagar, New Delhi-110 032.
- 7). **The Chief Wild Life Warden**, Government of Rajasthan, Secretariat, Jaipur
- 8). **The Member Secretary**, Central Ground Water Authority, A-2, W3, Curzon Road Barracks, K.G. Marg, New Delhi-110001.
- 9). **The Chairman**, Rajasthan State Pollution Control Board, 4, Institutional

- area, Jhalana, Doongri, Jaipur.
- 10). **The Controller General**, Indian Bureau of Mines, Indira Bhavan, Civil Lines, Nagpur - 440 001.
  - 11). **The District Collector**, District- **Rajsamand**, State of Rajasthan.
  - 12). **Guard File.**
  - 13). **MoEFCC website.**

  
(Surendra Kumar)  
Advisor