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HINDUSTAN ZINC
Zinc & Silver of India

REGISTERED AD

HZL/SKM/ENV/Form-V/2023/135

September 19th, 2023

To,
The Member Secretary,
Rajasthan State Pollution Control Board,
4, Institutional Area,
Jhalana Doongri,
Jaipur (Rajasthan) -302004.

Sub.: Environmental Statement (Form-V) for the year 2022-23 of Hindustan Zinc Ltd, Sindesar Khurd Mine. (Unit ID: 70896).

Ref.: **(i)** F(Mines)/Rajsamand(Railmagra)/1715(1)/2017-2018/2097-2101 dtd 13/09/2022
(ii) F(HDF)/Rajsamand(Railmagra)/6463(1)/2021-2022/7920-7922 dtd 31/03/2022
(iii) F(CPM)/Rajsamand(Railmagra)/3(1)/2016-2017/5854-5857 dtd 09/01/2019
(iv) F(HSW)/Rajsamand(Railmagra)/4(1)/2016-2017/6170-6172 dtd 02/02/2022
(v) EC vide no. J-11015/7/2017/-IA.II(M) dtd 31.05.2018

Sir,

With reference to above subject please find enclosed Environmental Statement (Form-V) for financial year 2022-23 of Sindesar Khurd Mine located at Sindesar Khurd Village, Railmagra Tehsil Rajsamand District in Rajasthan.

Thanking You.

Yours Faithfully,

19/09/2023

Anshul Kumar Khandelwal
Unit Head & Authorized Signatory
Sindesar Khurd Mine, HZL

Cc: 1. The Regional Officer,
Rajasthan State Pollution Control Board,
Old Building of District Excise Office,
Kalawati, Rajnagar, Rajsamand-311001.

2. The Deputy Director (S)/ Scientist- C
Ministry of Environment Forests and Climate Changes,
Integrated Regional Office, A-209 & 218, Aranya Bhawan,
Jhalana Institutional area, Jaipur – 302004

3. Office copy

ENVIRONMENTAL STATEMENT FOR THE YEAR 2022-23

HINDUSTAN ZINC LIMITED
SINDESAR KHURD MINE

Prepared & Submitted By:

HINDUSTAN ZINC LIMITED
SINDESAR KHURD MINE
VILLAGE– SINDESAR KHURD, TEHSIL- RAILMAGRA
P.O. - DARIBA, DISTRICT – RAJASMAND - 313211
RAJASTHAN

Form –V (Environmental Statement)

For the Financial Year Ending the 31st March 2023

PART - A

(i)	Name and address of the owner/occupier of the industry operation or process Name and address of Unit Head	:	Arun Misra CEO & Whole Time Director M/s. Hindustan Zinc Limited Yashad Bhawan, Udaipur 313001. Anshul Kumar Khandelwal Unit Head, Sindesar Khurd Mine, Hindustan Zinc Limited, P.O.- Dariba, Tehsil- Relmagra, Dist. – Rajsamand, Rajasthan – 313211
(ii)	Industry category	:	Red/ Large
	Primary – (STC Code)	:	GSTIN No.: 08AAACH7354K1ZB
	Secondary- (SIC Code)	:	Not Applicable
(iii)	Production Capacity	:	6.0 Million Tons Per Annum (Lead- Zinc Ore Production) 6.5 Million Tons Per Annum (Lead- Zinc Ore Beneficiation)
(iv)	Year of Establishment	:	December 2005
(v)	Date of Last Environmental Statement Submitted	:	20.09.2022 vide letter no. HZL/SKM/ENV/Form-V/2022/97

PART -B
WATER AND RAW MATERIAL CONSUMPTION

(i) Water consumption (m^3/d) *

Name of Product	Process water consumption per MT of concentrate produced	
	During the previous financial year (2021-22)	During the current financial year (2022-23)
Lead-Zinc Concentrate	0.144 m^3/MT	0.218 m^3/MT

(ii) Raw material consumption:

Name of raw material	Name of products	Consumption of raw material per MT of concentrate produced	
		During the previous financial year (2021-22)	During the current financial year (2022-23)
Lead –Zinc Ore*	Lead & Zinc Concentrate	9.77 MT	10.57 MT
CuSo4		0.00347 MT	0.00309 MT
Sodium Iso Propyl Xanthate (SIPX)		0.000342 MT	0.00055 MT
Sodium Cyanide		Nil	Nil
Grinding Media (Rod)		0.00159 MT	0.00172 MT
Grinding Media (Ball)		0.00387 MT	0.00359 MT

*Ore is being treated to produce Lead and Zinc Concentrate at Sindesar Khurd Ore Beneficiation Plant

PART-C

POLLUTION DISCHARGED TO ENVIRONMENT/ UNIT OF OUTPUT

(Parameter as specified in the consent issued)

Sr. No.	Pollutants	Quantity of pollutants discharged	Concentration of pollutants in discharges (mass/volume)	Percentage of variation from prescribed standards
(a)	Water	Zero Discharge is maintained.		
(b)	Air: Particulate matter (SPM) from stack of Sec. crusher	42.23 Kg/day	80.41 mg/Nm3	Within Permissible Limit

PART-D

HAZARDOUS WASTES:

[As specified under Hazardous Wastes (Management, Handling & Transboundary Movement Rules, 2008)]

Hazardous Waste	Total Quantity Generation	
	During the previous financial year (2021-22)	During the current financial Year (2022-23)
(a) From Process		
Used /spent Oil (Cat.:5.1)	374.98 MT	469.65 MT
Waste or Residues containing oil (Oil Filters, Hoses etc.) Cat.: 5.2	73.02 MT	77.02 MT
Discarded Containers/barrels/liners used for hazardous chemicals/ wastes (Cat:33.1)	17.58 MT	6.87 MT
(b) From pollution control facilities	Not Applicable	Not Applicable

PART-E

SOLID WASTE:

Solid Waste	Total quantity generated during the year	
	During the previous Financial Year (2021-22)	During the current Financial year (2022-23)
(a) From process		
Tailings generation from beneficiation Process	4912740 MT	5441684 MT
Waste Rock	479181 MT	644189 MT
(b) From pollution control facility	Nil	Nil
(c) Quantity recycled or re-utilized within the unit	2808122 MT	2663261 MT

PART - F

Please specify the characterization (in terms of composition and quantum) of hazardous as well as solid wastes and indicate disposal practice adopted for both the categories of wastes.

Details of Solid Wastes and Its Disposal Method:

Sr No	Name of Waste	Chemical Characteristics	Quantity Generation/ Annum (MT)	Mode of Storage	Mode of Disposal
1	Tailings generation from beneficiation Process	Zn:< 0.2%, Pb:< 0.2%, Fe: 10-14%	5441684 MT	Stored in various storage tanks and thickeners in the form of slurry	Disposal in underground mine for void filling and remaining quantity sent in Tailing Dam.
2	Waste Rock	Zn: 0.01 to 0.03%, Pb: 0.05 to 0.07%, Fe: 2.5 to 5.5%, SiO2: 30-35%, Graphite (C):1.5 to 2.5%	644189 MT	Stored in designated waste storage yard.	Disposal in underground mine for void filling.

Details of Hazardous Wastes & Its Disposal Method:

Sr. No.	Name of Waste	Characteristics	Quantity Generation/Annum (MT)	Mode of Storage	Mode of Disposal
1	Empty barrels/ container/liners contaminated with hazardous chemicals / wastes	Flammable, Toxic	6.87	Stored in designated storage area equipped with all necessary arrangement to prevent spill/leak/fire etc.	Disposal in CTDF Udaipur/ Sale to Registered Recyclers
2	Contaminated cotton rags and other cleaning material	Flammable	3.13	Collected and stored in bins and bags in designated covered storage yard equipped with all necessary arrangement to prevent spill/leak/fire etc.	Approved Incinerator/ authorized recyclers or reprocessor
3	Sludge from treatment of wastewater arising out of cleaning/disposal of barrels/containers	Toxic, Reactive	---	Collected in Plastic barrels and kept in secured area of process for reuse.	Disposal in CTDF Udaipur
4	Used or Spent Oil	Flammable	469.65	Collected in MS barrels and being kept in designated storage yard equipped with all necessary arrangement to prevent spill, leak or fire.	Sales to Registered Recyclers
5	Wastes or residues containing Oil (Oil Filters, Hoses etc.)	Flammable	77.02	Collections in bin and kept in designated storage yard equipped with all necessary arrangement to prevent spill, leak or fire.	Incineration/ Sale to Registered Recyclers

PART-G

Impact of the pollution abatement measures taken on conservation of natural resources and on the cost of production.

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.

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.
- Concrete 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.
- Avenue Plantation is ensured at the road from mine to smelter at RDC.
- 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.
- 3 nos of Continuous Ambient Air Monitoring Stations (CAAQMS) have been installed for AAQ monitoring.
- Regular monitoring of stacks and ambient air is being done through third party Laboratory approved from MoEF&CC.
- Successful Trial of Reagent (Dustron) with various proportion of water has been conducted to improve dust suppression by increasing dust settling time along the haul roads and same is being continued.

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:

- Majority of operations are catered treated water from company operated Sewage Treatment Plant located at Udaipur and STP treated water is being used on priority.
- Water coming due to intersection from underground mining operation is being recycled and reused in process.
- Maximum use of Paste fill plant operation is being ensured to reduce water consumption for filling of voids in underground mine.
- 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.

- Water conservation projects have been done by deepening of water ponds from nearby villages.

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 and also being used in height raisening of tailing dam. Tailing genrated from Ore Beneficiation process is being reused for filling of underground voids.

Hazardous Wastes generated in mine are being segregated at source and then stored in designated areas equiped with secondary containment, spill control kits, impervious floor, covered shed to avoid contamination with water, air and soil and sufficient numbers of fire extinguishers are provided 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 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 Muff) are provided.

PART-H

Additional measures/investment proposal for environment protection including abatement of pollution /prevention of pollution.

1. Green belt Development: Implementation of afforestation program is of paramount importance for Sindesar Khurd Mine. Till date 104850 nos. of saplings have been planted successfully in various areas of mine. Drip irrigation facility has been provided to plant saplings. Around 100 kg seeds were spread to further increase green cover of Sindesar Khurd Mines.
   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.

2. Cleaning of industrial roads and yards by Mechanical Road Sweepers.

3. Auto Dust suppression system at crusher

4. Dust suppression through water sprinkling on haul road at surface and in underground

5. 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.

PART - I

Any other particular for improving the quality of the environment.

- Sindesar Khurd Mine won Rajasthan Energy Conservation Award-2022 held by (RRECL-Rajasthan Renewable Energy Corporation Limited)
- In Mines Environment & Mineral Conservation week-2021 held in Aug-22, SKM bagged 1st Prize in Systematic and scientific development.

- Induction of India's 1st Battery-operated Electric vehicle (BEV) in SK Mines for UG mining operation.

- Site is certified for ISO 9001:2015, ISO 14001:2015, ISO 45001:2018, ISO 50001: 2018 standards.
- Sindesar Khurd Mines had celebrated "No Vehicle Day" on 10th October'2022, 14th December'22, and on 13th January 2023 to support the environment and reduce the carbon footprint.
- Environmental Training are regularly given to all concern on various aspects of the Safety, Environment and job-related training.
- Provision of permanent water sprinklers on haul road for continuous dust suppression.

19/09/2023

Anshul Kumar Khandelwal
Unit Head & Authorized Signatory
Sindesar Khurd Mine, HZL

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