

I/14467/2023

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

**MCDR inspection REPORT**

**Bangalore regional office**

**Mine file No :** KNT/BLR/Fe-493/BNG

**Mine code :** 30KAR03184

- (i) Name of the Inspecting : S47 ) DR. Sudhakara T.L  
Officer and ID No.
- (ii) Designation : Senior Mining Geologist
- (iii) Accompanying mine : Mr. Anurag Mishra, AVP (Mines), Mr. Awadhesh Kumar Ra  
Official with  
Designation
- (iv) Date of Inspection : 16/06/2023
- (v) Prev.inspection date : 22/10/2022

**PART-I : GENERAL INFORMATION**

1. (a) **Mine Name** : BHADRA IRON ORE MINES
- (b) **Registration NO.** : IBM/432/2011
- (c) **Category** : A Fully Mechanised
- (d) **Type of Working** : Opencast
- (e) **Postal address**
- State : KARNATAKA
- District : BELLARY
- Village : ITTANAHALLI
- Taluka : SANDUR
- Post office : TARANAGAR
- Pin Code : 583119
- FAX No. : 8395-250132
- E-mail : PANDEY.BINAY@JSW.IN
- Phone : 8395-250120-30
- (f) **Police Station** : SANDUR
- (g) **First opening date** : 01/06/2019
- (h) **Weekly day of rest** : SUN
2. **Address for correspondance** : ITTANAHALLI VILLAGE  
TARANAGAR POST  
BALLARI-583119
3. (a) **Lease Number** : ML No. 007; Mine code: 30KAR03184
- (b) **Lease area** : 130.53 Ha
- (c) **Period of lease** : 50 Years
- (d) **Date of Expiry** : from 27.05.2019 to 26.05.2069
4. **Mineral worked** : IRON ORE Main

## 5. Name and Address of the

Lessee : JSW STEEL LIMITED  
 JSW Mining office, Near  
 Talur Cross Vidyanagar  
 Post, Toranagallu Sandur,  
 Bellary BELLARY KARNATAKA  
 Phone:9448286155  
 FAX :

Owner : Jayant Acharya ,Dy. Managing Director  
 JSW Mining Office, Near  
 Talur Cross Vidyanagar  
 (Post), Toranagallu, Sandur  
 Taluk,Bellary-Dist BELLARY  
 KARNATAKA  
 Phone:  
 FAX :

Agent : SUNIL KUMAR SINGH  
 JSW steel Ltd., Vijayanagar  
 works, Vidyanagar Po,  
 Bellari, Karnataka BELLARY  
 KARNATAKA  
 Phone: 9449598135  
 FAX : 08395250132/142

Mining Engineer  
 Name : MANJUNATH GOVINDAPPA,Full Time  
 Qualification : M. Tech (Mining)  
 Appointment/ : 07/10/2022  
 Termination date

Geologist  
 Name : CHIRUKURI HSR KRISHNA,Full Time  
 Qualification : MSc (Geology)  
 Appointment/ : 22/11/2021  
 Termination date

Manager  
 Name : AWADHESH KUMAR RAI  
 Qualification : DIP IN MINING FCC  
 Appointment/ : 15/06/2020  
 Termination date

6. Date of approval of Mining Plan/Scheme of Mining : MP under 16(1) of MCR 2016 06/07/2017  
 Modif.of approved Mining Plan 16/11/2021

## PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

## Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	NIL	NIL	In the reply to violation letter dated 19/01/2023, lessee replied that, during FY 2019-20 total 32 Boreholes were drilled with total Meterage of 1460.50 m.
1b	Exploration over lease area for geological axis 1 or 2	During the year 2022-23 Boreholes: 14 Nos Meterage: 580 Mts	Upto 31st March 2023: RC- 27 Boreholes with cumulative meterage of 875m From 1st April, 2023 to G1 Exploration Completion date: 25th May 2023: Core- 10 Boreholes with cumulative meterage of 540m. Total Boreholes: 37 Nos. Total Meterage: 1415 Mts	Cumulative (including the bore holes drilled during 2019-20): RC- 57 Boreholes with total meterage of 2249m Core- 12 Boreholes with total meterage of 626.5m. Total- 69 Boreholes with total meterage of 2875.5m
1c	Exploration Agencies and Expenditure in lakh rupees during the year	NIL	Drilling Agency- M/s RocktechEntreprises Expenditure- 112.45 lacs	Cumulative Expenditure- 197.98 lacs
1d	Balance area to be explored to bring Geological axis in 1 or 2	G2: 28.40 Ha G3: 15.04 Ha	Lessee has carried out 37 bore holes with a total meterage of 1415m. Plan showing level of exploration yet to be updated.	As per approved Mining Plan Details of are under G1: 30.61 Ha G2: 28.40 Ha G3: 15.04 Ha Non mineralized Area: 56.48 Ha

1e	Balance reserve as on 01/04/20	" Proved Mineral Reserve (111) - 2716588 MT " Probable Mineral Reserve (122) - 7169276 " Feasibility Mineral Reserve (211) - 16252476 MT Total Reserves- 9885864 MT Total Resources- 26138340 MT (As on 01.04.2021) as per approved Mining Plan	" Proved Mineral Reserve (111) - 233647 MT " Probable Mineral Reserve (122) - 7169276 " Feasibility Mineral Reserve (211) - 16252476 MT Total Reserves- 7402923 MT Total Resources- 23655399 MT (as on 01.04.2023)	Actual figures as reported by lessee during the inspection.
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1f	General remarks of inspecting officers on geology, exploration etc	The iron ore formation in mine is bedded stratiform deposit with irregular habit, the ore body undergone deformation. Pinching and swelling of ore body is observed, requires more close spaced drilling. Records of bore holes drilled during the year 2022-23 in Form-J format has not been prepared and maintained as per the provision of the rule 48 of MCDR, 2017, violation pointed out under Rule 48 of MCDR, 2017
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 Development :
 

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Sl.No.	Item	Proposals	Actual work	Remarks
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2a	Location of development w.r.t.lease area	E 674770 to E675538 N1669934 to N.1671039	E/W: 674773 / 675534 N 1669956 to 1671000	Development is within the proposed location
2b	Separate benches in topsoil, overburden and minerals (Rule 15)	Benches in Mineral and Overburden: 12	Benches in Mineral and Overburden: 12	No Top Soil Generation
2c	Stripping ratio or ore to OB ratio	Ore: 1439939 tonnes OB: 2583292tonnes 1:1.79	Ore: 1050228 tonnes OB : 1222081tonnes 1:1.16	Violation pointed out for deviation in proposed ROM production, OB Development and stripping ratio.
2d	Quantity of topsoil generation in m3	NIL	NIL	No Top Soil Generation
2e	Quantity of overburden generation in m3	1291646 m3	611040.325 m3	
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc			The iron ore formation in mine is bedded stratiform deposit with irregular habit. Pinching and swelling nature of ore body observed along the strike of the formation. There is a deviation in bench advancement observed due to not achieving the proposed ROM quantity there by lacking in proposed development, bench advancement and not achieving the proposed stripping ratio. Violation pointed out under Rule 11(1) of MCDR,2017

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**Exploitation:**


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Sl.No.	Item	Propasals	Actual work	Remarks
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3a	Number of pit proposed for production	02	02	As per proposal in Block 2 & Block 3.
3b	Quantity of ROM mineral production proposed	1439939 Metric Tons	1050228 Metric Tons	Proposed ROM quantity not achieved, violation pointed out.
3c	Recovery of sailable/usable mineral from ROM production	100%	100%	-
3d	Quantity of mineral reject generation	No proposal	NIL	-
3e	Grade of mineral rejects generation and threshold value declared.	No proposal	NIL	-
3f	Quantity of sub grade mineral generation.	No proposal	NIL	-
3g	Grade of sub grade mineral generation	No proposal	NIL	-
3h	Manual / Mechanised method adopted for segregating from ROM	Mechanized Method for ROM Segregation (Crushing & Screening)	Mechanized Method for ROM Segregation (Crushing & Screening)	Dry Crushing and Screening observed at mine site for sorting of lumps and fines
3i	Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects.	No proposal	NIL	-
3j	Provision of drilling and blasting in mineral benches	Drilling and Blasting is proposed for mineral benches.	Drilling and Blasting is carried for mineral benches.	Drilling and Blasting Carried out as per proposal

3k	Provision of mining machineries in mineral benches	Proposed Mining Machineries: Excavator - 9 Rock breaker 1 Tippers - 58 Drill Rig - 2 Front end Loader - 4 Back Hoe Loader - 1	Mining Machineries deployed: Excavator - 9 Rock breaker - 1 Tippers - 50 Drill Rig - 2 Front end Loader - 4 Back Hoe Loader - 1	Machineries given observed at mine site.
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Bench Height- 8 m Bench Width- 8m	Bench Height- 8 m Bench Width- 8m	Benches height and width maintained at proposed working locations.
3m	Total area covered under excavation/pits	42.88Ha	42.55 Ha	-
3n	Ore to OB ratio for the pit/mine during the year.	1:1.79 (in Metric Tonnes)	1:1.16 (in Metric Tonnes)	Violation pointed out for not achieving the Ore to OB ratio.
3o	Total area put in use under different heads at the end of year	Mining- 42.88 Ha Mineral Storage- 00.30 Ha Roads- 1.43 Ha Infrastructure - 4.30 Ha O/B Dumps- 34.40 Ha Others- 47.22 Ha	Mining- 42.55 Ha Mineral Storage - 00.30 Ha Roads- 1.43 Ha Infrastructure - 4.30 Ha O/B Dumps- 34.40 Ha Others- 47.55 Ha	Slightly less in area in Mining due to less production.
3p	Production of ROM mineral during the last five year period as applicable	2019-20: 1250000 2020- 21:1440000 2021- 22:1440000 2022- 23:1439939	2019-20: 1249750 2020-21:1439800 2021-22:1432713 2022-23:1050228	Data of 04 Financial year provided due to the mine operations started during 2019-20. Figures 2019-20 to 2021-22 from AR. Figures 2022-23 are from Monthly returns.

3q General remarks of inspecting officers on method of mining etc.

Mine benches systematically developed. Lessee has not achieved the Proposed ROM production and Development . violation pointed out.

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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)	Separate dumping of Overburden is proposed	Separate dumping of Overburden is being carried out.	Total of 611040.325 m3 of OB has been dumped in AD-01 & PTD.
4b	Location of topsoil, OB and mineral reject dumps	Overburden dumping Active Dump in block-1 (AD-1) E 674707 to E 675185 N 1671680 to 1671937 Block -3: Proposed Temporary Dump: E 676635 to N676730 N 1667022 to N1667128	Overburden dumping Active Dump in block-1: (AD-1) E 674713 to E675180 N 1671695 to N1671936 Block -3: Proposed Temporary Dump: E 676635 to E676730 N 1667022 to N 1667128	Dumping carried out at the proposed location.
4c	Number of dumps within lease area and outside of lease area	Within Lease Area- (2 - Active dumps & 6 In-active dumps) Outside - No Proposal	Within Lease Area- (2 - Active dumps & 6 In-active dumps) Outside - Nil	Inactive Dump was created by erstwhile lessee



4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	Active Dump in block-1 (AD-1) E 674707 to N675185 N 1671680 to N1671937 Block -3: Proposed Temporary Dump: E 676635 to E 676730 N 1667022 to N1667128	Part of the dumps within UPL	
4e	Number of active and alive dumps.	Active Dump - 2	Active Dump - 2	Active Dumps: in block-1 (AD-1) In Block-3 (AD-2) Temporary dump
4f	Number of dead dumps.	Inactive Dump - 6	Inactive Dump - 6	All the 6 dumps created by erstwhile lessee
4g	Number of dumps established.	NIL	All 06 Inactive dumps are stabilized.	EID dump part is inside the lease area which is also stabilized.
4h	Whether Retaining wall or garland drain all along dumps are there.	YES	YES	Lessee has completed the retaining wall and garland drain as per approved R & R Plan.
4i	Length of Retaining wall or garland drain all along dumps	NIL	NIL	There is no proposal in the plan period. Lessee has completed the retaining wall and garland drain as per approved R & R Plan Cumulative (includes outside lease area): Retaining wall - 3357m Garland drain - 3107m.
4j	Number of settling ponds	NIL	NIL	Cumulative 03 (including outside lease area).

4k	Specific comments of inspecting officer on waste dump management			Lessee has carried out dumping at the proposed location. Systematic terracing of dumps observed. Lessee has made efforts to stabilize the inactive dumps.
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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.	NIL	NA	No area is completely mined out during this plan period.
5b	Area under backfilling of mined out area	NIL	NA	No Backfilling.
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	NIL	NA	No top soil generation (2022-23)
5d	Total area fully reclaimed and rehabilitated	NA	NA	-
5e	General remarks of inspecting officers on backfilling and reclamation etc.			The ore body exists below the working level and the pit is not matured for back filling.

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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).	Submission of Annual report on PMCP under rule 23E(2).	PMCP Annual Report for the year 2022-23 not yet submitted.	

6b	Area available for rehabilitation (ha) .	No proposal	Nil	
6c	afforestation done (ha).	1.62 Ha	1.48Ha	
6d	No. of saplings planted during the year	4050 Nos.	3697 Nos. (Within lease area)	Plantation done outside lease area 1596 Nos. Total no plantation done in 2022-23: 5293 Nos. As reported by lessee during inspection.
6e	Cumulative no .of plants	Not specified in AMP	16789Nos. (Within lease area)	Includes plantation in green belt, In-active dump.
6f	Any other method of rehabilitation	Implementation of Engineering measures for Surface Water and Dump Management as per Approved R&R Plan.	Engineering measures for Surface Water and Dump Management as per Approved R&R Plan are being implemented.	-
6g	Cost incurred on watch and care during the year	6.50 Lakhs	6.47 Lakhs	As reported by lessee during inspection. The given cost is Cost incurred for plantation within lease area.
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling ( Lx B x D	No proposal	NA	
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	No proposal	NA	
6j	Compliance on reclamation and rehabilitation by backfilling (iii)Afforestation on on backfilled area	No proposal	NA	

6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	No proposal	NA
6l	Compliance on reclamation and rehabilitation by backfilling (v) any other specific means.	No proposal	NA
6m	Compliance of rehabilitation of waste land within lease (i) afforestation	No proposal	NA
6n	Compliance of rehabilitation of waste land within lease (ii) Area rehabilitation (ha)	No proposal	NA
6o	Compliance of rehabilitation of waste land within lease (iii) Method of rehabilitation	No proposal	NA

6p	Compliance of environmental monitoring (core zone and buffer zone)	Regular Environmental Monitoring of Core and Buffer zone is proposed.	Environmental Monitoring of Core and Buffer zone is being carried out on regular basis.	Monitoring Agency-Ecomen Laboratories Parameters which are being Monitored: " Ambient Air Quality " Ambient Noise " Surface Water Quality " Dust Fall Measurement " Noise Monitoring (Personal Exposure) " Stack Monitoring " Personal Dust Monitoring " Fugitive Dust Monitoring " Ground Water Quality " Soil Analysis " Blasting Vibration Monitoring  The results are within permissible limit.
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.			Lessee has carried out PMCP activities as per proposal.

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Mineral Conservation:

Sl.No.	Item	Propasals	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	Yes	Lumps and fines separated by crushing and screening. Lumps and fines of different grades carried out mine site.	ROM Opening stock: 60950.00 MT Closing stock: 652.79 MT.
7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	Crushing & Screening	By dry crushing and screening	Lumps and fine separated

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7c	Different grade of mineral sorted out at mines.	Yes	Dispatch of lumps 1)Grade:45-51 % Qty.: 29502.00 2)Grade:51-55 % Qty.: 307046.31 Dispatch of Fines 1)Grade:45-51 % Qty.: 8000.00 2)Grade:51-55 % Qty.: 733127.7	As reported by lessee during inspection
7d	Any beneficiation process at mines .	NIL	No beneficiation process is carried out within lease area.	Crushing and screening carried out.
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues			There is no beneficiation proposal. Lessee has carried out size-wise and grade-wise sorting by crushing and screening method.

## Environment:

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	No proposal	Nil	Production & development is in the broken up area, no top soil generated.
8b	Concurrent use or storage of topsoil	No proposal	NIL	
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	Separate dump for overburden is proposed at 2 locations (Block 1 & Block 3)	Separate dumping of overburden is being carried out at 2 locations (Block 1 & Block 3) as per proposal.	Lessee has carried out Dump stabilization (AD-1) of the first terrace by coir matting and plantation .
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	NA	NA	Actual work for the year 2022-23

8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	NA	NA	-
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	Green Belt development across safety zone Proposed Planation-4050 Nos.	Green Belt Plantation, Gap plantation, Plantation over Encroached Inactive Dump has been carried out. Total Plantation Carried out in year 2022-23: 5293 Nos.	Total nos. are as reported by lessee during inspection.
8g	Survival rate	85 - 90 %	90 %	
8h	Water sprinkling on roads to control airborne dust	Water sprinkling on roads are proposed to control airborne dust.	Water tankers have been deployed for sprinkling on roads to control airborne dust	No. of Water Tankers: 03 Capacity: 10000 Litre
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area			Environmental monitoring system is taken care during the mining operation. Aesthetic beauty in around the mine is good.

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Compliance of Rule 45:

Sl.No.	Item	Propasals	Actual work	Remarks
9a	Status of submission of Monthly and Annual returns	Monthly Retrun Submitted up to: May-2023 Submitted on: 09.06.2023		Monthly return submitted within stipulated time. Annual Returns for the year 2022-23 not yet submitted.
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	-	-	Annual Returns for the year 2022-23 not yet submitted.

9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	-	-	Annual Returns for the year 2022-23 not yet submitted.
9d	Scrutiny of Annual return on afforestation	-	-	Annual Returns for the year 2022-23 not yet submitted.
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	-	-	Annual Returns for the year 2022-23 not yet submitted.
9f	Scrutiny of Annual return on ROM stock and/or graded ore	-	-	Annual Returns for the year 2022-23 not yet submitted.
9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	-	-	Annual Returns for the year 2022-23 not yet submitted.
9h	Scrutiny of Annual return on fixed assets	-	-	Annual Returns for the year 2022-23 not yet submitted.
9k	Scrutiny of Annual return on mining machineries	-	-	Annual Returns for the year 2022-23 not yet submitted.

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**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
MCDR17 Rule 11(1)	21/06/2023				
MCDR17 Rule 48	21/06/2023				

**Date :****(DR. Sudhakara T.L)**

Indian Bureau of Mines