

**INDIAN BUREAU OF MINES  
MINERALS DEVELOPMENT AND REGULATION DIVISION  
MCDR INSPECTION REPORT  
BHUBANESWAR REGIONAL OFFICE**

**General:**

SL. No.	Particulars	Details
1	Name of the Mine	Tantra Raikela Bandhal (TRB) Iron Ore Mine
2	Date of inspection	<b>28/10/2024</b>
3	Name of inspecting officer	Prashant S Hegde, RMG
4	Name accompanying mine officials	S/Shri Pramod Kumar Patra, VP (Mines), R. S. Raghuwanshi , Agent, P.S. Acharya, QP, Sanjay Kumar, QP, A. Samal , Mines Manager and other mine officials.
5	Last date of Inspection & Officer	01/11/2023 Shri S.K. Mohapatra, SMG
6	Total Lease Area (Ha) with breakup of Non-forest and forest land	207.113 Ha. (205.697 Ha Forest + 1.416 Ha Non- forest )
7	Minecode	30ORI13028
8	IBM Registration Number under rule 45 of MCDR, 2017	IBM/4355/2011
9	Name of the lessee, Address, phone, email and fax number	M/s Jindal Steel & Power Ltd. At/PO - Tensa, Sundargarh (Odisha), Pin Code -770042 Phone. No.: 9437578362 Email ID : raghuraj.raghuwanshi@jindalsteel.com
10	Village	Tantra
11	Taluka/Mandal	Koira
12	District	Sundargarh
13	Pincode	770042
14	State	Odisha
15	Post office	Tensa
16	Nearest police station	Lahunipara
17	Nearest Railway station	Barsuan
18	Date of Grant of Mining Lease	25.05.1985 (Lease transfer on 03.01.1990)
19	Date of Execution	03.01.1990
20	Date of opening of Mine	03.01.1990
21	Date of expiry	24.05.2035
22	Name of the <b>Nominated Owner</b> with Address, phone, email, fax number and date of appointment	Shri Damodar Mittal, Jindal Steel & Power Ltd. Chhendipada Road, SH-63, Jindal Nagar, Angul, Odisha - 759111 Date of appointment: 23.05.2023 Email: <a href="mailto:damodar.mittal@jindalsteel.com">damodar.mittal@jindalsteel.com</a>
23	Name of the <b>Mine Agent</b> with Address, phone, email, fax number and date of appointment	Shri R. S. Raghuwanshi TRB Iron Ore Mines Jindal Steel & Power Ltd., Tensa Phone. No. 9437578362, <a href="mailto:raghuraj.raghuwanshi@jindalsteel.com">raghuraj.raghuwanshi@jindalsteel.com</a> Date of appointment: 04.10.2024

24	Name of the <b>Mines Manager</b> with Address, mobile no, email, fax number and date of appointment in mine	Shri A. Samal, TRB Iron Ore Mines Jindal Steel & Power Ltd ,Tensa Phone No. 9437576958 abhimanyu.samal@jindalsteel.com Date of appointment: 20.11.2021
25	Name of the <b>Mining Engineer</b> , Qualification and total experience with Address, mobile no, email, fax/phone number and date of appointment in mine	Shri Keshabananda Gharei, (B.Tech. Mining Engineering, FCC), Total experience – 10 years TRB Iron Ore Mines Jindal Steel & Power Ltd ,Tensa Phone No. 7064434477 Date of appointment: 17.01.2024, keshabananda.gharei@jindalsteel.com
26	Name of the <b>Geologist</b> , Qualification and total experience with Address, mobile no, email, fax number and date of appointment in mine	Shri S. Kumar, (M.Sc in Earth Science), Total experience – 23 years TRB Iron Ore Mines Jindal Steel & Power Ltd ,Tensa Phone No. 7077768681 Date of appointment: 15.03.2023, sanjay.kumar4@jindalsteel.com
27	Date of Approval of Mining Plan/Review of Mining Plan/ their modifications with five-year period and specific condition in approval letter, if any.	1) Modification of Review of Mining Plan approved vide letter No. MCDR-MiFLOFE/25/2023-BBS-IBM_RO_BBS dated 24.01.2024 (for period 2023-24 to 2024-25) 2) Next draft RMP submitted on 29/09/2024 and same was under process.
28	Mineral (s) granted in lease and proved for mining	Iron Ore (Hematite)
29	Method of Mining(Open cast, Underground)	Open cast
30	Category (Fully Mechanised, Others or Manual)	Fully Mechanized
31	Captive/Non Captive	Non-Captive
32	Present EC Capacity	3.11 MTPA

**OBSERVATIONS/COMMENTS OF INSPECTING OFFICER:****1)Exploration:---**

SL.No	Item	Proposals (FY 2023-24)	Actual work	Remarks
1a	Backlog of previous year	FY: 23-24: 2 nos of BHs with 40 meterage FY:2024-25: 2 Nos of core BHs with 40 meterage.	FY 2023-24: 8 nos of Core BHs with 621 total meterage.	NIL
1b	Exploration over lease area for Geological axis 1 or 2.	Entire area under G-1	Entire lease area of 207.113 Ha	_____

			has been explored under G1.	
1c	Exploration Agency & Expenditure in lakh Rupees during the year	NA	Sarada Mines Private Limited (2023-24)  Expenditure – 20.89 Lakhs	
1d	Balance area to be explored to bring Geological axis in 1 or 2	NA	Nil	Entire lease area of 207.113 Ha has been explored under G1.
1e	Balance reserves as on 01.04.2024	NA	Iron Ore (+ 45 % Fe) Reserves (111) : 13.06 million tonnes	Based on approved modified RMP dated 24/01/2024 and AR
<b>1f:</b>	General remarks of inspecting Officer on Geology, exploration etc.	Lease area around Tensa-Raikela represents a part of the western limb of the main "Horse Shoe" shaped Synclinorium (Jones'34) which exposes the oldest meta-sedimentary formations of Pre-Cambrian age. In the lease area, five (5) lithological units are observed/ identified and these are (1) Alluvium (2) Laterite/ Lateritic ore (3) In-situ Iron Ore (Blue Dust and SLO) (4)BHQ/BHJ/Quartzite (5) Shale. The Based on last approved document 24/01/2024, the configuration of ore bodies as follows. (1)Patch 1: 650 m X 140m X 192m (2) Patch 2: 320 m X 12 m X 8m (3)Patch 3A: 330mx300mX18m Entire lease area of 207.113 Ha has been explored under G1		

## 2)Development:--

SL. No.	Item	Proposals (FY 2023-24)	Actual work	Remarks
2a	Location of development w.r.t. lease area	Patch-1: N2421039 – N2421937 /E311830 – E312436 Patch-2: Before approval of modifications	Patch-1: N2421039–N2421937 /E311830 –E312436 As per proposals.	_____
2b	Separate benches in topsoil, overburden and mineral	Separate benches in overburden and minerals ; No top-soil generation	As per proposal	_____
2c	Stripping ratio or ore to OB ratio	1:1.366	1: 1.054	Ratio in M3/tonnes
2d	Quantity of topsoil generation	No proposals	Nil	_____

	in m3			
2e	Quantity of overburden generation in m3	3,650,224	2,402,441 (Due to Production permission granted by State DMG on pro-rata basis from the date of approval of modified RMP)	-----
2f	General remarks of inspecting Officer on development of pit w.r.t. type of deposit etc	Development of pit is being carried out as per approved modified RMP dated 24.01.2024. Next draft RMP submitted on 29/09/2024 and same was under process.		

### 3)Exploitation:--

SL.No.	Item	Proposals (FY 2023-24)	Actual work	Remarks
3a	Number of pits proposed for production	One pit (Patch-1)	One pit (Patch-1)	As per approved modified RMP dated 24.01.2024 .
3b	Quantity of ROM mineral production proposed	2,672,165 Tonnes	2,279,177 Tonnes (Due to Production permission granted by State DMG on pro-rata basis from the date of approval of modified RMP)	Within the limit
3c	Recovery of salable/usable mineral from ROM production	100 %	100 %	As cut-off grade of mine was +45 % Fe
3d	Quantity of mineral reject generation	NIL	NIL	NIL
3e	Grade of mineral reject generation and threshold value declared	Iron ore: 45 to 58 % Fe	Iron ore: 45 to 58 % Fe	Threshold value of Iron Ore : +45 % Fe
3f	Quantity of sub-grade mineral generation	Same as para 3d		-----
3g	Grade of sub-grade	Same as para 3e		

	mineral generation			
3h	Manual / Mechanised method adopted for segregating from ROM	Mechanized	Mechanized	-----
3i	Any analysis or beneficiation study proposed & carried out for sub-grade mineral and reject	Nil	NIL	-----
3j	Provision of drilling & blasting in mineral benches	Deep Hole Drilling and blasting Dia:- 100-150 mm Depth: - 9.9 m Spacing: - 2.5 m Burden: - 2 m	As per proposals.	-----
3k	Provision of mining machineries in mineral benches	Yes; Excavator and Dumper combination.	As per proposals.	-----
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	9m bench height with 12 m width	As per proposals.	-----
3m	Total area covered under excavation/ pits	108.98 Ha	108.04 Ha	-----
3n	Ore to OB ratio for the pit/mine during the year	1:1.366	1: 1.054	Ratio in M3/ tonnes

3o	Total area put in use under different heads at the end of year	Particulars	Total Area(Ha) at the end of FY 2023-24	Particulars	Total Area(Ha) at the end of FY 2023-24	_____
		Area under Mining	108.98	Area under Mining	108.04	
		Overburden/Waste dumping	29.23	Overburden/Waste dumping	29.23	
		Mineral Storage	10.45	Mineral Storage	10.45	
		Infrastructure (Occupied by plants buildings & roads)	30.54	Infrastructure (Occupied by plants buildings & roads)	30.54	
				Within the limit.		
3p	Production of ROM mineral during last five-years period, as applicable	2019-20: 3,100,644 2020-21: 3,100,863 2021-22: 3,100,798 2022-23: 2,501,037 2023-24: 2,672,165		2019-20: 2,575,673 2020-21: 2,506,870 2021-22: 2,854,350 2022-23: 2,500,000 2023-24: 2,279,177		Unit: In tonnes
3q	General remarks of inspecting Officer on method of mining etc	Open-cast fully mechanized mining method is being carried as per approved modified RMP. Joint mining at common boundary with Korp & GMM-LLP (previously NE) which was to start during 2023-24 is pending due to MoEF & CC clearance.				

#### 4)Solid Waste Management-Dumping:--

SL.No.	Item	Proposals (FY 2023-24)	Actual work	Remarks
4a	Separate dumping of topsoil, OB & mineral reject	No top soil generation; Separate dumping/backfilling of OB & mineral reject proposed.	As per proposals.	_____
4b	Location of topsoil, OB & mineral reject dumps	OB Dump No. 1: N2421581.24 - N2421945.77 / E311585.66 - E312181.10  Partial Backfilling of Patch - 2: N2420975.24 - N2421387.82 / E312703.06 - E313192.83	As per proposals and within the proposed limit.	_____
4c	Number	Within ML: 1 nos		_____

	of dumps within lease area and outside lease area	Outside ML: NIL	As per proposals.	
4d	Location of dumps w.r.t. ultimate pit limit	Proposed outside the UPL	As per proposals.	_____
4e	Number of active & alive dumps	OB dumps: 1 nos	As per proposals.	_____
4f	Number of dead dumps	NIL	NIL	_____
4g	Number of dumps stabilised	NIL	NIL	_____
4h	Whether Retaining wall or garland drain all along dumps are there	Yes, proposed	Proposals carried out as per approved modified RMP and well maintained. (581 m for DUMP No.1)	_____
4i	Length of Retaining wall or garland drain all along dump	Retaining wall- 135 m Garland drain- 135 m	Retaining wall- 135 m Garland drain- 135 m	_____
4j	Number of settling ponds	NIL	Regular Maintenance of 8 Nos of settling ponds / check dams	_____
4k	Specific comments of inspecting Officer on waste dump management	Overburden wastes management is being carried out as per the approved proposals.		

**5)Solid Waste Management-Backfilling:--**

SL.No	Item	Proposals (FY 2023-24)	Actual work	Remarks
5a	Status on part or full extraction of mineral from mined out area before starting backfilling	Back-filling proposed at exhausted part pits. (Extension of partly Back filled area of Patch-2)	As per proposals.	_____
5b	Area under backfilling of mined out area	4.73 Ha	4.73 Ha	_____
5c	Concurrent use of topsoil for restoration or rehabilitation of mined out area	Nil	Nil	_____
5d	Total area fully reclaimed & rehabilitated	NIL	Nil	NIL
5e	General remarks of inspecting Officer on backfilling and reclamation etc	Backfilling is being carried out as per the approved proposals. As reported, total cumulative back-filled area was 28.3 Ha. and rehabilitation area of backfilling was 17.39 Ha.		

**6)Progressive Mine Closure Plan:---**

SL.N.	Item	Proposals (FY 2023-24)	Actual work	Remarks
6a	Whether Annual report on PMCP submitted on time and correctly - Rule 26(2). (Hard copy same provided)	Before 1 <sup>st</sup> July of 2024	Submitted on time.	NIL
6b	Management of worked/ mined out benches/dumps i) Area available for rehabilitation (ha) ii) Afforestation done (ha) iii) No. of saplings planted during the year iv) Cumulative no. of plants v) Any other specific method of rehabilitation vi) Cost incurred on watch & care during the year	i)NIL ii)1.5 Ha iii)3000 nos (within ML) iv) NAs v)NA vi) NA	i)NIL ii)1.5 Ha on dump iii) 15,162 nos within ML (1600 nos on dump) iv)3,51,763 nos within ML (46,268 nos on dump) v) NIL vi) 8.66 lakhs	NIL



6c	Compliance on reclamation and rehabilitation by backfilling i) Voids available for backfilling (L X B X D) ii) Void filled by waste/tailings iii) Afforestation on the backfilled area iv) Rehabilitation by making water reservoir v) Any other specific means	i) NIL ii) 4.73 Ha iii) NIL iv) Nil v) NIL	i) NIL ii) 4.73 Ha iii) 9192 nos of saplings at 1.19 ha area. iv) Nil v) NA	As reported, 69,737 m <sup>3</sup> of OB materials backfilled during FY 2023-24. Total cumulative backfilled area so far was 28.3 ha
6d	Compliance of Rehabilitation of waste land within lease i) Afforestation ii) Area rehabilitated (ha) iii) Method of rehabilitation	i) NIL ii) Nil iii) Nil	i) 4370 nos ii) Nil iii) Nil	4370 nos of saplings planted as Gap Plantation at Safety Zone, colony & Greenbelt during FY 2023-24.
6e	Compliance of Environmental monitoring (core zone & buffer zone)	Environmental monitoring in Core zone and buffer zone will be as per MOEFCC and SPCB guidelines.	Environmental monitoring in Core zone and buffer zone was carried out as per the proposals and parameters are within the limit.	NIL
6f	General remarks of inspecting Officer on PMCP compliance & progressive closure operation etc	Lessee has implementing PMCP proposals as per approved modified RMP.		

## 7) Mineral Conservation:---

SL.No	Item	Proposals (FY 2023-24)	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	Ore/mineral sorting by Dry crushing & screening Plant within lease area.	As per proposals	NIL
7b	Method of grade-wise mineral sorting i.e. manual or mechanical	Mechanical	Mechanical	NIL
7c	Different grade of mineral sorted out at mines	<b>Iron Ore</b> of different size viz. CLO (size : 5-18mm & 10-40mm ) & Fines and	As per proposals; Fines: 51 to 65 % Fe grade range ;	NIL

		Iron Grade range- 51- 65 % Fe;	CLO (any size, 5-18 mm, 10-40mm)	
7d	Any beneficiation process at mines	Dry crushing & screening	As per proposals.	————
7e	General remarks of inspecting Officer on mineral conservation & beneficiation issues	After dry crushing & screening, ore/mineral/product dispatches to their captive steel plant and direct selling. There is no mineral conservation issue.		

### 8)Environment:--

SL.No.	Item	Proposals (FY 2023-24)	Actual work	Remarks
8a	Separate removal and utilization of topsoil	No such proposals.	Nil	<i>Topsoil encountered was stacked separately and utilized for plantation</i>
8b	Concurrent use or storage of topsoil	No such proposals.	Nil	---do---
8c	Separate dumps for overburden, waste rock, rejects and fines	Separate dumping/backfilling of OB wastes proposed	Carried out as per proposals.	Nil
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	OB Wastes will be used for backfilling (Extension of backfilled area of patch-2) and over waste dump no. 1	Carried out as per the proposals	Nil
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	Back-filling proposed to be carried out over 4.73 Ha area of exhausted pit (i.e. Patch-2 )	Carried out as per proposals. 4.73 Ha	Total cum. back-filled area so far: 28.3 Ha and 17.39 Ha of backfilled area rehabilitated.
8f	Baseline information on existence of plantation & additional plantation done	Area proposed for plantation: 1.5 ha No. of saplings to be planted: 3000 nos	Area under plantation (FY'23-24): 1.5 Ha (Excluding gap plantation area ) No. of saplings planted FY'23-24: 15,162 nos  Cumulative area under plantation: 62.6 Ha.	————

			Cumulative nos. Of plants within the lease: 3,51,763 nos	
8g	Survival rate	75 %	79 %	_____
8h	Water sprinkling on roads to control airborne dust	Regular sprinkling of water on Haul roads, dumping/backfilling area and dry beneficiation Plants area using Water tankers to suppress the dust.	Carried out as per the proposals.	_____
8i	General remarks of inspecting Officer on aesthetic beauty in & around mines area.	Aesthetic beauty in & around mines area is good as lessee implementing the PMCP proposal and carried out plantation as per the proposals.		

### 9) Compliance of Rule 45

SL.No.	Item	COMMENTS		Remarks.
9a	Status of submission of Monthly and Annual returns	Regularly submitting the MRs/ARs on-time except MR of May-2024. Subsequently, fine amount of Rs 50,000 deposited on 2/7/2024 for delay submission of MR.		<b>Nil</b>
S.N.	Item	Details GIVEN in A.R.	Actual in field	_____
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Mines Manager: Mr. Abhimanyu Samal Mining Engineer: Mr. Keshabananda Gharei Geologist: Mr Sanjay Kumar	Actual also as per AR.	_____
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	(1) Area already exploited and abandoned by opencast Mining: 26.544 Ha (2) Covered under current (O/C) Workings- 81.494 Ha (3) Used for Waste Disposal- 29.233 Ha (4) Occupied by plant, buildings, residential, wel-	Actual also as per AR.	_____

		fare, buildings and roads- 26.204 Ha (5) Other Purpose (Mineral Storage+ Tailing pond+ safety zone)- 43.638 Ha																								
9d	Scrutiny of Annual return on afforestation	15,162 nos within ML during year 23-24.	Actual also as per AR except cum. nos of plantations.	V/L issued.																						
9e	Scrutiny of Annual return on mineral reject generation (Grade & quantity)	During year-23-24 <table border="1"> <tr> <td>Iron Unprocessed Ore</td> <td>Ni 1</td> </tr> <tr> <td>Iron Processed Ore</td> <td>Ni 1</td> </tr> </table>	Iron Unprocessed Ore	Ni 1	Iron Processed Ore	Ni 1	Actual also as per AR (cut-off grade of mine was +45% Fe)	—																		
Iron Unprocessed Ore	Ni 1																									
Iron Processed Ore	Ni 1																									
9f	Scrutiny of Annual return on ROM stock and/or graded ore	As on 31.03.2024 tonnes Stock Iron ROM:NIL <table border="1"> <tr> <th colspan="2"><b>Fines closing stock in tonnes</b></th> </tr> <tr> <td>51%-below 55%</td> <td>419</td> </tr> <tr> <td>55%-below 58%</td> <td>1799.9</td> </tr> <tr> <td>58%-below 60%</td> <td>343</td> </tr> <tr> <td>60%-below 62%</td> <td>1717</td> </tr> <tr> <td>62% below 65%</td> <td>57</td> </tr> <tr> <th colspan="2">CLO stock in tonnes</th> </tr> <tr> <td>Below 62% Fe (CLO any size)</td> <td>12,843</td> </tr> <tr> <td>62%-below 65% Fe (5-18 mm)</td> <td>362</td> </tr> <tr> <td>62%-below 65% Fe (10-40 mm)</td> <td>92</td> </tr> <tr> <td>65% and</td> <td>1017</td> </tr> </table>	<b>Fines closing stock in tonnes</b>		51%-below 55%	419	55%-below 58%	1799.9	58%-below 60%	343	60%-below 62%	1717	62% below 65%	57	CLO stock in tonnes		Below 62% Fe (CLO any size)	12,843	62%-below 65% Fe (5-18 mm)	362	62%-below 65% Fe (10-40 mm)	92	65% and	1017	Appear to be correct except wrong selection of grade range at item no. 5.	Violation issued.
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9g	Scrutiny of Annual return on sale value, Ex. Mine price & production cost	<p>Cost of production: Rs-1643.34 per tonne; Ex-mine price:</p> <table border="1"> <tr> <td colspan="2">Ex-mine price of Iron ore mines in Rs per tonne</td> </tr> <tr> <td>51%-below 55%</td> <td>1928.64</td> </tr> <tr> <td>55%-below 58%</td> <td>3487.09</td> </tr> <tr> <td>58%-below 60%</td> <td>3474.92</td> </tr> <tr> <td>60%-below 62%</td> <td>4540.47</td> </tr> <tr> <td>62% below 65%</td> <td>4734.84</td> </tr> <tr> <td colspan="2">Ex-mine price of CLO in Rs per tonne</td> </tr> <tr> <td>Below 62 % Fe (CLO any size)</td> <td>4650.56</td> </tr> <tr> <td>62%-below 65% Fe (10-40 mm)</td> <td>6697.12</td> </tr> </table>	Ex-mine price of Iron ore mines in Rs per tonne		51%-below 55%	1928.64	55%-below 58%	3487.09	58%-below 60%	3474.92	60%-below 62%	4540.47	62% below 65%	4734.84	Ex-mine price of CLO in Rs per tonne		Below 62 % Fe (CLO any size)	4650.56	62%-below 65% Fe (10-40 mm)	6697.12	Appear to be correct as non-captive mine.	_____
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9i	Scrutiny of Annual return on fixed assets	Fixed Value of Assets: Rs 39,44,85,837	Appear to be correct except Estimated market value under Land.	V/L issued.																		
9k	Scrutiny of Annual return on mining machineries	Back Hoe (0.9 to 3.1 m3): 7 nos; Rock Hole Drill: 3 nos; Front end Loader: 4 nos; Dumpers (25 to 35 T):46 nos ; Water tanker: 5 nos; Dozer: 3 nos Motor Grader: 1 nos. Crane: 5 nos Crusher: 1 nos	Observed to be correct.	_____																		

**(10) Violation observed during current inspection and compliance position of earlier violation pointed out:**

(a) Compliance position of earlier violation pointed out: During last inspection dated 01/11/2023, the violation of rules 11(1) was pointed out and subsequently, said rule complied on 31/01/2024.

(b) During current inspection: The violation of Rule 45 (7) of MCDR 2017 has been observed and the violation letter issued on 14/11/2024.

Date: 18/11/2024

(Prashant S. Hegde)  
Regional Mining Geologist