

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

**MCDR INSPECTION REPORT**

**Gandhinagar regional office**

**Mine file No :** RAJ/UDP/LEAD-ZINC-4

**Mine code :** 34RAJ26005

- (i) Name of the Inspecting : **G021** ) **DATA RAM GURJAR**  
Officer and ID No.
- (ii) Designation : Sr. Asst. Contrl. Mines
- (iii) Accompanying mine : Sh. Debanshu Chaterjee, Mine Manager & Dr. S.B.Shukla  
Official with  
Designation
- (iv) Date of Inspection : 10-MAR-21
- (v) Prev.inspection date : 24-OCT-20

**PART-I : GENERAL INFORMATION**

1. (a) **Mine Name** : **BAROI**
- (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 : **SARADA**
- 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-DEC-73**
- (h) **Weekly day of rest** : **MON**
2. **Address for** : **PO- ZAWAR**  
**correspondance** : **DISTT- UDAIPUR**  
: **RAJASTHAN**
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 SANDEEP NARADE  
 Zawar Mines, Udaipur  
 rajasthan UDAIPUR  
 RAJASTHAN  
 Phone: 97993 97755  
 FAX : 0294-423430

## Mining Engineer

Name : Vinod Saini, Full Time  
 Qualification : B.E. Mining  
 Appointment/ : 04-OCT-18  
 Termination date

## Geologist

Name : Sri Somdeb Dutta Mal, Full Time  
 Qualification : M.Sc. (Geology)  
 Appointment/ : 31-JAN-19  
 Termination date

## Manager

Name : Sri Debanshu Chatterjee  
 Qualification : B.E. Mining  
 Appointment/ : 21-AUG-19  
 Termination date

6. Date of approval of Mining	:	Mining Scheme rule 12 MCDR1988	15-SEP-03
Plan/Scheme of Mining		Modif.approved Mining Scheme	16-AUG-05
		MP modif under 17(3) MCR 2016	17-MAY-19
		MP review under 17(1) MCR 2016	17-DEC-19

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

## Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	During the previous year i.e. 2018-19 a total of 27000mts of drilling proposed from UG and 24000 mts from surface exploration.	During the year 2018-19 a total of 43579 mts. of drilling carried out from UG and 27736 mts from surface exploration.	No Backlog.
1b	Exploration over lease area for geological axis 1 or 2	A total of 609 BHs with 55000 mts of drilling was proposed.	A total of 460 BHs with 88645 mts of drilling was carried out.	Drilled meterage are more than the proposed meterage. However, violation for less number of BHs have been issued vide letter dated 12/11/2020 by the previous inspecting officer.
1c	Exploration Agencies and Expenditure in lakh rupees during the year	No specific proposal about drilling agency and expenditure.	2019-20 2019-20: Agency: 1. Eco Friendly Mining & Construction Pvt. Ltd.- 89 holes 2. Hard Rock Engg. Const. Ltd-155 holes 3. Trans directional mining Associates -162 holes 4. MMPL-54 holes  Expenditure-38.98cr	Nil
1d	Balance area to be explored to bring Geological axis in 1 or 2	An area of 0.90 Ha of G3 level has been proposed to explore.	An area of 0.90 Ha. upgraded to G1/G2 level of exploration.	NIL.
1e	Balance reserve as on 01/04/20	As per approved document dated 17/12/2019, the position of reserve on 01/04/2019 was 2.667 million tonnes.	The position of reserve as on 01/04/2020 was 1.487 million tonnes.	Depletion of 1180839 tonnes of ore.

1f	General remarks of inspecting officers on geology, exploration etc	Drilled meterage are more than the proposed meterage. However, violation for less number of BHs have been issued vide letter dated 12/11/2020 by the previous inspecting officer.
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Development :

Sl.No.	Item	Propasals	Actual work	Remarks
2a	Location of development w.r.t.lease area	Development has been proposed for BK series, K series, North Baroi, Haran Magra and South Baroi series of lenses at various mRL. A total of 15000 mts of development was proposed during the year 2019-20.	Development has been carried out for BK series, K series, North Baroi, Haran Magra and South Baroi series of lenses. During the RY, a total development of 12466 mts has been carried out during the year 2019-20.	Less development meterage due to COVID-19 Pandemic and equipment delay.
2b	Separate benches in topsoil, overburden and minerals (Rule 15)	Not applicable as mining operations was proposed through UG Mining Method.	Not applicable.	NIL.
2c	Stripping ratio or ore to OB ratio	Not applicable as mining operations was proposed through UG Mining Method.	Not applicable.	NIL.
2d	Quantity of topsoil generation in m3	No proposal of top soil generation during the year.	Top soil has not been generated during the RY i.e. 2019-20.	NIL.

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2e	Quantity of overburden generation in m3	A total of 377000 MT of waste has been proposed to generate through UG development.	A total of 370753 MT of waste has been generated.	Nil
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc			Water & sludge was observed in haulage drive & cross cuts on 128mRL level during the stoping inspection, hence violation of Rule 11(1) of MCDR 2017 issued vide letter dated 23.03.2021.

#### Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
3a	Number of pit proposed for production	Not applicable being an underground mine.	Not applicable.	NIL.
3b	Quantity of ROM mineral production proposed	2019-20: 1460000.00 tonnes.	2019-20: 1180839.00 tonnes.	Nil
3c	Recovery of sailable/usable mineral from ROM production	100%	100%	Nil
3d	Quantity of mineral reject generation	No proposal of Mineral Reject generation.	Entire ROM is subject to beneficiation.	A quantity of 1099561 tonnes (mill tailing) has been reported as mineral reject.
3e	Grade of mineral rejects generation and threshold value declared.	Not applicable as no proposal.	0.67% (Pb+Zn) (as per annual return).	Mill tailing has been reported as mineral reject.
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.	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 was 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.	Beneficiation of ROM is being carried out as per proposal.	Beneficiation facility of 4.7 mtpa is already in place within lease boundary.
3j	Provision of drilling and blasting in mineral benches	Not applicable being an underground mine.	Not applicable.	NIL.
3k	Provision of mining machineries in mineral benches	Not applicable being an underground mine.	Not applicable.	NIL.
3m	Total area covered under excavation/pits	Not applicable being an underground mine.	Not applicable.	NIL.
3n	Ore to OB ratio for the pit/mine during the year.	Not applicable being an underground mine.	Not applicable.	NIL.
3o	Total area put in use under different heads at the end of year	No specific mine wise proposal. However, an area of 296.97 Ha. has been proposed to put in use at the end of reporting year.	An area of 254.52 Ha. has been put in use at the end of the year 2019-20.	Figures are for entire Zawar Lease area.
3p	Production of ROM mineral during the last five year period as applicable	2020- 21:1500000 2019- 20:1460000 2018- 19:1000000 2017-18:850000 2016-17:600000 2015-16:365000	2020-21:1260568(up to feb 2021) 2019-20:1180839 2018-19:999991 2017-18:714198 2016-17:602000 2015-16:402000	All figures in Metric Tonnes (MT)

3q	General remarks of inspecting officers on method of mining etc.	Underground method of mining has been proposed. The Method of mining is suitable to the type of deposit. No issue observed related method of mining.
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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 and Mineral Reject generation. OB/waste is proposed to dispose in UG stopes as well as for tailing dam construction.	Top soil has not been generated during the reporting year. Waste generated during the year has been dumped as per proposal. Mill tailing of 1099561 MT has been reported as Mineral reject.	NIL.
4b	Location of topsoil, OB and mineral reject dumps	No proposal of top soil and Mineral Reject generation. OB/waste is proposed to dispose in UG stopes as well as for tailing dam construction.	Top soil was not generated during the reporting year. Waste generated during the year has been dumped as per proposal. Mill tailing was disposed in tailing dam.	Mill tailing has been reported as Mineral reject.
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 Baroi Mine.	NIL.
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	Not applicable being an underground mine.	Not applicable.	NIL.
4e	Number of active and alive dumps.	No proposal of active and alive waste dumping other than disposal of waste for tailing dam construction.	No active & alive waste dumps.	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 proposal of waste dumping on surface.	Not applicable.	NIL.
4i	Length of Retaining wall or garland drain all along dumps	No proposal of retaining wall and garland drain.	Not applicable.	NIL.
4j	Number of settling ponds	No proposal of settling ponds.	Not applicable.	NIL.
4k	Specific comments of inspecting officer on waste dump management			OB/waste was proposed to dispose in UG stopes as well as for tailing dam construction. Waste generated during the year was dumped as per proposal. No issue related to waste dumping.

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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.	Backfilling or in stope waste dumping after full extraction of mineral was proposed.	In stope waste dumping was observed after extraction of mineral for the year 2019-20.	NIL.
5b	Area under backfilling of mined out area	2019-20-No specific proposal of area. A quantity of 182000 MT has been proposed to dispose in UG stopes.	2019-20 A quantity of 150393 MT has been dispose in UG stopes.	Nil
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.			Backfilling or in stope waste dumping after full extraction of mineral was proposed. In stope waste dumping was observed after full extraction of mineral for the year 2019-20. No issue related to backfilling or waste disposal.

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Progressive Mine Closure Plan:

Sl.No.	Item	Proposals	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 the year i.e. 2019-20 was not submitted.	Violation of rule 26(2) of MCDR, 2017 was pointed out vide letter dated 12/11/2020 by the previous inspecting officer.
6b	Area available for rehabilitation (ha) .	4.0 Ha.	4.0 Ha.	Figures are for entire Zawar Lease area. No mine specific proposal.
6c	afforestation done (ha).	4.0 Ha.	4.0 Ha.	Figures are for entire Zawar Lease area. No mine specific proposal.
6d	No. of saplings planted during the year	4000 number of saplings.	9000 number of saplings.	Figures are for entire Zawar Lease area. No mine specific proposal.
6e	Cumulative no .of plants	No specific proposal on cumulative number of plants.	Cumulatively 434625 number of saplings were planted as on 01/04/2020.	Figures are for entire Zawar Lease area

6f	Any other method of rehabilitation	Other than plantation, no specific proposal of any other method of rehabilitation	No other method of rehabilitation was observed.	NIL.
6g	Cost incurred on watch and care during the year	No proposal on cost of watch and care during the year.	As reported, approximately Rs. 52087469/-	Figures are for entire Zawar Lease area
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling ( Lx B x D	Underground exhausted stopes.	Underground exhausted stopes were backfilled.	NIL.
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	2019-20-No specific proposal of area. A quantity of 182000 MT has been proposed to dispose in UG stopes.	2019-20 A quantity of 150393 MT has been dispose in UG stopes.	Nil
6j	Compliance on reclamation and rehabilitation by backfilling (iii)Afforestation on backfilled area	Not applicable being an underground mine.	Not applicable.	NIL.
6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	Not applicable being an underground mine.	Not applicable.	NIL.
6l	Compliance on reclamation and rehabilitation by backfilling (v)any other specific means.	No any other specific proposal.	Not applicable.	NIL.
6m	Compliance of rehabilitation of waste land within lease (i)afforestation	4000 number of saplings.	9000 number of saplings.	Figures are for entire Zawar Lease area.

6n	Compliance of rehabilitation of waste land within lease (ii)Area rehabilitation (ha)	4.0 Ha.	4.0 Ha.	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)	Proposal of environment monitoring has been envisaged.	Environment monitoring was carried out and found within permissible limit.	NIL.
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.			Violation of rule 26(2) of MCDR, 2017 was pointed out vide letter dated 12/11/2020 by the previous inspecting officer.

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

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7d	Any beneficiation process at mines .	4.7MTPA Beneficiation plant has been installed within the lease area. The process includes mainly crushing and grinding of ROM, Classification ,differential flotation cell etc.	Beneficiation of ROM was observed.	NIL.
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues			No issues related to mineral conservation and beneficiation.

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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.	NIL.
8b	Concurrent use or storage of topsoil	Not applicable as no proposal of top soil generation.	Top soil has not been generated during the RY i.e. 2019-20.	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 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. Mill tailing was disposed in tailing pond as per proposal.	NIL.

8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	Waste rock is proposed to dispose in stoped out area.	U/G stoped out area has been utilized for waste dumping/backfilling 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)	An area of 4.0 Ha has been proposed for plantation with 4000 number of saplings.	During the year a total of 9000 thousand saplings have been planted over 4.0 ha area including gap filling plantation.	NIL.
8g	Survival rate	No proposal on survival rate.	Survival rate was 75 %.	As per AR 2019-20.
8h	Water sprinkling on roads to control airborne dust	To control the air born dust particle, water sprinkling has been proposed on the roads.	Water sprinkling has been observed on haul roads 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.

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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 on time.	Nil

9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Information on Mining Engineer, Manager and geologist was furnished.	Mine Manger, Mining engineer and Geologist are appointed.	Scrutiny of AR 2019-20.
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	Ana area of 299.59 Ha. has been furnished under different heads.	The information furnished about land use pattern in annual return is found to correct. However, work done under PMCP during year was not furnished.	Violation pointed out vide letter dated 12/11/2020 by the previous inspecting officer. Information furnished was for overall Zawar lease area.
9d	Scrutiny of Annual return on afforestation	Within ML 9000 Nos of saplings.	Information furnished was found correct.	For overall Zawar lease area.
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	Quantity- 1099561 MT Grade- 0.67 % (Pb+Zn)	The quantity of Mineral Reject furnished was actually a quantity of mill tailing.	NIL.
9f	Scrutiny of Annual return on ROM stock and/or graded ore	ROM Closing stock at Mine head- NIL. No graded ore stock.	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: Rs. 3314.95 per tonne Cost of Production: Rs. 3480.83 per tonne	No sale of mineral only captive use of mineral. Being an captive mine Cost of production and Ex-mine should be same.	Violation of MCDR issued vide letter dated 12/11/2020 by the previous inspecting officer for difference in Ex-mine prise and cost of production.
9h	Scrutiny of Annual return on fixed assets	Value of fixed asset is furnished as Rs. 0.	Information is furnished under Mochia Mine	Violation of MCDR issued vide letter dated 12/11/2020 by the previous inspecting officer.
9k	Scrutiny of Annual return on mining machineries	Load Haul Dumper, Dumper, Rock Drill, Blast Hole Drill, Air Compressor, Pumps, Ventilation fan etc.	The information furnished on mining machineries appears to be in order.	NIL.

**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 31(4)	23-MAR-21			

**Date :**

**(DATA RAM GURJAR)**

Indian Bureau of Mines