

**INDIAN BUREAU OF MINES
MINERALS DEVELOPEMENT 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 : **K018**) **DR A Z KHAN**
Officer and ID No.
- (ii) Designation : Regional Mining Geologist
- (iii) Accompanying mine : Sh. Nandlal(Mine Manager), Dr. Shashi Shukla(Geology)
Official with
Designation
- (iv) Date of Inspection : 26-AUG-23
- (v) Prev.inspection date : 28-MAR-23

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. : 0294-2412545
- E-mail : arun.mishra@vedanta.co.in
- Phone : 0294-6604120
- (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 : 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 Radha Raman
 Post: Zawar District:
 Udaipur UDAIPUR RAJASTHAN
 Phone:
 FAX :

Mining Engineer

Name : Shri Sazal, Full Time
 Qualification : BE Mining
 Appointment/ : 23-JAN-19
 Termination date

Geologist

Name : Shri Shashi Shukla, Full Time
 Qualification : M.Sc. Geology
 Appointment/ : 14-JAN-22
 Termination date

Geologist

Name : Sri Prasanta Biswas, Full Time
 Qualification : M.Sc. Geology
 Appointment/ : 17-MAR-20 13-JAN-22
 Termination date

Manager

Name : Sri Lokesh Paliwal
 Qualification : Be.Mining
 Appointment/ : 02-JUL-19 16-JAN-23
 Termination date

Manager

Name : Shri Nand Lal Swami
 Qualification : ME Mining
 Appointment/ : 17-JAN-23
 Termination date

6. Date of approval of Mining Plan/Scheme of Mining	:	PMCP under 23B(1) for Renewal	21-AUG-09
		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	UG- 13000 Surface- 5000	UG- 15374 Surface- 3793	Backlog due to delay in approval in forest dept.
1b	Exploration over lease area for geological axis 1 or 2	Surface Exploration with 5 hole and 5000 meterage Underground Exploration with 75 hole and 13000 meterage	Surface Exploration with 4 hole and 1915 meterage Underground Exploration with 117 hole and 14261.15 meterage	Surfaceexploration has not been carried out as per approved proposal and there is shortfall in the total exploration also for which violation of Rule 11(1) has been pointed out
1c	Exploration Agencies and Expenditure in lakh rupees during the year	No specific proposal about drilling agency and expenditure	Surface Exploration by MAPL, TDMA with Expenditure of Rs.7208941 Underground Exploration by EFMCP, TDMA with Expenditure of Rs.54914795	Nil
1d	Balance area to be explored to bring Geological axis in 1 or 2	G1 (0.4Ha) G2 (0.4Ha) G3 (0.2Ha)	G1 (0.4Ha) G2 (0.4Ha) G3 (0.2Ha)	Nil
1e	Balance reserve as on 01/04/20	No yearwise specific proposal	Reserve : 4.00 Mil. Tonne 111- 2.7 122- 1.3 Resource: 5.96 Mil. Tonne 211- 3.26 222- 1.03 333- 1.66	Nil
1f	General remarks of inspecting officers on geology, exploration etc	Surface Exploration with 5 hole and 5000 meterage Underground Exploration with 75 hole and 13000 meterage	Surface Exploration with 4 hole and 1915 meterage Underground Exploration with 117 hole and 14261.15 meterage	Surfaceexploration has not been carried out as per approved proposal and there is shortfall in the total exploration also for which violation of Rule 11(1) has been pointed out

Development :

Sl.No.	Item	Proposals	Actual work	Remarks
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2a	Location of development w.r.t.lease area	Section Block Planned in m C. Zone 80-433 300 C. Zone (-))230-(-)130 1600 C. Zone (-))130-(-)30 400 W. Zone 80-250 100 W. Zone 250- 430 200 E. Zone 80-250 100 E. Zone 250- 430 200 S.Zawarmala 80-(-)250 200 Back filling & Ventilation 200 Exploration Drive 200 Ramp 600 G.Total 4100	Section Block Actual in m C. Zone 80-433 292.65 C. Zone (-)230-(-)130 844.4 C. Zone (-)130-(-)30 369.1 W. Zone 80-250 0 W. Zone 250-430 123.57 E. Zone 80-250 0 E. Zone 250-430 186.93 S.Zawarmala 80-(-)250 0 Back filling & Ventilation Exploration Drive 180.43 113.77 Ramp 366.77 G.Total 2477.61	The underground development has not been carried out as per approved proposal and there is shortfall in the total development also for which violation of rule 11(1) has been pointed out
2b	Separate benches in topsoil, overburden and minerals (Rule 15)	No proposal for separate benches in topsoil, 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	Not applicable as mining operation has been proposed through UG Mining Method.	Nil
2d	Quantity of topsoil generation in m3	No proposal	Not applicable as mining operation has been proposed through UG Mining Method and there is no topsoil generation	Nil

2e	Quantity of overburden generation in m3	Not applicable as it is U/G mine. However, a total of 31851.85m3 (86000MT) of waste has been proposed to generate through UG development	A total of 22926.8m3(61902MT) of waste has been generated through UG development	Less quantity of waste generation is due to less U/G development.
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc	Development has been proposed through UG mining method.	The UG mechanised method has been adopted for carrying out development & mining operations in the mine	Shortfall in UG mine development observed for the year 2022-23 for which violation under rule 11(1) of MCDR,2017 has been pointed out

Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
3a	Number of pit proposed for production	Being U/G mine no proposal for pit. However, a total of 08 Stope blocks at different level has been proposed for stoping operation.	Stoping operation has been carried out at 02 stope blocks.	Nil
3b	Quantity of ROM mineral production proposed	550000 tonne	347383 tonne	Nil
3c	Recovery of sailable/usable mineral from ROM production	Proposal for whole ROM for beneficiation	Whole ROM beneficiated	Nil
3d	Quantity of mineral reject generation	No proposal for mineral reject	No mineral reject generation. Whole ROM beneficiated.	A quantity of 314910 tons (mill tailing) has been reported as mineral reject in annual retrun.
3e	Grade of mineral rejects generation and threshold value declared.	No proposal. No threshold value has been declared for Pb-Zn	No mineral generation. Whole ROM beneficiated	The grade of mil tailing reported was 0.39 % (Pb+Zn)

3f	Quantity of sub grade mineral generation.	No proposal of Sub-grade generation	Not Applicable	Nil
3g	Grade of sub grade mineral generation	No proposal	Not applicable because there is no sub-grade genetaion.	Nil
3h	Manual / Mechanised method adopted for segregating from ROM	No proposal of segregation	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	Beneficiation of ROM is being carried out as per proposal	Beneficiation facility of 4.8 mtpa is already in place within Mine boundary where ROM of Balaria, Baroi Mochia and Zawarmala mine is 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	Being U/G mine no proposal for mineral benches but for U/G 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 proposed being a UG mining operation	Not applicable	Nil

3m	Total area covered under excavation/pits	No proposal	Not applicable being a UG mining operation.	Nil
3n	Ore to OB ratio for the pit/mine during the year.	No proposal	Not applicable being a UG mining operation.	Nil
3o	Total area put in use under different heads at the end of year	An area of 380.12 hectare at the end of the plan period i.e. 2024-25	An area of 325.23 hectare as per AR 2022-23	Nil
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	2018-19: 299995 2019-20: 435925 2020-21: 397728 2021-22: 381438 2022-23: 347382	Nil
3q	General remarks of inspecting officers on method of mining etc.	Underground method of mining has been proposed	Underground method of mining has been adopted as per proposal	The Method of mining is suitable to the type of deposit. No issue related method of mining has been observed

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, OB mineral reject generation. Proposed for U/G waste of 31680tons and Tailing reject of 495000 tonnes Proposed waste generation is	No top soil & OB generation and the waste generated for the year is 60302.6 tonne and tailing reject 314909.99 tonnes.	Grade of Mill tailing reject is 0.39 % (Pb+Zn) .

4b	Location of topsoil, OB and mineral reject dumps	No proposal of dump for top soil, OB and Mineral Reject . U/G development waste is proposed to be disposed in UG stopes as well as for tailing dam construction.	Top soil, OB and Mineral Reject has not been generated during the reporting year. U/G development waste generated during the year has been disposed off as per proposal.	Tailing reject has been disposed in Tailing Dam
4c	Number of dumps within lease area and outside of lease area	No proposal of waste dumping in dump within lease or outside lease.	Waste generated by U/G development has been disposed in UG stopes as well as for tailing dam construction.	Old waste dump within lease has been converted under Stadium and rock garden.
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	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 as no waste dump within Mine boundary	Nil
4i	Length of Retaining wall or garland drain all along dumps	No proposal	Not applicable as no waste dump within Mine boundary	Nil
4j	Number of settling ponds	No proposal	Not applicable	Nil
4k	Specific comments of inspecting officer on waste dump management	U/G development 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.

Solid Waste Management - Backfilling:

Sl.No.	Item	Propasals	Actual work	Remarks
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5a	Status of part or full extraction of mineral from mined out area before starting backfilling.	U/G development waste dumping proposed in U/G mined out stopes after full extraction of ore	Dumping of waste has been carried out in UG stopes.	Nil
5b	Area under backfilling of mined out area	No specific proposal of area. A quantity of 83000 MT has been proposed to dispose in UG stopes.	The entire quantity of 40202 MT of waste has been dispose in mined out 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 of UG mind out voids by waste dumping was proposed.	Dumping of waste was carried out in mined out UG void stopes	Dumping has been carried out as per proposal. No other issue observed

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 for rehabilitation	Not applicable	Nil
6c	afforestation done (ha).	5 Ha areas have been proposed within Zawar Lease area	5 Ha area have been planted	Gap filling planation for entire Zawar lease.

6d	No. of saplings planted during the year	5000 plants within lease area	5190 sapling planted with Zawar lease	Figures are for entire Zawar Lease area. No mine specific proposal.
6e	Cumulative no .of plants	No specific proposal on cumulative number of plants.	As per Annual Return 2022-23, cumulative number of planation as on 31/03/2023 was 447815	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 .	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 is approximately Rs 577400/-	Nil
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (L x B x D	176700 m ³	62500 m ³	Nil
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	348900 m ³	Void filled by: Waste - 22334.0 m ³	Nil
6j	Compliance on reclamation and rehabilitation by backfilling (iii) Afforestation on 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 specific proposal	Not applicable being an underground mine	Nil
6m	Compliance of rehabilitation of waste land within lease (i)afforestation	5000 plantation	5190 sapling planted	Nil
6n	Compliance of rehabilitation of waste land within lease (ii)Area rehabilitation (ha)	5.0 ha area	5.0 ha area by plantation of 5190 sapling	Figures are for entire Zawar Lease area
6o	Compliance of rehabilitation of waste land within lease (iii)Method of rehabilitation	By plantation	By planataion	Nil
6p	Compliance of environmental monitoring (core zone and buffer zone)	Proposal of environment monitoring stations has been given.	Environment monitoring was carried out.	Nil
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.	A total of 5000 number sapling has been proposed to plant.	A total of 5190 number of saplings has been planted.	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	All 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.	No proposal for grade wise sorting	Not applicable as no grade wise sorting	Nil
7c	Different grade of mineral sorted out at mines.	No proposla	Not applicable as no grade wise sorting	Nil

7d	Any beneficiation process at mines .	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.	Beneficiation has been observed as per proposal	Ore beneficiation process in lease area for all 4 mines.
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues	No proposal of fresh beneficiation study.	Beneficiation of ROM is being carried out. A beneficiation plant of 4.8 MTPA has been installed within the lease area.	No issues related to mineral conservation and beneficiation observed

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 separate dump for OB, Reject and fines . However, Waste rock 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.	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 be disposed in stopped out area as well as for tailing dam construction.	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)	An area of 5.0 Ha has been proposed for plantation with 5000 number of saplings.	During the year a total of 5190 saplings have been planted over 5.0 ha area for gap filling plantation	Figures are for entire Zawar Lease area. No mine wise specific proposal
8g	Survival rate	No proposal of survival rate.	80% survival rate has been reported in Annual Return.	Nil
8h	Water sprinkling on roads to control airborne dust	To control the air borne dust particle, water sprinkling has been proposed over the roads by water tanker.	Water sprinkling has been observed with fixed water sprinklers at Zawarmala 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.	Nil
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area	A total of 5000 numbers of saplings proposed to plant during 2022-23 covering 5.0 ha area	A total of 5190 numbers of saplings have been planted during 2022-23 in 5.0 ha area.	The aesthetic beauty in and around the mine is satisfactory.

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 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	Information on Mining Enginner, Geologist & Manager to be given by the lessee in Annual return	Information on Mining Enginner, Geologist & Manager has been given by the lessee in Annual return. Mining Engineer- Shri Sazal Geologist- Dr. Shashi Bhushan Shukla Manager- Shri Nandlal Swami	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 information is as reported in Annual Return 2022-23	The land use details are for entire Zawar lease.
9d	Scrutiny of Annual return on afforestation	Information on afforestation to be given	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)	There is no mineral reject as specified in Part V(3) of Annual Return	The information about reject in the form of tailing reject is given	The Quantity is 314910 MT with grade of 0.37%
9f	Scrutiny of Annual return on ROM stock and/or graded ore	Information is given under Part-VI(1) of Annual return	Found in order	Nil

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 is given as Rs.3666.0 & Production cost Rs.4894.91/- per tonne.	The discrepancy is pointed out in the form of show cause notice	Show cause notice for violation of rule 45(7) of MCDR,2017 has been issued
9h	Scrutiny of Annual return on fixed assets	The information on fixed asset has been given	Details of fixed assets submitted in Annual Return . The Value of Fixed Assets: Rs. 1450362209	The discrepancy observed has been pointed out through Show Cause notice under rule 45(7) of MCDR,2017
9k	Scrutiny of Annual return on mining machineries	The detail information on mining machineries is given	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 11(1)	30-SEP-23	14-DEC-23			
	Rule 45(7)	30-SEP-23	14-DEC-23			

Date :

(DR A Z KHAN)

Indian Bureau of Mines