

**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 : **P022** ) **PANKAJ KULSHRESTHA**  
Officer and ID No.
- (ii) Designation : Assistant Controller Mine
- (iii) Accompanying mine : Shri Balamurugan P, Mines Manager , Shri K.Sairaj, Geol  
Official with  
Designation
- (iv) Date of Inspection : 14/10/2022
- (v) Prev.inspection date : 02/06/2022

**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** : **01/04/1955**
- (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** : **31/03/2030**
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/ : 07/12/2016  
 Termination date

## Geologist

Name : Sri Vivake Tyagi, Full Time  
 Qualification : M.Sc. Geology  
 Appointment/ : 15/12/2017  
 Termination date

## Manager

Name : Mohd. Javed Alam  
 Qualification : BE Mining  
 Appointment/ : 04/03/2021  
 Termination date

## Manager

Name : Sri Sanat Kumar  
 Qualification : B.E. Mining  
 Appointment/ : 01/12/2020                      04/03/2021  
 Termination date

6. Date of approval of Mining Plan/Scheme of Mining : Mining Scheme rule 12 MCDR1988                      01/07/2002  
 MP modif under 17(3) MCR 2016                      17/05/2019  
 MP review under 17(1) MCR 2016                      17/12/2019  
 MP modif under 17(3) MCR 2016                      15/07/2021

## PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

## Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	NA	No backlog reported.	
1b	Exploration over lease area for geological axis 1 or 2	2022-23: Surface: 21000m (39) Underground: 40000m (240)	2022-23 Surface: 19188.80 (26) Underground: 19400.50 (162)	
1c	Exploration Agencies and Expenditure in lakh rupees during the year	No specific proposal about drilling agency	Surface Exploration MAPL, TDMA, EFMCP Expenditure: 7,40,79,627.00 Underground Exploration EFMCP, TDMA : Expenditure : 49429373.00	
1d	Balance area to be explored to bring Geological axis in 1 or 2	G1 (10.24Ha) proposed holes 220. G2 (2.24Ha) proposed holes 6 G3 (6.53Ha) proposed holes 17	2022-23: G1 (8.68Ha) actual holes 151. G2 (1.91Ha) actual holes 25. G3 (3.80Ha) actual holes 12 Resources from inferred/ Geo Axis 3 to prove (1 or 2)	
1e	Balance reserve as on 01/04/20	The position of reserve and resources as on 01/04/2022: 111- 7.06 MT 122- 3.31 MT 221- 10.01 MT 222- 3.87 MT 332- 0.00 MT 333- 31.18 MT	The position of reserve and resources as on 01/04/2022: 111- 7.06 MT 122- 3.31 MT 221- 10.01 MT 222- 3.87 MT 332- 0.00 MT 333- 31.18 MT	
1f	General remarks of inspecting officers on geology, exploration etc	NA	The status of geology, exploration may be considered as satisfactory.	

## 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 in the yeear 2022-23.	During the year, a total of 6323.24 m (Horizontal and vertical) development has been achieved up to September 2022.
2b	Separate benches in topsoil, overburden and minerals (Rule 15)	Not applicable as mining operation has been proposed through UG Mining Method	Not applicable
2c	Stripping ratio or ore to OB ratio	Not applicable as mining operation has been proposed through UG Mining Method	Not applicable
2d	Quantity of topsoil generation in m3	Not applicable as mining operation has been proposed through UG Mining Method	Not applicable
2e	Quantity of overburden generation in m3	A total of 146296.3 m3 of waste has been proposed to generate through UG development.	A total of 87894.4 m3 of waste has been generated till September 2022 during the year 2022-23.
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc	The status of development of mine w.r.t type of deposit may be considered as satisfactory.	

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### Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
3a	Number of pit proposed for production	11 Stope blocks at different level has been proposed for stoping operation during the year 2022-23.	Stoping operation has been carried out at 8 stope blocks up to September 2022.	

3b	Quantity of ROM mineral production proposed	It was proposed to mine out 1800000t of ROM.	Total 773226t of ROM has been mined out till September, 2022 during the year 2022-23.
3c	Recovery of sailable/usable mineral from ROM production	100%`	The recovery is 100% as the entire ROM is utilised.
3d	Quantity of mineral reject generation	In the year 2022-23, 1642500 tons of mineral reject generation has been proposed	Entire ROM is subject to beneficiation. A quantity of 708291.3 tons (mill tailing) has been reported as mineral reject till September 2022.
3e	Grade of mineral rejects generation and threshold value declared.	Not applicable as no proposal	The grade of mill tailing reported was 0.38 % (Pb+Zn)
3f	Quantity of sub grade mineral generation.	No proposal of Sub-grade generation.	Not applicable
3g	Grade of sub grade mineral generation	NA	Not applicable
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
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 4.7 mtpa is already in place within Mine boundary.	Beneficiation of ROM is being carried out as per proposal.
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.

3k	Provision of mining machineries in mineral benches	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.
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
3m	Total area covered under excavation/pits	Not applicable being a UG mining operation.	Not applicable.
3n	Ore to OB ratio for the pit/mine during the year.	Not applicable being a UG mining operation.	Not applicable
3o	Total area put in use under different heads at the end of year	Mining-46.36 Mineral storage-4.73 Ben. Plant-23.82 Township-38.95 Tailing pond-159.41 Roads-10.86 Infrastructure -66.88 Waste dump-0.50 Community Dev.- 8.71 Others-19.9 Total-380.12	Mining-46.36 Mineral storage-4.73 Ben. Plant-23.82 Township-38.95 Tailing pond-159.41 Roads-10.86 Infrastructure-66.88 Waste dump-0.50 Community Dev.- 8.71 Others-19.9 Total-380.12 (Overall Zawar group of mines)
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 ( All in ton)	2018-19: 949994 2019-20: 1175794 2020-21: 1424513 2021-22: 1512919.7 2022-23(upto Sep22): 682753.59 ( All in ton)

3q General remarks NA The status of mining in  
of inspecting Mochia mines may be  
officers on considered as  
method of mining satisfactory.  
etc.

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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 dumping. No OB proposal as UG operated mines Mineral Reject- 1642500 tons	No Top soil generated No OB Quantity of Mill tailing of 708291.3MT (up to September 2022)	
4b	Location of topsoil, OB and mineral reject dumps	No proposal of top soil and OB generation. Mineral Reject is proposed to dispose in UG stopes as well as for tailing dam	Top soil and OB has not been generated during the reporting year. Mineral reject generated during the year has been disposed as per proposal.	
4c	Number of dumps within lease area and outside of lease area	No proposal of waste dumping within Mine	No waste dumping within Mine boundary of Mochia Mine	
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	Not applicable as Mining operations are being carried out through UG mining method.	Not applicable	
4e	Number of active and alive dumps.	NA	Not applicable	
4f	Number of dead dumps.	NA	Not applicable	
4g	Number of dumps established.	No proposal.	Not applicable	
4h	Whether Retaining wall or garland drain all along dumps are there.	Not applicable as no waste dump within Mine boundary.	Not applicable.	
4i	Length of Retaining wall or garland drain all along dumps	No proposal.	Not applicable	

4j	Number of settling ponds	No proposal	Not applicable
4k	Specific comments of inspecting officer on waste dump management	NA	The status of waste dumping in Mochia mines may be considered as satisfactory

#### 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 or waste dumping in UG voids has been proposed.	The entire quantity of 237315 tons of waste has been dispose in UG stopes upto September 2022.	
5b	Area under backfilling of mined out area	No specific proposal of area. A quantity of 385000 tons has been proposed to dispose in UG stopes.	The entire quantity of 237315 tons of waste has been dispose in UG stopes.	
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.	
5d	Total area fully reclaimed and rehabilitated	No proposal of full reclamation and or rehabilitation	Not applicable	
5e	General remarks of inspecting officers on backfilling and reclamation etc.	NA	THE Status of backfilling and reclamation of Mochia mines may be considered as satisfactory	

#### Progressive Mine Clousre Plan:

Sl.No.	Item	Propasals	Actual work	Remarks
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6a	Whether Annual report on PMCP submitted on time and correctly. Rule 23 E(2).	As per MCDR, 2017	Yes,
6b	Area available for rehabilitation (ha) .	Nil	Nil
6c	afforestation done (ha).	5 Ha areas have been proposed within Zawar Lease area.	5 ha gap filling (Zawar group of mines)
6d	No. of saplings planted during the year	5000 saplings	5000 saplings have been planted in Zwawar group of mines.
6e	Cumulative no .of plants	NA	Cummulativfe plantation is 442625 for Zawar group of Mines.
6f	Any other method of rehabilitation	Nil	Nil
6g	Cost incurred on watch and care during the year	No specific proposal on cost of watch and care during the year	As reported, approximately Rs 52087469/- fo over all Zawar group of mines.
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 385000 MT has been proposed to dispose in UG stopes	The entire quantity of 237315 tons of waste has been dispose in UG stopes till September 2022.
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	Proposal of void to be filled: Waste - 385000 tons Hydraulic backfill - 388800 tons	2022-23( upto Sep22): Void filled by: Waste - 237315 tons Hydraulic backfill - 217628.83tons
6j	Compliance on reclamation and rehabilitation by backfilling (iii)Afforestati on on backfilled area	No Proposal.	No applicable

6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	No Proposal.	Not applicable
6l	Compliance on reclamation and rehabilitation by backfilling (v)any other specific means.	No proposal	Not applicable
6m	Compliance of rehabilitation of waste land within lease (i)afforestation	5 HA	5 HA, Gap filling fo overall Zawar group of mines.
6n	Compliance of rehabilitation of waste land within lease (ii)Area rehabilitation (ha)	Nil	Nil
6o	Compliance of rehabilitation of waste land within lease (iii)Method of rehabilitation	Plantation	Method of rehabilitation is Plantation
6p	Compliance of environmental monitoring (core zone and buffer zone)	Provision of environment monitoring stations has been given.	Environment monitoring parameters are found to be within permissible limit.
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.	NA	The status of PMCP compliance and progressive closure operations may be considered as 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 specific proposal of grade wise sorting.	All ROM ore is being transported to Ore beneficiation plant located within lease area	

7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	Not applicable as no grade wise sorting.	Not applicable
7c	Different grade of mineral sorted out at mines.	No proposal	Not applicable
7d	Any beneficiation process at mines .	4.7 MTPA Beneficiation plant has been installed within the lease area. The process includes mainly crushing and grinding of ROM, Classification , differential flotation cell etc.	Beneficiation has been observed as per proposal. Yes. Ore beneficiation process in lease area for all 4 mines of Zawar group
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues	NA	The status of Mineral conservation and beneficiation issues may be considered as satisfactory.

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Environment:

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	No proposal of top soil generation	Not applicable	
8b	Concurrent use or storage of topsoil	NA	Not applicable	

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 stopes as well as for tailing dam construction.	Reject and fines has not been generated during the year. Waste has been disposed as per proposal.
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 stopped out area has been utilized for waste dumping purpose.
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	No proposal.	Not applicable
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	Base line 380425 Plan addition 5000	Current Cumulative 442625 Actual Addition 5000
8g	Survival rate	No specific proposal for survival rate.	The survival rate is 90%
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 with fixed water sprinklers at Mochia Crusher and stock pile area with total stretch of 180m long. 2 Water tankers (capacity 10KL) sprinkling water on haul roads to control airborne dust due to mining activity.

8i	General remarks of inspecting officer on aesthetic beauty in and around mines area	NA	The status of aesthetic beauty in and around mines area may be considered as 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, monthly and annual returns to be submitted.	Monthly and annual returns have been submitted for reporting year.	
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Mining Eng.- Balamurugan P. Geologist- K.Sairaj Manager- Balamurugan P.	Mine Manger, Mining engineer and Geologist are appointed.	
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	Mining-46.36 Mineral storage-4.73 Ben. Plant-23.82 Township-38.95 Tailing pond-159.41 Roads-10.86 Infrastructure-66.88 Waste dump-0.50 Community Dev.- 8.71 Others-19.9 Total-380.12	Mining-46.36 Mineral storage-4.73 Ben. Plant-23.82 Township-38.95 Tailing pond-159.41 Roads-10.86 Infrastructure-66.88 Waste dump-0.50 Community Dev.- 8.71 Others-19.9 Total-380.12	
9d	Scrutiny of Annual return on afforestation	Afforestation done- 2 Ha (Gap Filling) No. of Saplings- 2000	Afforestation done- 2 Ha (Gap Filling) No. of Saplings- 2000	
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	Quantity- 1309963 grade- 0.61 % (Pb+Zn)	Quantity- 1309963 grade- 0.61 % (Pb+Zn) The quantity of Mineral Reject furnished is actually a quantity of mill tailing.	

9f	Scrutiny of Annual return on ROM stock and/or graded ore	ROM Closing stock at Mine head- 0. ROM closing stock at Mill: 2324MT	The information furnished is found to be in order.
9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	No sale of mineral only captive use of mineral. Ex. Mine Price & Production cost Rs. 4540.54 per tonne.	Information furnished appears to be corrected.
9h	Scrutiny of Annual return on fixed assets	Value of fixed asset furnished is Rs. 1357157497/-	The value of fixed asset furnished appears to be in order.
9k	Scrutiny of Annual return on mining machineries	Rock Drill, Blast Hole Drill. Locomotive, LPDT, LHD, Air Compressor, Pumps, Ventilation fan etc .	The information furnished on mining machineries appears to be in order.

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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 :**

(PANKAJ KULSHRESTHA)

Indian Bureau of Mines