

MCDR-MiFLOFE/23/2022-BBS-IBM_RO_BBS
INDIAN BUREAU OF MINES
MINERALS DEVELOPMENT AND REGULATION DIVISION

I/10924/2023

MCDR INSPECTION REPORT

Bhubaneshwar regional office

Mine file No : ORI/IRON/SNG/MCDR-2/BBS

Mine code : 30ORI13006

- (i) Name of the Inspecting : **VPD**) **VIKRAM DESHPANDE**
Officer and ID No.
- (ii) Designation : Assistant Controller Mine
- (iii) Accompanying mine : Shri A.K. Mishra, Mines Manager, Karthikeya Shankar,
Official with
Designation
- (iv) Date of Inspection : 18/05/2023
- (v) Prev.inspection date : 12/04/2022

PART-I : GENERAL INFORMATION

1. (a) **Mine Name** : **KALTA**
- (b) **Registration NO.** : **IBM/5662/2011**
- (c) Category : A Other than Fully Mech.
- (d) Type of Working : Opencast
- (e) Postal address :
State : ORISSA
District : SUNDARGARH
Village : KALTA
Taluka : BONAI
Post office : KALTA
Pin Code : 770052
FAX No. : 06625-234023
E-mail : kimkalta@rediffmail.com
Phone : 06625-234036
- (f) Police Station : Koira
- (g) First opening date : 06/01/1960
- (h) Weekly day of rest : SUN
2. Address for : KALTA IRON ORE MINE
correspondance AT/PO-KALTA
DIST-SUNDERGARH
3. (a) Lease Number : ORI0158
- (b) Lease area : 3.34
- (c) Period of lease : 20
- (d) Date of Expiry : 17/01/2004
4. Mineral worked : IRON ORE Main

I/10924/2023

5. Name and Address of the

Lessee : M/s Steel Authority of India Ltd (SAIL)
 Ispat Bhwan, Lodhi Road New
 Delhi DELHI DELHI
 Phone:011-24367481-86
 FAX :011-24367015/22467458

Owner : Atanu Bhowmick
 Rourkela Steel Plant
 Rourkela SUNDARGARH ORISSA
 Phone:
 FAX :

Agent : Tilak Patnaik
 At & Po Taldih PO: Koira
 District: Sundargarh
 SUNDARGARH ORISSA
 Phone:
 FAX :

Mining Engineer

Name : SHRI A K MISHRA,Full Time
 Qualification : B TECH MINING
 Appointment/ : 12/01/2019
 Termination date

Geologist

Name : SHRI KARTIKEYA SHANKAR,Full Time
 Qualification : MECH APPLIED GEOLOGY
 Appointment/ : 24/04/2021
 Termination date

6. Date of approval of Mining	:	Modif.of approved Mining Plan	21/06/2013
Plan/Scheme of Mining	:	MP modif under 17(3) MCR 2016	29/03/2019

I/10924/2023

PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	2021-22: 24	2022-23: 28	Backlog continued in 2022-23.
1b	Exploration over lease area for geological axis 1 or 2	24 No. of Boreholes were proposed in 2021-22	28 Nos. of Boreholes have been done in 2022-23	All the boreholes are drilled in G2 level.
1c	Exploration Agencies and Expenditure in lakh rupees during the year	M/s Gemco Kati Exploration Pvt. Ltd. (1586.41 Lakh for entire Lease)	M/s Gemco Kati Exploration Pvt. Ltd. (1586.41 Lakh for entire Lease)	
1d	Balance area to be explored to bring Geological axis in 1 or 2	174.069Ha	174.069Ha	Mineralized zone explored in G1 level and the rest area explored in G2 level.
1e	Balance reserve as on 01/04/20	As on 31.10.2020 111: 77.663 121: 18.344 211: 21.082 221: 4.657 Total: 121.746	As on 01.04.2023 111: 70.108 121: 18.244 211: 21.082 221: 4.657 Total: 114.091	Mineralized zone explored in G1 level and the rest area explored in G2 level.

I/10924/2023

1f	General remarks of inspecting officers on geology, exploration etc	M.L area exhibits 18 km long north-south trending ridge like hilly terrain. Banded Iron Formation is the host rock of the Iron ore deposits. Iron ore deposit strikes from N60°E - S60°W to N-S & N20°W - S20°E to E-W and dips 300 to 800 in western part and 100 to 500 in eastern part of the M.L area. The Mineralized zone has been explored in G1 level and the rest area explored in G2 level.
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Development :

Sl.No.	Item	Propasals	Actual work	Remarks
2a	Location of development w.r.t.lease area	Block-A: 315000E to 315800 E 2430300 N to 2431450 N Block-C: 316550 E to 317250 E, 2432450 N to 2433300 N	Block-A: 315000E to 315800 E 2430300 N to 2431450 N Block-C: 316550 E to 317250 E, 2432450 N to 2433300 N	As Per Proposal
2b	Separate benches in topsoil, overburden and minerals (Rule 15)	Block-A: Topsoil- 1 Bench Mineral- 9 Block-C: Topsoil- 1 Bench Overburden- Inter burden benches Mineral- 2	Block-A: Mineral-24 Block-C: Topsoil- 1 Bench Mineral- 2	Separate benches in OB and mineral maintained. Block A is worked manually whereas Block C is worked with Mechanized method.

I/10924/2023

2c	Stripping ratio or ore to OB ratio	1:0.061	1:0.057	
2d	Quantity of topsoil generation in m3	7250	6230	
2e	Quantity of overburden generation in m3	240550	182898	
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc			In all there are 06 pits within the Amalgamated lease out of which Mining in Kalta Mine is confined to two pit viz. A and C Blocks. Benches have height of 6m and width of 10m. Block A is worked manually whereas Block C is worked with Mechanized method. In block A the bench height in the new area were not maintained properly.

Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
3a	Number of pit proposed for production	2 (A & C)	2 (A & C)	As Per proposal
3b	Quantity of ROM mineral production proposed	3997656 t	3187048.49 t	Less Production due to Less EC Quantity.
3c	Recovery of sailable/usable mineral from ROM production	100%	100%	
3d	Quantity of mineral reject generation	260595 Cu. M	As per proposal	Generated mineral Reject Blended.

I/10924/2023

3e	Grade of mineral rejects generation and threshold value declared.	Grade: Fe >45 to <57% Threshold: Fe 45%	Grade: Fe >45 to <57% Threshold: Fe 45%	Grade of mineral reject generation and threshold value as per proposal.
3f	Quantity of sub grade mineral generation.	260595 Cu.M	Nil	Generated Subgrade Blended.
3g	Grade of sub grade mineral generation	+45-57% Fe	+45-57% Fe	
3h	Manual / Mechanised method adopted for segregating from ROM	Manual(Block-A) & Mechanised(Block C)	Manual(Block-A) & Mechanised(Block C)	
3i	Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects.	Yes, proposed.	Fe varying from 45 to 57 %	Screening of subgrade materials as per requirement.
3j	Provision of drilling and blasting in mineral benches	Yes, proposal made for drilling & blasting in mineral benches.	Blast hole diameter: 110mm Blasting is done by slurry explosives with NONEL. Burden: 2.5 m Spacing: 3.0 m	
3k	Provision of mining machineries in mineral benches	Excavator Bucket Capacity: 1.8-2.5 m3 Dumper Capacity: 16T-35 T	Yes, Excavator Bucket Capacity: 1.2-2.45m3 Dumper Capacity: 25T-31T	
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Yes, 6 m Bench Height is proposed	Yes, 6 m Bench Height is maintained in Block C. Not maintained in Block-A	Violation of Rule 11(1) for not maintaining the proposed bench height issued to the lessee.
3m	Total area covered under excavation/pits	121.500 Ha.	121.500 ha.	

I/10924/2023

3n	Ore to OB ratio for the pit/mine during the year.	1:0.061	1:0.057	
3o	Total area put in use under different heads at the end of year	194.853 Ha. Area under Excavation: 121.50 ha. Overburden Dump: 1.92ha. Mineral storage: 34.762 ha. Road:19.192Ha Top Soil:0.175Ha Others & Infrastructure : 17.304 ha. Total area: 194.853 ha.	194.853 Ha. Area under Excavation: 121.50 ha. Overburden Dump: 1.92ha. Mineral storage: 34.762 ha. Road:19.192Ha Top Soil:0.175Ha Others & Infrastructure : 17.304 ha. Total area: 194.853 ha.	
3p	Production of ROM mineral during the last five year period as applicable	Year -2018-19-2833100 T Year-2019-20-2499950 T Year-2020-21-3178600 T Year-2021-22-3493254 T Year-2022-23-3997656 T	Year -2018-19-1717832.00 T Year-2019-20-1873300.00 T Year-2020-21-2496900.00 T Year-2021-22-3168400.00 T Year-2022-23-3187048.49 T	The mining method adopted is opencast method by shovel-dumper combination in Block-C and Conventional Manual method in Block-A and is same as proposed.

Solid Waste Management - Dumping:

Sl.No.	Item	Propasals	Actual work	Remarks
4a	Separate dumping of topsoil, OB and mineral rejects (Rule 32,33)	Yes, proposed for Mineral Reject and Dumping of Waste	Dumping of Mineral Reject in KSD-10, and Dumping of Waste in KWD-11.	As per proposal

I/10924/2023

4b	Location of topsoil, OB and mineral reject dumps	Waste Dump KWD-11: 316579E- 316920E; 24131977N- 2432419N; Mineral Reject Dumps KSD- 10;314830E- 315140E;243031 0N-2430615N	Waste Dump KWD-11: 316579E-316920E; 24131977N-2432419N; Mineral Reject Dumps KSD-10; 314830E- 315140E;2430310N- 2430615N	
4c	Number of dumps within lease area and outside of lease area	All waste dump and mineral reject dumps are within Lease area Waste Dump: 1 no. Mineral Reject Dump: 8 nos.	All waste dump and mineral reject dumps are within Lease area Waste Dump: 1 no. Mineral Reject Dump: 8 nos.	As per proposal
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	Outside UPL	KWD-11 & KSD 10 are Outside UPL	As per proposal
4e	Number of active and alive dumps.	Waste Dump: 2no. (KWD-11 & 12) Mineral reject dump: 1 no. (KSD-10)	Waste Dump: 2 no. (KWD-11 & 12) Mineral reject dump: 1 no. (KSD-10)	As per proposal
4f	Number of dead dumps.	Nil	Nil	
4g	Number of dumps established.	Nil	None	
4h	Whether Retaining wall or garland drain all along dumps are there.	Yes	As per proposal	
4i	Length of Retaining wall or garland drain all along dumps	Retaining Wall: 0m Garland Darin: 0m	Retaining Wall: 0 Garland Darin: 775m (Western Side of "C" Block)	

I/10924/2023

4j	Number of settling ponds	Nil	Nil	As per proposal.
4k	Specific comments of inspecting officer on waste dump management			The dump KSD-10 is not secured properly nor terracing has been done for which violation of 37(2) and 37(5) of MCDR 2017 has been pointed out to the lessee vide letter dated 29/05/2023.

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.	No Proposal	Nil	
5b	Area under backfilling of mined out area	Nil	None	
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	No Proposal	None	
5d	Total area fully reclaimed and rehabilitated	No Proposal	None	
5e	General remarks of inspecting officers on backfilling and reclamation etc.			No area is matured for reclaimed & rehabilitation hence no such proposal.

Progressive Mine Clousre Plan:

Sl.No.	Item	Propasals	Actual work	Remarks
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I/10924/2023

6a	Whether Annual report on PMCP submitted on time and correctly. Rule 23 E(2).	As per rule 23E(2) of MCDR, 2017, the holder of mining lease shall submit to the competent authority a yearly report as per the format specified by the IBM, before 1st day of July every year setting forth the extent of the protective and rehabilitative works carried out as envisaged in the approved mine closure plan, and if there is any deviation, reasons thereof.	Under process of Submission.
6b	Area available for rehabilitation (ha) .	NA	NA
6c	afforestation done (ha).	NA	NA
6d	No. of saplings planted during the year	NA	NA
6e	Cumulative no .of plants	NA	NA
6f	Any other method of rehabilitation	NA	NA
6g	Cost incurred on watch and care during the year	NA	NA

I/10924/2023

6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (Lx B x D	NA	NA
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	NA	NA
6j	Compliance on reclamation and rehabilitation by backfilling (iii)Afforestation on backfilled area	NA	NA
6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	NA	NA
6l	Compliance on reclamation and rehabilitation by backfilling (v)any other specific means.	NA	NA
6m	Compliance of rehabilitation of waste land within lease (i)afforestation	NA	NA
6n	Compliance of rehabilitation of waste land within lease (ii)Area rehabilitation (ha)	NA	NA

I/10924/2023

6o	Compliance of rehabilitation of waste land within lease (iii)Method of rehabilitation	NA	NA	
6p	Compliance of environmental monitoring (core zone and buffer zone)	Quarterly monitoring of AAQ, Water Quality and Noise Level to be carried out through a recognized environmental consultant.	Monthly and Quarterly monitoring of AAQ, Water Quality and Noise Level are being carried out.	
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.			The area is not matured for backfilling hence no such proposal has been made. The lessee carried out no plantation in the area.

Mineral Conservation:

Sl.No.	Item	Propasals	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	Yes, grade-wise sorting within lease area proposed	As per proposal	Kalta Iron Mine is a captive mine of M/s SAIL and the ore is used for extraction of Iron & Steel from different steel plants.
7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	Mechanical	Mechanical	
7c	Different grade of mineral sorted out at mines.	Yes	45 - 57% Fe at Dump /Stack	
7d	Any beneficiation process at mines	No such proposal	No beneficiation Process, only Dry Process.	

I/10924/2023

7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues	No beneficiation of ore is done except grade-wise sorting which is carried out at the mine site itself. The grade-wise sorted material is transported via trucks to the Roxy siding of the lessee which is located at a distance of 12 km from the mine site.
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Environment:

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	Removal: 7250 M3 Utilization: 7250 M3	Removal: 6230 M3 Utilisation: 2000 M3	
8b	Concurrent use or storage of topsoil	Storage: Nil	Storage: 4230 M3	To be utilized for Plantation
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	Dumping of Overburden in KWD-11 & 12	Dumping of Overburden in KWD-11	
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	Nil	Nil	As per proposal

I/10924/2023

8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	Nil	Nil	As per proposal
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	Nil	Nil	
8g	Survival rate	NA	NA	
8h	Water sprinkling on roads to control airborne dust	Water sprinkling in haulage road for dust control.	Regular water sprinkling is being done with 12KL-2nos. 16KL-1no., 18 ton: 2nos. mobile water tankers.	
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area			The lessee is regularly monitoring the air, water and other parameters. No plantation has been done and for dust suppression regular water sprinkling is being done. Due to these efforts there is no adverse impact on the aesthetic beauty in and around the mines.

Compliance of Rule 45:

Sl.No.	Item	Propasals	Actual work	Remarks
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I/10924/2023

- 9a Status of submission of Monthly and Annual returns Monthly return M.R. Submitted upto to be March, 2023. AR for submitted by 2022-23 under process of 10th of each submission. month and Annual Return to be submitted by 1st July every year.
- 9b Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager Mines manager, Mining engineer & Geologist have appointed in the mine. AR for 2022-23 under process of submission
- 9c Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc. Area under Excavation: 121.50 ha. Overburden Dump: 1.92ha. Mineral storage: 34.762 ha. Road:19.192Ha Top Soil:0.175Ha Others & Infrastructure : 17.304 ha. Total area: 194.853 ha Area under Excavation: 121.50 ha. Overburden Dump: 1.92ha. Mineral storage: 34.762 ha. Road:19.192Ha Top Soil:0.175Ha Others & Infrastructure: 17.304 ha. Total area: 194.853 ha AR for 2022-23 under process of submission.
- 9d Scrutiny of Annual return on afforestation No Proposal Nil
- 9e Scrutiny of Annual return on mineral reject generation (Grade and quantity) AR for 2022-23 under process of submission.
- 9f Scrutiny of Annual return on ROM stock and/or graded ore

I/10924/2023

9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	Lump: 2361/Te Fines:1490/Te	AR for 2022-23 under process of submission.
9h	Scrutiny of Annual return on fixed assets	This asset is common for Barsua & Taldih Iron Mine.	AR for 2022-23 under process of submission.
9k	Scrutiny of Annual return on mining machineries		AR for 2022-23 under process of submission.

I/10924/2023

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)	29/05/2023			
MCDR17	Rule 32(1)(k)	29/05/2023			
MCDR17	Rule 37(2)	29/05/2023			
MCDR17	Rule 37(5)	29/05/2023			

Date :**(VIKRAM DESHPANDE)**

Indian Bureau of Mines