

**INDIAN BUREAU OF MINES
MINERALS DEVELOPEMMENT AND REGULATION DIVISION**

MCDR INSPECTION REPORT

Gandhinagar regional office

Mine file No : RAJ/UDP/PB-ZN-2

Mine code : 34RAJ26004

- (i) Name of the Inspecting : **DJ03**) **DILIP JAIN**
Officer and ID No.
- (ii) Designation : Senior Mining Geologist
- (iii) Accompanying mine : Mr. Nandlal Swami, Mine Manager, Dr. Shashi Bhushan S
Official with
Designation
- (iv) Date of Inspection : 11-JUL-24
- (v) Prev.inspection date : 07-NOV-19

PART-I : GENERAL INFORMATION

1. (a) **Mine Name** : **ZAWARMALA**
- (b) **Registration NO.** : **IBM/421/2011**
- (c) Category : A Mechanised
- (d) Type of Working : Underground
- (e) Postal address
- State : RAJASTHAN
- District : UDAIPUR
- Village : ZAWAR
- Taluka : GIRWA
- Post office : ZAWAR MINES
- Pin Code :
- FAX No. : 0294-2726243
- E-mail : Sunil.Duggal@vedanta.co.in
- Phone : 2726611,2726612,2726253,
- (f) Police Station : Zawar Mines
- (g) First opening date : 01-APR-50
- (h) Weekly day of rest : MON
2. Address for : VILL-ZAWAR
correspondance POST-ZAWARMALA,P.O=Goverdhanvilash
DISTT-UDAIPUR
3. (a) Lease Number : RAJ1725
- (b) Lease area : 816
- (c) Period of lease :
- (d) Date of Expiry : 29-MAR-10
4. Mineral worked : LEAD & ZINC ORE Main

5. Name and Address of the

Lessee : Hindustan Zinc Ltd.
 Yashad Bhavan Udaipur
 UDAIPUR RAJASTHAN
 Phone:
 FAX :

Owner : Shri Arun Misra
 YASHAD BHAWAN HINDUSTAN
 ZINC LIMITED Udaipur
 UDAIPUR RAJASTHAN
 Phone: 0294-2421420
 FAX : 0294-2412545

Agent : Sri Radha Raman
 Admin Block Zawar Mines,
 Udaipur UDAIPUR RAJASTHAN
 Phone:
 FAX :

Mining Engineer
 Name : Mr. Shantanu Karmakar, Full Time
 Qualification : BE mining
 Appointment/ : 11-SEP-23
 Termination date

Geologist
 Name : Dr. Shashi Bhushan Shukla, Full Time
 Qualification : Ph. D. Geology
 Appointment/ : 14-JAN-22
 Termination date

Manager
 Name : Sri Nandlal Swami
 Qualification : BE mining
 Appointment/ : 21-JAN-23
 Termination date

6. Date of approval of Mining : PMCP under 23B(1) for Renewal 21-AUG-09
 Plan/Scheme of Mining

PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	A total of 80 BHs with 18000 mts of drilling was proposed during previous year 2022-23.	A total of 117 BHs with 18147.15 mts of drilling was completed during previous year 2022-23.	No short fall during previous year.
1b	Exploration over lease area for geological axis 1 or 2	A total of 80 BHs with 18000 mts of drilling was proposed during reporting year (RY) 2023-24.	A total of 97 BHs with 13443.00mts of drilling was completed during reporting year (RY) 2023-24.	Surface and UG exploration for Zawarmala Mine of Zawar Group of Mines.
1c	Exploration Agencies and Expenditure in lakh rupees during the year	No specific proposal of drilling agency and expenditure.	Surface Exploration: MAPL, TDMA and Underground Exploration: EFMCP, TDMA. Total Expenditure: Rs. 33606500/-	Nil
1d	Balance area to be explored to bring Geological axis in 1 or 2	An area of 0.20 hectare of G3 level proposed to explore under G2/G1 level.	An area of 0.10 hectare of G3 level has been explored under G2/G1 level during RY.	Violation of rule 11(1) of MCDR, 2017 issued for shortfall in exploration of G3 area vide letter dated 20/08/2024.
1e	Balance reserve as on 01/04/20	The position of reserve and resources as on 01/04/2021 was 3.01 and 5.95 million tons respectively.	The position of reserve and resources as on 01/04/2024 was 3.29 and 4.31 million tons respectively.	The position of reserve and resources as per AR 2023-24.
1f	General remarks of inspecting officers on geology, exploration etc			Geologically the area is complex in nature. 3D modeling technique is being used for correlation of ore body, exploration planning and grade interpolation etc.

Development :

Sl.No.	Item	Proposals	Actual work	Remarks
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2a	Location of development w.r.t. lease area	A total of 4300 mts of development was proposed in C. Zone, E. Zone, W. Zone and South Zawarmala.	During the RY, a total of 1921.02 mts development has been achieved in C. Zone, E. Zone and W. Zone.	Violation of rule 11(1) of MCDR, 2017 issued vide letter dated 20/08/2024 for less development.
2b	Separate benches in topsoil, overburden and minerals (Rule 15)	Not applicable being a UG mine.	Not applicable.	Nil
2c	Stripping ratio or ore to OB ratio	Not applicable being a UG mine.	Not applicable.	Nil
2d	Quantity of topsoil generation in m3	No proposal of topsoil generation during the RY.	No topsoil has been generated during the RY.	Nil
2e	Quantity of overburden generation in m3	A total of 88000MT of waste has been proposed to generate through UG development during RY 2023-24.	A total of 37422.10 MT (22013CuM) waste has been generated during the RY 2023-24.	Less quantity of waste generation due to less development.
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc	Underground development has been proposed through burn cut method.	As per proposal.	Underground development was proposed through burn cut method of development and same is being practiced at the mine. The development was less compared to the proposed development, resulting violation of rule 11(1) of MCDR, 2017 issued vide letter dated 20/08/2024.

Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
3a	Number of pit proposed for production	Not applicable being a UG mine.	Not applicable.	Nil

3b	Quantity of ROM mineral production proposed	600000 Tons	486705 Tons	Less production in account of less development. Violation for less development issued vide letter dated 20/08/2024.
3c	Recovery of sailable/usable mineral from ROM production	100%	100%	Entire ROM is usable and being dispatch to the beneficiation plant located in lease area.
3d	Quantity of mineral reject generation	Mineral Reject (Mill tailing) generation- 540000 MT.	Entire ROM is subject to beneficiation. A quantity of 441080 tons of mill tailing has been generated.	Less generation due to less production of ROM and beneficiation.
3e	Grade of mineral rejects generation and threshold value declared.	No proposal of grade.	The grade of mil tailing reported was 0.20 % (Pb+Zn)	Grade as per AR 2023-24.
3f	Quantity of sub grade mineral generation.	No proposal of Sub-grade generation.	Not applicable.	Nil
3g	Grade of sub grade mineral generation	Not applicable as no proposal of sub-grade generation.	Not applicable.	Nil
3h	Manual / Mechanised method adopted for segregating from ROM	No proposal of segregation as entire ROM is subject to beneficiation.	Entire ROM is being beneficiated in beneficiation plant located in lease area. .	Nil
3i	Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects.	No proposal of any fresh beneficiation study. However, beneficiation facility of 5.2 mtpa is already in place within lease boundary.	Beneficiation of ROM is being carried out as per proposal.	ROM of Balaria, Baroi and Mochia mine is also beneficiated at same location.

3j	Provision of drilling and blasting in mineral benches	Drilling pattern for development in ore and rock- Burn Cut method. Drilling pattern in Stopes- Ring drilling with parallel hole drilling.	Drilling and blasting has been carried out as per proposal in UG development and stopes.	Nil
3k	Provision of mining machineries in mineral benches	Twin Boom Jumbo, Loaders, LPDT, Grader, scaler and utility vehicles etc. have been proposed for mine development and stoping operation.	Deployment of Mining machinery has been found as per proposal.	Nil
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Not applicable being a UG mining operation.	Not applicable.	Nil
3m	Total area covered under excavation/pits	Not applicable being a UG mining operation.	Not applicable.	Nil
3n	Ore to OB ratio for the pit/mine during the year.	Not applicable being a UG mining operation.	Not applicable.	Nil
3o	Total area put in use under different heads at the end of year	Total area of 380.12 hectare has been proposed to put in use under different heads at the end of the year 2024-25.	An area of 366.30has been utilized under different heads at the end of the year 2023-24.	Figures for entire Zawar lease area.

3p	Production of ROM mineral during the last five year period as applicable	2018-19: 300000 2019-20: 580000 2020-21: 540000 2021-22: 550000 2022-23: 550000 2023-24: 600000	2018-19: 299995 2019-20: 435925 2020-21: 397728 2021-22: 381438 2022-23: 347382 2023-24: 486705	All figures in Metric Tons (MT)
3q	General remarks of inspecting officers on method of mining etc.	Underground method of mining has been proposed.	Underground method of mining is being practiced.	The method of mining proposed is suitable for the type of the deposit.

Solid Waste Management - Dumping:

Sl.No.	Item	Propasals	Actual work	Remarks
4a	Separate dumping of topsoil, OB and mineral rejects (Rule 32,33)	No proposal of topsoil generation. Developmental waste and mill tailing was proposed to dispose separately.	Top soil has not been generated during the reporting year. Developmental waste has been disposed in stope out area and mill tailing has been disposed in existing tailing dam and exhausted stopes through paste filling.	Nil
4b	Location of topsoil, OB and mineral reject dumps	Top Soil: No proposal. Waste: UG stopes as well as for tailing dam construction. Tailing: Baroi tailing dam/dry staking in extension of the old tailing dam.	Top Soil: No top soil generation during RY. Waste: As per proposal in UG stopes and tailing dam construction. Tailing: Baroi tailing dam/dry staking on old tailing dam.	Violation of rule 11(1) of MCDR, 2017 issued for deviation in location of dry staking of tailing vide letter dated 20/08/2024.

4c	Number of dumps within lease area and outside of lease area	No proposal of waste dumping in and outside lease area. Developmental waste is proposed to dispose in UG stopes as well as for tailing dam construction.	No waste dumping outside lease area. Developmental waste has been disposed in stope out area.	Nil
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	Not applicable being a UG mine.	Not applicable.	Nil
4e	Number of active and alive dumps.	No proposal.	Not applicable.	Nil
4f	Number of dead dumps.	No proposal.	Not applicable.	Nil
4g	Number of dumps established.	No proposal.	Not applicable.	Nil
4h	Whether Retaining wall or garland drain all along dumps are there.	Not applicable as no waste dump within mine boundary.	Not applicable.	Nil
4i	Length of Retaining wall or garland drain all along dumps	No proposal.	Not applicable.	Nil
4j	Number of settling ponds	No proposal.	Not applicable.	Nil
4k	Specific comments of inspecting officer on waste dump management			Dry tailing stacking was proposed in extension of old rehabilitated tailing pond, whereas dry staking of tailing was observed over the of old rehabilitated tailing pond. Hence, violation of rule 11(1) of MCDR, 2017 issued for deviation in dry staking of tailing vide letter dated 20/08/2024.

Sl.No.	Item	Propasals	Actual work	Remarks
5a	Status of part or full extraction of mineral from mined out area before starting backfilling.	After full extraction of mineral from the stopes, backfilling or waste dumping in UG stoped out area was proposed.	Dumping of waste has been carried out in UG stopes after full extraction of mineral.	Nil
5b	Area under backfilling of mined out area	Waste quantity of 85000 MT and mill tailing of 410400 MT was proposed to backfill in UG voids.	Waste quantity of 37422 tons and mill tailing of 233820 MT disposed UG stopes.	The violation of rule 11(1) of MCDR, 2017 issued for shortfall in backfilling of mill tailing vide letter dated 20/08/2024.
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	No proposal of topsoil generation during reporting year.	No topsoil has been generated during the year.	Nil
5d	Total area fully reclaimed and rehabilitated	Not applicable being a UG mine.	Not applicable.	Nil
5e	General remarks of inspecting officers on backfilling and reclamation etc.			Developmental waste and mill tailing (hydraulic filling) is being back filled in exhausted stopes. However, violation of rule 11(1) of MCDR, 2017 issued for shortfall in backfilling of mill tailing vide letter dated 20/08/2024.

Progressive Mine Clousre Plan:

Sl.No.	Item	Propasals	Actual work	Remarks
6a	Whether Annual report on PMCP submitted on time and correctly. Rule 23 E(2).	As per rule 26(2) of MCDR, 2017, PMCP report to be submitted for previous year by 1st July.	Annual PMCP report for reporting year i.e. 2023-24 has been submitted along with annual return for the year 2023-24.	Nil

6b	Area available for rehabilitation (ha) .	No proposal.	Not applicable.	Nil
6c	afforestation done (ha).	5ha (Infill Plantation)	5ha (Infill Plantation)	Figures for entire Zawar lease area.
6d	No. of saplings planted during the year	5000 nos (within lease area).	6000 nos (within lease area).	Figures for entire Zawar lease area.
6e	Cumulative no .of plants	No Proposal.	452815 nos as on 31/03/2024.	Nil
6f	Any other method of rehabilitation	No Proposal.	Not applicable.	Nil
6g	Cost incurred on watch and care during the year	No Proposal.	Rs 388100000/-	Figures for entire Zawar lease area.
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (Lx B x D	No specific proposal of area. A quantity of 410400MT of mill tailing and 85000 MT of waste has been proposed to dispose in UG voids.	A quantity of 233820 MT of mill tailing and 37422 MT of waste has been dispose in UG stopes	Less quantity of waste backfilling in account of less development. Violation of rule 11(1) of MCDR issued for deviation in backfilling of mill tailing vide letter dated 20/08/2024.
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	A quantity of 410400MT of mill tailing and 85000 MT of waste has been proposed to dispose in UG voids.	A quantity of 233820 MT of mill tailing and 37422 MT of waste has been dispose in UG stopes	Less quantity of waste backfilling in account of less development. Violation of rule 11(1) of MCDR issued for deviation in backfilling of mill tailing vide letter dated 20/08/2024.
6j	Compliance on reclamation and rehabilitation by backfilling (iii)Afforestation on on backfilled area	No proposal.	Not applicable.	Nil
6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	No proposal.	Not applicable.	Nil

6l	Compliance on reclamation and rehabilitation by backfilling (v)any other specific means.	No proposal.	Not applicable.	Nil
6m	Compliance of rehabilitation of waste land within lease (i)afforestation	5000 number of saplings.	6000 number of saplings.	Figures for entire Zawar lease area.
6n	Compliance of rehabilitation of waste land within lease (ii)Area rehabilitation (ha)	5.0 Hectare area (gap filling).	5.0 Hectare area (gap filling).	Figures for entire Zawar lease area.
6o	Compliance of rehabilitation of waste land within lease (iii)Method of rehabilitation	Plantation.	Plantation.	Nil
6p	Compliance of environmental monitoring (core zone and buffer zone)	Provision of environment monitoring stations has been given.	Environment monitoring is being carried out and on sample check parameters are found within permissible limit.	The afforestation done during the RU was satisfactory. However, violation of rule 11(1) of MCDR, 2017 issued for shortfall in backfilling quantity vide letter dated 20/08/2024.
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.			Nil

Mineral Conservation:

Sl.No.	Item	Propasals	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	No specific proposal of grade wise sorting.	Entire ROM ore is being transported to Ore beneficiation plant located within lease area.	Nil

7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	Not applicable as no grade wise sorting proposal.	Not applicable.	Nil
7c	Different grade of mineral sorted out at mines.	No proposal.	Not applicable.	Nil
7d	Any beneficiation process at mines .	A beneficiation plant of 5.2 MTPA is installed within lease area.	Beneficiation plant having capacity of 5.2 MTPA Installed. The process includes mainly crushing and grinding of ROM, Classification , differential flotation etc.	Nil
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues			No issue related to mineral conservation.

Environment:

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	No proposal of topsoil generation.	Not applicable.	Nil
8b	Concurrent use or storage of topsoil	Not applicable as no proposal of top soil generation.	Not applicable.	Nil
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	No proposal of Reject and fines generation. Waste has been proposed to dispose in UG stoped out area and as well as for tailing dam construction	Reject and fines has not been generated during the year. Waste has been disposed in UG stoped out area.	Nil

8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	Waste proposed to dispose in stopped out area and tailing dam construction.	Generated waste has been disposed in U/G stoped out area.	Nil
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	No proposal.	Not applicable.	Nil
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	An area of 5.0 hectare (gap filling) with 5000 number of saplings.	An area of 5.0 hectare (gap filling) with 6000 number of saplings. .	Number of cumulative plantation is 452815 as on 31/03/2024.
8g	Survival rate	No specific proposal of for survival rate.	About 90% of plant survived.	Nil
8h	Water sprinkling on roads to control airborne dust	To control air born dust particle, water sprinkling has been proposed over the roads by water tanker.	Water sprinkling has been observed with fixed water sprinklers at Crusher and stockpile area.	Nil
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area			Aesthetic beauty in and around mine is satisfactory as the working is being carried out through UG mining method.

Compliance of Rule 45:

Sl.No.	Item	Propasals	Actual work	Remarks
9a	Status of submission of Monthly and Annual returns	As per rule 45 of MCDR, monthly and annual returns to be submitted.	Monthly and annual returns for the reporting year have been submitted.	Nil

9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Mining Eng.- Shantanu Karmakar Geologist- Dr. Shashi Bhushan Shukla Manager- Nandlal Swami	Mine Manger, Mining engineer and Geologist are appointed.	Nil
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	A total of 321.23 hectare area has been furnished under infra, roads etc and 45.07 hectare area furnished as reclaimed and rehabilitated.	As per approved document an area of 0.5 hectare has been furnished under waste dumps. However, same has not shown in the submitted AR.	The area of waste dump not shown, show-cause notice for violation of rule 45(7) of MCDR, 2017 issued vide letter dated 20/08/2024
9d	Scrutiny of Annual return on afforestation	Afforestation- 5 Ha (Gap Filling) and no. of Saplings- 6000	Found in order.	Nil
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	Mineral reject generation: NIL	No mineral reject generation during RY.	Mill tailing of 441080.36 tons has been generated.
9f	Scrutiny of Annual return on ROM stock and/or graded ore	ROM Closing stock at Mine head- Nil	The information furnished is found in order.	Nil
9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	Ex mine price- 4030.80/- and cost of production 5096.41/ ton.	The mine is a captive mine, hence the cost of production and Ex-mine price shall be same.	Violation of rule 45(7) of MCDR, 2017 issued for the deviation vide letter dated 20/08/2024.
9h	Scrutiny of Annual return on fixed assets	Value of fixed asset Rs: 1975651901.00	The information furnished appears in order.	Nil
9k	Scrutiny of Annual return on mining machineries	Winding Engine, Blast hole drill, rock drill, locomotive, dumper, LHD, Air compressor, Ventilation fan, Pumps, Conveyor, crusher etc.	The information furnished appears in order.	Besides above, few more discrepancy has also been observed in annual return for which violation of rule 45(7) of MCDR, 2017 issued vide letter dated 20/08/2024.

Details of violations observed during current inspection and compliance position of violation pointed out

Violation observed			Show couse position		
Rule NO.	Issued on	Compliance on	Rule NO.	Issued on	Compliance on
MCDR17 Rule 11(1)	20-AUG-24				
MCDR17 Rule 45(7)(a)	20-AUG-24				

Date :

(DILIP JAIN)

Indian Bureau of Mines