

**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 : **P022**) **PANKAJ KULSHRESTHA**
Officer and ID No.
- (ii) Designation : Assistant Controller Mine
- (iii) Accompanying mine : Sh. Satish Thakare, Manager, Shri Shashi Shukla, Geol
Official with
Designation
- (iv) Date of Inspection : 15/10/2022
- (v) Prev.inspection date : 18/01/2022

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. : 0294-2412545
E-mail : arun.mishra@vedanta.co.in
Phone : 0294-6604120
- (f) Police Station : ZAWAR
- (g) First opening date : 01/04/1970
- (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 : 80
- (d) Date of Expiry : 31/03/2030
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 : Sri Arun Mishra
 Yashad Bhavan, Udaipur
 Rajasthan UDAIPUR
 RAJASTHAN
 Phone:
 FAX : 0294-2412545

Agent : Mithilesh Kumar
 HINDUSTAN ZINC LTD. P.O.-
 ZAWAR MINES, DISTRICT-
 UDAIPUR UDAIPUR RAJASTHAN
 Phone: 9829013876
 FAX :

Mining Engineer

Name : PRASHANT GUPTA, Full Time
 Qualification : BE. (MIN.) 2 class cert.
 Appointment/ : 11/08/2012
 Termination date

Geologist

Name : Sri K. Sairaj, Full Time
 Qualification : M.Sc. Geology
 Appointment/ : 02/06/2020
 Termination date

Manager

Name : Sh. Mithilesh Kumar
 Qualification : BE(Mining)
 Appointment/ : 19/01/2018 04/06/2021
 Termination date

Manager

Name : Sri Debanshu Chatterjee
 Qualification : B.E. Mining
 Appointment/ : 04/06/2021
 Termination date

6. Date of approval of Mining Plan/Scheme of Mining : Modif.of approved Mining Plan 04/10/2012
 Mining Scheme rule 12 MCDR1988 31/07/2015
 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	During the previous year i.e., 2021-22 total 59000mts were proposed.	During the year 2021-22 total 79629 meters have been drilled. Therefor no backlog considered.	
1b	Exploration over lease area for geological axis 1 or 2	2021-22- 380no.of holes/45000m	2021-22- 520no.of holes/57778m	
1c	Exploration Agencies and Expenditure in lakh rupees during the year	2021-22: No specific proposal about Drilling agency and expenditure	2021-22 Expenditure: 1357.33lacs 1. Eco Friendly Mining & Construction Pvt. Ltd. 2. Trans directional mining Associates	
1d	Balance area to be explored to bring Geological axis in 1 or 2	G1 (16.46Ha) proposed holes 290. G2 (5.2Ha) proposed holes 95 G3 (7.28Ha) proposed holes 7	G1 (13.47Ha) actual holes 258. G2 (4.9Ha) proposed holes 128 G3 (9.30Ha) actual holes 6 (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- 9.818MT 122- 6.649 MT 221- 5.371 MT 222- 1.515 MT 333- 22.304 MT	The position of reserve and resources as on 01/04/2022: 111- 9.818MT 122- 6.649 MT 221- 5.371 MT 222- 1.515 MT 333- 22.304 MT	
1f	General remarks of inspecting officers on geology, exploration etc	The ststus of 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	As per mining plan	As per mining plan.
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 292000(108148 m3) tonnes of waste has been proposed to generate through UG development	A total of 268752 (99538m3) tonnes of waste has been generated.
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc	NA	The development of the mine may be considered as satisfactory.

Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
3a	Number of pit proposed for production	A total of 12 Stope blocks at different level has been proposed for stoping operation.	Stoping operation has been carried out at 7 stope blocks.	The production adversely affected due to covid.
3b	Quantity of ROM mineral production proposed	The quantity of ROM mineral production proposed during the year 2021-22 was 1150000 tonnes.	Total 961816 tonnes ROM was produced during the year 2021-22.	

3c	Recovery of salable/usable mineral from ROM production	The proposed recovery of salable/usable mineral from ROM production was 100%	Recovery of salable/usable mineral from ROM production achieved during the year 2021-22 is 100%
3d	Quantity of mineral reject generation	The reject generation as mill tailing was estimated around 1035000 t	Entire ROM is subject to beneficiation. A quantity of 895278 tonnes (mill tailing) has been reported as mineral reject
3e	Grade of mineral rejects generation and threshold value declared.	Not applicable as no proposal.	NA, Thresh hold is 0.400% (Pb+Zn)
3f	Quantity of sub grade mineral generation.	No proposal of Sub-grade generation	Not applicable
3g	Grade of sub grade mineral generation	No proposal of Sub-grade generation	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 4.7mtpa is already in place within lease boundary.	Beneficiation of ROM is being carried out as per proposal. ROM of Mochia, Baroi and Zawarmala mine are also 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 have been carried out as per proposal in UG development and stopes.

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.	
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-36.63 Mineral storage- 3.95 Ben. Plant-9.46 Township-37.95 Tailing pond-119.52 Roads-10.86 Infrastructure -62.68 Waste dump-10.57 Community development-8.71 Others-19.90 Total-320.23 (for over all Zawar group of Mines)	Mining-36.63 Mineral storage- 3.95 Ben. Plant-9.46 Township-38.95 Tailing pond-119.52 Roads-10.86 Infrastructure-62.68 Waste dump-10.57 Community development-8.71 Others-19.90 Total-321.23 (for over all Zawar group of Mines)	The above mentioned figures pertains to over all Zawar group of Mines.

3p	Production of ROM mineral during the last five year period as applicable	2016-17	2016-17	421700t
		455000t	2017-18	471291t
		2017-18	2018-19	582024t
		550000t	2019-20	492058t
		2018-19	2020-21	726877t
		750000t	2021-22	961816t
		2019-20		
		960000t		
		2020-21		
		960000t		
2021-22				
		1150000t		

3q	General remarks of inspecting officers on method of mining etc.	NA	The overall method of mining may be considered as satisfactory.
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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 topsoil generation, Mineral Reject generation: 1035000tonnes	Topsoil has not been generated during the reporting year. Mineral Reject generation: 895278tonnes	
4b	Location of topsoil, OB and mineral reject dumps	No proposal of location of topsoil dumping. All Mineral rejects to be dumped at tailing dam generation. OB/waste is proposed to dispose in UG stopes as well as for tailing dam construction.	Topsoil has not been generated during the reporting year. All mineral rejects (Tailings) have been disposed to tailing dam as per proposal. Waste generated during the year has been dumped in exhausted stopes as per proposal.	
4c	Number of dumps within lease area and outside of lease area	No proposal of waste dumping outside lease area.	No waste has been dumped on surface outside lease area.	
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.	No proposal	Not applicable
4f	Number of dead dumps.	No proposal	Not applicable
4g	Number of dumps established.	No proposal	Not applicable
4h	Whether Retaining wall or garland drain all along dumps are there.	No proposal	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 overall dump management 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	Dumping of waste has been carried out in UG stops.	
5b	Area under backfilling of mined out area	A quantity of 282000 MT has been proposed to dispose in UG stopes.	A quantity of 268752 MT 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 generated during the year.	
5d	Total area fully reclaimed and rehabilitated	Reclamation and or rehabilitation backfilling: 224800(Cu.m)	Reclamation and or rehabilitation backfilling: 178173(Cu.m)	

5e	General remarks of inspecting officers on backfilling and reclamation etc.	NA	The overall status of backfilling may be considered as satisfactory.
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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 reporting year i.e., 2021-22 has been submitted.	
6b	Area available for rehabilitation (ha) .	Nil	Nil, however total 5000 saplings have been planted in 5 hect. area within Zawar group of mines.	
6c	afforestation done (ha).	5000 saplings	Total 5000 saplings have been planted within 5 hect. area in Zawar group of mines.	
6d	No. of saplings planted during the year	5000 Nos	5000 Nos.	
6e	Cumulative no .of plants	NA	NA	
6f	Any other method of rehabilitation	No specific proposal of area. A quantity of 282000 MT has been proposed to dispose in UG stopes.	A quantity of 268752 MT has been disposed in UG stopes.	
6g	Cost incurred on watch and care during the year	NA	Not available for Balaria mines	
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.	NA	The overall status of PMCP compliance and progressive closure operations may be considered as satisfactory.	

Mineral Conservation:

Sl.No.	Item	Proposals	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.	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 .	4.7MTPA 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. Yes. Ore beneficiation process in lease area for all 4 mines of Zawar group of mines.
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues	NA	The over all status of Mineral conservation and beneficiation may be considered as satisfactory.

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	Not applicable as no proposal.	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 No Proposal of survival rate	Current Cumulative : 442625 Actual Addition 5000 90% of the plants have survived
8g	Survival rate	NA	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 Crusher and stockpile 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 overall 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	Proposals	Actual work	Remarks
9a	Status of submission of Monthly and Annual returns	As per time line given in MCDR.	Submitted in time.	
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Mining Eng.- Prashant Gupta Geologist- K.Sairaj Manager-Sh. Debanshu Chatterjee	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-36.63 Mineral storage- 3.95 Ben. Plant- 9.46 Township-37.95 Tailing pond- 119.52 Roads-10.86 Infrastructure -62.68 Waste dump- 10.57 Community development- 8.71 Others-19.90 Total-320.23	Mining-36.63 Mineral storage- 3.95 Ben. Plant-9.46 Township-37.95 Tailing pond-119.52 Roads-10.86 Infrastructure-62.68 Waste dump-10.57 Community development- 8.71 Others-19.90 Total-320.23	
9d	Scrutiny of Annual return on afforestation	Afforestation done- 5 Ha (Gap Filling) No. of Saplings- 5000	Afforestation done- 5 Ha (Gap Filling) No. of Saplings- 5000 (For Zawar group)	
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	Quantity- 895278MT of 0.39%	Quantity- 895278MT of 0.39%	

9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	Ex mine price- Rs. 5054.72/-	Ex mine price- Rs. 5054.72/-
9h	Scrutiny of Annual return on fixed assets	Yes, details provided	Yes details available
9k	Scrutiny of Annual return on mining machineries	Yes, details pertaining to mining machineries is available in AR	Yes, details pertaining to Mining Machinery is in operation.

Details of violations observed during current inspection and compliance position of violation pointed out

Violation observed		Show cause position	
Rule NO.	Issued on Compliance on	Rule NO.	Issued on Compliance on

Date :

(PANKAJ KULSHRESTHA)

Indian Bureau of Mines