

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

MCDR INSPECTION REPORT

Gandhinagar regional office

Mine file No : RAJ/UDP/PB-ZN ORE-1

Mine code : 34RAJ26002

- (i) Name of the Inspecting : **DJ03**) **DILIP JAIN**
Officer and ID No.
- (ii) Designation : Senior Mining Geologist
- (iii) Accompanying mine : Shri Balamurugan P(Mine Manager), Shri Vekesh Chittor
Official with
Designation
- (iv) Date of Inspection : 15-FEB-24
- (v) Prev.inspection date : 21-NOV-23

PART-I : GENERAL INFORMATION

1. (a) **Mine Name** : **MOCHIA**
- (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 : SARDA/GIRWA
- Post office : ZAWAR MINES
- Pin Code : 313901
- FAX No. : 0294-2412545
- E-mail : arun.mishra@vedanta.co.in
- Phone : 0294-6604120
- (f) Police Station : Zawar
- (g) First opening date : 01-APR-55
- (h) Weekly day of rest : MON
2. Address for : VILLAGE-ZAWAR
correspondance : DISTT-UDAIPUR
3. (a) Lease Number : RAJ1725
- (b) Lease area : 816
- (c) Period of lease : 80
- (d) Date of Expiry : 31-MAR-30
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 : Sri Arun Mishra
 Yashad Bhavan, Udaipur
 Rajasthan UDAIPUR
 RAJASTHAN
 Phone:
 FAX : 0294-2412545

Agent : Sri Vikesh Chittora
 Post: Zawar Mine, Tidi
 Udaipur, Rajasthan UDAIPUR
 RAJASTHAN
 Phone:
 FAX :

Mining Engineer

Name : Shri Balamurugan P, Full Time
 Qualification : BE Mining
 Appointment/ : 07-DEC-16
 Termination date

Geologist

Name : Sri Vivake Tyagi, Full Time
 Qualification : M.Sc. Geology
 Appointment/ : 15-DEC-17
 Termination date

Manager

Name : Mohd. Javed Alam
 Qualification : BE Mining
 Appointment/ : 04-MAR-21
 Termination date

Manager

Name : Sri Sanat Kumar
 Qualification : B.E. Mining
 Appointment/ : 01-DEC-20 04-MAR-21
 Termination date

6. Date of approval of Mining Plan/Scheme of Mining : Mining Scheme rule 12 MCDR1988 01-JUL-02
 MP modif under 17(3) MCR 2016 17-MAY-19
 MP review under 17(1) MCR 2016 17-DEC-19
 MP modif under 17(3) MCR 2016 15-JUL-21

PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	During Previous year 2021-22, total 243 BH have been proposed with 57000 mts.	During Previous year 2021-22, total 303 BH have been proposed with 59972 mts.	No backlog.
1b	Exploration over lease area for geological axis 1 or 2	2022-23: Surface: 21000m (39) Underground: 40000m (240) Total 279 BH with 61000 mts.	2022-23: Surface: 43153 (49) Underground: 42073.8 (345) Total 394 BH drilled with 85227 mts.	Nil
1c	Exploration Agencies and Expenditure in lakh rupees during the year	No specific proposal about drilling agency.	Surface Exploration MAPL, TDMA, EFMCPPL Expenditure Rs: 181734775 Underground Exploration EFMCPPL, TDMA : Expenditure Rs: 11323269	Nil
1d	Balance area to be explored to bring Geological axis in 1 or 2	G1 (10.24Ha) G2 (2.24Ha) G3 (6.53Ha)	2022-23: G1 (10.78Ha) G2 (2.37Ha) G3 (5.21Ha)	None
1e	Balance reserve as on 01/04/20	No specific Yearwise proposal given.	Reserve and resource as on 31.03.2023 was 19.0MT and 36.5 million tons respectively.	Nil
1f	General remarks of inspecting officers on geology, exploration etc			The exploration has been carried out as per the approved proposal. There is no shortfall in exploration. Geologically the area is complex in nature. 3D modelling technique is being used for correlation of ore zone 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 18800 m (horizontal and vertical) of development has been proposed.	A total of 12645.6m (horizontal and vertical) of development has been achieved.	Violation of rule 11(1) of MCDR 2017 issued during previous inspection for shortfall in development.
2b	Separate benches in topsoil, overburden and minerals (Rule 15)	Being UG mine there was no proposal of separate benches in top soil, OB and minerals.	Not applicable as mining operation has been proposed through UG Mining Method.	Nil
2c	Stripping ratio or ore to OB ratio	No proposal being a UG mining operation	Not applicable.	Nil
2d	Quantity of topsoil generation in m3	No proposal of topsoil generation during the year.	Being UG mine no Topsoil generated during the year	Nil
2e	Quantity of overburden generation in m3	A total of 146296.20m3 (395000MT) of waste has been proposed to be generate through UG development.	A total of 189506.66m3 (511666 MT) of waste has been generated by UG development.	The waste generation from UG was more than the proposal for which violation of rule 11(1) has been pointed out during previous inspection.
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc			Over all Development is less than the proposal. Violation of Rule 11(1) has been pointed out during previous inspection.

Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
3a	Number of pit proposed for production	Being UG mine no proposal for production from pit. However, in UG propduction from development & 11 stope block was proposed	During the year production from UG development and 5 stope block has been achieved.	Nil

3b	Quantity of ROM mineral production proposed	1800000 tons of ROM mineral production has been proposed.	1569453 tons of ROM mineral production has been achieved.	Less production in account of less development.
3c	Recovery of sailable/usable mineral from ROM production	100% ROM is usable for beneficiation.	Entire ROM is being used for the purpose of beneficiation.	Less production in account of less development.
3d	Quantity of mineral reject generation	1642500 tons of mineral reject/mill tailing generation was proposed.	During beneficiation of ROM about 1455065 tons of mill tailing has been generated.	Less generation due to less production of ROM compared to proposal.
3e	Grade of mineral rejects generation and threshold value declared.	No proposal. No threshold value has been declared for Pb-Zn minerals.	The grade of mill tailing reject reported as 0.39 % (Pb+Zn).	Nil
3f	Quantity of sub grade mineral generation.	No proposal of Sub-grade generation.	Beneficiation of whole ROM is being carried out. No sub-grade mineral generation.	Nil
3g	Grade of sub grade mineral generation	Not proposed.	Not applicable as there is no sub-grade generation.	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.	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 4.8 mtpa is already in place within lease boundary.	ROM of all the 04 mines i.e Mochia, Balaria, Baroi and Zawarmala mine is being beneficiated at same location.

3j	Provision of drilling and blasting in mineral benches	Being UG mine, no provision of drilling & blasting in mineral benches. However, 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	Being UG mine there was no proposal of mining machineries in mineral benches. However, Twin Boom Jumbo, Loaders, LPDT, Grader, scaler and utility vehicles etc. has been proposed for mine development and stoping operation.	Deployment of Mining machinery has been found to be as per proposal in UG operations.	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 was proposed to utilize at the end of the plan period i.e. 2024-25.	Total area of 325.23 hectare (as per AR) was utilized at the end of the year 2022-23.	Nil
3p	Production of ROM mineral during the last five year period as applicable	2018-19: 950000 2019-20: 1500000 2020-21: 1500000 2021-22: 1600000 2022-23: 1800000	2018-19: 949994 2019-20: 1175794 2020-21: 1424513 2021-22: 1512919.7 2022-23: 1569453	All figures in tons. Less production during the year 2022-23 in account of less development.
3q	General remarks of inspecting officers on method of mining etc.	UG mining method proposed.	UG mining method as per proposal has been implemented.	Method of mining is suitable to the type of deposits. No issue observed related to method of mining.

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 top soil. Tailing/Minera l Reject will be disposed in Tailing dam . U/G development waste is proposed to dispose in UG stopes as well as for tailing dam construction.	Tailing/Mineral reject & waste rock generated during the year has been disposed as per proposal.	Nil

4b	Location of topsoil, OB and mineral reject dumps	No proposal of topsoil generation. OB/waste is proposed to dispose in UG stopes as well as for tailing dam construction. Mineral reject/Mill tailing has been proposed to backfill in stope out area.	Topsoil has not been generated during the reporting year. Waste and mill tailing has been disposed as per proposal.	Nil
4c	Number of dumps within lease area and outside of lease area	No proposal of waste dumping within Mine boundary.	No waste dumping within Mine boundary of mochia mine.	Nil
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	No proposal.	Not applicable as Mining operations are being carried out through UG mining method	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.	No proposal.	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	Top soil has not been generated during the reporting year. Mineral reject in form of tailing generated during the year has been disposed as per proposal in the tailing dam & UG stopes. The waste rock handled during underground development is backfilled in the worked out stopes.
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Solid Waste Management - Backfilling:

Sl.No.	Item	Propasals	Actual work	Remarks
5a	Status of part or full extraction of mineral from mined out area before starting backfilling.	Waste generated during development was proposed to dispose in mined out stopes after full extraction of mineral as well as for tailing dam construction.	Waste generated during development was disposed in mined out stopes after full extraction of mineral.	Nil
5b	Area under backfilling of mined out area	No specific proposal of area. A quantity of 385000 tons of waste has been proposed to dispose in UG stopes and Hydraulic backfill of tailing 388800 tons	The entire quantity of 189506.66m3(511667 tons) of waste has been dispose in UG stopes and Hydraulic backfill - 302598 tons.	The waste generation from UG is more than the proposal for which violation of rule 11(1) has been pointed out during previous inspection.
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	No proposal of top soil generation during reporting year.	No top soil has been generated during the year.	Nil

5d	Total area fully reclaimed and rehabilitated	No proposal of full reclamation and or rehabilitation	Not applicable	Nil
5e	General remarks of inspecting officers on backfilling and reclamation etc.	Waste generated during development was proposed to dispose in mined out stopes after full extraction of mineral as well as for tailing dam construction.	Waste generated during development was disposed in mined out stopes.	No issue related to the backfilling. Waste generated during development is being disposed in the stoped out area.

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. 2022-23 has been submitted.	Nil
6b	Area available for rehabilitation (ha) .	No proposal.	Not applicable.	Nil
6c	afforestation done (ha).	5.0 Ha areas have been proposed for afforestation within Zawar Lease area.	Afforestation has been carried out in 5.0 Ha. area.	Gap filling planation has been carried out in entire Zawar lease.
6d	No. of saplings planted during the year	Total 5000 nos of saplins within lease area.	Total 5190 sapling planted during the year.	Figures are for entire Zawar Lease area. No mine specific proposal.
6e	Cumulative no .of plants	No specific proposal on cumulative number of plants	The cumulative number of planation as on 31/03/2023 was 447815.	Nil

6f	Any other method of rehabilitation	No specific proposal of any other method of rehabilitation except plantation	Except plantation no other method of rehabilitation was observed.	Nil
6g	Cost incurred on watch and care during the year	No specific proposal on cost of watch and care during the year.	Cost incurred on watch & care during the year is approximately Rs 577400/-	Nil
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (L x B x D	Voids proposed for backfilling was 211000 m3	Voids available for backfilling is 78288.11m3	Nil
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	A quantity of 385000 tons of waste has been proposed to dispose in UG stopes and Hydraulic backfill - 388800 tons	The entire quantity of 511667 tons of waste has been dispose in UG stopes and Hydraulic backfill - 302598 tons	Nil
6j	Compliance on reclamation and rehabilitation by backfilling (iii) Afforestation on backfilled area	No proposal.	Not applicable being an underground mine.	Nil
6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	No proposal.	Not applicable being an underground mine.	Nil
6l	Compliance on reclamation and rehabilitation by backfilling (v) any other specific means.	No any specific proposal.	Not applicable being an underground mine.	Nil
6m	Compliance of rehabilitation of waste land within lease (i) afforestation	5 Ha area by 5000 sapling.	5 Ha area by 5190 sapling.	Figures are for entire Zavar Lease area.

6n	Compliance of rehabilitation of waste land within lease (ii)Area rehabilitation (ha)	5.0 ha area.	5.0 ha area.	Figures are 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 has been carried out	Nil
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.	A total of 5000 number sapling plantation in 5.0 ha area.	A total of 5000 number of saplings has been planted in 5.0 ha.	PMCP compliance is satisfactory.

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 of ROM. Entire ROM proposed to dispatch for beneficiation.	Entire ROM ore is being transported/dispatched to Ore beneficiation plant located within zawar lease boundary.	Nil
7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	No proposal for grade-wise sorting.	Not applicable as no grade wise sorting.	Nil
7c	Different grade of mineral sorted out at mines.	No Proposal.	Not applicable as no grade wise sorting.	Nil

7d	Any beneficiation process at mines .	Yes. Ore beneficiation process in lease area for all 4 mines located within Zawar lease area.	4.8 MTPA Beneficiation plant has been installed within the lease area. The process includes mainly crushing and grinding of ROM, Classification, differential flotation cell etc.	Nil
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues			No issues observed related to mineral conservation and beneficiation. Beneficiation of ROM is being carried out through beneficiation plant of 4.8 MTPA installed within the lease area.

Environment:

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

8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	No proposal of use of waste rock for restoring the land to its original use. However, waste rock is proposed to dispose in stopped out area.	U/G mined out stopes have been utilized for waste dumping purpose.	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)	Gap filling plantation over 5.0 hectare area with 5000 number of saplings.	During the year 2022-23 a total of 5190 number of saplings have been planted over 5.0 hectare area as a gap filling plantation.	Nil
8g	Survival rate	No proposal of survival rate.	80% survival rate reported.	Nil
8h	Water sprinkling on roads to control airborne dust	To control the air born dust particle, water sprinkling has been proposed over the roads by water tanker.	Water sprinkling has been observed to control airborne dust due to mining activity.	Nil
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area			The aesthetic beauty in and around the mine is satisfactory.

Compliance of Rule 45:

Sl.No.	Item	Proposals	Actual work	Remarks
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9a	Status of submission of Monthly and Annual returns	As per rule 45 of MCDR,2017 Monthly and Annual returns to be submitted by the lessee.	Monthly and Annual returns for the year 2022-23 have been submitted by lessee.	Nil
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Mining Engineer- Bala Murugan P Geologist-K Sairaj Manager- Bala Murugan P	Information on Mining Enginner, Geologist & Manager has been given in the return.	Nil
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	Reclaimed/ rehabilitated- 45.070, Occupied by plant, buildings, residential, welfare buildings & roads-275.16 Work done under PMCP-5.0 hect.	The land use details are for entire Zawar lease and appears in order.	Nil
9d	Scrutiny of Annual return on afforestation	5190 number of trees.	Information is given in Part V(5) of Annual return. Afforestation done in 5 Ha with 5190 saplings as Gap Filling.	This is for entire Zawar lease
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	Mineral Reject generation: NIL	No mineral reject generation during RY.	Nil
9f	Scrutiny of Annual return on ROM stock and/or graded ore	ROM closing stock: NIL	Found in order.	Nil
9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	Ex Mine Price and cost of production is given as Rs. 5047.33 per ton.	No sale of mineral only captive use of mineral.	Nil
9h	Scrutiny of Annual return on fixed assets	The Value of Fixed Assets: Rs. 6552647396/-	The information furnished on fixed asset appears in order.	Nil

9k	Scrutiny of Annual return on mining machineries	Winding Engine, Blast Hole drill, Rock Drill, LHD, Air compressor, Ventilation fan, Pumps, conveyor, crusher etc.	The information furnished on mining machineries appears to be in order.	Nil
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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

Date :

(DILIP JAIN)

Indian Bureau of Mines