

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

MCDR inspection REPORT

Bangalore regional office

Mine file No : KNT/BLR/FE/491/BNG

Mine code : 30KAR03182

- (i) Name of the Inspecting : **S19**) **SANDEEP KUMAR SINGH**
Officer and ID No.
- (ii) Designation : Assistant Controller Mine
- (iii) Accompanying mine : Shri. Vinodh Kumar NR, Mine Manager & Mining Engineer
Official with
Designation
- (iv) Date of Inspection : 17/02/2021
- (v) Prev.inspection date : 11/10/2018

PART-I : GENERAL INFORMATION

1. (a) **Mine Name** : **NANDI IRON ORE MINE**
- (b) **Registration NO.** : **IBM/432/2011**
- (c) Category : A Fully Mechanised
- (d) Type of Working : Opencast
- (e) Postal address :
State : KARNATAKA
District : BELLARY
Village : MALAGOLLA
Taluka :
Post office :
Pin Code :
FAX No. : 08395250132
E-mail : sunil.singh@jsw.in
Phone : 08395250120
- (f) Police Station : SANDUR
- (g) First opening date : 23/04/2018
- (h) Weekly day of rest : SUN
2. Address for : Malagola Village,
correspondance Sandur Post & Taluk
Bellary
3. (a) Lease Number :
(b) Lease area :
(c) Period of lease :
(d) Date of Expiry :
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 : DR. VINOD NOWAL
 DY.MANAGING DIRECTOR, M/S
 JSW STEEL LIMITED, NANDI
 IRON ORE MINE, BELLARY
 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 : VINOD KUMAR N.R,Full Time
 Qualification : B.E(MINING),1st Class Mine's Manager Cer
 Appointment/ : 21/03/2018
 Termination date

Geologist

Name : Nataraj. B.D,Full Time
 Qualification : M.Sc (Geology)
 Appointment/ : 21/03/2018
 Termination date

6. Date of approval of Mining Plan/Scheme of Mining : MP under 16(1) of MCR 2016 16/02/2017
 Modif.of approved Mining Plan 02/06/2020

PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	5 boreholes with total meterage of 260 m proposed for the year 2018-19	5 boreholes drilled during the year 2018-19 with total meterage of 240 m.	No Exploration backlog.
1b	Exploration over lease area for geological axis 1 or 2	3 boreholes with total meterage of 150 m proposed for the year 2019-20	20 bore holes with total meterage of 1160 m drilled during the year 2019-20	Nil
1c	Exploration Agencies and Expenditure in lakh rupees during the year	Not mentioned	Rs 56.27 lakhs expenditure incurred for exploration activities during the year 2019-20	As reported by the Lessee(Rs 4851/m drilling cost- Total exploratory drilling during the year 2019-20 is 1160 m)
1d	Balance area to be explored to bring Geological axis in 1 or 2	Not mentioned	6.93 ha under G-3 area	G-1-13.22 ha, G-2-0.88 ha(As reported by the Lessee)
1e	Balance reserve as on 01/04/20	8,164,706 million tonnes of iron ore with grade 54.41 % as on 01.06.2018	7,348,907 tonnes of iron ore as on 1.04.2020.	As per AR 2019-20.
1f	General remarks of inspecting officers on geology, exploration etc	-	-	The exploratory drilling has been carried out as per the proposals.

Development :

Sl.No.	Item	Proposals	Actual work	Remarks
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2a	Location of development w.r.t.lease area	Development proposed in sections S1-1', S2-2', S3-3', S4-4', S5-5' N-1660300 to 1660800 E- 669200 to 668900	Actual development carried out within the proposed extent of S1-1' to S4-4'. N-1660410 to 1660720, E-669351 to E-669076	Development was restricted till Sec-S4-4' due to 1 Km boundary restriction from Historic monument.
2b	Separate benches in topsoil, overburden and minerals (Rule 15)	Separate benches proposed in OB & mineral.	Separate benches maintained in OB & mineral	Overburden-6 bench, Mineral-10 bench.
2c	Stripping ratio or ore to OB ratio	1:0.18(in tons)	1:0.24(in tons)	Ore- 407800 tons Waste- 101938 tons.
2d	Quantity of topsoil generation in m3	No proposal	Nil	Nil
2e	Quantity of overburden generation in m3	36210 Cum	50969 Cum	As per AR, 2019-20.
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc	-	-	The development carried out within the proposed extent as per the proposals.

Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
3a	Number of pit proposed for production	One pit proposed.	Actual working carried out in One pit.	Nil
3b	Quantity of ROM mineral production proposed	4,08,000 tons proposed	4,07,800 tons	As reported in AR 2019-20
3c	Recovery of sailable/usable mineral from ROM production	100 %	100 %	Nil
3d	Quantity of mineral reject generation	No proposal	Nil	Nil

3e	Grade of mineral rejects generation and threshold value declared.	No proposal	Nil	Nil
3f	Quantity of sub grade mineral generation.	No proposal	Nil	Nil
3g	Grade of sub grade mineral generation	No proposal	Nil	Nil
3h	Manual / Mechanised method adopted for segregating from ROM	Mechanized Crushing & Screening proposed.	Mechanized crushing and screening carried out.	Size- 0-10mm(fines) & 10-40 mm(C-ore), Crusher Capacity-200 TPH
3i	Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects.	No proposal	Nil	Nil
3j	Provision of drilling and blasting in mineral benches	Deep hole Drilling and blasting proposed.	Drilling & blasting carried out . DTH drilling of 100 mm dia & slurry explosives in conjunction with Detonators used for blasting.	Nil
3k	Provision of mining machineries in mineral benches	i)Excavator- 1.4-1.6 Cum- 3 Nos & 0.9-1.1 Cum- 1 no. ii)Tippers-16-18 Cum-8 Nos. iii)Drill-102-115 mm dia- 1 No. iv)Wheel loader- 2 Nos. v)Water sprinklers- 10000 litres- 7 nos.	i)Excavator- 1.6 Cum - 2 Nos ,2.6 Cum-1 no & 0.6 Cum- 1 no ii)Wheel Loader- 2 Nos. iii)Tipper-14 Cum-8 nos. iv)Water tanker-10,000 litres-2 nos. v)Drill- 100 mm-1 no.	Nil
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Proposed Height 8 m for both Overburden and Mineral bench	8 m height maintained for both Overburden and Mineral bench.	10 benches in ore and 6 benches in OB.

3m	Total area covered under excavation/pits	10.76 ha at the end of plan period (2022-23)	8.8 ha covered under excavation/pits	As per AR 2019-20.
3n	Ore to OB ratio for the pit/mine during the year.	1:0.18(in tons)	1:0.24(in tons)	Ore- 407800 tons Waste- 101938 tons.
3o	Total area put in use under different heads at the end of year	i)Area under Mining- 10.76 ha ii) Waste dump- 1.20 ha iii) Infrastructure & roads- 1.50 ha. iv)Mineral storage- 0.30 ha v)Green belt& R &R measures- 1.77 ha at the end of plan period (2022-23)	i)Covered under current(O/c) workings- 8.8 ha ii)Waste disposal- 1.320 ha iii) Occupied by Plants, buildings, residential, welfare& roads-1.454 ha. iv)Other purpose(Green belt safety zone, R&R and Future Mining area)- 9.456 ha	Land use as reported in AR 2019-20
3p	Production of ROM mineral during the last five year period as applicable	2018-19: 4,08,000 tons 2019-20:4,08,000 tons (in tonnes)	2018-19: 4,07,999 tons 2019-20: 4,07,800 tons (in tonnes)	Mine operations commenced on 1.06.2018.(Auctioned block)

3q	General remarks of inspecting officers on method of mining etc.	-	-	The Mining activities were carried out as per the proposal. i)It was reported during inspection that the Mine was not in operation since Dec-2019.The notice of temporary discontinuance of work in mines has not been sent in Form-E. The intimation of reopening of mine after temporary discontinuance in Form-C has to be submitted. Violation issued under Rule 28(1) & 29.
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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 proposed for OB.	Separate dumping maintained for OB.	Nil
4b	Location of topsoil, OB and mineral reject dumps	Proposed OB dump Location(PTD)- Between Sec-(S1-1', to S2-2'')	Actual OB dump location- Sec(S1-2' to S2-2')	Nil
4c	Number of dumps within lease area and outside of lease area	3 waste dumps within the Lease area(1 Proposed temporary dump(PTD) + 2 dead dumps(ID1 & ID2))	3 waste dumps within the Lease area(1 Proposed temporary dump(PTD) + 2 dead dumps(ID1 & ID2))	Nil
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	Proposed dump within UPL	Proposed dump located within UPL.	Temporary dump.

4e	Number of active and alive dumps.	1 Proposed waste dump (PTD) proposed for waste dumping.	1 proposed waste dump (PTD) is used for waste dumping.	Nil
4f	Number of dead dumps.	2 dead dumps inside the Lease area (ID1 & ID2)	2 dead dump present inside the Lease area (ID1 & ID2)	Nil
4g	Number of dumps established.	No proposal	Nil	Nil
4h	Whether Retaining wall or garland drain all along dumps are there.	Retaining wall & Garland drain proposed along the waste dumps.	Retaining wall and garland drain construction carried out as per the proposal	Nil
4i	Length of Retaining wall or garland drain all along dumps	For ID-1, TW-1-200 m & GD-1-325 m, For ID-2- TW2-145 m & GD-2-152 m, For PTD- TW-5-235 m and Gd-5 -240 m.	Toe wall and garland drain construction for ID-1 & ID-2 completed as per the proposals. (TW-1-212 m, GD-1-212 m, TW-2-155 m & GD-2-191 m)The toe wall & garland drain construction at PTD have not been constructed since it is a temporary dump and is at the bottom most portion of the pit and will be re-handled in future.	Nil
4j	Number of settling ponds	GCD, SMCD, RWHP & SST proposed as per the R& R plan. Location (N-1, N-2 & N-3)	Construction of GCD, SMCD, RWHP & SST is being carried out as per the as per the R& R plan.	As reported by the Lessee.
4k	Specific comments of inspecting officer on waste dump management	-	-	The waste dumping has been carried out as per the proposal.

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	Nil

5b	Area under backfilling of mined out area	No proposal	Nil	Nil
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	No proposal	Nil	Nil
5d	Total area fully reclaimed and rehabilitated	No proposal	Nil	Nil
5e	General remarks of inspecting officers on backfilling and reclamation etc.	-	-	No backfilling proposals.

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).	To be submitted before 1st of July every year	Annual PMCP report for the year 2019-20 submitted on 10.09.2020	Submitted.
6b	Area available for rehabilitation (ha) .	5.29 ha(4.83 ha area under encroachment & 0.46 ha Green belt development inside Lease)	0.46 ha within the Lease	As reported by the Lessee during inspection.
6c	afforestation done (ha).	5.29 ha within Lease .	0.46 ha within the Lease	As reported by the Lessee during inspection. Violation issued for carrying out less plantation w.r.t the approved proposal.
6d	No. of saplings planted during the year	20,000 nos. of plants proposed(Area under Encroachment & Green belt development)	1160 nos. of plants within ML area with 95 % survival rate.(Green belt development)	As reported in AR 2019-20. Violation issued.

6e	Cumulative no .of plants	40000 nos. plants proposed(Including 2018-19 & 2019-20) including inside & outside ML	Total 1711-(1160(2019-20) + 551(2018-19) nos. of plants within ML area. Outside ML- 255 nos. Total plants -1966 nos.	As reported by the Lessee during inspection.
6f	Any other method of rehabilitation	No proposal	Nil	Nil
6g	Cost incurred on watch and care during the year	Not mentioned	Nil	Nil
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (Lx B x D	No proposal	Nil	Nil
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	No proposal	Nil	Nil
6j	Compliance on reclamation and rehabilitation by backfilling (iii)Afforestation on on backfilled area	No proposal	Nil	Nil
6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	No proposal	Nil	Nil
6l	Compliance on reclamation and rehabilitation by backfilling (v)any other specific means.	No proposal	Nil	Nil

6m	Compliance of rehabilitation of waste land within lease (i)afforestation	5.29 ha proposed	0.46 ha	Green belt development. Violation issued for carrying out less plantation w.r.t the approved proposal.
6n	Compliance of rehabilitation of waste land within lease (ii)Area rehabilitation (ha)	5.29 ha	0.46 ha	Green belt development. Violation issued for carrying out less plantation w.r.t the approved proposal.
6o	Compliance of rehabilitation of waste land within lease (iii)Method of rehabilitation	Afforestation proposed.	Afforestation carried out.	Nil
6p	Compliance of environmental monitoring (core zone and buffer zone)	Environmental monitoring proposed for Air, water, noise& Soil for Core and buffer zone.	Environmental monitoring carried out for Air, Water Noise& Soil for both core and buffer zone.	Environmental monitoring report for Dec-2019 available. All environmental parameters within the permissible limit
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.	-	-	Total 20,000 nos. saplings to be planted in Greenbelt development & area under encroachment against which only 1160 nos. of total saplings are planted for the year 2019-20. Violation issued.

Mineral Conservation:

Sl.No.	Item	Propasals	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	Mechanized Crushing & screening proposed for iron ore	Mechanized Crushing carried out for iron ore.	Crusher-200 TPH Size- 0-10 mm(fines) & 10-40 mm(C-ore)
7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	No grade wise sorting proposed	No grade wise sorting carried out.	Nil

7c	Different grade of mineral sorted out at mines.	No proposal	Nil	Nil
7d	Any beneficiation process at mines	No proposal	Nil	Nil
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues	-	-	The mineral conservation activities are carried out inside mine as per the proposal

Environment:

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	No proposal	Nil	Nil
8b	Concurrent use or storage of topsoil	No proposal	Nil	Nil
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	Separate dumping proposed for OB.	Separate dumping maintained for OB.	Dumping of waste carried out in proposed temporary waste dump (PTD). No mineral reject generation
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	No proposal	Nil	Nil
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	No proposal	Nil	Nil

8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	Not mentioned	Total 1711-(1160(2019-20) + 551(2018-19) nos. of plants within ML area. Outside ML- 255 nos. Total plants -1966 nos.	Nil
8g	Survival rate	Not mentioned	95% achieved within ML area.	As reported in AR 2019-20.
8h	Water sprinkling on roads to control airborne dust	Water sprinkling on roads proposed	Water sprinkling carried out as per the proposal	Two Water sprinkler of capacity 10 KL used in the mines for water sprinkling.
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area	--	--	The aesthetic beauty in and around the mine looks good.

Compliance of Rule 45:

Sl.No.	Item	Propasals	Actual work	Remarks
9a	Status of submission of Monthly and Annual returns	M.R. Submitted up to Jan-2021. ***** A.R. of the year 2019-20 submitted on 30.06.2020	M.R. Submitted up to Jan-2021. ***** A.R. of the year 2019-20 submitted on 30.06.2020	submitted
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Mining Engineer- Shri Pradeep Kumar Sahu ii) Geologist- Shri Nataraja B. iii) Manager- Shri Vinodh Kumar NR	It was observed during inspection that A whole time 'Geologist' has not been appointed as per the provision of Rule (55) of MCDR 2017.	Violation issued under Rule 55.

9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	i)Covered under current(O/c) workings- 8.8 ha ii)Waste disposal- 1.320 ha iii) Occupied by Plants, buildings, residential, welfare& roads-1.454 ha. iv)Other purpose(Green belt safety zone, R&R and Future Mining area)- 9.456 ha	Appears to be correct.	Nil.
9d	Scrutiny of Annual return on afforestation	1160 nos. of plants within ML area with 95 % survival rate.	Appears to be correct	Nil
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	Nil	Appears to be correct	nil
9f	Scrutiny of Annual return on ROM stock and/or graded ore	O/s- 0.370 tons ROM Production- 4,07,800 tons C/s- 0.370 tons	Appears to be correct	Nil
9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	Cost of Production- Rs 601.41/ton Ex mine price- Rs. 601.41/ton	Appears to be correct	Captive mine
9h	Scrutiny of Annual return on fixed assets	Rs 301527679 including industrial, plant & machinery & capitalized expenditure	Appears to be correct	Nil

9k	Scrutiny of Annual return on mining machineries	i)Excavator- 1.6 Cum - 2 Nos ,2.6 Cum-1 no & 0.6 Cum- 1 no ii)Wheel Loader- 2 Nos. iii)Tipper-14 Cum-8 nos. iv)Water tanker-10,000 litres-2 nos. v)Drill- 100 mm-1 no. vi)Motor Grader-1 no. vii)Dozer-1 no. viii)Crusher- 200TPH-1	Appears to be correct	Nil
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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)	01/03/2021			
MCDR17	Rule 28(1)	01/03/2021			
MCDR17	Rule 29	01/03/2021			
MCDR17	Rule 55(1)(3)	01/03/2021			

Date :

(SANDEEP KUMAR SINGH)

Indian Bureau of Mines