

INDIAN BUREAU OF MINES  
MINERALS DEVELOPEMMENT AND REGULATION DIVISION

MCDR INSPECTION REPORT

Bhubaneshwar regional office

Mine file No : ORI/IRON/SNG/MCDR-7/BBS

Mine code : 30ORI13028

- (i) Name of the Inspecting : SQ10 ) SHRI G.C. SETHI  
Officer and ID No.
- (ii) Designation : Deputy Controller Mines
- (iii) Accompanying mine : Shri S.M.Patro, Qualified Person  
Official with  
Designation
- (iv) Date of Inspection : 22/10/2019
- (v) Prev.inspection date : 21/08/2019

PART-I : GENERAL INFORMATION

1. (a) Mine Name : TANTRA, RAIKELA & BANDHAL
- (b) Registration NO. : IBM/4355/2011
- (c) Category : A Mechanised
- (d) Type of Working : Opencast
- (e) Postal address :  
State : ORISSA  
District : SUNDARGARH  
Village : TANTRA  
Taluka : BONAI  
Post office : TENSA  
Pin Code : 770042  
FAX No. : 95-6625-236023  
E-mail : trbmine@jindalsteel.net  
Phone : 95-6625-236023,236024
- (f) Police Station : Lahunipara
- (g) First opening date : 17/02/1990
- (h) Weekly day of rest : SUN
2. Address for  
correspondance : T.R.B IRON MINES  
PO-TENSA  
DIST-SUNDERGARH
3. (a) Lease Number : ORI0652
- (b) Lease area : 297.85
- (c) Period of lease : 50
- (d) Date of Expiry : 24/05/2035
4. Mineral worked : IRON ORE Main

## 5. Name and Address of the

Lessee : m/s Jindal Steel and Power Ltd  
 TRB Iron Ore Mines At  
 P.O.Tensa SUNDARGARH  
 ORISSA  
 Phone:06625 - 82023, 82024  
 FAX :

Owner : Jindal steel & power ltd  
 Barbil KEONJHAR ORISSA  
 Phone: 06767 30158  
 FAX :

Agent : SHRI P K PATRA  
 SUNDARGARH ORISSA  
 Phone:  
 FAX :

## Mining Engineer

Name : B D SAHOO, Full Time  
 Qualification : BE-MINING AND FCC  
 Appointment/ : 17/09/2014  
 Termination date

## Geologist

Name : R K CHATURVEDI, Full Time  
 Qualification : M TECH IN APPLIED GEOLOGY  
 Appointment/ : 17/09/2014  
 Termination date

## Manager

Name : PANCHANAN SINGH  
 Qualification : BE-MINING AND FCC  
 Appointment/ : 26/12/2016  
 Termination date

6. Date of approval of Mining Plan/Scheme of Mining	:	Mining Scheme rule 12 MCDR1988	25/08/2000
		Renewal under rule 22 MCR1960	09/10/2003
		Modif.of approved Mining Plan	19/12/2007
		Mining Scheme rule 12 MCDR1988	22/03/2010
		FMCP under 23C(1)	29/07/2010
		Modif.approved Mining Scheme	11/08/2010
		Modif.approved Mining Scheme	23/04/2012
		Mining Scheme rule 12 MCDR1988	27/03/2015
		MP modif under MCR 1960	27/03/2015
		MP review under 17(1) MCR 2016	18/10/2017
		MP modif under 17(3) MCR 2016	05/12/2018

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

## Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	No backlog	NA	Nil
1b	Exploration over lease area for geological axis 1 or 2	15 nos of boreholes were proposed as a part of exploration over lease area for G1/G2 level during the year 2018-19.	15 nos of boreholes were drilled during 2018-19.	Nil
1c	Exploration Agencies and Expenditure in lakh rupees during the year	Not specified.	Exploration Agency: Mapp Drilling & Exploration Pvt. Ltd, and Expenditure incurred was Rs.36.75 lakhs as reported by lessee.	Nil
1d	Balance area to be explored to bring Geological axis in 1 or 2	As per the approved document on 05.12.2018 the potential mineralised area of 107.82 ha has been explored under G1 level.	15 nos of boreholes were drilled in G1 area for lateral and depth wise extension of mineral deposit.	Nil

1e	Balance reserve as on 01/04/20	As per the approved documnet on 05.12.2018 the iron ore reserves under catoegory 111: 11.013 million tonnes, 121: 1.411 million tonnes and resources under category 211: 6.67 million tonnes.t, 221: 0.282 million tonnes	The updated reserves/resources as on 01.04.2019 under diffrent UNFC catoegories such as 111: 10.24 million tonnes, 121: 0.73 million tonnes. and resources under category 211: 6.67 million tonnesil.t, 221: 0.282 million tonnes respectively.	Nil
1f	General remarks of inspecting officers on geology, exploration etc		15 nos of boreholes were drilledt during the year 2018-19 as a part of exploration programme envisaged in the approved document.	

## Development :

Sl.No.	Item	Propasals	Actual work	Remarks
2a	Location of development w.r.t.lease area	There are three quarries such as patch-1, Patch-2 & float, patch-3A are proposed in the year 2018-19.	Patch-1, Patch-2& float, patch-3A were under operation during the year 2018-19.	The joint mining with M/s Penguin Trading & Agencies could not done in patch-1 due to want of statutory clearences.

2b	Separate benches in topsoil, overburden and minerals (Rule 15)	Separate benches in OB and iron ore proposed. Provisions for separate benches in top soil not envisaged. However if top soil encountered it will be removed and utilised.	Separate benches in OB and iron ore zone are made.	Nil
2c	Stripping ratio or ore to OB ratio	1:1.279 t/cu.m.	1:1.16 t/cu.m.	Due to pending of statutory clearnces, the production and development have not been achieved as per the proposal.
2d	Quantity of topsoil generation in m3	Provisions for generation of top soil not envisaged. However if top soil encountered it will be removed and utilised.No top soil generation is envisaged during the year 2018-19.	During the year 2018-19, only 294 cu.m. top soil generated and utilised.	Nil
2e	Quantity of overburden generation in m3	3967356 cu.m. of overburden material generation was envisaged in the year 2018-19.	3211883 cu.m. of overburden materials generated during 2018-19.	Both production & development is in lowside due to want of statutory clearnces.

2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc	The mine development is restricted to the proposed patches. Joint mining in patch-1 could not be done due to want of statutory clearnces.	Nil
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## Exploitation:

Sl.No.	Item	Proposals	Actual work	Remarks
3a	Number of pit proposed for production	3 nos. of patches such as patch-1, patch-2 and patch-3A are proposed for production in the year 2018-19.	The production from the mine was confined to three patches as envisaged in the approved document.	Nil
3b	Quantity of ROM mineral production proposed	3.1 million tonnes in 2018-19.	2.76 million tonnes of production achieved during 2018-19.	Due to want of statutory clearnces in joint mining with M/s PTA and also due to market demand for low grade iron ore.
3c	Recovery of sailable/usable mineral from ROM production	2451851 tonnes of saleable ore and 648486 tonnes of mineral rejects in 2018-19 envisaged.	2610623 tonnes of saleable ore and 154746 tonnes of mineral rejects production reported during 2018-19.	Nil
3d	Quantity of mineral reject generation	648486 tonnes in 2018-19.	154746 tonnes generated during 2018-19.	The mineral reject generation is also considered as the sub-grade ore.
3e	Grade of mineral rejects generation and threshold value declared.	+45-58% Fe	+45-58% Fe	Nil
3f	Quantity of sub grade mineral generation.	648486 tonnes	154746 tonnes	The sub-grade iron ore generation is also considered as the mineral reject.



3g	Grade of sub grade mineral generation	+45-58% Fe	+45-58% Fe	The mineral reject is considered as thye sub-grade.
3h	Manual / Mechanised method adopted for segregating from ROM	Mechanised	Mechanised	Nil
3i	Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects.	Not applicable.	Nil	Nil
3j	Provision of drilling and blasting in mineral benches	Deep hole drilling and blasting is proposed. blasting is proposed to be done by using electric delay detonator or NONEL system of initiation is in use to reduce vibration and fly rock	Deep hole drilling and blasting is practised as per proposal.	Nil
3k	Provision of mining machineries in mineral benches	shovel and dumper combination is proposed for excavation and hauling of material.	shovel and dumper combination is deployed for excavation and hauling of material.	Nil
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	9 m bench height are proposed.	9 m bench height are mainatined.	Nil
3m	Total area covered under excavation/pits	108.0.38 ha at the end of plan period i.e. year 2019-20.	107.82 ha till the end of year 2018-19.	Nil

3n	Ore to OB ratio for the pit/mine during the year.	1:1.279 t/cu.m.	1:1.16 t/cu.m.	Nil
3o	Total area put in use under different heads at the end of year	(i) Covered under current (O/C) Workings 108.038 ha (ii) Used for waste disposal 29.233 ha (iii) Occupied by plant, buildings, residential, welfare buildings & roads 26.204 ha (vi) Other Purpose (Mineral Storage, Top Soil, Tailing Pond, Green Belt, Safety Zone) 43.856 ha till the end of plan period.	(i) Covered under current (O/C) Workings 107.82 ha (ii) Used for waste disposal 29.233 ha (iii) Occupied by plant, buildings, residential, welfare buildings & roads 26.204 ha (iv) Other Purpose (Mineral Storage, Top Soil, Tailing Pond, Green Belt, Safety Zone) 43.856 ha	Nil
3p	Production of ROM mineral during the last five year period as applicable	2017-18: 3.1 million tonnes 2018-19: 3.1 million tonnes	2014-15: 2.5 million tonnes 2015-16: 2.92 million tonnes 2016-17: 2.72 million tonnes 2017-18: 2.57 million tonnes 2018-19: 2.76 million tonnes	Nil
3q	General remarks of inspecting officers on method of mining etc.		The production of rion ore is confined to 3 nos of patches as proposed.	Nil

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Solid Waste Management - Dumping:

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Sl.No.	Item	Propasals	Actual work	Remarks
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4a	Separate dumping of topsoil, OB and mineral rejects (Rule 32,33)	Separate dumping for Overburden and mineral reject are envisaged.	Dumping of overburden materials and mineral reject are done separately.	Nil
4b	Location of topsoil, OB and mineral reject dumps	OB dump: E/W-490-1409, N/S-550-1109. Mineral reject: E/W-530-1385, N/S-550-1092.	OB dump: E/W-490-1409, N/S-550-1109. Mineral reject: E/W-530-1385, N/S-550-1092.	Nil
4c	Number of dumps within lease area and outside of lease area	one dump within lease area. outside the lease area: Nil	Only one dump within lease area.	Nil
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	beyond UPL	beyond UPL	Nil
4e	Number of active and alive dumps.	1 no.	1 no.	Nil
4f	Number of dead dumps.	Nil	Not applicable	Nil
4g	Number of dumps established.	Nil	Not applicable	Nil
4h	Whether Retaining wall or garland drain all along dumps are there.	293 m length of retaining wall constcution proposed in 2018-19.	300 m length of reataining wall was constrcuted around dump during the year 2018-19.	Nil
4i	Length of Retaining wall or garland drain all along dumps	293 m length of retaining wall constcution proposed in 2018-19.	300 m length of reataining wall constrcuted around dumps during the year 2018-19.	Nil
4j	Number of settling ponds	Not applicable	Not applicable	Nil
4k	Specific comments of inspecting officer on waste dump management		Waste and mineral rejects management are being done as proposed in the approved mining plan.	Nil

## 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.	5.77 ha	5.77 ha	Nil
5b	Area under backfilling of mined out area	5.77 ha in 2018-19.	5.77 ha during 2018-19.	Nil
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	Provisions for generation of topsoil not envisaged. However if top soil encountered it will be removed and utilised.	294 cu.m. of top soil generated and preserved for future use.	Nil
5d	Total area fully reclaimed and rehabilitated	5.77 ha are reclamation in 2018-19.	5.77 ha of area reclaimed during 2018-19.	Nil
5e	General remarks of inspecting officers on backfilling and reclamation etc.		The reclamation of the mined out area was undertaken as per the proposal.	Nil

## 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).	Annual report on PMCP to be submitted before 1 st July.	Submitted.	Nil
6b	Area available for rehabilitation (ha) .	Not applicable	Nil	Nil
6c	afforestation done (ha).	1600 nos saplings plantation proposed in 2018-19.	1863 nos of saplings planted during 2018-19.	Nil

6d	No. of saplings planted during the year	1600 nos.	1863 nos.	Nil
6e	Cumulative no .of plants	Not specified.	240101 nos. as on 01.04.2019.	Nil
6f	Any other method of rehabilitation	Not applicable	Nil	Nil
6g	Cost incurred on watch and care during the year	Rs 2.2 lakhs	Rs. 3.91 lakhs	Nil
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling ( Lx B x D	5.77 ha of mined area for reclamation in 2018-19.	5.77 ha of mined area reclaimed during 2018-19.	Nil
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	5.77 ha of mined area for reclamation in 2018-19.	5.77 ha of mined area reclaimed during 2018-19.	Nil
6j	Compliance on reclamation and rehabilitation by backfilling (iii) Afforestation on backfilled area	1600 nos. of saplings in 2018-19.	1863 nos. of saplings planted during 2018-19.	Nil
6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	Not applicable	Nil	Nil
6l	Compliance on reclamation and rehabilitation by backfilling (v) any other specific means.	Not applicable	Nil	Nil

6m	Compliance of rehabilitation of waste land within lease (i)afforestation	Not applicable	Nil	Nil
6n	Compliance of rehabilitation of waste land within lease (ii)Area rehabilitation (ha)	Not applicable	Nil	Nil
6o	Compliance of rehabilitation of waste land within lease (iii)Method of rehabilitation	Not applicable	Nil	Nil
6p	Compliance of environmental monitoring (core zone and buffer zone)	Environmental monitoring of core zone and bufer zone proposed.	Monitoring of environmenatl parameters such as quality of ambient Air, water, noise etc., are being carried out on regualr basis.	Nil
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.		Progressive Mine Closure is done by backfilling & plantation as per the proposal envisaged in the mining plan.	Nil

## Mineral Conservation:

Sl.No.	Item	Propasals	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	Grade wise sorintg envisaged.	Grade wise sorting of iron ore is in practice.	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.	(a) Below 55% Fe (b) 55% to below 58% (c) 58% to below 60% (d) 60% to below 62% (e) 62% to below 65% (f) 65% and above	(a) Below 55% Fe (b) 55% to below 58% (c) 58% to below 60% (d) 60% to below 62% (e) 62% to below 65% (f) 65% and above	Nil
7d	Any beneficiation process at mines	Not applicable.	Dry crushing and screening is being practised.	Nil
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues		There is no mineral conservation problem in the mine.	Nil

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**Environment:**

Sl.No.	Item	Proposals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	Provisions for generation of top soil in not envisaged. However if top soil encountered it will be removed and utilised.	294 cu.m. of top soil removed and preserved for future use.	Nil
8b	Concurrent use or storage of topsoil	Provisions for generation of top soil in not envisaged. However if top soil encountered it will be removed and utilised.	Only 294 cu.m. of top soil removed and preserved for future use.	Nil

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8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	Separate dumps for OB & mineral rejects envisaged.	Separate dumps for OB & mineral rejects are made in the mine.	Nil
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	Utilisation of part of the over burden materials for backfilling of mined out land is envisaged.	The same is in practice as per the proposal.	Nil
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	5.77 ha of mined out area is envisaged for reclamation in 2018-19.	5.77 ha of mined out area has been backfilled/reclaimed during 2018-19.	Nil
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	3200 nos. of saplings plantation proposed in 2018-19.	3211 nos. of saplings were planted during 2018-19.	Nil
8g	Survival rate	Not specified.	72%	Nil
8h	Water sprinkling on roads to control airborne dust	Water sprinkling on haul roads for dust suppression is proposed.	Water sprinkling on roads are being done for dust suppression.	Nil
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area		Reclamation of mined out areas by waste materials and planation on the dump slope and pereiphery areas enhances the aesthetic beauty in and around mines.	Nil

## Compliance of Rule 45:

Sl.No.	Item	Propasals	Actual work	Remarks
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
9a	Status of submission of Monthly and Annual returns	Monthly and annual returns are to be submitted as per rule 45 of MCDR, 2017.	Submitted all the monthly returns for 2018-19 and annual return for the year 2018-19 in time.	Nil
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	(i) Graduate Mining Engineer 6 nos (ii) Diploma Mining Engineer 4 nos (iii) Geologist 2 nos	The deployment status of mining engineers and gheologists are found to be in order.	Nil
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	(i) Covered under current (O/C) Workings 107.82 ha (ii) Used for waste disposal 29.233 ha (iii) Occupied by plant, buildings, residential, welfare buildings & roads 26.204 ha (iv) Other Purpose (Mineral Storage, Top Soil, Tailing Pond, Green Belt, Safety Zone) 43.856 ha	Found to be in order.	Nil
9d	Scrutiny of Annual return on afforestation	15115 nos. of saplings.	15115 nos.	Nil
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	154746 tonnes	154746 tonnes	Nil

9f	Scrutiny of Annual return on ROM stock and/or graded ore	ROM closing stock: 22650 t (b) 55% to below 58% 122.850 t (c) 58% to below 60% 25939.978 t (d) 60% to below 62% 22133.935 t (e) 62% to below 65% 2924.906 t (f) 65% and above 1660.230 t	Found to be in order.	Nil
9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	Production cost Rs. 955.68	Found to be in order.	Nil
9h	Scrutiny of Annual return on fixed assets	Rs. 561439541	Rs. 561439541	Nil
9k	Scrutiny of Annual return on mining machineries	SHOVEL (HYDRAULIC) 3.500 CUM 3 nos BACK HOE 0.400 CUM 2 nos BACK HOE 0.900 CUM 6 nos BACK HOE 1.800 CUM 3 nos BACK HOE 2.100 CUM 4 nos BACK HOE 2.800 CUM 1 nos BACK HOE 3.100 CUM 1 nos BACK HOE 5.200 CUM 1 nos FRONT END LOADER 1.800 CUM 2 nos FRONT END LOADER 2.400 CUM 1 no.	The deployment status of mining machineries are found to be in order.	Nil

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 : 18/11/2019

  
(SHRI G.C. SETHI)

Indian Bureau of Mines