

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

MCDR INSPECTION REPORT

Gandhinagar regional office

Mine file No : RAJ/RJS/LEAD-ZINC-COPPER-1

Mine code : 34RAJ27001

- (i) Name of the Inspecting : **K018**) **DR A Z KHAN**
Officer and ID No.
- (ii) Designation : Regional Mining Geologist
- (iii) Accompanying mine : Sanjay Kumar, Mine Manager
Official with
Designation
- (iv) Date of Inspection : 31-JUL-24
- (v) Prev.inspection date : 17-MAY-24

PART-I : GENERAL INFORMATION

1. (a) **Mine Name** : **RAJPURA DARIBA**
- (b) **Registration NO.** : **IBM/421/2011**
- (c) Category : A Mechanised
- (d) Type of Working : Underground
- (e) Postal address
- State : RAJASTHAN
- District : RAJSAMAND
- Village : DARIBA
- Taluka : RAILMAGRA
- Post office : DARIBA
- Pin Code : 313211
- FAX No. : 02952-65143
- E-mail : arun.misra@vedanta.co.in
- Phone : 0294-2421420
- (f) Police Station : Railmagra
- (g) First opening date : 28-DEC-70
- (h) Weekly day of rest : SUN
2. Address for : RAJPURA-DARIBA
correspondance : DISTRICT-RAJSAMAND(RAJ.)
PIN-313211
3. (a) Lease Number : RAJ0654
- (b) Lease area : 1142.2
- (c) Period of lease : 20
- (d) Date of Expiry : 29-MAY-30
4. Mineral worked : COPPER ORE Associated
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 : Debanshu Chatterjee
 Rajpura Dariba Lead Zinc
 Mine PO-Dariba Tehsil-
 Railmagra RAJSAMAND
 RAJASTHAN
 Phone: 02952-265164
 FAX : 0295-2265143

Mining Engineer

Name : Sanjay Kumar, Full Time
 Qualification : BE(Mining)
 Appointment/ : 12-JUL-23
 Termination date

Geologist

Name : Dr. Sandeep Kumar Rajput, Full Time
 Qualification : Ph.D., N.E.T
 Appointment/ : 15-JUN-20
 Termination date

Manager

Name : Sanjay Kumar
 Qualification : BE(Mining)
 Appointment/ : 12-JUL-23
 Termination date

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| 6. Date of approval of Mining Plan/Scheme of Mining | : | Mining Scheme rule 12 MCDR1988 | 12-DEC-00 |
| | | Mining Scheme rule 12 MCDR1988 | 19-AUG-05 |
| | | Renewal under rule 22 MCR1960 | 26-MAY-09 |
| | | Modif. approved Mining Scheme | 26-MAY-09 |
| | | Modif. of approved Mining Plan | 19-OCT-12 |
| | | Mining Scheme rule 12 MCDR1988 | 22-JUL-15 |
| | | MP modif under 17(3) MCR 2016 | 26-SEP-17 |
| | | MP review under 17(1) MCR 2016 | 23-JAN-18 |
| | | MP modif under 17(3) MCR 2016 | 10-MAY-19 |

PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

Exploration :

| Sl.No. | Item | Proposals | Actual work | Remarks |
|--------|---|--|--|--|
| 1a | Backlog of previous year | Proposed 192 BHs with 20000 mts of drilling the year 2022-23. | Actual drilled 220 BHs with 44192 mts during the year 2022-23. | Achieved the proposed target hence no backlog of previous year i.e. 2022-23. |
| 1b | Exploration over lease area for geological axis 1 or 2 | UG exploration : 13000 m(168 BHs) Surface exploration: 12000 m(12 BHs) Total: 25000 m(180 BHs) | UG exploration : 16564 m(101 BHs) Surface exploration : 19379 m (24 BHs) Total: 35943 m(125 BHs) | There is shortfall in nos. of bore holes , for which violation of Rule 11(1) of MCDR 2017 has been pointed out vide letter dated 19.07.2024 after previous inspection of mine. |
| 1c | Exploration Agencies and Expenditure in lakh rupees during the year | Proposed Exploration Agency: Mining Associates Pvt. Ltd, M/s Onkarlal Baluram No specific proposal on expenditure. | Actual Exploration Agency: Mining Associates & M/s Onkarlal Baluram. Total expenditure on exploration during year 2023-24 is Rs.1734.67 lakh | None |
| 1d | Balance area to be explored to bring Geological axis in 1 or 2 | 78.05 ha. Area under Inferred Resource (G3) to bring in G2 & G1. | 78.05 ha area explored to bring in G2 & G1 category. | There is shortfall in nos. of bore holes , for which violation of Rule 11(1) of MCDR 2017 has been pointed out vide letter dated 19.07.2024 after previous inspection of mine. |
| 1e | Balance reserve as on 01/04/20 | No year wise specific proposal | As on 01/04/2024 the total R&R was 87.66 Million tonne. Out of which 47.11 million tone was under reserve and 40.55 million tonne was resource | None |

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| 1f | General remarks of inspecting officers on geology, exploration etc | Geologically the deposit is vein type, the exploration was proposed to prove depth continuity of mineral and up gradation of resource to reserve. During the reporting year , shortfall in exploration drilling in respect of nos. of bore holes , hence violation of Rule 11(1) of MCDR 2017 issued vide letter dated 19.07.2024 after previous inspection of mine. |
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Development :

| Sl.No. | Item | Propasals | Actual work | Remarks |
|--------|--|--|---|---------------------------------------|
| 2a | Location of development w.r.t.lease area | A total 10096mts of U/G Development proposed in North Lode, East Lode, Main Lode and South Lode at various levels during the year 2023-24. | A total 10231.92 mts of U/G Development has been carried out in NorthLode, East Lode, MainLode and South Lode at various levels out during the RY 2023-24 | No shortfall in U/G mine development. |
| 2b | Separate benches in topsoil, overburden and minerals (Rule 15) | No Proposal | Being U/G mine Not applicable | None |
| 2c | Stripping ratio or ore to OB ratio | No proposal | Being U/G mine Not applicable | None |
| 2d | Quantity of topsoil generation in m3 | No proposal | Being U/G mine no top soil generated during the reporting year | None |

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| 2e | Quantity of overburden generation in m3 | No proposal for OB generation. Proposed U/G waste generation quantity was 129374 m3 or 349311 MT | No OB generation. The quantity of U/G waste generated due to U/G mine development during the year was 116220 m3 or 313793 MT | None |
| 2f | General remarks of inspecting officers on development of pit w.r.t. type of deposit etc | | | The method of U/G development proposed is suitable for the type of deposit in the mine. |

Exploitation:

| Sl.No. | Item | Propasals | Actual work | Remarks |
|--------|---|--|--|---|
| 3a | Number of pit proposed for production | No Pit wise proposal for production given. Production from 04 lodes i.e. North, East, Main & South lode in UG propsed. | Being UG mine pit wise production not applicable. Production from 04 lodes i.e. North, East, Main & South lode in UG has been carried out. | None |
| 3b | Quantity of ROM mineral production proposed | Proposed 1750050 Tonnes production during the year 2023-24 | Actual 1343829 Tonnes produced during the year 2023-24 | None |
| 3c | Recovery of sailable/usable mineral from ROM production | Entire ROM is proposed for beneficiation | Entire ROM produced was beneficiated | None |
| 3d | Quantity of mineral reject generation | No proposal of mineral rejects (MR)generation . However, 871698 MT of Mill Tailing reject with Pb-0.20% & Zn-0.70% proposed. | No mineral generation. 815451 MT Mill Tailing reject with Pb-0.17% & Zn-0.71% generated during the year. | Less tailing generation due to less beneficiation of ore. |
| 3e | Grade of mineral rejects generation and threshold value declared. | No proposal & threshold value is also not declared for the Pb-Zn minerals. | No mineral reject generation hence not applicable. | None |

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| 3f | Quantity of sub grade mineral generation. | No proposal of sub grade generation | No sub grade generated during the year | None |
| 3g | Grade of sub grade mineral generation | No proposal | No sub grade generated during the year | None |
| 3h | Manual / Mechanised method adopted for segregating from ROM | Mechanized method through froth floatation proposed | Mechanized method through froth floatation adopted | None |
| 3i | Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects. | No proposal of any fresh beneficiation study. | No fresh beneficiation study carried out during the year 2023-24. | None |
| 3j | Provision of drilling and blasting in mineral benches | No proposal of drilling & Blasting in mineral bench. Proposed U/G development by blasts using burn cut pattern Blast Hole Stopping in stopes | Being U/G mine drilling & Blasting in mineral bench is not applicable. U/G development blasts using burn cut pattern Blast Hole Stopping in stopes has been carried out. | None |
| 3k | Provision of mining machineries in mineral benches | No proposal of mining machinery for mineral benches. Mining Machineries proposed for U/G mining. | Mining Machineries used in U/G mining as per proposal | None |
| 3l | Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM | No proposal | Being U/G mine not applicable | None |
| 3m | Total area covered under excavation/pits | No proposal | Being U/G mine not applicable | None |
| 3n | Ore to OB ratio for the pit/mine during the year. | No proposal | Being U/G mine not applicable | None |
| 3o | Total area put in use under different heads at the end of year | 293.42 ha proposed | Actual area at the end of year 2023-24 is 267.67 ha | None |

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| 3p | Production of ROM mineral during the last five year period as applicable | 2019-20: 1500000, 2020-21: 1500000, 2021-22: 1550000, 2022-23: 2000000, 2023-24: 1750050 | 2019-20: 1037607 2020-21: 1215171 2021-22: 1252365 2022-23: 1390245 2023-24: 1343829 | Unit is metric tonnes |
| 3q | General remarks of inspecting officers on method of mining etc. | | | U/G method of Mining proposed & adopted is suitable for the type of 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 for dumping of top soil, OB & mineral reject . Proposal given for U/G development waste & Mill tailing reject. | No top soil, OB & Mineral Reject generated during the reporting year. Mill tailing has been disposed in existing tailing dam as well as in mined out U/G stopes. UG waste has been disposed in the UG stopes as well as on existing waste dump at surface. | None |
| 4b | Location of topsoil, OB and mineral reject dumps | No proposal of top soil, OB & mineral reject dumps. Dumping of the waste has been proposed over the existing waste dump as well as backfilling in UG voids | Dumping has been done as per proposal | None |
| 4c | Number of dumps within lease area and outside of lease area | One waste dump within lease and no waste dump outside lease area. | One waste dump within lease and no waste dump outside lease area. | None |
| 4d | Location of dumps w.r.t. ultimate pit limit (Rule 16) | No proposal. | Being U/G mine not applicable | None |

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| 4e | Number of active and alive dumps. | One active & alive dump | One active & alive dump | None |
| 4f | Number of dead dumps. | No proposal | No dead dump | None |
| 4g | Number of dumps established. | No proposal | No dead dump hence not applicable | None |
| 4h | Whether Retaining wall or garland drain all along dumps are there. | No proposal for the reporting year | Retaining wall and garland drain constructed earlier observed at required places of waste dump | None |
| 4i | Length of Retaining wall or garland drain all along dumps | No proposal for the reporting year | Not applicable as there was no proposal | None |
| 4j | Number of settling ponds | No proposal for the reporting year | Not applicable as there was no proposal | None |
| 4k | Specific comments of inspecting officer on waste dump management | | | Waste dump management has been carried out as per proposal. |

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. | Backfilling proposed after full extraction of mineral from stopes | Backfilling has been carried out after full extraction of mineral from stopes | None |
| 5b | Area under backfilling of mined out area | Proposed: 428191m ³ | Actual : 334381m ³ | Less area available due to less production |
| 5c | Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32) | No proposal of concurrent use of top soil | No top soil generated during the RY 2023-24 | None |
| 5d | Total area fully reclaimed and rehabilitated | No proposal | Being U/G mine not applicable | None |

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| 5e | General remarks of inspecting officers on backfilling and reclamation etc. | Backfilling of U/G mined out stopes after extraction of full mineral has been carried out as per proposal.. |
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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 has to be submitted for the previous year by 1st July | PMCP report for the year 2023-24 has been submitted | None |
| 6b | Area available for rehabilitation (ha) . | No proposal | Not applicable as there was no proposal | None |
| 6c | afforestation done (ha). | Proposed 2.05 ha gap filling plantation | 2.08 ha covered by gap filling plantation | None |
| 6d | No. of saplings planted during the year | Proposed 1800 sapling | Planted 5800 saplings | None |
| 6e | Cumulative no .of plants | No specific proposal on cumulative number of plants. | As per Annual Return 209550 plants at the end of the RY 2023-24 | None |
| 6f | Any other method of rehabilitation | No any other proposal | None | NA |
| 6g | Cost incurred on watch and care during the year | Proposed Rs 3.78 lakh | Actual cost Rs.74.31 lakh | None |
| 6h | Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (Lx B x D | 5,83,350 m3 | 4,47,943 m3 | Voids generated after stoping |

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| 6i | Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings | 4,28,191 m3 | 3,34,381m3 | Less backfilling of U/G voids due to less generation of tailing. |
| 6j | Compliance on reclamation and rehabilitation by backfilling (iii)Afforestation on on backfilled area | No proposal | Not applicable being underground mine | None |
| 6k | Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir | No proposal | Not applicable being underground mine | None |
| 6l | Compliance on reclamation and rehabilitation by backfilling (v)any other specific means. | No proposal | Not applicable being underground mine | None |
| 6m | Compliance of rehabilitation of waste land within lease (i)afforestation | Total 1800 number of saplings during the RY | Total 5800 numbers of saplings planted during the RY | None |
| 6n | Compliance of rehabilitation of waste land within lease (ii)Area rehabilitation (ha) | 2.05 hect. Gap filling plantation proposed in RY | 2.08 hect. area gap filling plantation carried out in RY | None |
| 6o | Compliance of rehabilitation of waste land within lease (iii)Method of rehabilitation | Plantation | Plantation | None |
| 6p | Compliance of environmental monitoring (core zone and buffer zone) | Proposal given for environment monitoring in Core & Buffer zone. | Environment monitoring carried out in core & buffer zone | None |

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| 6q | General remarks of inspecting officers on PMCP compliance and progressive closure operations etc. | The PMCP compliances is satisfactory. |
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Mineral Conservation:

| Sl.No. | Item | Propasals | Actual work | Remarks |
|--------|--|---|--|--|
| 7a | ROM Mineral dispatch or grade-wise sorting within lease area | No proposal of grade wise sorting of ROM. | Entire ROM was transported/dispatched to beneficiation plant | None |
| 7b | Method of grade-wise mineral sorting i.e. manual or mechanical. | No grade wise sorting of mineral proposed | Entire ROM has been Beneficiated | None |
| 7c | Different grade of mineral sorted out at mines. | No proposal | Not applicable as there was no proposal | None |
| 7d | Any beneficiation process at mines . | Beneficiation proposed. | 1.1 MTPA beneficiation plant installed within lease area. Beneficiation plant having froth floatation process Major sections are primary crusher, COSP, secondary crusher, grinding section, lead/zinc floatation cells, concentrate thickeners, filters, tailing dewatering, & backfilling system. | Beneficiation of ROM was carried out at Dariba and SK beneficiation plant |
| 7e | General remarks of inspecting officer on Mineral conservation and beneficiation issues | | | No issue related to the Mineral conservation & beneficiation has been observed |

Environment :

| Sl.No. | Item | Propasals | Actual work | Remarks |
|--------|------|-----------|-------------|---------|
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| 8a | Separate removal and utilization of topsoil (Rule 32) | No proposal of separate removal of top soil during the RY2023-24 | No top soil generated during the RY 2023-24. | None |
| 8b | Concurrent use or storage of topsoil | No proposal of concurrent use or storage of top soil | No top soil generated during the RY 2023-24. | None |
| 8c | Separate dumps for overburden, waste rock, rejects and fines (Rule 33) | No proposal for OB & reject and fines. Proposal given for waste rock & mill tailing reject | No generation of OB & reject and fines. UG waste & mill tailing reject dumped as per proposal. | None |
| 8d | Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use | No proposal for OB & reject & fine. Proposal given for Waste rock and tailing to use in filling of UG mined out voids/stopes. | Waste rock and tailing used for filling UG mined out voids/stopes | None |
| 8e | Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc) | No proposal during the reporting year | Being U/G mine not applicable | None |
| 8f | Baseline information on existence of plantation and additional plantation done (Rule 41) | Proposed 1800number of saplings over2.05 hect area(gap filling) during the RY | Total 5800 numbers of saplings planted over2.08 hect area (gap filling) during the RY. Cumulative no. of plants is 209550 | None |
| 8g | Survival rate | Proposed survival rate 90% | Actual Survival rate 85% | None |
| 8h | Water sprinkling on roads to control airborne dust | Proposal given for water sprinkling on roads to control air born dust. | Water sprinkling on roads to control air borne dust due to mining activity has been observed | None |

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| 8i | General remarks of inspecting officer on aesthetic beauty in and around mines area | The aesthetic beauty in and around the mine is satisfactory. |
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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, 2017 monthly and annual returns to be submitted to IBM | Monthly and annual return for the RY 2023-24 has been submitted | None |
| 9b | Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager | Mining Engineer- Sanjay Kumar, Mine Manager- Sanjay Kumar, Geologist- Sandeep Kr. Rajput | Mining Engineer, Manager and Geologist are appointed | None |
| 9c | Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc. | Total area used in different heads has been given as 267.67 Hect.. | Details seem correct | None |
| 9d | Scrutiny of Annual return on afforestation | Information on plantation has beengiven | Information furnished is not found in order. Show cause under rule 45(7) of MCDR, 201 has been pointed out | None |
| 9e | Scrutiny of Annual return on mineral reject generation (Grade and quantity) | Mineral Reject generation :NIL | Found in order | None |

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| 9f | Scrutiny of Annual return on ROM stock and/or graded ore | ROM opening stock is reported as 28980 tonne with Pb 1.29, Zn 5.12 & Silver 56.00ppm & closing stock 57050 tonnes with Pb 0.95, Zn 4.98 & Silver 49.0 ppm. | The information furnished found in order. | None |
| 9g | Scrutiny of Annual return on sale value, Ex. Mine price and production cost | Ex-Mine price and cost of production is given as Rs7532.60 per tonne. | The information given appears to be in order. | None |
| 9h | Scrutiny of Annual return on fixed assets | Value of fixed asset given is Rs.18859485910 | The information furnished appears to be in order | None |
| 9k | Scrutiny of Annual return on mining machineries | Information on mining machineries Winding engine , Air compressor, Ventilation Fan, Pumps, Crusher, Conveyor, Rock drill, Load Haul Dumper, Motor grader, Dumper, LPDT etc used at mine is given | Details seems correct. | None |

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 45(7)(a) | 24-SEP-24 | | MCDR17 Rule 45(7) | 24-SEP-24 | |

Date :

(DR A Z KHAN)

Indian Bureau of Mines