

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

MCDR INSPECTION REPORT

Gandhinagar regional office

Mine file No : RAJ/UDP/LZ-3

Mine code : 34RAJ26001

- (i) Name of the Inspecting : **DJ03**) **DILIP JAIN**
Officer and ID No.
- (ii) Designation : Senior Mining Geologist
- (iii) Accompanying mine : Sri Rahul Bose, Mine Manager and Sri Sandeep Rajput,
Official with
Designation
- (iv) Date of Inspection : 06-NOV-19
- (v) Prev.inspection date : 24-JUL-19

PART-I : GENERAL INFORMATION

1. (a) **Mine Name** : **BALARIA**
- (b) **Registration NO.** : **421**
- (c) Category : A Fully Mechanised
- (d) Type of Working : Underground
- (e) Postal address
- State : RAJASTHAN
- District : UDAIPUR
- Village : ZAWAR
- Taluka : SARADA/GIRWA
- Post office : ZAWAR MINES
- Pin Code : 313901
- FAX No. : 0294-2726243
- E-mail : sunil.duggal@vedanta.co.in
- Phone : 2726238
- (f) Police Station : ZAWAR
- (g) First opening date : 01-APR-70
- (h) Weekly day of rest : SUN
2. Address for : PO- ZAWAR
correspondance : DISTT.- UDAIPUR
RAJASTHAN-313901
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 LIMITED
 YASHAD BHAVAN UDAIPUR
 RAJASTHAN
 Phone:(0294) 2342093
 FAX :(0294) 2342092

Owner : SUNIL DUGGAL
 YASHAD BHAWAN UDAIPUR
 UDAIPUR RAJASTHAN
 Phone: 0294-6604120
 FAX : 0294-6604120

Agent : Shri Kishore S
 Mochia Pb_zn Mine, Post:
 Zawar, Udaipur Rajasthan
 UDAIPUR RAJASTHAN
 Phone:
 FAX : 0294-2412545

Mining Engineer

Name : PRASHANT GUPTA, Full Time
 Qualification : BE. (MIN.) 2 class cert.
 Appointment/ : 11-AUG-12
 Termination date

Geologist

Name : Dr. Sandeep Kumar Rajput, Full Time
 Qualification : Ph.D., N.E.T
 Appointment/ : 22-APR-17
 Termination date

Manager

Name : Sh. Mithilesh Kumar
 Qualification : BE(Mining)
 Appointment/ : 19-JAN-18
 Termination date

6. Date of approval of Mining Plan/Scheme of Mining	:	Modif.of approved Mining Plan	04-OCT-12
		Mining Scheme rule 12 MCDR1988	31-JUL-15
		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 315 BH have been proposed with 21000mts.	During the year 2017-18 a total of 367 BH {44 (UG) + 5(Surface)} have been drilled with 27764 mts.	No Backlog.
1b	Exploration over lease area for geological axis 1 or 2	During the reporting year 2018-19 a total of 360 BH have been proposed with 24000 mts.	A total of 430 BH have been drilled with 33724 mts.	A total of 10 BH have been drilled form surface during the year 2018-19.
1c	Exploration Agencies and Expenditure in lakh rupees during the year	No specific proposal about Drilling agency and expenditure.	Drilling has been carried out by EFMCP, total expenditure of 308.79 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 29.10 Ha. 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 and resource as on 01/04/2016 was 2.591 and 27.644million tonnes respectively.	The position of reserve and resources as on 01/04/2019 as per approved document dated 17/05/2019 was 2.433 and 30.750 million tonnes respectively.	NIL.

1f	General remarks of inspecting officers on geology, exploration etc	During the reporting year 2018-19 a total of 360 BH have been proposed with 24000 mts.	A total of 410 BH from UG have been drilled with 32337.10 mts.	The adequate exploration has been carried out. No issue regarding exploration.
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Development :

Sl.No.	Item	Propasals	Actual work	Remarks
2a	Location of development w.r.t.lease area	A total of 8500 mts of development has been proposed at various levels.	During the year a total of 6968 mts development has been achieved.	Violation of MCDR vide letter dated 24/10/2019 has been issued for less development during previous inspection.
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 179000 tonnes of waste has been proposed to generate through UG development.	A total of 187121 tonnes of waste has been generated.	NIL.
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
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3a	Number of pit proposed for production	Not applicable as it is UG mine.	Not applicable.	NIL.
3b	Quantity of ROM mineral production proposed	750000 tonnes.	582024 tonnes.	NIL.
3c	Recovery of sailable/usable mineral from ROM production	750000 tonnes.	582024 tonnes.	NIL.
3d	Quantity of mineral reject generation	No proposal of Mineral Reject generation.	Entire ROM is subject to beneficiation. A quantity of 541817 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 mill tailing reported was 0.92 % (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, an area of 251.52 has been proposed to put in use under different heads at the end of the plan period i.e. 2019-20.	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	2014-15: 350000 2015-16: 340000 2016-17: 455000 2017-18: 550000 2018-19: 750000	2014-15: 221190 2015-16: 318335 2016-17: 421700 2017-18: 471291 2018-19: 582024	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 proposed 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 541817 MT of 0.92% (Pb+Zn) has been reported as Mineral reject.
4b	Location of topsoil, OB and mineral reject dumps	No proposal of waste dumping within Mine boundary.	No waste dumping within Mine boundary of Balaria.	NIL.
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 Balaria.	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.	Not applicable as no waste dump within Mine boundary.	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	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.	No issue related to waste dumping.

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 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	Out of total quantity of 179000 MT of waste generation, a quantity of 129000 MT has been proposed to dispose in UG stopes and remaining quantity of 50000 MT has been proposed to utilized for Tailing dam.	Total waste generated quantity has been disposed of 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 dumping in UG voids has been proposed.	Dumping of waste has been carried out in UG stops.	Being a UG mine, UG stoped out area is utilized for waste dumping.

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).	04 Ha areas have been within Zawar Lease area.	75 Ha areas have been planted including gap filling plantation.	Proposal and actual is for entire Zawar Lease area.
6d	No. of saplings planted during the year	4000 within lease area.	25000 saplings have been planted.	For overall Zawar Lease area.

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.	Commutative plantation number is 425625 number.
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/-	For overall Zawar Lease area.
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (Lx B x D	A quantity of 129000 MT has been proposed to dispose in UG stopes.	A quantity of 187121 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 129000 MT has been proposed to dispose in UG stopes.	A quantity of 187121 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	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.	For overall Zawar lease area.
6n	Compliance of rehabilitation of waste land within lease (ii)Area rehabilitation (ha)	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.	For overall 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)	Provision of environment monitoring has been given.	Being done as per proposal and parameters are found to be within permissible limit.	NIL.
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.	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.	PMCP compliance appears to be 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.	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.	NIL.
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues	No specific proposal.	Not applicable.	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. Mill tailing has been considered as Mineral reject. 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.	Cumulative plantation 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) 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.

Compliance of Rule 45:

Sl.No.	Item	Propasals	Actual work	Remarks
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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 Engineer- Prashant Gupta Geologist- Dr.Sandeep Kumar Rajput Mine Manager- Sh. Mithilesh Kumar	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.	For overall Zawar Lease.
9d	Scrutiny of Annual return on afforestation	Within ML 25000 Nos of saplings.	Information furnished appears to be corrected.	For overall Zawar lease.
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	Quantity- 945365 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. Concentrate closing stock at Mill: 596.97 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 Rs. 3280.53 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 Rs. NIL.	The values of fixed assets are furnished in Mochia Mine return of the Zawar lease.	NIL.
9k	Scrutiny of Annual return on mining machineries	Winding Engine, Front end loader, Trucks, Blast Hole drill, Crusher, Air Compressor 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 45(7)(a)	18-DEC-19			

Date :

(DILIP JAIN)

Indian Bureau of Mines