

**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 : **DJ03**) **DILIP JAIN**
Officer and ID No.
- (ii) Designation : Senior Mining Geologist
- (iii) Accompanying mine : Shri Sh. Debanshu Chatterjee, Mine Manger and Sri Som
Official with
Designation
- (iv) Date of Inspection : 05-NOV-19
- (v) Prev.inspection date : 26-JUL-19

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 :
FAX No. : 0294-2726243
E-mail : hzlm@datainfosys.net
Phone : 0294-2726611,2726612
- (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 :
- (d) Date of Expiry : 29-MAR-10
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 : SUNIL DUGGAL
 YASHAD BHAWAN UDAIPUR
 UDAIPUR RAJASTHAN
 Phone: 0294-6604120
 FAX : 0294-6604120

Agent : Sri Vijay Prakash Joshi
 Baroi Pb-Zn Mine, Post-
 Zawar, District: Udaipur
 Rajasthan UDAIPUR RAJASTHAN
 Phone:
 FAX :

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

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. 2017-18 a total of 230 BH have been proposed with 23000mts	During the year 2017-18 a total of 460 have been drilled with 31041 mts.	No Backlog.
1b	Exploration over lease area for geological axis 1 or 2	During the reporting year 2018-19 a total of 300 BH have been proposed with 27000 mts.	A total of 422 BH have been drilled with 71315 mts.	NIL.
1c	Exploration Agencies and Expenditure in lakh rupees during the year	No specific proposal of exploration agency and expenditure.	Drilling has been carried out by AEC and HRREC and TDMA agencies with total expenditure of 972.65 lacs.	NIL.
1d	Balance area to be explored to bring Geological axis in 1 or 2	No specific proposal/area has been mentioned under balance area to be explored to bring Geological axis in 1 or 2.	As per approved document dated 15/05/2019, an area of 45.49 yet to bring under G1/G2 level of exploration.	NIL.
1e	Balance reserve as on 01/04/20	As per approved document dated 24/11/2016, the position of reserve on 01/04/2016 was 3.103 million tonnes.	The position of reserve as on 01/04/2019 is 2.667 million tonnes.	NIL.
1f	General remarks of inspecting officers on geology, exploration etc	During the reporting year 2018-19 a total of 300 BH have been proposed with 27000 mts.	A total of 422 BH have been drilled with 71315 mts.	Exploration carried out is more than the proposal.

Development :

Sl.No.	Item	Propasals	Actual work	Remarks
2a	Location of development w.r.t.lease area	A total of 10000 mts of development has been proposed at various levels.	During the year a total of 12025 mts of development has been achieved.	NIL.
2b	Separate benches in topsoil, overburden and minerals (Rule 15)	Not applicable as mining operation has been proposed through UG Mining Method.	Not applicable.	NIL.
2c	Stripping ratio or ore to OB ratio	Not applicable being a UG mining operation.	Not applicable.	NIL.
2d	Quantity of topsoil generation in m3	No proposal of top soil generation during the year.	No top soil has been generated during the year.	NIL.
2e	Quantity of overburden generation in m3	A total of 211000 tonnes of waste has been proposed to generate through UG development.	A total of 456452 tonnes of waste has been generated.	Violation of MCDR issued vide office letter dated 03/12/2019.
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc	Development has been proposed through UG mining operation.	The UG mechanised method has been adopted for carrying out mining operations in the lease area which is best suited to the type of deposit.	NIL.

Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
3a	Number of pit proposed for production	Not applicable as it is UG mine.	Not applicable.	NIL.
3b	Quantity of ROM mineral production proposed	1000000 tonnes.	999991 tonnes.	NIL.
3c	Recovery of sailable/usable mineral from ROM production	1000000 tonnes.	999991 tonnes.	NIL.

3d	Quantity of mineral reject generation	No proposal of Mineral Reject generation.	Entire ROM is subject to beneficiation. A quantity of 934564 tonnes (mill tailing) has been considered as mineral reject.	NIL.
3e	Grade of mineral rejects generation and threshold value declared.	Not applicable as no proposal.	The grade of mil tailing reported was 1.01 % (Pb+Zn)	NIL.
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 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 4.7 mtpa is already in place within lease boundary.	Beneficiation of ROM is being carried out as per proposal.	NIL.
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	Twin Boom Jumbo, Loaders, LPDT, LHD, Grader 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	As per approved document dated 24/11/2016 for the period upto 2019-20, an area of 251.52 Ha has been proposed to use under different heads.	An area of 254.02 Ha . has been put in use at the end of the year 2018-19. Further, an area of 45.07 Ha. has been declared as reclaimed and rehabilitated.	As per approved document dated 17/05/2019, area proposed to put in use at the end of the plan period i.e. 2019-20 has been revised to 296.97 Ha.
3p	Production of ROM mineral during the last five year period as applicable	2018-19:1000000 2017-18:850000 2016-17:600000 2015-16:365000 2014-15:425000	2018-19:999991 2017-18:714198 2016-17:602000 2015-16:402000 2014-15:322900	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.	NIL.

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 and Mineral Reject has not been generated during the reporting year. Waste generated during the year has been dumped as per proposal.	Quantity of Mill tailing of 934564 MT of 1.01% (Pb+Zn) has been reported as Mineral reject.

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 and Mineral Reject has not been generated during the reporting year. Waste generated during the year has been dumped as per proposal.	Quantity of Mill tailing of 934564 MT of 1.01% (Pb+Zn) has been reported as Mineral reject.
4c	Number of dumps within lease area and outside of lease area	No proposal of waste dumping during the year 2018-19.	No waste dumping during the year 2018-19.	NIL.
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.	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	OB/waste is proposed to dispose in UG stopes as well as for tailing dam construction.	Waste generated during the year has been dumped as per proposal.	NIL.

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.	Backfilling or dumping in UG voids has been proposed.	Dumping of waste has been carried out in UG stops.	NIL.
5b	Area under backfilling of mined out area	No specific proposal of area. A quantity of 174000 MT has been proposed to dispose in UG stopes.	A quantity of 346365 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 waste dumping in UG voids has been proposed.	Dumping of waste has been carried out in UG stops.	NIL.

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. 2018-19 has been submitted on 20/06/2019.	NIL.
6b	Area available for rehabilitation (ha) .	An area of 4.0 Ha of within lease area has been proposed for rehabilitation	75 Ha areas has been planted including gap filling plantation.	Proposal and actual is for entire Zawar group of mines.

6c	afforestation done (ha).	An area of 4.0 75 Ha areas has been Ha of within planted including gap lease area has filling plantation. been proposed for rehabilitation	Proposal and actual is for entire Zawar group of mines.	
6d	No. of saplings planted during the year	4000 within lease area.	25000 saplings have been planted.	For overall Zawar group of mines.
6e	Cumulative no .of plants	As per approved document dated 24/11/2016, cumulatively 12000 numbers of plants has been proposed to plant during 2016-17 to 2019-20 within lease area.	Cumulatively 77300 number of plants has been planted within lease area from 2016-17 to 2018-19 within lease area.	NIL.
6f	Any other method of rehabilitation	Other than plantation, no specific proposal of any other method of rehabilitation	Plantation has been carried out as per proposal.	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. 705422/-	NIL.
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 174000 MT has been proposed to dispose in UG stopes.	A quantity of 346365 MT has been dispose in UG stopes.	NIL.
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	A quantity of 174000 MT has been proposed to dispose in UG stopes.	A quantity of 346365 MT has been dispose in UG stopes.	NIL.

6j	Compliance on reclamation and rehabilitation by backfilling (iii) Afforestation on backfilled area	No Proposal.	Not applicable.	NIL.
6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	No Proposal.	Not applicable.	NIL.
6l	Compliance on reclamation and rehabilitation by backfilling (v) any other specific means.	No Proposal.	Not applicable.	NIL.
6m	Compliance of rehabilitation of waste land within lease (i) afforestation	Plantation of 4000 no of plants over 4.0 Ha rea.	Plantation of 25000 no of plants over 75.0 ha area.	NIL.
6n	Compliance of rehabilitation of waste land within lease (ii) Area rehabilitation (ha)	Plantation of 4000 no of plants over 4.0 Ha rea.	Plantation of 25000 no of plants over 75.0 ha area.	NIL.
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 parameters are found to be within permissible limit.	NIL.
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.	Plantation of 4000 no of plants over 4.0 Ha rea.	Plantation of 25000 no of plants over 75.0 ha area.	PMCP implementation is satisfactory.

Mineral Conservation:

Sl.No.	Item	Propasals	Actual work	Remarks
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7a	ROM Mineral dispatch or grade-wise sorting within lease area	No specific proposal of grade wise sorting.	Entire ROM ore is being transported 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.
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 has been observed as per proposal.	MIL.
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues	4.7MTPA Beneficiation plant has been installed within the lease area.	Beneficiation of ROM is being carried out as per proposal.	No issues related to mineral conservation and beneficiation.

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.	Not applicable.	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.	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 stoped out area has 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 4.0 Ha has been proposed for plantation with 4000 number of saplings.	During the year a total of 25000 thousand saplings have been planted over 75 ha area including gap filling plantation.	Current Cumulative plantation as on 01/04/2019 was 425625.
8g	Survival rate	No specific proposal of for survival rate.	80%	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 with water sprinklers (capacity 10KL) 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	Proposal of plantation over 4.0 Ha with 4000 number of saplings has been proposed.	During the year a total of 25000 thousand saplings have been planted over 75 ha area including gap filling plantation.	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.	Scrutiny of annual return 2018-19.
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Mining Eng.- Vinod Saini Geologist- Somdeb Dutta Mal Mine Manager- Sh. Debanshu Chatterjee	Mine Manger, Mining engineer and Geologist are appointed.	Scrutiny of annual return 2018-19.
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	A total of 254.52 Ha rea has been shown degraded under various activity like Road, plants, Buildings, Township etc. Further, an area of 45.07 ha. has been furnished under reclaimed and rehabilitated area.	The information furnished about land use pattern in annual return is found to correct.	The information furnished is for entire Zawar group of mines
9d	Scrutiny of Annual return on afforestation	Within ML 25000 Nos of saplings.	Information furnished appears to be corrected.	For overall Zawar group of mines.
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	Quantity- 934564 MT Grade- 1.01 % (Pb+Zn)	The quantity of Mineral Reject furnished is 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. concentrates closing stock at Mill: 1096.228 MT	The information furnished is found to be 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 & Production cost is 2637.46/- per tonne	Violation of MCDR issued for vide letter dated 23/09/2019 during previous inspection for cost of production.	NIL.
9h	Scrutiny of Annual return on fixed assets	Value of fixed asset furnished is NIL.	Information is furnished under Mochia Mine annual return.	NIL.
9k	Scrutiny of Annual return on mining machineries	Rock Drill, Blast Hole Drill. LPDT, LHD, 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 11(1)	03-DEC-19			
MCDR17	Rule 45(7)(a)	03-DEC-19			

Date :

(DILIP JAIN)

Indian Bureau of Mines