O/C

ज़ावर माइन्स
पिन कोड - 313901
जिला - उदयपुर (राज.)

HINDUSTAN ZINC LIMITED
हिन्दुस्तान जिंक लिमिटेड

Telephone - (0294) 2723400

Zawar Mines
PIN Code – 313901
Dist-Udaipur (Raj.)

HZL/ZM/ENV/2024/383

Date: 15.11.2024

The Deputy Director (S), Scientist - C,
Ministry of Environment, Forest & Climate Change
Integrated Regional Office,
A- 209 & 218, Aranya Bhawan, Jhalana Institutional Area
Jaipur (Rajasthan) - 302004

Sub: – Six monthly Environment Compliance report for Zawar Group of Mines near Village-Zawar, Dist. Udaipur, Rajasthan of M/S Hindustan Zinc Limited

Ref: - Environment Clearance Letter No. – J-11015/259/2012-IA.II (M), dated 05.01.2017 & J-11015/259/2012-IA-II(M), dated 16.10.2020

Sir,

With reference to aforesaid subject and cited reference, please find enclosed six monthly compliance report for the conditions stipulated in the Environment Clearances of Zawar Group of Mines near Village-Zawar, Dist. Udaipur, Rajasthan of M/S Hindustan Zinc Limited for the period from April' 2024 to September' 2024 along with monitoring data report for your kind consideration.'

We trust that the measures taken towards environmental safeguards comply with the stipulated environmental conditions. We look forward to your further guidance which shall certainly help us in our endeavour for further improve upon our Environmental Management Practices.

Thanking You,

For Hindustan Zinc Limited

Yours faithfully,

(Ram Murari)

CEO- IBU Zawar

Hindustan Zinc Ltd

CC:

- Incharge (Zonal Office)
  Central Pollution Control Board,
  3rd Floor, Sahkar Bhawan, North T.T. Nagar, Bhopal – 462003
- Member Secretary,
  Rajasthan State Pollution Control Board,
  4, Institutional Area, Jhalana Doongri, Jaipur -302004 (Raj)
- Regional Officer,
  Rajasthan State Pollution Control Board,
  E-470, Near UCCI Building, Madri Industrial Area, Udaipur-313003 (Raj)
- Office Copy Env Cell

Environment Clearance Letter No. – J-11015/259/2012-IA.II (M), dated 05.01.2017		
S.No.	**SPECIFIC CONDITIONS**	**COMPLIANCE STATUS**
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.	• The directions of the Hon'ble courts shall be adhered to.
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	• Not applicable, as the Jaisamand Wildlife Sanctuary and other protected areas are not falling within the 10 km of aerial distance of mine lease area. Letter certifying the same by DCF-Wildlife is attached as **Annexure-1** • Further, Zawar mine lease boundary is outside the eco sensitive zone of Jaisamand wildlife and sanctuary
3	No mining activities will be allowed in forest area, if any, for which the Forest Clearance is not available.	• We have obtained Forest Diversion/ Clearance for carrying out Mining activities (total forest land: 1537.91 ha which includes diversion of 114.94 ha for surface rights and diversion of 1422.97 ha underground mining). Recent renewal of Forest diversion/ clearance was obtained vide letter no: F.No.8-1/1997-FC dated 23.01.2015
4	The project proponent shall obtain Consent to Operate from the State Pollution Control Board, Rajasthan and effectively implement all the conditions stipulated therein.	• Consent to operate have been obtained from the Rajasthan State Pollution Control Board (RSPCB) vide letter no. • **CTO for Mines:** F(Mines)/Udaipur(Sarada)/53(1)/2016-2017/5003-5007 dated 20/12/2022 valid up to 31.12.2027 • **CTO for Beneficiation Plant:** F(HDF)/Udaipur (Sarada)/1(1)/2020-2021/5368-5370 dated 28/12/2022 valid up to 31.12.2027 • The conditions stipulated therein are being implemented and complied.

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	• CAAQMS have been installed at 3 locations as per wind direction with digital display of data in front of the main gate of the mine site. Also provided pH and turbidity meters.  **DIGITAL DISPLAY**  **CAAQM STATION**  **PH & TURBIDITY METERS** • We are maintaining zero discharge from our operations.

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.	• We are carrying out mining activities through underground mining method. Waste rock generated is backfilled into underground voids. Part of the waste rock are used for stabilizing slopes of tailing storage facilities. • Presently, there is no storage of waste rock on surface. All initial waste dumps have already been vegetated & rehabilitated.  **WASTE DUMP REHABILITATED AND TURNED INTO ROCK GARDEN**
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.	• We are carrying out mining activities through underground mining method. Waste rock generated is backfilled into underground voids. Part of the waste rock are used for stabilizing slopes of tailing storage facilities. • Presently, there is no storage of waste rock on surface. All initial waste dumps have already been vegetated & rehabilitated.
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.	• We are regularly carrying out monitoring and studying invertebrates and aquatic life of water bodies. Study conducted & indicated that there is no adverse impact of mining operation.
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	• We are regularly carrying out the ecological survey of plant species and plantation is carrying out regularly in and around our operation. Study conducted & indicated that there is no adverse impact of mining operation.

	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.	• We conducted Occupational Health study with respect to the pressure impact on Ear drum in the underground working through M/s Sure Safety and no impact was found.
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.	• Blast Vibration monitoring is being done regularly by inhouse team. CIMFR has been engaged for blast vibration monitoring and other controlling measures. • Controlled blasting with major use of electronic detonator
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.	• Water sprinkling is done on haul road in mines on regular basis to arrest fugitive dust if any. • Water sprinklers have been provided at transfer points. • Covered Conveyors have been provided to control fugitive emissions. • Roads at surface are black tarred/ cemented and Mechanised vacuum road sweepers have been deployed to clean roads on the surface to arrest fugitive dust generation.  **Mechanized vacuum road sweepers**

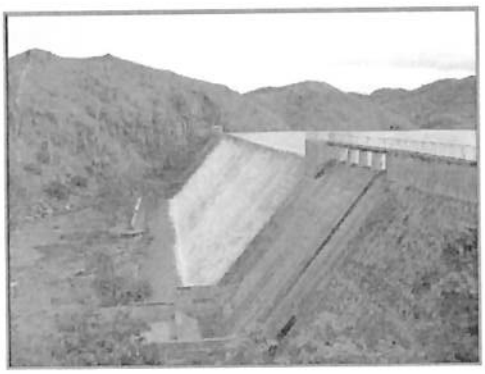
13	The monitoring of PM 2.5 in the vehicle emission shall be conducted to improve the mine environment and report submitted to the Regional Office of the MoEFCC.	• MoEF recognized laboratory are engaged for carrying out environment monitoring. Ambient PM 2.5 monitoring is done at the surface and readings are well within norms.
14	The Project Proponent reported that there are seven Schedule-I species viz. Peafowl *(Pavo cristatus)*, Osprey *(Pandion haliaetus)*, Tawny eagle *(Aquila rapax)*, Crested honey buzzard *(Pernisptilorhynchus)*, Shikra *(Accipiter badius)*, Leopard *(Pantherapardus)*, Indian pangolin *(Manis crassicaudata)* in the study area. The PP shall implement the Conservation Plan and enhance the budget for implementation of Conservation Plan for Schedule I Species and also increase the budget for plantation/green belt development. 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.	• Wild life conservation plan for Schedule-1 for Zawar Mines is approved by Chief Wild Life Warden, Jaipur as per "SOP issued in May 2019". • We have deposited an amount of Rs. 3,69,00,000/- in 2022 through online transaction to the account of "Rajasthan Protected Areas, Conservator society, Udaipur". Details of online transaction done is UTR-2052671107403. Amount deposited for contribution towards conservation of wildlife and administrative cost for processing inspections, etc. • In 2021, contributed 8.8 lacs rupees to forest department towards development cum maintenance of safari park/ golden park and forest nursery. • Site has undertaken various conservation measures for conservation so far: constructed 39 check dams for soil conservation & water recharge and plantation in the lease area. Also, working areas are properly fenced/ boundary in place to avoid any interaction. • In 2023-24, an amount of Rs 100 lac deposited for forest department and plantation work has been done during monsoon in 2024.
15	Proponent shall carry out monitoring of lead in the blood samples of the employees and the villagers in the areas surrounding the mine in their schedule of health check-up. The nearby water bodies shall be monitored every six months and report submitted to Regional office of the MoEFCC to ascertain impact due to lead contamination.	• Third party monitoring of lead in blood of employees and villagers is being done and continued. Monitoring reports indicate that lead level in blood are below the norms. Details enclosed in **Annexure 5** • Monitoring of nearby water bodies is conducted as part of post project monitoring and monitored data enclosed.
16	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.	• We have taken appropriate actions for the issues raised during public hearing. Detailed are enclosed as **Annexure 8**.
17	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.	• Blast Vibration monitoring is being done regularly by inhouse team. CIMFR has been engaged for blast vibration monitoring and other controlling measures. • Controlled blasting with major use of electronic detonator
18	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	• Analysis done for Mine dewatering and there is absence of any radioactive elements. (Monitoring report enclosed as **Annexure 6**.

	adverse impact of Radon and its daughter products on any worker should be included in the Occupational Health Monitoring Programme.	

Environment Clearance Letter No. – J-11015/259/2012-IA.II (M), dated 05.01.2017		
S.No.	**STANDARD CONDITIONS**	**COMPLIANCE STATUS**
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.	• Presently, mine is in operation stage. This point is noted for future adherence and compliance.
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.	• Complied. Mining is carried out as per Mine plan duly approved by IMB vide letter no. 584(4)(3)(1868)/2021- क्षेखानि अजम dated 15/07/2021
3	No change in the calendar plan including excavation, quantum of mineral and waste should be made.	• Calendar plan, as per approved mine plan, is being adhered to.
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.	• Water is drawn from Captive Tidi Dam with permission of Water Resources department, Govt. of Rajasthan vide agreement dated 17.09.1976 and amended time to time.
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).	• Mining is being carried out as per the Mining Plan duly approved by IBM vide letter no. 584(4)(3)(1868)/2021- क्षेखानि अजम dated 15/07/2021 and as per the guidelines of 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.	• Noted and Complied.
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.	• Digital processing of the entire lease area using remote sensing technique is being carried out regularly once in three years • Recent study done in August 2024, copy of the same enclosed herewith.
8	The critical parameters as per the Notification 2009 such as PM10, PM2.5, NOx and SOx 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	• Monitoring is being done for ambient air quality and effluent and monitored data are enclosed herewith. • Display board has been placed near main gate. • Required details is uploaded on company website https://www.hzlindia.com/ at Sustainability section > Environment compliance > Zawar Mines

	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 PM10 and PM2.5 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	• Water sprinkling is carried out at loading, unloading and transfer points. • Closed Conveyors are provided to control fugitive emissions. • Regular water sprinkling is done at haul roads underground. • Roads are regularly cleaned via mechanized vaccum sweeper to control fugitive dust. • Ambient Air Monitoring is being carried out fortnightly at 8 stations and are within limits. • Detailed reports are enclosed as **Annexure - 2.**
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.	• Ground water level and quality is being monthly monitored through network of piezometers & wells in and around mine area. • 6 Piezometers have been provided around tailing dam. • Monitoring reports are being submitted to MoEF, IRO, Jaipur and CPCB, Bhopal on six monthly basis as part of 6 monthly compliance of EC and to Central Ground Water Authority. • No natural water course and/or water resources have been obstructed due to any mining operations. • Detailed reports are enclosed as **Annexure-3**
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 well located in village should be incorporated to ascertain the impact of mining over ground water table.	• The natural water bodies and or streams which are flowing in an around the village, are not being disturbed. There are no perennial nallah in the and around the lease. • Entire fresh water requirement is sourced from a captive surface water source i.e Tidi dam. No ground water is extracted for industrial use except for the ground water intersection due to mining. • Pre-mining ground water table is not available as modern mining is going on in the area since 1950. Ground water recharge structures are being constructed for ground water recharge. • Ground water level and quality is being regularly monitored through network of piezometers & key wells in and around mine area. • Detailed reports are enclosed as **Annexure-3**
12	Regular monitoring of water quality upstream and downstream of water	• Ground water level and quality is being regularly monitored through network of piezometers & key wells

	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.	in and around mine area. • Monitoring reports are being submitted to MoEF, IRO, Jaipur and CPCB, Bhopal on six monthly basis as part of 6 monthly compliance of EC and to Central Ground Water Authority. • Detailed reports are enclosed as **Annexure-3**
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.	• Road used for transportation of ore does not pass through any village
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.	• Mining being underground, there is no such impact. • Also, nearby villages are far away from the surface infrastructures in the core zone. • Noise level monitored are well within the limit.
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.	• Being underground mines, main haulage roads are underground. • Water sprinkling is carried out to suppress fugitive dust on haul roads • All the roads used for ore transportation are tarred/ cemented.

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.	• There are no artificial gullies in the mine lease because of absence of surface waste dump.
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.	• The captive Tidi dam with a capacity of 8.5 mcm constructed by HZL is a major rainwater harvesting measure form which the water is sourced for the project. • We have constructed 39 rainwater harvesting around all mines.  **TIDI DAM**  **Checkdam**  **Checkdam**
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.	• We are carrying out mining activities through underground mining method. Waste rock generated is backfilled in to underground voids. Part of the waste rock are used for stabilizing slopes of tailing storage facilities.

		• Presently, there is no storage of waste rock on surface. All initial waste dumps have already been vegetated & rehabilitated.
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.	• All the initial waste dumps have been reclaimed and became ecologically sustainable. • No fresh waste dumps in the mine lease.
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 8m and width 20 m and overall slope of the dumps shall be maintained to 45°. The OB dumps should be scientifically vegetated with suitable native species to prevent erosion and surface run off. In critical areas, use of geo textiles shall be undertaken for stabilization of the dump. The entire excavated area shall be backfilled and afforested. Monitoring and management of rehabilitated areas should continue until the vegetation becomes self-sustaining. Compliance status shall be submitted to the Ministry of Environment, Forest and Climate Change and its Regional Office on six monthly basis.	• The project is expansion of an underground mine and beneficiation plant within existing area. Thus, no top soil is generated. • We are carrying out mining activities through underground mining method. Waste rock generated is backfilled in to underground voids. Part of the waste rock are used for stabilizing slopes of tailing storage facilities. • Presently, there is no storage of waste rock on surface. All initial waste dumps have already been vegetated & rehabilitated. • Compliance reports are submitted to MoEF, IRO Jaipur and CPCB, Bhopal 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	• The waste generated from the mine development work is dumped in the voids created due to stopping. Part of the waste rock is utilized for covering slope of tailing storage facility. • Being underground mine, there is no generation of overburden and hence OB dumps are there. • Drains are maintained at required places like around tailing storage facilities, inside beneficiation plants. The drains are cleaned and maintained on regular basis. • The concentrate from the beneficiation plant is accommodated in concentrate stockpile yards having covered sheds and is secured by stone masonry walls of appropriate height. • Concentrate from the stockpile yard is directly loaded into trucks mechanically/ manually for end use at

	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.	captive smelter.
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.	• Till date, plantation has been done in 170.85 ha in including rehabilitated areas, around beneficiation plant, on matured tailing dam, roads and social a forestry. • Apart from this, we have carried out plantation in Plantation in nearby forest area through forest department in 75 ha in RDF 1 & RDF 2 during FY 2019-20 and 75 ha in RDF 1 & RDF 2 during FY 2021-22. We have further deposited 35 lacs in May 2022 to forest department for carrying out plantation work. • This year, we have planted 21000 nos. of plantation.
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.	• There is no adverse impact on the habitations as our mining activities are underground and suitable measures have been taken wrt environment management.
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	• No grazing land has been acquired as part of operations.

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<tr><td></td><td>such trees should be promoted.</td><td></td></tr>
<tr><td>25</td><td>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.</td><td>• Wild life conservation plan for Schedule-1 for Zawar Mines is approved by Chief Wild Life Warden, Jaipur as per "SOP issued in May 2019".
• We have deposited an amount of Rs. 3,69,00,000/- in 2022 through online transaction to the account of "Rajasthan Protected Areas, Conservator society, Udaipur". Details of online transaction done is UTR-2052671107403. Amount deposited for contribution towards conservation of wildlife and administrative cost for processing inspections, etc.
• In 2021, contributed 8.8 lacs rupees to forest department towards development cum maintenance of safari park/ golden park and forest nursery.
• Site has undertaken various conservation measures for conservation so far: constructed 39 check dams for soil conservation & water recharge and plantation in the lease area. Also, working areas are properly fenced/ boundary in place to avoid any interaction.
• In 2023-24, an amount of Rs 100 lac deposited for forest department and plantation work has been done during monsoon in 2024.</td></tr>
<tr><td>26</td><td>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.</td><td>• CSR expenditure is being done for the Socio Economic Development of the neighborhood based on the Need based door to door survey by established Social Institutes/Workers.
<table><tr><td>Sakhi & Samadhan</td><td>Shiksha Sambal</td><td>Medical Camps</td><td>Coaching Classes</td></tr></table></td></tr>
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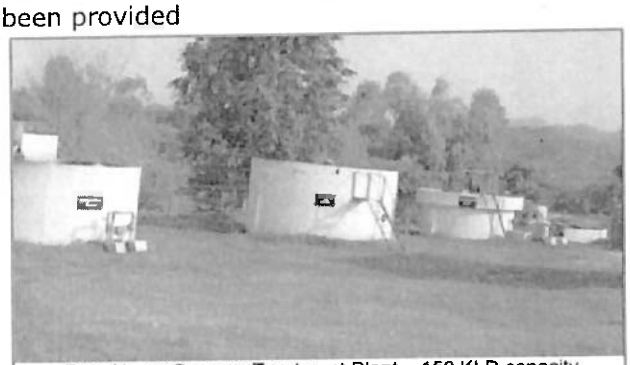
		5071 women connected though 394 SHGs, 32 VOs and 1 federation under Sakhi project. Farmer Producer Organization with 1200+ shareholders were operational at since more than 2 years, they also conducted AGM with distribution of shareholders Namkeen Unit is operational with 7 Production Sakhis and 13 Business Sakhis into manufacturing of more than 7 types of namkeen as well as selling them through 4 channels: General Trade, Modern Trade, Rural Trade and e-commerce. More than 500 sakhi marts are operational in the operational villages who have taken individual loans to set	Shiksha Sambal Project is running in 10 Secondary and Sr. Secondary Schools at Zawar for Improving board results with special focus on Science, English and Mathematics. 3 learning camps are organized annually: Summer, Diwali and Winter camps, which were focused on increasing the board results and it was attended by more than 300 students, along with participation of 20+ volunteers	Medical Camps are conducted in the interior hamlets of our operational villages. So far 12 medical camps with 300+ beneficiaries were conducted. Specific camps such as Anaemia camp for girls (70+), Cancer screening camp (150+) and Organ Donation Camp (400+) were also conducted.	We have completed 3 month long coaching classes for the youth of our nearby villages. This was done with the help from our implementation Partner Anushka Academy. More than 70 students attended the sessions regularly and they shall be appearing for the upcoming Govt exams for Patwari, Tehsil level positions etc. Commencing Computer Coaching classes for the youth with different focused classes on accounting softwares. It is benefiting around 40 youth in one batch from our nearby villages.

		up their own entrepreneurial ventures.
27	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, creche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.	• There are no construction labor residing in the site.
28	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	• Following noise control measures have been taken: o Specifying permissible noise level limit for equipment below 85 dB(A) o Acoustic enclosures with insertion loss of at least 25 dB(A) o Suitable evasee at the outlet of ventilation fans o Plantation for attenuation of noise • Employees are provided with ear plugs / muffs with proper training and awareness for its usage • Monitoring results are attached as **Annexure – 4.**

29	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 l9th May, 1993 and 3lst December, 1993 or as amended from time to time. Oil and grease trap should be installed before discharge of workshop effluents.	• Oil and grease trap is provided at workshop and water is reused for alternate uses. Zero discharge is being maintained. • Sewage is treated and reused for plantation and dust suppression. • Two STP's with combined capacity of 450 KLD have been provided  Ram Nagar Sewage Treatment Plant – 150 KLD capacity 
30	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.	• Personnel Protective Equipments (PPEs) are provided to the workers. • Initial and refreshers training are also provided covering safety and occupational health aspects. Regular safety interactions are also carried out.
31	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.	• There is a separate Environment Management cell with qualified environmental professionals headed by AGM-Environment under the direct control of CEO- IBU Zawar and Corporate HSE.
32	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.	• Being complied regularly. • Year wise expenditure are reported to MoEF, Integrated Regional Office, Jaipur. Expenses during **Apr'24 to Sep'24** is **Rs. 165.025 Lakhs.**
33	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.	• Project is expansion of existing underground mines, no land development is required.
34	The project proponent shall submit six monthly reports on the status of the implementation of the stipulated environmental safeguards to the Ministry of	• Six monthly reports are being submitted on regular basis for the EC.

	Environment, Forest and Climate Change, its Regional Office, Central Pollution Control Board and State Pollution Control Board.	
35	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.	• Noted and complied.
36	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.	• No suggestion / representation has been received from any Panchayat / local NGO.
37	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.	• Copies of Environment Clearance have been submitted to RSPCB Regional Office, District Industry Centre and Collector's office/ Tehsildar's Office
38	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 and a copy of the same should be forwarded to the Regional Office.	• It was advertised in Rajasthan Patrika and Dainik Bhaskar. • Advertisements are attached as **Annexure-7.**

Environment Clearance Letter No. – J-11015/259/2012-IA-II(M), dated 16.10.2020		
S.No.	**Specific Conditions**	**Compliance Status**
(a)	Gap plantation shall be carried in consultation with State Forest Department in the total Mining lease area where the surface rights were not acquired. These plantations shall be maintained and monitoring to be done to achieve the survival rate of 90%.	Deposited Rs 100 lacs to state forest department in FY 2020-21 and carried out plantation in 25 ha and 50 ha under RDF-1 & 2 scheme of forest department. A part from this, carried out 2500 nos. of plantation at tailing storage facility and 1000 nos. as gap plantation in mine area. Also, carried out 6000 nos. of plantation in 2023-24. This year we have planted 21000 numbers of plantation.
(b)	The conversation plan for Schedule-I species reported in the study are namely. 1 reptilian (Bengal Monitor Lizard), 3 avifaunal (Osprey, Indian Peafowl and White rumped Vulture), 2 mammalians (Indian Pangolin and Indian Leopard) and 1 butterfly (Crimson Rose) should be prepared and implemented in consultation with State Forest Department including the recommendations of the Chief Wildlife Warden.	• Wild life conservation plan for Schedule-1 for Zawar Mines is approved by Chief Wild Life Warden, Jaipur as per "SOP issued in May 2019". • We have deposited an amount of Rs. 3,69,00,000/- in 2022 through online transaction to the account of "Rajasthan Protected Areas, Conservator society, Udaipur". Details of online transaction done is UTR-2052671107403. Amount deposited for ccontribution towards conservation of wildlife and administrative cost for processing inspections, etc. • In 2021, contributed 8.8 lacs rupees to forest department towards development cum maintenance of safari park/ golden park and forest nursery. • Site has undertaken various conservation measures for conservation so far: constructed 39 check dams for soil conservation & water recharge and plantation in the lease area. Also, working areas are properly fenced/ boundary in place to avoid any interaction. • In 2023-24, an amount of Rs 100 lac deposited for forest department and plantation work has been done during monsoon in 2024.
(c)	As proposed no additional water shall be used for the proposed expansion. The requirement shall e met from the existing daily water demand of 14,000 KLD, out of which 2,400 KLD water is used for mining purpose, 8,600 KLD for beneficiation plant and 3,000 KLD for domestic use which is drawn from Tidi Dam through pipeline.	Total water requirement for Mines, beneficiation and domestic purposes is kept below the 14,000 cum/ day/. Source of fresh water is Tidi dam (surface water).
(d)	The project proponent should obtain the NOC from the CGWA regarding the intersection of workings with the groundwater table.	NOC for ground water intersection from CGWA for all the four operating mines i.e. Mochia Mines, Balaria Mine, Baroi Mine and Zawarmala mine are in place.
(e)	Mist spraying arrangements shall be provided to suppress the dust emission at the loading, crushing and transfer points. The effective water spraying arrangements shall be made at the tailing dam to control the air borne dust.	We have provided suitable water spraying arrangement for water spraying to arrest fugitive dust generation. Also, moisture is maintained in ore while loading and crushing. Water is sprinkled in the tailing storage facility on regular basis.

(f)	The project proponent should implement all the additional measures that are proposed in the present application.	Noted and complied.

ANNEXURE-1

Office of The Deputy Conservator of Forests Wildlife Udaipur

Sajjangarh, Udaipur Post Box No.161, Phone No.0294&2800009
Email ID -dcfwludz@gmail.com

F.9(10) Survey/DCFWL/ Udr/2016-17/ 11715 Date : 29/11/16

TO,

V.Jayaraman
VP & Head - EOHS
Hindustan Zinc Limited
Yashad Bhawan, Udaipur

Sub : Issue of certification regarding Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Tiger/ Elephant Reserves (exiting as well as proposed), if any within 10 km of the Zawar mine lease.

Ref: Hindustan zinc Limited, Udaipur Letter No. Nil Date:24.11.2016

Dear sir,

With reference to the above mentioned subject certified G.T.Sheet & details of GPS Co-ordinates of two blocks submitted by you is verified by Forest Range Officer Jaisamand based on his factual report by vide letter no. 602 dated 29.11.2016 saying that no National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Tiger/Elephant Reserves & Jaisamand wildlife Sanctuary within 10 km of submitted Zawar mine lease area.

Hence this is certified that Jaisamand Wildlife Sanctuary & other P.A.'s mentioned above are not falling in 10 km of aerial distance of mine lease area.

Encl. : Certified G.T.Sheet

Sincerely

(Dr.T.Mohanraj)
Deputy Conservator of Forests
Wildlife Udaipur

F.9(10) Survey/DCFWL/ Udr/2016-17/ Date :

Copy to

1 Deputy Conservator of Forests, Udaipur
2 Forest Range Officer, Wildlife Jaisamand

-Sd-

(Dr.T.Mohanraj)
Deputy Conservator of Forests
Wildlife Udaipur

ANNEXURE – 2

AIR MONITORING AT ZAWAR GROUP OF MINES								
STACK MONITORING (All units are in mg/Nm3)								
Sampling Points	Parameters	Prescribed Limits	**Apr- 24**	**May-24**	**Jun-24**	**Jul - 24**	**Aug-24**	**Sep-24**
Mochia Crusher Stack	SPM	150	27.4	28.5	26.4	28.6	27.7	27.2
Balaria Crusher Stack	SPM	150	26.3	27.9	26.5	26.7	26.5	27.5
DE - 2 (Mill 2)	SPM	150	25	29.5	27.7	29	26	28.7
DG Set 6 MW	SPM	75	-	-	46.4	-	-	48.9
	NOX (as NO2) (At 15% O2, dry basis in ppm)	710	-	-	560	-	-	590
	CO	150	-	-	116.3	-	-	104.1
	NMHC (as C)	100	-	-	68.2	-	-	57.8

AMBIENT AIR QUALITY MONITORING (All units are in µg/m3)							
Apr -24							
S.No.	STATIONS	PM_{10}	$PM_{2.5}$	SO_2	NO_X	CO	Pb
1	Mill Office	63.9	38	8.4	13.7	802	0.17
2	Mochia Mine	60.3	35.7	7.2	12.5	687	0.16
3	Balaria Mine	56.9	34.4	7	10.8	687	0.12
4	Administrative Block	69.4	41.3	8.8	15.2	1031	0.29
5	Zawar Mala Mine	62.3	37.9	7.6	12.8	802	0.24
6	Baroi Mine	58.7	34	7.2	10.5	687	0.15
Prescribed Limits		**100**	**60**	**80**	**80**	**2000**	**1**

May -24							
S.No.	STATIONS	PM_{10}	$PM_{2.5}$	SO_2	NOx	CO	Pb
1	Mill Office	71.2	41.9	8.4	14.9	1031	0.29
2	Mochia Mine	60.4	36.1	7.6	11.5	916	0.20
3	Balaria Mine	59.8	35.7	6.8	10.3	687	0.11
4	Administrative Block	70.7	41.6	9.5	16.1	1031	0.36
5	Zawar Mala Mine	66.1	39.5	8.5	14.7	1031	0.27
6	Baroi Mine	63.5	37.5	7.4	12.6	687	0.23
Prescribed Limits		**100**	**60**	**80**	**80**	**2000**	**1**

Jun -24							
S.No.	STATIONS	PM_{10}	$PM_{2.5}$	SO_2	NOx	CO	Pb
1	Mill Office	64.5	38	7.8	13	916	0.20
2	Mochia Mine	57.9	39.2	7.2	10.6	802	0.15
3	Balaria Mine	56.1	34.5	7.2	9.6	573	<0.1
4	Administrative Block	68.4	40.9	10.2	17.6	1145	0.33
5	Zawar Mala Mine	58.3	34.6	7.4	12	802	0.16
6	Baroi Mine	61	36.7	7.1	11.3	802	0.18
Prescribed Limits		**100**	**60**	**80**	**80**	**2000**	**1**

AMBIENT AIR QUALITY MONITORING (All units are in µg/m3)							
Jul -24							
S.No.	STATIONS	PM_{10}	$PM_{2.5}$	SO_2	NOx	CO	Pb
1	Mill Office	58.4	34.2	6.6	10.3	687	0.13
2	Mochia Mine	51.2	31	6.2	9.5	687	0.12
3	Balaria Mine	46.2	28.5	6	8.6	458	<0.1
4	Administrative Block	62	47.1	7.3	10.5	802	0.15
5	Zawar Mala Mine	50.9	31	6.3	9.1	573	0.12
6	Baroi Mine	62	37.2	7.9	12	916	0.19
Prescribed Limits		**100**	**60**	**80**	**80**	**2000**	**1**

Aug -24							
S.No.	STATIONS	PM_{10}	$PM_{2.5}$	SO_2	NOx	CO	Pb
1	Mill Office	64.7	38.1	7.3	12.9	916	0.20
2	Mochia Mine	58	34.9	7	10.4	802	0.15
3	Balaria Mine	56.2	34	7	11	802	0.13
4	Administrative Block	64.1	38.5	8.3	14.6	916	0.27
5	Zawar Mala Mine	60.7	35.8	7.9	12.4	802	0.16
6	Baroi Mine	60	35.7	7	11	802	0.16
Prescribed Limits		**100**	**60**	**80**	**80**	**2000**	**1**

Sep -24							
S.No.	STATIONS	PM_{10}	$PM_{2.5}$	SO_2	NOx	CO	Pb
1	Mill Office	68.2	40.6	8.5	13.7	1031	0.23
2	Mochia Mine	55.6	33.1	7.8	12	916	0.18
3	Balaria Mine	54.6	32.9	6.8	10.5	687	0.12
4	Administrative Block	70.5	42	8.9	16.2	1031	0.30
5	Zawar Mala Mine	58.4	34.6	7.5	10.7	687	0.13
6	Baroi Mine	65.2	39	7.6	12	916	0.19
Prescribed Limits		**100**	**60**	**80**	**80**	**2000**	**1**

ANNEXURE – 3

Ground Water Quality at Zawar Group of Mines								
May-24								
S.No.	Parameters	IS : 10500:2012		Zawarmata Hand pump	Zawarmata Well	Naka Well	Mahadev ki Nal Well	Tiger Well
		Acceptable	Permissible					
1	pH	6.5-8.5	No Relaxation	7.92	7.76	7.97	7.08	7.77
2	Chlorides	250	1000	67.98	83.97	51.98	67.98	77.98
3	TSS	-	-	<5	<5	<5	<5	<5
4	Zinc	5	15	0.05	0.06	0.02	0.15	0.03
5	Lead	0.01	No Relaxation	<0.01	<0.01	<0.01	<0.01	<0.01
6	Iron	1.0	No Relaxation	0.03	0.04	0.02	0.06	0.04
7	Copper	0.05	1.5	<0.01	<0.01	<0.01	<0.01	<0.01
8	Cadmium	0.003	No Relaxation	<0.003	<0.003	<0.003	<0.003	<0.003
9	Cyanides	0.05	No Relaxation	<0.01	<0.01	<0.01	<0.01	<0.01
10	Nickel	0.02	No Relaxation	<0.01	<0.01	<0.01	<0.01	<0.01
11	Cobalt	-	-	<0.01	<0.01	<0.01	<0.01	<0.01
12	Chromium	0.05	No Relaxation	<0.01	<0.01	<0.01	<0.01	<0.01
13	Total Organic Carbon	-	-	0.8	1.0	0.5	1.3	1.0
Except pH all values are in mg/lt.								

Ground Water Quality at Zawar Group of Mines

Aug-24

S.No.	Parameters	IS : 10500:2012		Zawarmata Hand pump	Zawarmata Well	Naka Well	Mahadev ki Nal Well	Tiger Well
		Acceptable	Permissible					
1	pH	6.5-8.5	No Relaxation	7.76	7.92	8.05	7.67	7.92
2	Chlorides	250	1000	59.98	85.97	63.98	69.98	65.98
3	TSS	-	-	<5	<5	<5	<5	<5
4	Zinc	5	15	0.04	0.04	0.02	0.12	0.02
5	Lead	0.01	No Relaxation	<0.01	<0.01	<0.01	<0.01	<0.01
6	Iron	1.0	No Relaxation	0.03	0.03	0.03	0.05	0.03
7	Copper	0.05	1.5	<0.01	<0.01	<0.01	<0.01	<0.01
8	Cadmium	0.003	No Relaxation	<0.003	<0.003	<0.003	<0.003	<0.003
9	Cyanides	0.05	No Relaxation	<0.01	<0.01	<0.01	<0.01	<0.01
10	Nickel	0.02	No Relaxation	<0.01	<0.01	<0.01	<0.01	<0.01
11	Cobalt	-	-	<0.01	<0.01	<0.01	<0.01	<0.01
12	Chromium	0.05	No Relaxation	<0.01	<0.01	<0.01	<0.01	<0.01
13	Total Organic Carbon	-	-	0.6	0.8	<0.5	0.9	0.8

Except pH all values are in mg/lt.

Piezometer Well Water Quality at Zawar Group of Mines									
Jun-24									
S.No.	Parameters	IS : 10500:2012		Near Bridge Vala Patel House (Pz – 01)	Near In front of Old Tailing Dam (Pz -02)	Near Tailing Dam Pump House (Pz – 03)	Near Magazine Area (Pz -04)	Near Below Tailing Pipe Lines (Pz –05)	Near Way to Tailing Dam Road (Pz –06)
		Acceptable	Permissible						
1	pH	6.5-8.5	No Relaxation	7.63	7.64	7.15	7.05	7.46	7.26
2	Chlorides	250	1000	53.98	65.98	107.97	53.98	49.98	57.98
3	Zinc	5	15	0.09	0.14	0.07	0.10	0.03	<0.01
4	Lead	0.01	No Relaxation	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
5	Iron	1.0	No Relaxation	0.03	0.04	0.07	0.04	0.10	0.04
6	Copper	0.05	1.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
7	Cadmium	0.003	No Relaxation	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
8	Nickel	0.02	No Relaxation	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
9	Chromium	0.05	No Relaxation	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
10	Cyanide	0.05	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
11	Cobalt	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
12	Total Organic Carbon	-	-	1.3	1.9	2.7	2.7	0.5	2.2
Except pH all values are in mg/lt									

Piezometer Well Water Quality at Zawar Group of Mines

Sep-24

S.No.	Parameters	IS : 10500:2012		Near Bridge Vala Patel House (Pz – 01)	Near In front of Old Tailing Dam (Pz –02)	Near Tailing Dam Pump House (Pz – 03)	Near Magazine Area (Pz -04)	Near Below Tailing Pipe Lines (Pz –05)	Near Way to Tailing Dam Road (Pz –06)
		Acceptable	Permissible						
1	pH	6.5-8.5	No Relaxation	7.58	7.22	7.33	7.27	7.91	7.44
2	Chlorides	250	1000	53.98	71.98	189.94	59.98	39.98	33.99
3	Zinc	5	15	0.13	0.17	0.11	0.12	0.04	0.03
4	Lead	0.01	No Relaxation	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
5	Iron	1.0	No Relaxation	0.04	0.04	0.08	0.04	0.03	0.03
6	Copper	0.05	1.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
7	Cadmium	0.003	No Relaxation	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
8	Nickel	0.02	No Relaxation	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
9	Chromium	0.05	No Relaxation	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
10	Cyanide	0.05	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
11	Cobalt	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
12	Total Organic Carbon	-	-	2.2	2.5	3.3	3.0	0.6	2.0

Except pH all values are in mg/lt

Tidi Upstream and Downstream Water Quality at Zawar Group of Mines

May-24 (Except pH all values are in mg/lt)					
S. No.	Parameters	IS : 10500:2012		Tidi Upstream	Tidi Downstream
		Acceptable	Permissible		
1	pH	6.5-8.5	No Relaxation	7.67	7.75
2	Chlorides	250	1000	73.98	77.97
3	TSS	-	-	11	13
4	Zinc	5	15	0.17	0.20
5	Lead	0.01	No Relaxation	<0.01	<0.01
6	Iron	0.3	No Relaxation	0.03	0.03
7	Copper	0.05	1.5	<0.01	<0.01
8	Cadmium	0.003	No Relaxation	<0.003	<0.003
9	Cyanides	0.05	No Relaxation	<0.01	<0.01
10	Nickel	0.02	No Relaxation	<0.01	<0.01
11	Cobalt	-	-	<0.01	<0.01
12	Chromium	0.05	No Relaxation	<0.01	<0.01
13	Sulphate	200	400	24.76	35.47

August-24 (Except pH all values are in mg/lt)					
S. No.	Parameters	IS : 10500:2012		Tidi Upstream	Tidi Downstream
		Acceptable	Permissible		
1	pH	6.5-8.5	No Relaxation	7.63	7.57
2	Chlorides	250	1000	63.98	63.98
3	TSS	-	-	15	13
4	Zinc	5	15	0.12	0.10
5	Lead	0.01	No Relaxation	<0.01	<0.01
6	Iron	0.3	No Relaxation	0.02	0.03
7	Copper	0.05	1.5	<0.01	<0.01
8	Cadmium	0.003	No Relaxation	<0.003	<0.003
9	Cyanides	0.05	No Relaxation	<0.01	<0.01
10	Nickel	0.02	No Relaxation	<0.01	<0.01
11	Cobalt	-	-	<0.01	<0.01
12	Chromium	0.05	No Relaxation	<0.01	<0.01
13	Sulphate	200	400	24.50	19.21

Ground Water Level Monitoring at Zawar Group of Mines

S.No.	Piezometers	Apr – 24 (m)	May -24 (m)	Jun-24 (m)	Jul–24 (m)	Aug-24 (m)	Sep-24 (m)
1.	Near Bridge (Vala Patel House) (Pz – 01)	1.88	2.21	3.42	4.09	1.30	1.05
2.	Near In front of Old Tailing Dam (Pz – 02)	5.76	5.86	5.96	6.40	3.50	3.25
3.	Near Tailing Dam Pump House(Pz – 03)	3.04	3.21	3.39	4.08	2.05	2.02
4.	Near Magazine Area(Pz – 04)	4.96	5.14	5.27	5.87	3.63	3.45
5.	Near Below Tailing Pipe Lines(Pz – 05)	2.78	3.19	3.34	4.05	2.35	2.25
6.	Near Way to Tailing Dam Road(Pz – 06)	2.71	2.93	3.16	3.75	2.12	2.05

S.No.	Wells in the area	Apr – 24 (m)	May - 24 (m)	Jun -24 (m)	Jul – 24 (m)	Aug -24 (m)	Sep -24 (m)
1.	Zawarmata Well	5.81	7.01	7.38	2.01	1.79	1.65
2.	Mahadev ki Nal Well	1.62	1.98	2.26	0.59	0.42	0.41

DETAILS OF QUARTERLY STP ANALYSIS REPORT

S.No.	Parameters	Standard	Ashok Nagar			Ram Nagar		
			Apr - 24	May -24	Jun-24	Apr - 24	May -24	Jun-24
1	Total Suspended Solids	Not to exceed 100 mg/l	11	8	6	13	7	5
2	pH Value	Between 5.5 to 9.0	7.29	7.40	7.23	7.72	7.53	7.40
3	Oil and Grease	Not to exceed 10 mg/l	<5	<5	<5	<5	<5	<5
4	Total Residual Chlorine	Not to exceed 1.0 mg/l	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
5	Ammonical Nitrogen (as N)	Not to exceed 50 mg/l	5.2	<5	<5	6.8	<5	<5
6	Total Kjeldahl Nitrogen (as N)	Not to exceed 100 mg/l	6.7	6.3	5.8	12.7	5.8	7.2
7	Biochemical Oxygen Demand (3 days at 27°C)	Not to exceed 30 mg/l	10	9	7	13	7	8
8	Sulphide (as S)	Not to exceed 2.0 mg/l	<0.5	<.5	<.5	<.5	<.5	<.5
9	Nitrate Nitrogen	Not to exceed 10 mg/l	3.3	3.6	4.2	3.7	3.9	5.4
10	Chlorides	Not to exceed 1000 mg/l	113.9	119.9	149.9	133.9	165.9	159.9
11	Sulphates	Not to exceed 1000 mg/l	340.5	296.4	210.5	482	394.7	296.4
12	Chemical Oxygen Demand	Not to exceed 250 mg/l	88	45	40	119	38	43

DETAILS OF QUARTERLY STP ANALYSIS REPORT

S.No.	Parameters	Standard	Ashok Nagar			Ram Nagar		
			Jul - 24	Aug -24	Sep-24	Jul - 24	Aug -24	Sep-24
1	Total Suspended Solids	Not to exceed 100 mg/l	8	7	8	9	8	5
2	pH Value	Between 5.5 to 9.0	7.40	7.34	7.15	7.55	7.12	7.27
3	Oil and Grease	Not to exceed 10 mg/l	<5	<5	<5	<5	<5	<5
4	Total Residual Chlorine	Not to exceed 1.0 mg/l	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
5	Ammonical Nitrogen (as N)	Not to exceed 50 mg/l	<5	<5	<5	<5	<5	<5
6	Total Kjeldahl Nitrogen (as N)	Not to exceed 100 mg/l	6.1	5.6	5.2	6.6	8.2	5.8
7	Biochemical Oxygen Demand (3 days at 27°C)	Not to exceed 30 mg/l	6	8	9	9	8	6
8	Sulphide (as S)	Not to exceed 2.0 mg/l	<0.5	<.5	<.5	<.5	<.5	<.5
9	Nitrate Nitrogen	Not to exceed 10 mg/l	4.4	4.2	4.8	4.7	4.4	4
10	Chlorides	Not to exceed 1000 mg/l	99.9	125.9	119.9	129.9	147.9	129.9
11	Sulphates	Not to exceed 1000 mg/l	192.7	263.5	189.6	180.7	288.7	210.3
12	Chemical Oxygen Demand	Not to exceed 250 mg/l	30	40	47	47	43	40

Tailing Dam Reclaim Water (Except pH all values are in mg/lt.)								
S.No	**Parameters**	**Standard**	**Apr - 24**	**May -24**	**Jun-24**	**Jul - 24**	**Aug -24**	**Sep-24**
1	pH	5.5-9.0	7.29	7.49	7.80	7.18	7.70	7.74
2	Chlorides	-	359.89	319.90	53.98	63.98	81.97	97.97
3	TSS	100	12	12	10	15	16	15
4	Oil and Grease	10	<5	<5	<5	<5	<5	<5
5	BOD 3 days at 27°C	30	10.6	10.5	3.6	4.5	9.7	4.2
6	COD	250	63.2	63.1	13.4	16.7	55.2	18.6
7	Zinc	5	1.20	1.09	0.25	0.32	1.15	0.16
8	Lead	0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
9	Iron	3	0.12	0.12	0.03	0.04	0.12	0.02
10	Copper	3	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
11	Cadmium	2	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
12	Cyanides	0.2	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
13	Nickel	3	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
14	Cobalt	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
15	Chromium	2	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

ANNEXURE – 4

AMBIENT NOISE MONITORING AT ZAWAR GROUP OF MINES [in dB (A)]		
Stations/Month	**Jun-24**	
	Day	**Night**
Mill Office	66.4	54.7
Central Mochia Mine	57.2	50.4
Balaria Mine	59.6	51
Administrative Block	65	49.3
Zawar Mala Mine	60.7	52
North Baroi Mine	60.4	49.5
Hydrofill Plant	63.3	51.8
Dry Tailing Plant	66	52.1
Hospital	57.6	48.7
Ramnagar Colony	51.5	43.8
West Mochia Mine	57.2	50.4
Central Baroi Mine	63.6	54.3
Permissible Limit	**75 dB (A)**	**65 dB (A)**

AMBIENT NOISE MONITORING AT ZAWAR GROUP OF MINES [in dB (A)]		
Stations/Month	**Sep-24**	
	Day	**Night**
Mill Office	67.2	56
Central Mochia Mine	60.6	52
Balaria Mine	57.3	48.1
Administrative Block	67.3	52.9
Zawar Mala Mine	63.6	54.1
North Baroi Mine	58.5	47.2
Hydrofill Plant	61.2	52.4
Dry Tailing Plant	64.7	50.5
Hospital	60.5	45.3
Ramnagar Colony	52.2	43.4
West Mochia Mine	63	53.1
Central Baroi Mine	65	56.7
Permissible Limit	**75 dB (A)**	**65 dB (A)**

ANNEXURE-5

Sno	NAME	AGE	GENDER	UNIT/MINES	Date	Lead (µg/l)
1	ASHISH PRAJAPATI	22	M	Balaria	16 Feb 2024	87.13
2	RAPETI SIVAKESH	22	M	Balaria	16 Feb 2024	105.03
3	SHAYON ROY	23	M	Balaria	16 Feb 2024	74.72
4	NARAYAN LAL KALAL	36	M	Balaria	17 Feb 2024	54.38
5	PRAKASH CHANDRA MEENA	28	M	Balaria	16 Feb 2024	24.91
6	SURAJ MAL	28	M	Balaria	16 Feb 2024	36.33
7	KHEMRAJ KALASUA	33	M	Balaria	16 Feb 2024	54.82
8	SHIV LAL	44	M	Balaria	16 Feb 2024	50.43
9	MUKESH KUMAR MEENA	29	M	Balaria	16 Feb 2024	87.82
10	HEMAT LOHAR	31	M	Balaria	16 Feb 2024	44.42
11	VEERU KUMAR MEENA	31	M	Balaria	16 Feb 2024	54.12
12	RAMESH CHANDRA MAHANTA	30	M	Balaria	17 Feb 2024	100.63
13	YOGENDRA KUMAR YADAV	31	M	Balaria	16 Feb 2024	37.43
14	MAHENDRA SINGH DEVRA	44	M	Balaria	17 Feb 2024	88.67
15	BHERA MEENA	40	M	Balaria	16 Feb 2024	96.87
16	MANISH KUMAR	30	M	Balaria	17 Feb 2024	82.65
17	GAURAV SHARMA	21	M	Balaria	16 Feb 2024	41.32
18	PRABHU LAL MEENA	35	M	Balaria	17 Feb 2024	98.77
19	SUNDER LAL JAIN	37	M	Balaria	17 Feb 2024	112.32
20	SHAANTI LAL	30	M	Balaria	16 Feb 2024	58.08
21	GOJIYA VIPUL	26	M	Balaria	16 Feb 2024	46.99
22	AMBALAL	50	M	Balaria	17 Feb 2024	48.52
23	BHARAT SINGH SHEKHAWAT	27	M	Balaria	17 Feb 2024	62.58
24	ISWAR	52	M	Balaria	17 Feb 2024	77.54
25	SIDESWAR JENA	28	M	Balaria	17 Feb 2024	112.32
26	GEBI LAL	36	M	Balaria	17 Feb 2024	99.56
27	VINOD KUMAR	50	M	Balaria	16 Feb 2024	43.55
28	THAWARCHAND	37	M	Balaria	16 Feb 2024	51.44
29	MANOHAR LAL MEENA	32	M	Balaria	17 Feb 2024	85.4
30	SURAJ KUMAR	30	M	Balaria	17 Feb 2024	52.48
31	MANGAL CHAND	38	M	Balaria	16 Feb 2024	49.75
32	JOGESHWAR MAHANTA	30	M	Balaria	17 Feb 2024	70.32
33	BHUPENDRA SHARMA	38	M	Balaria	17 Feb 2024	81.97
34	CHAGAN LAL KALAL	44	M	Balaria	17 Feb 2024	112.5
35	MAHENDRA SINGH	32	M	Balaria	17 Feb 2024	80.79
36	SUNIL SINGH	35	M	Balaria	17 Feb 2024	47.16
37	RUPA MEENA	44	M	Balaria	16 Feb 2024	51.73
38	NARENDRA KUMAR MEENA	44	M	Balaria	17 Feb 2024	52.66
39	LAKSHMI LAL	40	M	Balaria	16 Feb 2024	53.32

40	SHIVA	30	M	Balaria	17 Feb 2024	105.95
41	TULSI DAS	50	M	Balaria	17 Feb 2024	83.36
42	SANJAY KUMAR	28	M	Balaria	17 Feb 2024	81.97
43	KAUSHIK KUMAR	32	M	Balaria	16 Feb 2024	60.57
44	OJALAL	55	M	Zawarmala	16 Feb 2024	53.45
45	SURAJ KUMAR	34	M	Zawarmala	17 Feb 2024	75.86
46	NISHITHRANJAN KUNDU	38	M	Zawarmala	17 Feb 2024	104.52
47	ASHOK KUMAR KHARADI	41	M	Zawarmala	17 Feb 2024	54.95
48	LALIT KUMAR PANCHAL	35	M	Zawarmala	16 Feb 2024	79.13
49	SHANTI LAL MEENA	39	M	Zawarmala	17 Feb 2024	83.43
50	GANESH SINGH	33	M	Zawarmala	17 Feb 2024	40.51
51	CHANDRA LAL	37	M	Zawarmala	16 Feb 2024	58.09
52	KAVAD KARSHAN	29	M	Zawarmala	17 Feb 2024	46.12
53	PRAVEEN	22	M	Zawarmala	16 Feb 2024	42.23
54	TULSIRAM	28	M	Zawarmala	17 Feb 2024	93.69
55	UTTAM MANDAL	28	M	Zawarmala	17 Feb 2024	113.07
56	NARAYAN LAL MEENA	32	M	Zawarmala	17 Feb 2024	57.99
57	MAHESH DAS VAISHNA	43	M	Zawarmala	17 Feb 2024	42.23
58	GOPI YADAV	29	M	Zawarmala	16 Feb 2024	93.46
59	SUNDAR SINGH	34	M	Zawarmala	16 Feb 2024	50.02
60	SHESH NATH SINGH	40	M	Zawarmala	16 Feb 2024	38.87
61	SANJAY KUMAR	33	M	Zawarmala	16 Feb 2024	35.45
62	DEVI SINGH CHOUHAN	38	M	Zawarmala	16 Feb 2024	55.91
63	JAI SHANKER	43	M	Balaria	17 Feb 2024	63.46
64	PAWAN	27	M	Balaria	16 Feb 2024	36.01
65	GULABCHAND	30	M	Balaria	16 Feb 2024	69.99
66	AHAMAD HUSSAIN	36	M	Balaria	17 Feb 2024	91.4
67	ANIL JAISWAL	39	M	Balaria	17 Feb 2024	105.42
68	SUMANTA BARMAN	31	M	Balaria	17 Feb 2024	69.78
69	NAVEEN RAJPUROHIT	32	M	Balaria	17 Feb 2024	98.66
70	RAMESH CHAND	35	M	Balaria	16 Feb 2024	79.45
71	PUSHPENDRA SINGH	29	M	Balaria	16 Feb 2024	77.21
72	NISHANT KUMAR SINGH	26	M	Balaria	16 Feb 2024	56.54
73	MATCHA ARAVIND	26	M	Balaria	17 Feb 2024	87.58
74	KUWAR PAL SINGH	32	M	Balaria	17 Feb 2024	60.63
75	BANSHI LAL	40	M	Balaria	17 Feb 2024	69.28
76	DINESH KUMAR	36	M	Balaria	17 Feb 2024	76
77	KANTI LAL	44	M	Balaria	17 Feb 2024	86.69
78	PANKAJ SINGH	31	M	Balaria	17 Feb 2024	66.49
79	SURAJ PRATAP SINGH RATHORE	23	M	Balaria	17 Feb 2024	63.79
80	SATNAM SINGH SAINI	39	M	Balaria	17 Feb 2024	116.11
81	KALU LAL MEENA	38	M	Balaria	17 Feb 2024	87.83
82	GAJENDRA SINGH PANWAR	37	M	Balaria	16 Feb 2024	55.75
83	KUNAL SINGH PARIHAR	33	M	Balaria	16 Feb 2024	100.11

84	DEEPAK KUMAR LOHAR	32	M	Balaria	17 Feb 2024	95.41
85	SURENDRA SINGH PANWAR	32	M	Balaria	17 Feb 2024	62.35
86	KISHORE BHISE	33	M	Balaria	17 Feb 2024	82.03
87	DAALCHAND	34	M	Balaria	16 Feb 2024	34.91
88	MUKESH KUMAWAT	34	M	Balaria	17 Feb 2024	86.69
89	DHARMENDRA KUMAR SINGH	33	M	Balaria	16 Feb 2024	44.72
90	RAKESH KUMAR KHATIK	30	M	Balaria	16 Feb 2024	47.54
91	DHANRAJ NAGDA	37	M	Balaria	16 Feb 2024	30.5
92	AVINASH PATHANIA	33	M	Balaria	16 Feb 2024	45.44
93	KUSHAL SINGH PANWAR	36	M	Balaria	16 Feb 2024	53.99
94	BANSILAL MEENA	33	M	Balaria	16 Feb 2024	30.7
95	PRAVEEN RATNADI	48	M	Balaria	17 Feb 2024	93.05
96	DEVENDRA MENARIA	28	M	Balaria	17 Feb 2024	64.78
97	K MAREE MUTTU	43	M	Balaria	16 Feb 2024	78.02
98	AMAR MAITY	31	M	Balaria	17 Feb 2024	80.93
99	SHIV PRAKASH SINGH	46	M	Balaria	17 Feb 2024	105.26
100	RAMESH CHANDRA MENARIA	30	M	Balaria	17 Feb 2024	79.76
101	GANGARAM MEENA	33	M	Balaria	16 Feb 2024	41.37
102	VIKAS VAISHNAV	31	M	Balaria	17 Feb 2024	115.54
103	MUESH KUMAR MEENA	39	M	Balaria	17 Feb 2024	66.74
104	SIDDHARTH BOSE	36	M	Balaria	17 Feb 2024	74.67
105	RAKESH KUMAR	40	M	Balaria	17 Feb 2024	80.46
106	PRASANTA PROTIHAR	35	M	Balaria	17 Feb 2024	58.45
107	INDRAJEET	32	M	Balaria	16 Feb 2024	108.41
108	SURESH SINGH	36	M	Balaria	17 Feb 2024	60.74
109	PRAKASH MEENA	43	M	Balaria	17 Feb 2024	96.05
110	ANIL KUMAR MEENA	33	M	Balaria	17 Feb 2024	94.77
111	SANJAY KUMAR PANWAR	32	M	Balaria	17 Feb 2024	96.62
112	PANNA LAL	37	M	Balaria	17 Feb 2024	115.54
113	LALU RAM	36	M	Balaria	17 Feb 2024	104.52
114	SHIV LAL	27	M	Balaria	17 Feb 2024	87.83
115	DEVA	45	M	Balaria	17 Feb 2024	79.57
116	BADRI LAL MEENA	31	M	Balaria	17 Feb 2024	67.96
117	KAMAL KUMAR PANCHAL	34	M	Balaria	17 Feb 2024	83.36
118	VAL CHANDA MEENA	33	M	Balaria	17 Feb 2024	81.26
119	DINESH KUMAR MEENAS	30	M	Balaria	17 Feb 2024	58.52
120	KAILASH CHANDRA MEENA	29	M	Balaria	17 Feb 2024	54.56
121	SHANKER LAL PATEL	36	M	Balaria	17 Feb 2024	85.47
122	SANGRAM CHAUHAN	27	M	Balaria	17 Feb 2024	61.1
123	LALIT KISHORE AUDCHIYA	57	M	Balaria	17 Feb 2024	76
124	SUKHJINDER SINGH	32	M	Balaria	17 Feb 2024	52.66
125	SERAFAT ALI	35	M	Balaria	17 Feb 2024	62.6
126	NANA MEENA	45	M	Balaria	17 Feb 2024	104.56

127	KAMLESH AUDICHYA	32	M	Balaria	17 Feb 2024	90.51
128	MANOHAR LAL	39	M	Balaria	17 Feb 2024	99.45
129	RAJU HAQUE	38	M	Balaria	17 Feb 2024	63.24
130	RAJENDRA SINGH	37	M	Balaria	17 Feb 2024	70.89
131	RAJENDRA KUMAR	56	M	Balaria	17 Feb 2024	70.89
132	BHAGWAN LAL	41	M	Balaria	17 Feb 2024	87.01
133	JEEVA RAM	45	M	Balaria	17 Feb 2024	58.09
134	DINESH	38	M	Balaria	17 Feb 2024	46.34
135	RAJ KUMAR	54	M	Balaria	17 Feb 2024	52.48
136	KISHAN LAL	34	M	Balaria	17 Feb 2024	111.46
137	NANA	53	M	Balaria	17 Feb 2024	117.93
138	MEGHA	52	M	Balaria	17 Feb 2024	75.32
139	AMRA	45	M	Balaria	17 Feb 2024	79.57
140	PUNJA	40	M	Balaria	17 Feb 2024	35.94
141	SURYAKANTA BEHERA	51	M	Balaria	17 Feb 2024	60.74
142	BANSHI LAL	45	M	Balaria	17 Feb 2024	100.31
143	SOHAN LAL	45	M	Balaria	17 Feb 2024	91.76
144	BABU LAL	30	M	Balaria	17 Feb 2024	64.28
145	POONAM CHAND	49	M	Balaria	17 Feb 2024	87.44
146	GOUTAM	52	M	Balaria	17 Feb 2024	52.98
147	NATHU LAL	57	M	Balaria	17 Feb 2024	76.32
148	DEVI LAL MEENA	46	M	Balaria	17 Feb 2024	87.44
149	SOHAN	47	M	Balaria	17 Feb 2024	66.99
150	LAXMAN	50	M	Balaria	17 Feb 2024	78.82

ANNEXURE- 6

Original

ULR NO: TC531220000000851F TC-5312

Modern Test Centre

- (Accredited To AERB vide certificate No: AERB/RSD/ACC-16/R-3/2017/1073)
- (Accredited To NABL through ISO/IEC 17025:2017)
- (Recognized by BIS vide OSL Code-5123116)

Off:-Gandhi Nagar 5th line Extn. East, Berhampur-760001, Dist-Ganjam (Odisha)
Lab:-Neelanchala Nagar 3rd lane, Berhampur-760010, Dist-Ganjam (Odisha), Phone:-0680 2403321-22
Visit us: www.moderntestcenter.com Mail: - moderntestcenter@gmail.com
Ref: - 26308/MTC/LF/7.8/14/2020 DATE: 20/07/2020

TEST CERTIFICATE

Issued to: M/s. Hindustan Zinc Limited, Zawar Mines
PO: Zawar Mines
Udaipur, Pin: 313901.

LOCATION: BALARIYA MINE

Customer Reference No: Nil Dt. 08/07/2020
Date of Receipt: 20/07/2020

Date of Initiation of Test : 20/07/2020
Date of Completion of Test: 20/07/2020

TEST CERTIFICATE NO: 2113 18896 **DATE: 20/07/2020**

TEST CERTIFICATE AS PER IS 14194 (PART- 1& PART-2): 2013

PART A: *PARTICULARS OF SAMPLE SUBMITTED*

a) Nature of sample	: Dewatering Water	f) Quantity	: 1 No's
b) Grade / Variety/ Type/Class/Size etc	: 1 lit bottle	g) Mode of packing	: Packed in Carton
c) Brand Name, if any	: Not available	h) Condition of Seal of Certifying Body Or the Regulatory authority	: Not applicable
d) Name of the test suggested	: Beta Emitters & Alpha Emitters	i) Any other information	: No Specific Observation
e) Batch No. & Date of Manufacture /Collection/Sampling	: Batch No: Not Specified : DOS: 06/07/2020		

PART B: *SUPPLIMENTARY INFORMATIONS*

a) Reference to sampling ~~by lab~~/submitted by party : Sample submitted by SCS Enviro Services, Jaipur, Rajasthan
By Lab: i) Location : ----------
ii) Date & time of collection : ----------
iii) Name of lab representative (Wherever applicable) : ----------
b) Supporting documents like graphs, tables, Sketches for the measurements taken and The results derived, if any to be attached : ---------
c) Deviation from the test methods as Prescribed in relevant ISS / Work Instructions, if any : No deviation
d) Deviation from environmental condition, if any : No deviation

PART C: *TEST RESULTS*

Sl. No	Parameter	Specified value maximum as per IS 10500:2012	Result
1	Beta Emitters	1 $Bq.l^{-1}$	BDL
2	Alpha Emitters	0.1 $Bq.l^{-1}$	BDL

N.B:- BDL is below detection limit of the detector.
The DL for Beta Emitters is 0.134 $Bq.l^{-1}$
The DL for Alpha Emitters is 0.007 $Bq.l^{-1}$

PART D: *REMARKS*

1) The results stated above relates to the sample tested only.
2) This report in full or in part shall not be published, advertised, used for any legal action unless prior permission has been secured from the competent Authority of the laboratory.
3) The sample shall be kept for three month after the test and can be returned on request or shall be destroyed. Any customer complain or by regulatory authority shall be entertained, if and only if the complain is registered within one month from date of report.

For Modern Test Centre
Signature with seal
Authorised Signatory

21903

Original

ULR NO: TC531220000000852F TC-5312

Modern Test Centre

- (Accredited To AERB vide certificate No: AERB/RSD/ACC-16/R-3/2017/1073)
- (Accredited To NABL through ISO/IEC 17025:2017)
- (Recognized by BIS vide OSL Code-5123116)

Off:-Gandhi Nagar 5th line Extn. East, Berhampur-760001, Dist-Ganjam (Odisha)
Lab:-Neelanchala Nagar 3rd lane, Berhampur-760010, Dist-Ganjam (Odisha), Phone:-0680 2403321-22
Visit us: www.moderntestcenter.com Mail: - moderntestcenter@gmail.com
Ref: - 26309/MTC/LF/7.8/14/2020 DATE: 20/07/2020

TEST CERTIFICATE

Issued to: M/s. Hindustan Zinc Limited, Zawar Mines
PO: Zawar Mines
Udaipur, Pin: 313901.

LOCATION: BAROI MINE

Customer Reference No: Nil Dt. 08/07/2020
Date of Receipt: 20/07/2020

Date of Initiation of Test : 20/07/2020
Date of Completion of Test: 20/07/2020
DATE: 20/07/2020

TEST CERTIFICATE NO: 2113 18897

TEST CERTIFICATE AS PER IS 14194 (PART- 1& PART-2): 2013

PART A: *PARTICULARS OF SAMPLE SUBMITTED*

a) Nature of sample	: Dewatering Water	f) Quantity	: 1 No's
b) Grade / Variety/ Type/Class/Size etc	: 1 lit bottle	g) Mode of packing	: Packed in Carton
c) Brand Name, if any	: Not available	h) Condition of Seal of Certifying Body Or the Regulatory authority	: Not applicable
d) Name of the test suggested	: Beta Emitters & Alpha Emitters	i) Any other information	: No Specific Observation
e) Batch No. & Date of Manufacture /Collection/Sampling	: Batch No: Not Specified : DOS: 06/07/2020		

PART B: *SUPPLIMENTARY INFORMATIONS*

a) Reference to sampling by lab/submitted by party : Sample submitted by SCS Enviro Services, Jaipur, Rajasthan
By Lab: i) Location : ----------
ii) Date & time of collection : ----------
iii) Name of lab representative (Wherever applicable) : ----------
b) Supporting documents like graphs, tables, Sketches for the measurements taken and The results derived, if any to be attached : ---------
c) Deviation from the test methods as Prescribed in relevant ISS / Work Instructions, if any : No deviation
d) Deviation from environmental condition, if any : No deviation

PART C: *TEST RESULTS*

Sl. No	Parameter	Specified value maximum as per IS 10500:2012	Result
1	Beta Emitters	1 $Bq.l^{-1}$	BDL
2	Alpha Emitters	0.1 $Bq.l^{-1}$	BDL

N.B:- BDL is below detection limit of the detector.
The DL for Beta Emitters is 0.134 $Bq.l^{-1}$
The DL for Alpha Emitters is 0.008 $Bq.l^{-1}$

PART D: *REMARKS*

1) The results stated above relates to the sample tested only.
2) This report in full or in part shall not be published, advertised, used for any legal action unless prior permission has been secured from the competent Authority of the laboratory.
3) The sample shall be kept for three month after the test and can be returned on request or shall be destroyed. Any customer complain or by regulatory authority shall be entertained, if and only if the complain is registered within one month from date of report.

For Modern Test Centre
Shankar Kunta
Signature with seal
Authorised Signatory

21401

Original

ULR NO: TC531220000000853F TC-5312

Modern Test Centre

- (Accredited To AERB vide certificate No: AERB/RSD/ACC-16/R-3/2017/1073)
- (Accredited To NABL through ISO/IEC 17025:2017)
- (Recognized by BIS vide OSL Code-5123116)

Off:-Gandhi Nagar 5th line Extn. East, Berhampur-760001, Dist-Ganjam (Odisha)
Lab:-Neelanchala Nagar 3rd lane, Berhampur-760010, Dist-Ganjam (Odisha), Phone:-0680 2403321-22
Visit us: www.moderntestcenter.com Mail: - moderntestcenter@gmail.com
Ref: - 26310/MTC/LF/7.8/14/2020 DATE: 20/07/2020

TEST CERTIFICATE

Issued to: M/s. Hindustan Zinc Limited, Zawar Mines
PO: Zawar Mines
Udaipur, Pin: 313901.

LOCATION: MOCHIA MINE

Customer Reference No: Nil Dt. 08/07/2020
Date of Receipt: 20/07/2020

Date of Initiation of Test : 20/07/2020
Date of Completion of Test: 20/07/2020

TEST CERTIFICATE NO: 2113 18898 **DATE: 20/07/2020**

TEST CERTIFICATE AS PER IS 14194 (PART- 1& PART-2): 2013

PART A: *PARTICULARS OF SAMPLE SUBMITTED*

a) Nature of sample	: Dewatering Water	f) Quantity	: 1 No's
b) Grade / Variety/ Type/Class/Size etc	: 1 lit bottle	g) Mode of packing	: Packed in Carton
c) Brand Name, if any	: Not available	h) Condition of Seal of Certifying Body Or the Regulatory authority	: Not applicable
d) Name of the test suggested	: Beta Emitters & Alpha Emitters	i) Any other information	: No Specific Observation
e) Batch No. & Date of Manufacture /Collection/Sampling	: Batch No: Not Specified : DOS: 06/07/2020		

PART B: *SUPPLIMENTARY INFORMATIONS*

a) Reference to sampling by lab/submitted by party : Sample submitted by SCS Enviro Services, Jaipur, Rajasthan
By Lab: i) Location : ----------
ii) Date & time of collection : ----------
iii) Name of lab representative (Wherever applicable) : ----------
b) Supporting documents like graphs, tables, Sketches for the measurements taken and The results derived, if any to be attached : ---------
c) Deviation from the test methods as Prescribed in relevant ISS / Work Instructions, if any : No deviation
d) Deviation from environmental condition, if any : No deviation

PART C: *TEST RESULTS*

Sl. No	Parameter	Specified value maximum as per IS 10500:2012	Result
1	Beta Emitters	1 $Bq.l^{-1}$	BDL
2	Alpha Emitters	0.1 $Bq.l^{-1}$	BDL

N.B:- BDL is below detection limit of the detector.
The DL for Beta Emitters is 0.134 $Bq.l^{-1}$
The DL for Alpha Emitters is 0.007 $Bq.l^{-1}$

PART D: *REMARKS*

1) The results stated above relates to the sample tested only.
2) This report in full or in part shall not be published, advertised, used for any legal action unless prior permission has been secured from the competent Authority of the laboratory.
3) The sample shall be kept for three month after the test and can be returned on request or shall be destroyed. Any customer complain or by regulatory authority shall be entertained, if and only if the complain is registered within one month from date of report.

For Modern Test Centre
Shankar Khatar
Signature with seal
Authorised Signatory

21402

Original

TC-5312

ULR NO: TC581220000000850F

Modern Test Centre

- (Accredited To AERB vide certificate No: AERB/RSD/ACC-16/R-3/2017/1073)
- (Accredited To NABL through ISO/IEC 17025:2017)
- (Recognized by BIS vide OSL Code-5123116)

Off:-Gandhi Nagar 5th line Extn. East, Berhampur-760001, Dist-Ganjam (Odisha)
Lab:-Neelanchala Nagar 3rd lane, Berhampur-760010, Dist-Ganjam (Odisha), Phone:-0680 2403321-22
Visit us: www.moderntestcenter.com Mail: - moderntestcenter@gmail.com
Ref: - 26307/MTC/LF/7.8/14/2020 DATE: 20/07/2020

TEST CERTIFICATE

Issued to: M/s. Hindustan Zinc Limited, Zawar Mines
PO: Zawar Mines
Udaipur, Pin: 313901.

LOCATION: ZAWARMALA MINE

Customer Reference No: Nil Dt. 08/07/2020
Date of Receipt: 20/07/2020

Date of Initiation of Test : 20/07/2020
Date of Completion of Test: 20/07/2020

TEST CERTIFICATE NO: 2113 18895 **DATE: 20/07/2020**

TEST CERTIFICATE AS PER IS 14194 (PART-1 & PART-2): 2013

PART A: *PARTICULARS OF SAMPLE SUBMITTED*

a) Nature of sample	: Dewatering Water	f) Quantity	: 1 No's
b) Grade / Variety/ Type/Class/Size etc	: 1 lit bottle	g) Mode of packing	: Packed In Carton
c) Brand Name, if any	: Not available	h) Condition of Seal of Certifying Body Or the Regulatory authority	: Not applicable
d) Name of the test suggested	: Beta Emitters & Alpha Emitters	i) Any other information	: No Specific Observation
e) Batch No. & Date of Manufacture /Collection/Sampling	: Batch No: Not Specified : DOS: 06/07/2020		

PART B: *SUPPLIMENTARY INFORMATIONS*

a) Reference to sampling ~~by lab~~/submitted by party : Sample submitted by SCS Enviro Services, Jaipur, Rajasthan
By Lab: i) Location : ----------
ii) Date & time of collection : ----------
iii) Name of lab representative (Wherever applicable) : ----------
b) Supporting documents like graphs, tables, Sketches for the measurements taken and The results derived, if any to be attached : ---------
c) Deviation from the test methods as Prescribed in relevant ISS / Work Instructions, if any : No deviation
d) Deviation from environmental condition, if any : No deviation

PART C: *TEST RESULTS*

Sl. No	Parameter	Specified value maximum as per IS 10500:2012	Result
1	Beta Emitters	1 $Bq.l^{-1}$	BDL
2	Alpha Emitters	0.1 $Bq.l^{-1}$	BDL

N.B:- BDL is below detection limit of the detector.
The DL for Beta Emitters is 0.114 $Bq.l^{-1}$
The DL for Alpha Emitters is 0.007 $Bq.l^{-1}$

PART D: *REMARKS*

1) The results stated above relates to the sample tested only.
2) This report in full or in part shall not be published, advertised, used for any legal action unless prior permission has been secured from the competent Authority of the laboratory.
3) The sample shall be kept for three month after the test and can be returned on request or shall be destroyed. Any customer complain or by regulatory authority shall be entertained, if and only if the complain is registered within one month from date of report.

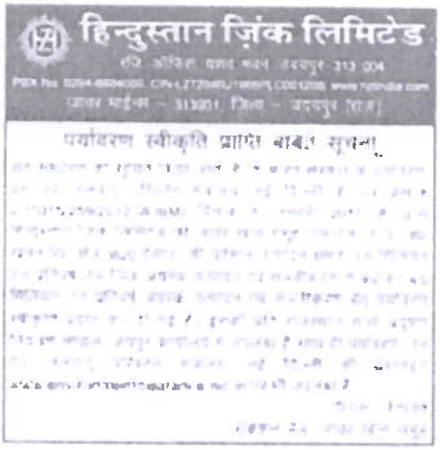
For Modern Test Centre
Shankar Khatai
Signature with seal
Authorised Signatory

21399

Annexure - 7

DAINIK BHASKAR, Udaipur Edition 10.01.2017 Page 4

राजस्थान



हिन्दुस्तान ज़िंक लिमिटेड

पर्यावरण स्वीकृति प्राप्ति बाबत सूचना

RAJASTHAN PATRIKA, Udaipur Edition 10.01.2017, Page 7

राजस्थान पत्रिका, उदयपुर मंगलवार 10.01.2017

हिन्दुस्तान ज़िंक लिमिटेड

पर्यावरण स्वीकृति प्राप्ति बाबत सूचना

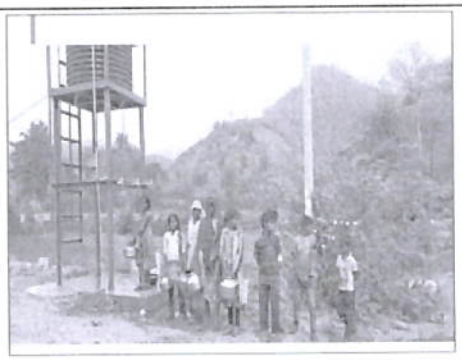
ANNEXURE-8

Compliance status of Commitments made during previous public hearing

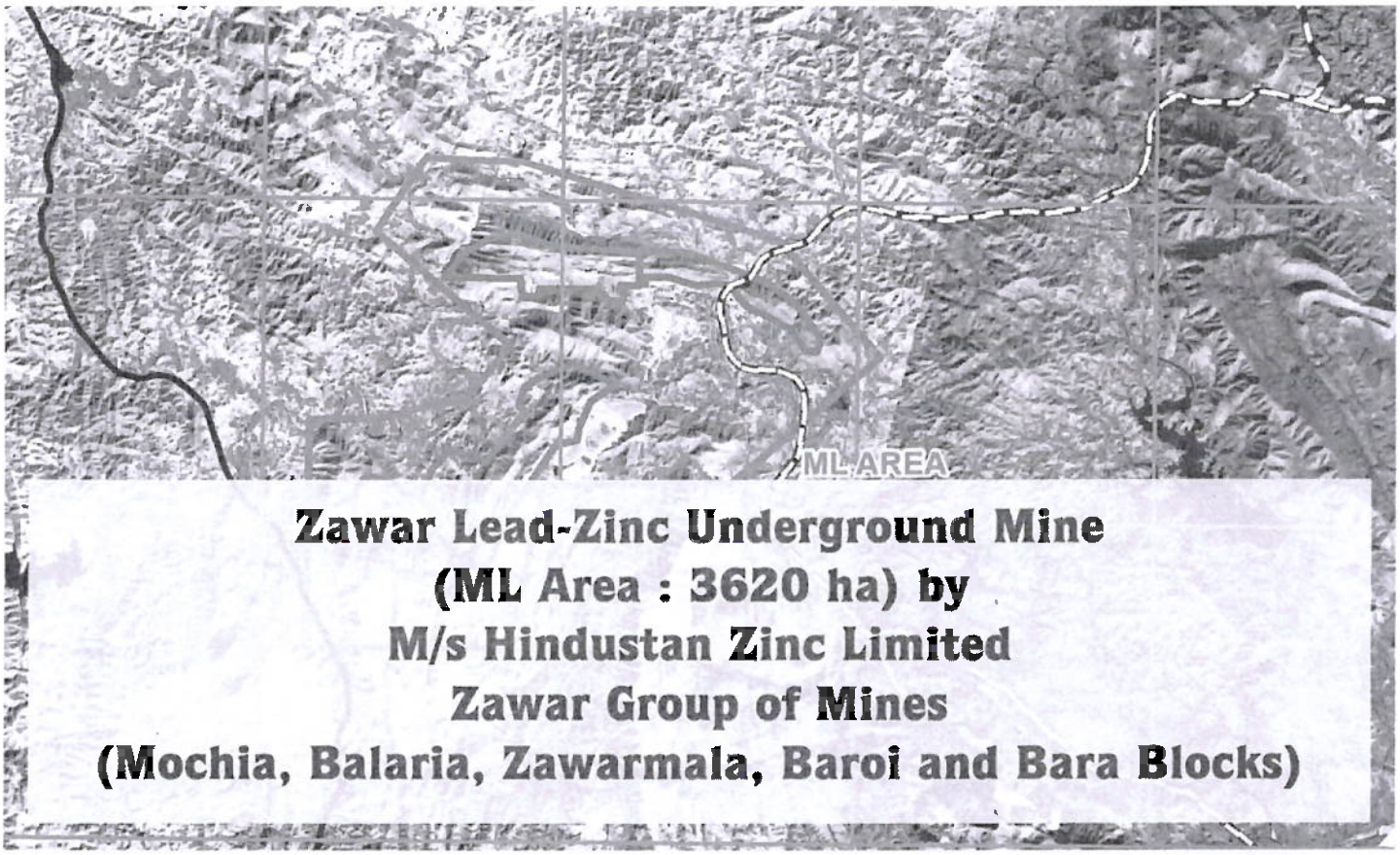
S. No.	Issues	Action taken
1	Appreciation for education especially Girls education.  	• 50+ meritorious girls from our nearby villages supported for higher education by getting them enrolled for post-graduation at Ringus College. • HZL is lending support in improving the board results of students under Shiksha Sambal Project in 10 Govt Schools and as a part of which 2 camps were organized bringing together 600+ students of these Schools (Summer Camp & Diwali Learning Camp) for better coverage and preparation of the exams • Total of 4 students has been selected from Tidi, Padla and Newatalai villages. under Unchi Udaan Project and is carrying out their coaching for engineering competitive exams in Udaipur with CSR Project Partner 'Resonance'. • We have completed 3 month long coaching classes for the youth of our nearby villages. This was done with the help from our implementation Partner Anushka Academy. More than 70 students attended the sessions regularly and they shall be appearing for the upcoming Govt exams for Patwari, Tehsil level positions etc. • Commencement of computer training classes in partnership with Vedanta Foundation for the youth of our nearby villages. Total 40 youth registered.
		

S. No.	Issues	Action taken
2	Demand for set-up of more industries in the area for employment generation.  	1. 500+ Rural Women supported to start generating livelihood through micro-enterprise activity under Sakhi Project, today they run their own small kirana, flour mill, stitching, beauty parlour etc. shops 2. Zawar Mata Farmer Producer Company (established through project support under CSR) recorded an Annual Business Turnover of 26.77 Lakhs in FY 2022-23 announced at AGM witnessing presence of 300+ Farmers from the community, the FPC has 900+ Rural Farmer Shareholders as on date. 3. Sakhi Namkeen Unit set up in Paduna, directly employing 8+ Rural Women for manufacturing & packaging unit. Photos attached*
3	Appreciation for maintaining good environment and plantation in the area.	1. We are regularly carrying out plantation in and around our mine operations. Over last 5 years, we have completed plantation in 225 ha area through forest department under RDF scheme-1&2. In 2021, also planted in 75 ha through forest department under RDF scheme-1&2. Planted 2500 nos. of plantation at tailing storage facility and 1000 nos. as gap plantation in mine area.
4	Chances of dust generation from Tailing Dam.	Various dust control measures like water sprinkling is being done continuously and same will be continued. Compaction of tailing after disposal is being done.
5	General problem of tree felling by villagers in the area.	1. Plantation of 500+ Fruit bearing & medicinal plants at Nevatalai site with the support of Panchayat 2. Distribution of 2000+ Fruit & Medicinal Saplings to the Community members , schools, women, farmers etc.
		

S. No.	Issues	Action taken
		 
6	Improvement of road network in the area. (Maintenance and augmentation of Tidi Zawar Road) 8	- Construction of Zawar to Tidi road of around 3.5 KM in PPP mode with PWD department was carried out. This has provided convenience to the locals for better connectivity with National highway. Photograph enclosed. - In addition to this, 180 m cc internal road constructed at Nevatalai panchayat and 200 m cc road constructed at Tidi panchayat, the service is being utilized by the community members. - Constructed & handed over 3 interior roads in the village of Zawar benefetting 1200+ community members - Completed the construction of 2 classrooms at Maha Dev Ki naal School. Repair and Renovation of Bedadhara school and Ramnagar School. Which all together reached a beneficiary count of 400+ - Apart from this the construction of Cremation shed at Singatwada was also completed. - Ongoing repair and renovation work at Tidi Girls school & Kanpur school benefitting 250+ students   -

S. No.	Issues	Action taken
		 **Construction of Zawar to Tidi road of around 3.5 KM in PPP mode with PWD department**
7	Water conservation and harvesting measures.	New Rain water harvesting structures (39 structures) along with deepening / de-silting of existing rain water harvesting structures for the period of FY 17 to FY 22
8	Drinking water problem- Kanpur village	Regular supply of drinking water to the villagers of Kanpur has been ensured through tankers and installed water supply system in 2023-24 also.
		
		

REPORT
ON
LAND USE/LAND COVER STUDY



Zawar Lead-Zinc Underground Mine
(ML Area : 3620 ha) by
M/s Hindustan Zinc Limited
Zawar Group of Mines
(Mochia, Balaria, Zawarmala, Baroi and Bara Blocks)

At

Village - Zawar, Tehsil: Girwa and Sarada,

District - Udaipur, Rajasthan

PROJECT PROPONENT

HINDUSTAN ZINC

M/s Hindustan Zinc Limited

Yashad Bhawan, Swaroop Sagar Road,

Udaipur - 313004

E - Mail: kishore.s@vedanta.co.in

Telephone No. +91-0294-2723400, 9799995890

August, 2024

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LAND USE /LAND COVER STUDY REPORT

1.0 INTRODUCTION

M/s. Hindustan Zinc Limited has proposed Expansion of Zawar Group of Underground Lead-Zinc Mines from 4.8 Million TPA to 6.5 Million TPA Ore Production with Total excavation of 7.78 Million TPA including Waste Rock 1.28 Million TPA and Beneficiation from 4.8 MTPA to 7.3 MTPA (M.L. Area- 3620 ha; ML No.03/89) at Village: Zawar, Tehsil: Girwa & Sarada, District: Udaipur, Rajasthan.

1.1 OBJECTIVE OF THE STUDY

This report has been prepared for compliance of following Standard ToR condition for obtaining Environment Clearance:

ToR Point (4): "All corner coordinates of the mine lease area, superimposed on a High Resolution Imagery/ toposheet, topographic sheet, geomorphology and geology of the area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone)"

ToR Point (8): "Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated".

Standard EC Condition No 7 of Environment Clearance granted on 05.01.2017

2.0 LAND USE / LAND COVER STUDY

Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given. To fulfill the requirement of the above said ToR point the following process has been adopted: -

- Development of land use & land cover map using land coordinates of the project area.
- Identification and marking of important basic features according to primary and secondary data.
- Evaluation of the impact on existing land use of the project area.
- Suggestive measures for conservation and sustainable use of land.

2.1 DATA USED

Current vintage data of Indian Remote Sensing Satellite RESOURCESAT-2 (L4FMX) digital FCC (False Color Composite) has been used for preparation of Land use/ Land cover thematic map of study area.

Satellite image has been procured from National Remote Sensing Centre, Hyderabad. Survey of India toposheet as a reference map on 1:50,000 scale has been used for preparation of base layer data like road, rail network; village and mine site and for geo-referencing of satellite image.

Table-1.1

Details of Data collection

S. No.	Particular	Details
1.	Satellite Image	RESOURCESAT 2A (LISS-IV)
2.	Vintage Date	27th May, 2024
3.	Satellite Data Source	NRSC, Hyderabad
4.	SOI Toposheets No	45 H/11, 45 H/12, 45 H/15 & 45 H/16
5.	Software Used	Earth Resources Data Analysis System (ERDAS) Imagine 9.2

2.2 SATELLITERY IMAGE OF THE STUDY AREA

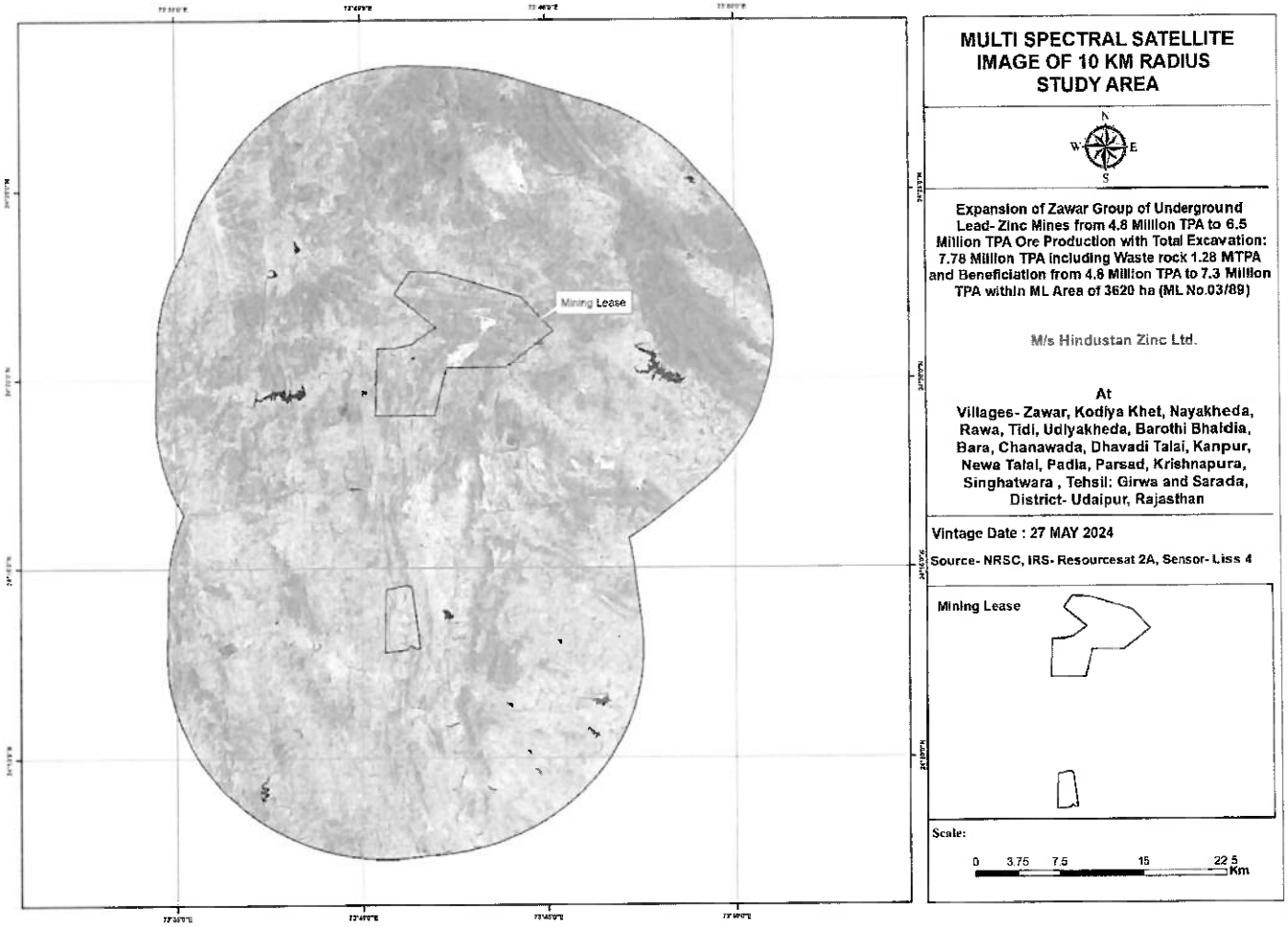

FIG NO: 1.1 SATELLITE IMAGERY OF THE STUDY AREA

2.3 SATELLITERY IMAGE OF THE CORE ZONE

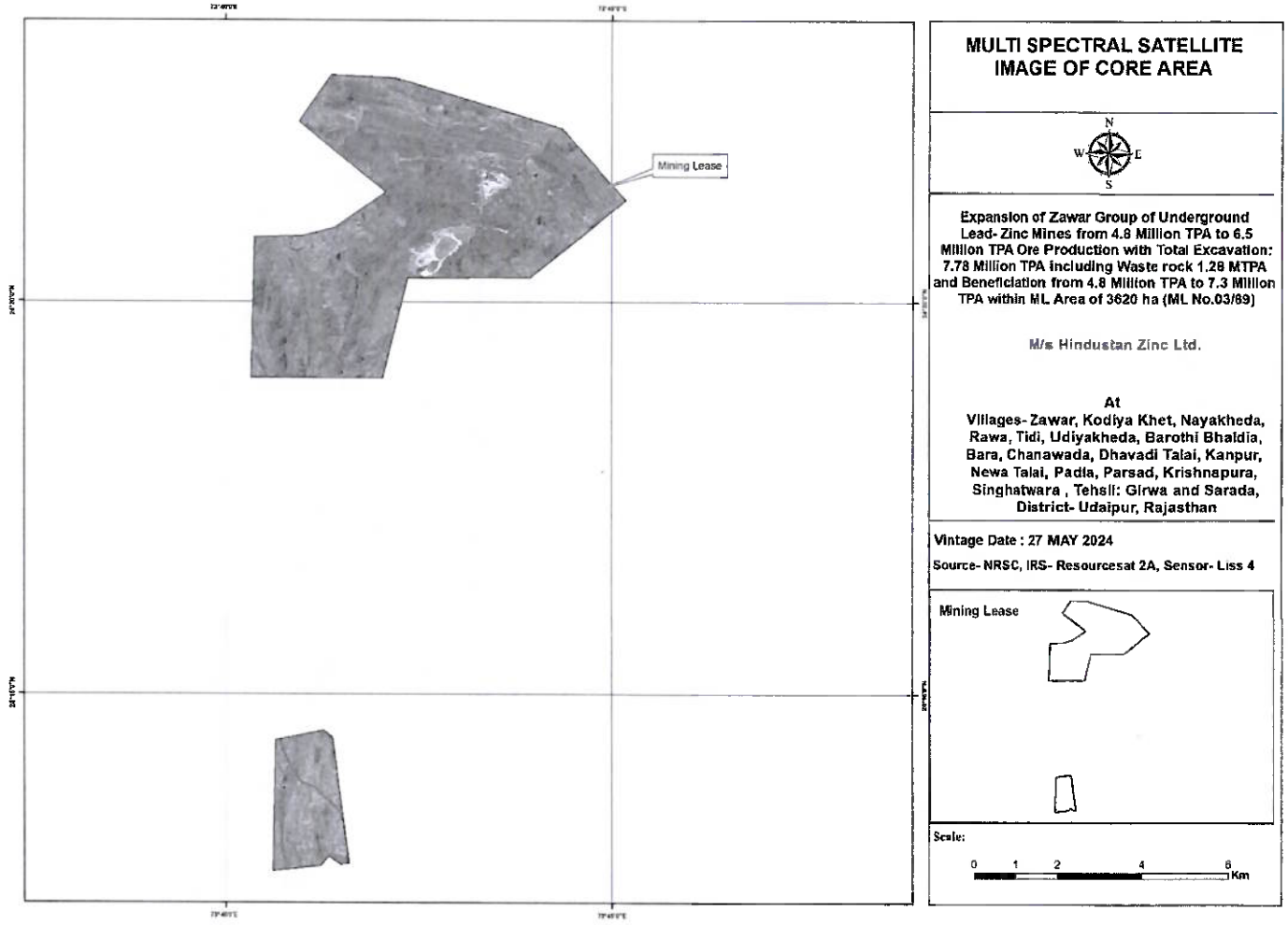

FIG NO: 1.2 SATELLITE IMAGERY OF THE CORE ZONE

2.4 METHODOLOGY

- Preliminary / primary data collection of the study area
  - Satellite data procurement from NRSC Hyderabad
- Secondary data collection from authorized bodies
  - Survey of India Toposheet (SOI)
  - Cadastral / Khasra map
  - GPS Coordinates of Mine Lease Boundary
  - Mining Maps approved by IBM, Bangalore
- Processing of satellite data using ERDAS Imagine 9.2 and to prepare the Land use and Land cover maps (e.g. Forest, agriculture, settlements, wasteland, water bodies etc.) by digital image processing (DIP) technique.
  - Geo-Referencing of the Survey of India Toposheet
  - Geo-Referencing of satellite Imagery with the help of Geo-Referenced Toposheets
  - Geo-Referenced Khasra Maps
  - Enhancement of the Satellite Imagery
  - Base Map layer creation (Roads, Railway, Village Names and others Secondary data etc.)
  - Data analysis and Classification using Digital interpretation techniques.
  - Ground truth studies or field Verification.
  - Error fixing / Reclassification
  - Final Map Generation

2.5 Land use & Land cover Map of ML Area

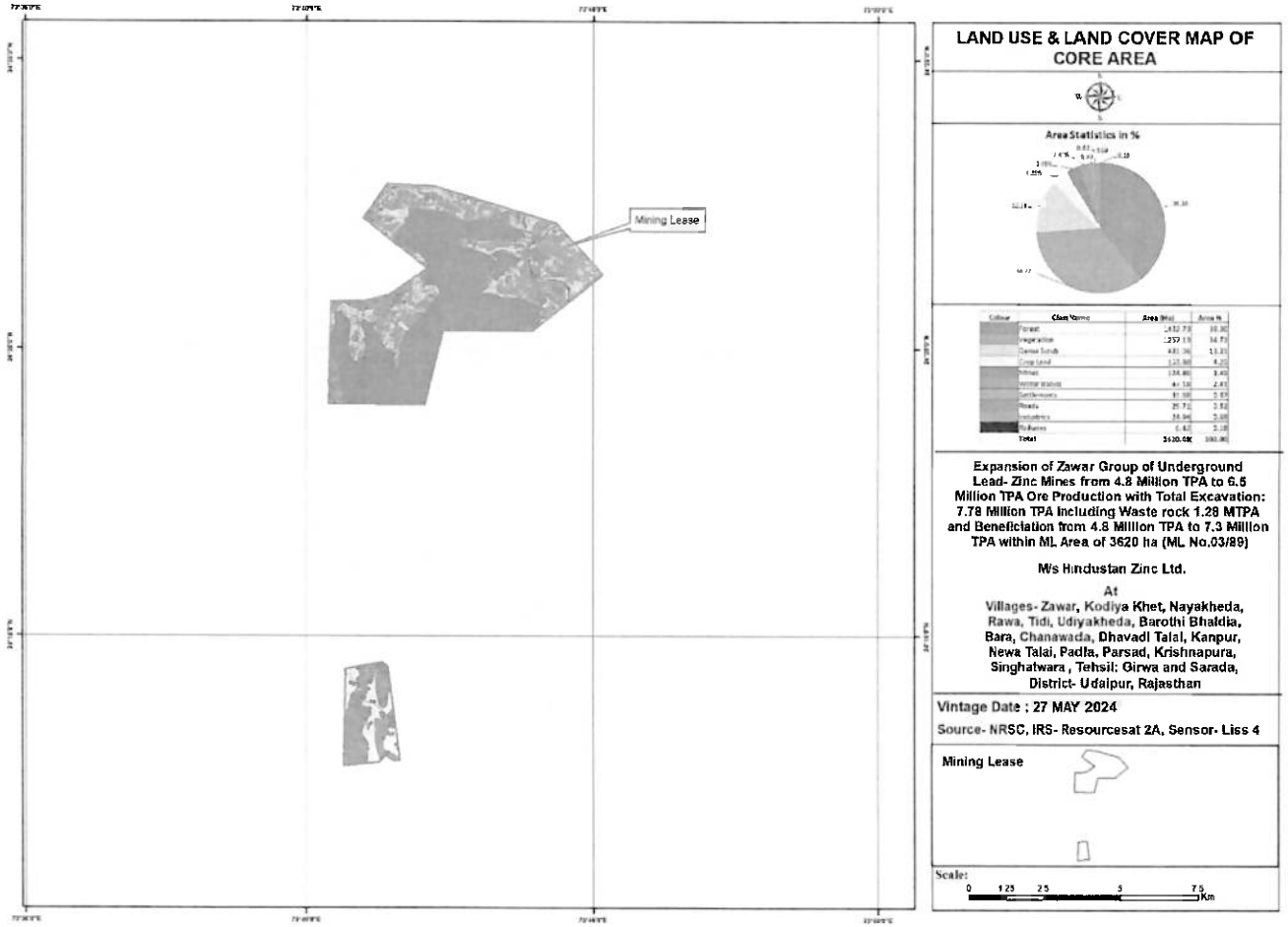

FIG.NO. 1.3 LAND USE LAND COVER MAP OF CORE ZONE

The land use and land cover details of the Core Zone area are given in Table – 1.2

TABLE – 1.2

LAND USE / LAND COVER DETAILS OF CORE ZONE

S. No.	Legend	Area (in ha)	Area (in %)
1.	Forest	1422.73	39.30
2.	Vegetation	1257.13	34.72
3.	Dense Scrub	481.96	13.31
4.	Crop Land	153.88	4.25
5.	Mines	124.86	3.45
6.	Water Bodies	87.18	2.41
7.	Settlement	31.68	0.87
8.	Roads	29.71	0.82
9.	Industries	24.94	0.69
10.	Railway	6.42	0.18
	Total	**3620.48**	**100**

(**Source:** *LU/LC classification map for Core Zone area)*

2.6 INTERPRETATION OF THE LULC DATA

The study area mainly comprises of Forest Land (39.30%) and Vegetation (34.72%). Dense scrub is spread over 13.31% and Crop land is over the 4.25% of the study area

Built up area is represented by human settlements (0.87%). Due to the upcoming project, increased human settlements will be near the mine lease area as employment will be generated. Water bodies comprise of Tiri Nadi etc. (2.41%).

2.7 Land use & Land cover Map of 10km radius study area

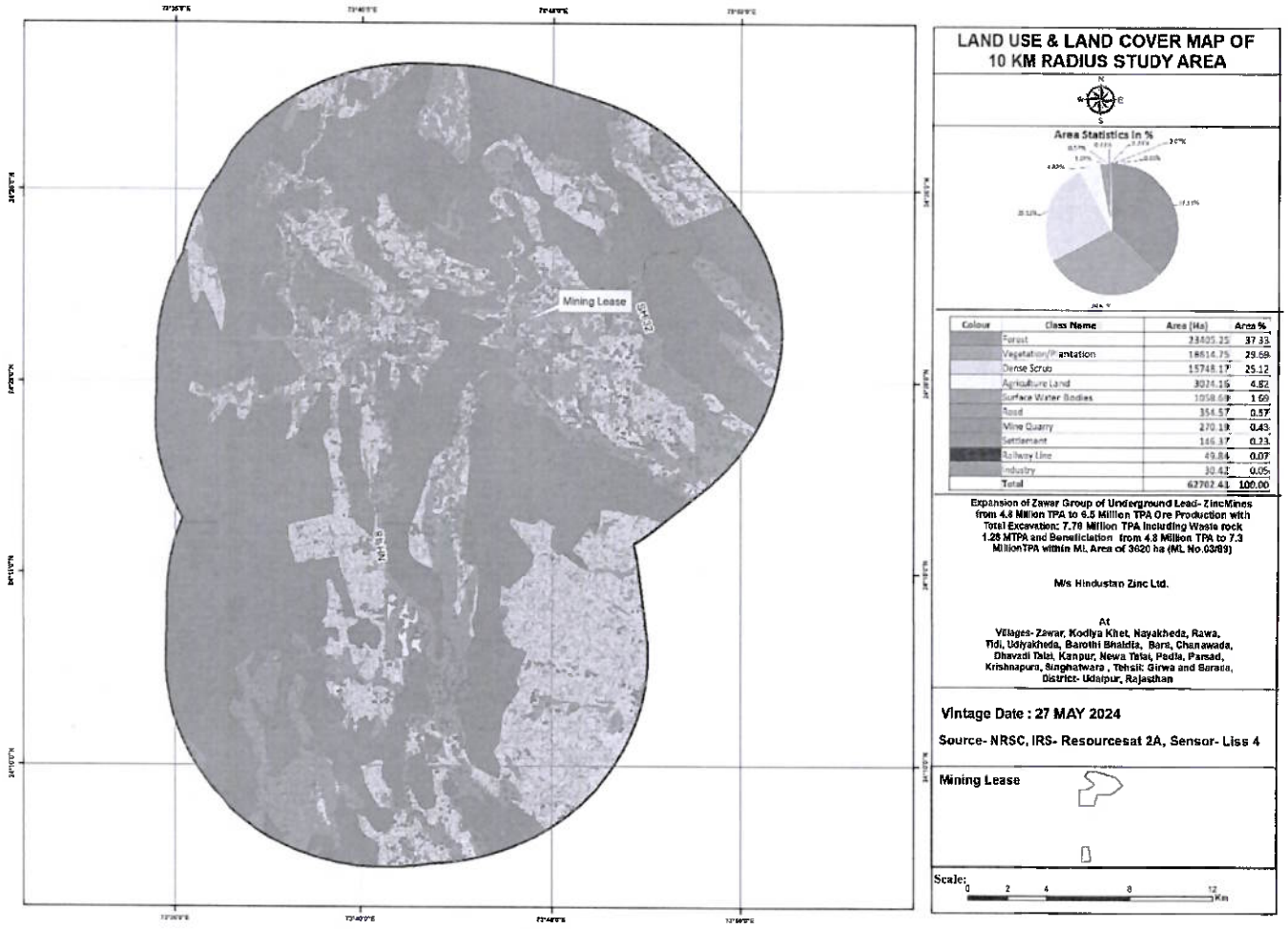

FIG.NO. 1.4 LAND USE LAND COVER MAP OF 10KM RADIUS STUDY AREA

The land use and land cover details of the Study area are given in Table – 1.3

TABLE – 1.3

LAND USE / LAND COVER DETAILS OF STUDY AREA

S. No.	Legend	Area (in ha)	Area (in %)
1.	Forest	23405.25	37.33
2.	Vegetation/Plantation	18614.75	29.69
3.	Dense Scrub	15748.17	25.12
4.	Agriculture Land	3024.16	4.82
5.	Surface Water Bodies	1058.69	1.69
6.	Road	354.57	0.57
7.	Mine Quarry	270.19	0.43
8.	Human Settlement	146.37	0.23
9.	Railway Line	49.84	0.07
10.	Industry	30.42	0.05
	Total	**62702.41**	**100.00**

*(**Source:** LU/LC classification map for study area)*

2.8 INTERPRETATION OF THE LULC DATA

The study area mainly comprises of Forest Land (37.33%) and Dense Scrub Land (25.12 %). Vegetation and Plantation spreads over 29.69% and Agriculture land (4.82 %) of total study area.

Built up area is represented by human settlements (0.23%). Due to the upcoming project, increased human settlements will be near the mine lease area as employment will be generated. There is a possibility of increase in transportation and population in the nearby villages that will result in change in the present land use and land cover. Water bodies comprise (1.69 %) Mining areas comprise of active quarries and mined out area (0.43%).