

Ref.: HZL/RDM/ENV/2022-23/ 12843

Date – 25.09.2022

Registered A/D

The Member Secretary,
Rajasthan State Pollution Control Board,
4th, Institutional Area,
Jhalana Doongari
JAIPUR (RAJ.)
PIN - 302004

Sub: Environment Statement of Rajpura Dariba Mine for the financial year 2021–2022.

Ref.: CTO Mine – F(Mines)/Rajsamand(Railmagra)/1724(1)/2018-2019/4481-4485 dated 12.01.2021
CTO Mill – F(HDF)/Rajsamand(Railmagra)/6460(10/2019-20/6027-6030 dated 18.03.2020
Environmental Clearance – J-11015/84/2018-IA-II(M) dated 13.04.2020

Sir,

Please find enclosed herewith the **Environment statement** for the financial year **2021 – 2022** of **Rajpura Dariba Mines, PO - Dariba, Teh: Railmagra, Dist. Rajsamand.**

Thanking you.

Yours faithfully,



(Pushpendra Singh Dhaibhai)
Unit Head - RDM

CC:

1. The Regional Officer,
Rajasthan State. Pollution Control Board,
Old Excise office building, Kalalwati Rajnagar
Rajsamand (Rajasthan), PIN - 313324

2. Office Copy

Hindustan Zinc Limited

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Registered Office : Yashad Bhawan, Udaipur (Rajasthan) - 313 004
CIN : L27204RJ1966PLC001208

Form-V
(See Rule 14)

Environmental Statement for the financial year ending the 31st March 2022

PART -A

(i)	Name and address of the owner / occupier of the industry operation or process	Sh. Arun Misra Chief Executive Officer & Whole Time Director Hindustan Zinc Limited Yashad Bhawan Udaipur - 313001
	Name & Address of the Unit Head	Sh. Pushpendra Singh Dhaibhai Unit Head – RDM Hindustan Zinc Limited Dariba-313211. Mobile No:9799397751
(ii)	Industry Category Primary – STC (Code) Secondary – STC (Code)	Red/Large GSTIN No.: 08AAACH7354K1ZB Not Applicable
(iii)	Production capacity-Units	2 Million TPA (Ore Production) & 2.5 Million TPA (Ore Beneficiation)
(iv)	Year of establishment	1983
(v)	Date of the last environmental statement submitted	05.09.2021

PART -B

(i) Water and raw material consumption

Water consumption	2020-21	2021-22
Process	3979 m3/day	5254 m3/day
Cooling	19.23 m3/day	17.22 m3/day
Domestic	260 m3/day	386.3 m3/day

Name of products	Process water consumption per unit of product output	
	2020-21	2021-22
Zinc Concentrate & Lead Concentrate	15.05 m3/MT of concentrate	18.62 m3/MT of concentrate

(ii) Raw material consumption

*Name of raw materials	Name of products	Consumption of raw material per unit of output	
		2020-21	2021-22
Lead-Zinc Ore	Lead-Zinc Concentrate	11.773 MT*	10.284 MT*

Copper Sulphate		0.0024 MT	0.0021 MT
Sodium Cyanide		0.0003 MT	0.0003 MT
Xanthate (SIPX+PEX)		0.001 MT	0.001 MT

* Ore is being treated to separate Lead and Zinc Concentrate

PART – C

Pollutant discharged to environment / unit of output

(Parameter as specified in consent issued)

Pollutants	Quantity of pollutants Discharged (mass/day)	Concentration of pollutants in discharges (mass/volume)	Percentage of variation from prescribed standard with reason
Trade effluents: Tailing slurry discharged to tailing dam	Zero Discharge	No Discharge	Zero discharge is maintained. Water is reclaimed from tailing dam and reused in beneficiation plant
Air Dust Emission from Stack (SPM) – Crusher Stack	0.21-1.27 Kg/hr.	21.99-45.23 mg/ Nm3	69.95 % lower than the stack emission standard

PART- D

HAZARDOUS WASTES

(as specified under Hazardous Wastes (Management and Handling Rules), 2016)

Hazardous Wastes	Total Quantity (Kg)	
	2020-21	2021-22
(a) From process		
Discarded asbestos (Cat. 15.2)	0 MT	MT
Empty barrels/containers/liners contaminated with hazardous chemicals/wastes (Cat. 33.1)	598 Nos.	607 Nos.
Chemical-containing residue arising from decontamination (Cat. 34.1)	74.75 Kg	75.5 Kg
Used or spent oil (Cat. 5.1)	155.29 MT	164.62 MT

Wastes or residues containing oil (Cat. 5.2)	3.93 MT	8.368 MT
(b) From pollution control facilities	Not Applicable	Not Applicable

PART- E

Solid Wastes

	Total Quantity	
	2020-21	2021-22
(a) From process (Tailings)*	729478 MT	897311 MT
(b) From pollution control facilities**	Nil	Nil
(c) (1) Quantity recycled or re-utilized within the unit ***	318320 MT	293033 MT
(2) Sold	Nil	Nil
(3) Disposed (Tailing Dam)	559189 MT	604278 MT

*All the tailings of beneficiation plant are being discharged to tailing dam and zero discharge is maintained. Water is reclaimed from tailing dam and is pumped back to beneficiation plant for reuse.

**All dust slurry transported to process plant and utilized

***Used as fill material for filling of underground voids.

PART – F

Details of Solid Wastes and its Disposal method:

Name of Waste	Chemical Characteristics	Quantity Generation/Annum (MT)	Mode of Storage	Mode of disposal
Tailings generation from Beneficiation process	Zn < 0.5% Pb<0.25% Fe: 10-14 %	897311 MT	Stored in thickeners in the form of slurry	Hydro-filling in underground mine for void filling and remaining quantity in tailing dam
Waste Rock	Zn: 0.01 – 0.03 % Pb: 0.05 – 0.07 % Fe: 2.5 – 5.5 % SiO ₂ : 30 – 35 % Graphite (C): 1.5 – 2.5 %	258301 MT	Stored in designated waste storage yard	Disposal in underground mine for void filling

Hazardous Waste:

Used Oil: -

The used lubricating oil is collected in empty drums and stored at earmarked place in the store yard for sale to registered recyclers duly registered by SPCB/CPCB.

Disposal of barrels of chemical substances: -

Sodium Cyanide is received in MS drums of capacity 50 Kg. Sodium Cyanide is used as depressant agent in Lead-Zinc flotation. The empty drums are de-contaminated by 5-7% Sodium Hypochlorite solution and given thorough wash with water. These drums are then flattened and stored in earmarked place and sent at common hazardous waste treatment storage facility at Gudli. The residue from this cleaning operation is reused in the process.

PART – G

Our aim is to preserve the long- term health of the natural environment affected by our operations. We set and achieve targets that promote efficient use of resources and include the reduction and prevention pollution.

The pollution abatement measures taken for conservation of natural resources are:

- Storage of tailings in the lined tailing dam.
- Reclamation and reuse of the tailing water for the Beneficiation plant operation.
- Construction of garland drain to prevent any possibility of leachate at tailing dam.
- Maintaining zero discharge from tailing dam.

PART- H

- Storage of used oil in covered shed.
- Dust from ore crushing & handling equipment's is being controlled by dust extraction system through wet scrubber & regular water spraying on industrial roads.
- Regular ambient air monitoring is being carried out.
- Water quality of mine & wells around the mine complex is being monitored on monthly basis.
- Regular recycling of Tailing Dam Water for beneficiation plant reuse.
- Regular monitoring of noise & persons working in high noise area are provided with ear muffs & ear plugs.
- Expenditure on Environment for 2021-22 is Rs. 1,09,25,620/-

PART – I

AIR QUALITY MANAGEMENT:

- Dust Extraction systems are provided in crusher; outlet of the system is further connected to stack to reduce PM emission.
- Dust suppression system with sprinklers have been installed at crusher, transfer points and conveyors also conveyors kept closed to mitigate impact on surrounding.

- Wet Drilling is being ensured for dust suppression in underground mine operations.
- Metaled road within the mine boundary and outside the mine area to avoid dust emission due to vehicular movement;
- Low profile Dumper Truck (LPDT) deployed with slow movement and low lift to reduce dust generation due to movement and handling of material;
- In underground, water-sprinkling arrangements is provided at the location of loading and mucking to suppress the dust;
- Greenbelt development ensured in various areas of mine along with all haul road, ore dump area etc.
- Regular sprinkling of water on roads to suppress dust.
- All finished good from mines is being transported through trucks covered with tarpaulin.
- Truck mounted vacuum cleaners is being used to maintain the good housekeeping and proper maintenance for controlling air pollution.
- Continuous Ambient Air Monitoring Stations (CAAQMS) have been installed for air quality monitoring.
- Regular monitoring of stacks and ambient air is being done through Laboratory approved from MoEF&CC.



MECHANNICAL TRUCK MOUNTED ROAD SWEEPER



CAAQMS

WATER MANAGEMENT:

By considering the availability, demand, importance, and value of water in life, we have developed sustainable water management plan and adopted for water conservation, recycling, reuse and reclaim policy in our operation. For effective implementation Following actions are ensured:

- Water coming due to intersection of water table from underground mining operation is being recycled and reused in process.
- Water going along with tailings in tailing dam is being reclaimed and reused in operation.
- Drip irrigation is provided to reduce water consumption for plantation.

- Regular monitoring of water table, quality of underground and surface water is being in core and buffer zone.
- Storm water ponds have been constructed inside mining area and water from the same is being used in operation
- Water conservation project has been done by deepening of water ponds.



DEEPENING OF MEHANDURIYA POND

WASTE MANAGEMENT:

We have adopted "4R" waste strategy – Reduce, Recycle, Reuse and Reclaim policy in our mines. Following action are being ensure for the same.

- Waste rock generated during mining operation is being reused in void filling.
- Tailing generated from Ore Beneficiation process is being reused for underground voids filling.
- Hazardous Wastes generated in mine are being segregated at source and then stored in designated areas equipped with secondary containment, spill control kits, impervious floor covered shed with sufficient capacity of fire extinguishers to avoid contamination with water air and soil and to control fire in case of emergency.

NOISE MANAGEMENT:

- Majority of mining activities are underground.
- Compressors located in isolated building and having acoustic enclosure.
- Ventilation fans are provided with dampeners. DG sets are having acoustic enclosure.
- All vehicles and machineries are periodically maintained as per OEM to ensure noise level within permissible limits.
- Regular monitoring of noise level.
- PPEs (Ear plug & Ear Muffs) are provided.

GREENBELT DEVELOPMENT:

Implementation of afforestation program is of paramount importance. Plantation is being carried out as per the plantation/greenbelt development plan.

- For the compliance reporting period, 4852 plants were planted the for maintenance of the current plantation. Furthermore, the project of

Miyawaki Plantation with a plantation density of 15000 plants/ha has also been taken and will be completed within 2022-23.

- This high-density plantation has been carried out to increase the overall plantation density to more than 2500 saplings/ha.
- Growth of each plant is monitored, and records are maintained. Survival rate for the plantation has been close to 90 %.
- The various plant species grown at site include; Neem (*Azadirachta indica*), Amaltas (*Cassia fistula*), Shisum (*Dalbergia Shishoo*), Ficus Religiosa, Terminalia Arjuna, Karanj (*Pongamia pinnata*) etc.
- While selecting the plant species for green belt, points related to dust capturing efficiency, plant's growth, canopy cover and origin of plant, climatic conditions etc. have been taken into consideration.

Plantation in Biodiversity Park



ENVIRONMENTAL AWARENESS:

To increase awareness on environment, events were celebrated on World Environment Day, Water day, Ozone day, MEMCW, etc.

- World Environment Day was celebrated on 5th June. Various competitions were organized, and prizes were distributed to the winners. Plantation was carried out. Fruit plant distribution, oath ceremony, quiz and prize distribution, etc. were conducted.
- Mine Environment & Mineral Conservation Week (MEMCW) was celebrated under the aegis of Indian Bureau of Mines. During the week-long celebrations. Various activities like Speech competition, slogan writing, etc. were organized for employees for creating awareness. Winners were conferred with awards.
- Environmental Training are regularly given to all concern on various aspects.
- Site is certified for ISO-9001:2015, ISO- 14001:2015, ISO-45001:2018, ISO-50001:2018 and SA 8000:2014.