

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

MCDR INSPECTION REPORT

Bhubaneshwar regional office

Mine file No : ORI/IRON/KJR/MCDR-32/BBS

Mine code : 30ORI08027

- (i) Name of the Inspecting : **K013**) **KEWAL KRISHAN**
Officer and ID No.
- (ii) Designation : Regional Mining Geologist
- (iii) Accompanying mine : Rajesh Kumar, agent, S.N. Jha Mines Manager&Head Joda
Official with
Designation
- (iv) Date of Inspection : 11/02/2021
- (v) Prev.inspection date : 20/10/2019

PART-I : GENERAL INFORMATION

1. (a) **Mine Name** : **JODA EAST**
- (b) **Registration NO.** : **IBM/4376/2011**
- (c) Category : A Mechanised
- (d) Type of Working : Opencast
- (e) Postal address
- State : ORISSA
- District : KEONJHAR
- Village : JODA
- Taluka : BARBIL
- Post office : JODA
- Pin Code : 758034
- FAX No. : 06767272010
- E-mail : gm.office@tatasteel.com
- Phone : 9234301340
- (f) Police Station : JODA
- (g) First opening date : 01/04/1956
- (h) Weekly day of rest : SUN
2. Address for : JODA EAST IRON MINES
correspondance VILL/PO-JODA
DIST-KEONJHAR PIN- 758034
3. (a) Lease Number : ORI0106
- (b) Lease area : 671.09
- (c) Period of lease :
- (d) Date of Expiry : 31/03/2030
4. Mineral worked : IRON ORE Main
MAGNESITE Associated
KAOLIN Associated

5. Name and Address of the

Lessee : TATA STEEL LTD.
 KEONJHAR ORISSA
 Phone:
 FAX :

Owner : Tata Steel Limited
 Bombay House, 24, Homi Modi
 Street Fort Mumbai MUMBAI
 (SUBURBAN) MAHARASHTRA
 Phone: 06572424602
 FAX : 06572431818

Agent : Rajesh Kumar
 At- Joda Post-Joda Dist
 Keonjhar KEONJHAR ORISSA
 Phone: 9234612797
 FAX :

Geologist
 Name : SANJAY KUMAR BHUYAN, Full Time
 Qualification : Msc Tech Geology
 Appointment/ : 01/07/2015
 Termination date

Manager
 Name : D. Vijayendra
 Qualification : B.Tech (mining)
 Appointment/ : 02/04/2018
 Termination date

6. Date of approval of Mining	:	Renewal under rule 22 MCR1960	07/06/2004
Plan/Scheme of Mining	:	Modif.of approved Mining Plan	19/07/2007
	:	Mining Scheme rule 12 MCDR1988	02/07/2010
	:	Mining Scheme rule 12 MCDR1988	26/03/2015
	:	Modif.approved Mining Scheme	21/02/2018
	:	MP review under 17(1) MCR 2016	21/02/2020

PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	2018-19 62 boreholes 2019-20 26 boreholes	no back log 2018-19 65 boreholes 2019-20 37 boreholes	a total of 745 nos of boreholes have been drilled so far in the block with grid interval of 100mx100m, 200mx200m and the total meterage drilled is 29434m.
1b	Exploration over lease area for geological axis 1 or 2	In the year 2019-200, a total of 26 nos of boreholes were proposed in grid interval of 200x200m for proving the barren area	37 nos of boreholes were drilled in grid interval of 200x200m to prove the barren area	The total area drilled under G1, G2, and G3 level of exploration is 357.88 ha, 220 ha and 93.14 ha respectively. Out of total mineralized area is 291.96 ha and non-mineralized is 379.13 ha
1c	Exploration Agencies and Expenditure in lakh rupees during the year		93.7 lakh	
1d	Balance area to be explored to bring Geological axis in 1 or 2	A total of 106 nos of boreholes were proposed in the last document period ie 2017-18 to 2019-20 as infilling boreholes to increase the confidence level keeping in view the new threshold values and to prove the barren area.	A total of 106 nos of boreholes are drilled during the period from 2017-18 to 2019-20 as infilling boreholes to prove the barren area	

1e Balance reserve as on 01/04/20 In the modification of review of mining plan approved on 21/2/2020, the reserves/resources as 1.9.2019 Reserves 188.52 million tonnes Resources 61.02 million Reserves 180.47 million resources Resources - 61.02 million tonnes

1f General remarks of inspecting officers on geology, exploration etc The main rocks within in the area are BHJ ,shale and cherty quartzite, laterite, hematitic iron ore, BHJ /shale hosts the iron ore in the lease area. About 98% of the potential mineralized has been explored under G1 level of exploration

Development :

Sl.No.	Item	Propasals	Actual work	Remarks
2a	Location of development w.r.t.lease area	North Quarry 1200E to 2400E 2400N to 4600N South Quarry 1600E to 2300E 1650N to 2300N	North Quarry 1200E to 2400E 2400N to 4600N South Quarry 1600E to 2300E 1650N to 2300N	
2b	Separate benches in topsoil, overburden and minerals (Rule 15)	Separate benches in topsoil, overburden and mineral	Separate benches in topsoil, overburden and mineral	

2c	Stripping ratio or ore to OB ratio	15.48	25.52	Less quantity of Mineral Reject was generated due to lesser excavation
2d	Quantity of topsoil generation in m3	No such proposal	no such proposal	
2e	Quantity of overburden generation in m3	840000	429350	Issued violation under rule 11(1) of MCDR 2017.
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc			The development activities are carried out in two quarry ie North quarry and south quarry and the location of development is as per the approved document.

Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
3a	Number of pit proposed for production	2 nos. of pits as per proposal ie North quarry & South Quarry		
3b	Quantity of ROM mineral production proposed	13.000 MT	10.957 MT	. Issued violation under rule 11(1) of MCDR 2017.
3c	Recovery of sailable/usable mineral from ROM production	93%	94.21%	Higher recovery of ore achieved by using Hydrocyclones
3d	Quantity of mineral reject generation	14.5 Lakh Tonnes	3.80 Lakh Tonnes	Issued violation under rule 11(1) of MCDR 2017..
3e	Grade of mineral rejects generation and threshold value declared.	+45% to <58%	as per proposal	
3f	Quantity of sub grade mineral generation.	14.5 Lakh Tonnes	3.80 Lakh Tonnes	Issued violation under rule 11(1) of MCDR

3g	Grade of sub grade mineral generation	+45% to <58%	As per proposal	
3h	Manual / Mechanised method adopted for segregating from ROM	Mechanised	mechanised	
3i	Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects.	no such proposal	no such proposal	
3j	Provision of drilling and blasting in mineral benches	Drilling and blasting	as per proposal	Drilling by using 150 mm diameter drills with 10% subgrade drilling. Blasting using Site Mixed Emulsion explosives. Use of both Non-electric initiation and electronic detonators for controlled blasting.
3k	Provision of mining machineries in mineral benches	The excavation using shovel dumper combination	Shovel and dumper combination is deployed as proposed	
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	9m high benches height is proposed.	Maintained as proposed	
3m	Total area covered under excavation/pits	244.976 ha	325.985ha	Issued violation under rule 11(1) of MCDR 2017
3n	Ore to OB ratio for the pit/mine during the year.	15.48	25.52	Less realization of OB as overall excavation is less.

3o	Total area put in use under different heads at the end of year	<p>As per approved modification in review of mining plan the area under different activities at the end of plan period as fallow</p> <p>a)Working-244.976ha b)waste dump-70.984 c).Mineral storage 117.695 ha d)Infrastructu res, road, conveyoy pipe line, electric line, railways ,ETP,magazine, mineral separation plant etc.127.669 ha e)Mineral separation plant f., topsoil, tailing pond 99.164 g)safety zone & greenery10.605 ha</p>	<p>)Working-325.985ha b)Used for waste disposal-29.181ha c).Occupied by plant, buildings, residential, welfare buildings & roads-70.319ha d).Other Purpose ((Storing of minerals, topsoil,tailing pond, tools and machineries, Magazine & green belt) 193.76ha</p>	<p>Issued violation under rule 11(1) of MCDR 2017.</p>
3p	Production of ROM mineral during the last five year period as applicable	<p>2015-2016:14.14 MT 2016-2017:14.62 MT 2017-2018:12.00 MT 2018-2019:12.00 MT 2019-2020:13.00 MT</p>	<p>2015-2016: 9.97 MT 2016-2017: 11.17 MT 2017-2018: 11.24 MT 2018-2019: 11.72 MT 2019-2020: 10.96 MT</p>	

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

The method of
mining is category
A and is fully
mechanized. The
ROM production is
carried out by
opencast mining
methods in two
quarries ie North
quarry and south
quarry

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 for overburden and mineral reject/subgrad e envisaged	Separate dumping for overburden and mineral reject/subgrade are being done	

4b	Location of topsoil, OB and mineral reject dumps	10 nos Location of dumps: Waste Dump No. 1 2517N-2729N, 2200E-2767E Waste Dump No. 2 3460N-3680N, 1200E-1400E Waste Dump No. 3 5000N-4100N, 1800E-2200E Waste Dump No. 4 5300N-4800N, 900E-1200E Waste Dump No. 5 5400N-5900N, 900E-1600E Waste Dump No. 6 1950N-2200N, 2000E-2350E Mineral Reject Dump 2A 2200N-2800N 2000E-2700E Mineral Reject Dump 2 2900N-3200N 2300E-2600E Mineral Reject Dump 1A 3600N-4200N 1200E-1600E Mineral Reject Dump No 3 4700N-5200N 1200E-1500E	06 nos Location of dumps: Waste Dump No. 1 2517N-2729N, 2200E-2767E Waste Dump No. 2 Not started Waste Dump No. 3 5000N-4100N, 1800E-2200E Waste Dump No. 4 Not started Waste Dump No. 5 Waste Dump No. 6 1950N-2200N, 2000E-2350E Mineral Reject Dump 2A 2200N-2800N 2000E-2700E Mineral Reject Dump 2 2900N-3200N 2300E-2600E Mineral Reject Dump 1A 3600N-4200N 1200E-1600E Mineral Reject Dump No 3 Not started	Issued violation under rule 11(1) of MCDR 2017
4c	Number of dumps within lease area and outside of lease area	10 within lease area	6 within lease area	Issued violation under rule 11(1) of MCDR2017
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	Outside UPL	Outside UPL	

4e	Number of active and alive dumps.	10nos	06 nos	Issued violation under rule 11(1) of MCDR2017
4f	Number of dead dumps.	no such proposal	no such proposal	
4g	Number of dumps established.	no such proposal	no such proposal	
4h	Whether Retaining wall or garland drain all along dumps are there.	Along the dump.	Along the dump.	
4i	Length of Retaining wall or garland drain all along dumps	2012m x1m x1.3m	as per proposal	
4j	Number of settling ponds	1 no. of settling pond.	1 no. of settling pond.	
4k	Specific comments of inspecting officer on waste dump management			Over burden/waste generation/mineral reject is not done as per the proposal Violation for the same has been issued under rule 11(1) of MCDR 2017.

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.	Backfilling by OB/slime	Backfilling by OB/slime	Reclamation of the mined out area has been done by back filling by OB/slime
5b	Area under backfilling of mined out area	56.078 ha	35.0 ha	Backfilling filling by OB/slime, Issued violation under rule 11(1) of MCDR

5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	no such proposal	no such proposal	
5d	Total area fully reclaimed and rehabilitated	no such proposal	no such proposal	Part of the dumps have been stabilized through plantation
5e	General remarks of inspecting officers on backfilling and reclamation etc.			The party has proposed the reclamation of mined out area of 56.078 ha during the year. But the same has not been completed fully. violation letter has been issued regarding the non-compliance of proposal.

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).	Submit before 1st July.	submitted	Submitted vide letter no. JE/155/2020 dated 15.06.2020
6b	Area available for rehabilitation (ha) .	no such proposal	no such proposal	
6c	afforestation done (ha).	1.6ha	as per proposal	On waste dumps
6d	No. of saplings planted during the year	4075	as per proposal	
6e	Cumulative no .of plants	673110	673110	

6f	Any other method of rehabilitation	No such proposal	No such proposal	Dumps have been stabilized using plantation with vetiver along with drip irrigation system. Miyawaki technique has been adopted over small patch for trial basis
6g	Cost incurred on watch and care during the year	Rs 1141000/-	16.67 Lakhs	
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (Lx B x D	No such proposal	No such proposal	
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	56.078 ha	35.0ha	Issued violation under rule 11(1) of MCDR2017
6j	Compliance on reclamation and rehabilitation by backfilling (iii)Afforestation on backfilled area	No such proposal	No such proposal	
6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	No such proposal	No such proposal	
6l	Compliance on reclamation and rehabilitation by backfilling (v)any other specific means.	No such proposal	No such proposal	

6m	Compliance of rehabilitation of waste land within lease (i)afforestation	No such proposal	No such proposal	
6n	Compliance of rehabilitation of waste land within lease (ii)Area rehabilitation (ha)	No such proposal	No such proposal	
6o	Compliance of rehabilitation of waste land within lease (iii)Method of rehabilitation	No such proposal	No such proposal	
6p	Compliance of environmental monitoring (core zone and buffer zone)	Periodical monitoring of environmental parameters are proposed	Carried out as per proposal	
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.			The party has not carried out the compliance as proposed in the document. Violation letter has been issued accordingly

Mineral Conservation:

Sl.No.	Item	Propasals	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	Grade wise sizing & sorting envisaged	Grade wise sizing & sorting envisaged	
7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	Mechanical	Mechanical	

7c	Different grade of mineral sorted out at mines.	+45 to 58% Fe +58% Fe +45 to 58% Fe +58% Fe	+45 to 58% Fe +58% Fe	
7d	Any beneficiation process at mines	Wet beneficiation is proposed .	Wet beneficiation is proposed .	
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues			Wet beneficiation is carried out as proposed

Environment:

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	no such proposal	no such proposal	
8b	Concurrent use or storage of topsoil	no such proposal	no such proposal	
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	Provision for separate dumping of overburden, waste rock and reject/subgrade is envisaged.	as per proposal	
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	no such proposal	no such proposal	

8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	Plantation at dumps is proposed	Carried out as proposed	
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	4075 saplings were proposed during the year 2019-20	9830 nos	
8g	Survival rate		78.1%	
8h	Water sprinkling on roads to control airborne dust	water sprinklers for dust suppression is proposed	Carried out as proposed	
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area			Aesthetic beauty in and around the mines is good because of plantation carried out by the and by regular sprinkling of water on mine roads to control the dust.

Compliance of Rule 45:

Sl.No.	Item	Proposals	Actual work	Remarks
9a	Status of submission of Monthly and Annual returns	As per rule Monthly and Annual Returns are to be submitted to IBM	submitted	

9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	The employment status of mining Engineer , geologist and Mine manager is furnished in the annual return.	Information furnished
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	Information has been furnished regarding the land use	Information has been furnished regarding the land use
9d	Scrutiny of Annual return on afforestation	4075 nos	4075 nos
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	3.80 Lakh Tonnes Grade - 53.11% Fe	3.80 Lakh Tonnes Grade - 53.11% Fe
9f	Scrutiny of Annual return on ROM stock and/or graded ore	Closing stock - lump, Fe 65% &above 421298.427T Closing stock- Fines , Fe 65% and above 580957.346 T	Closing stock - lump, Fe 65% &above 421298.427T Closing stock- Fines , Fe 65% and above 580957.346T
9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	Cost of production 1183.35	Cost of production 1183.35
9h	Scrutiny of Annual return on fixed assets	Value of Fixed Assets (in ?) 5829401679	Value of Fixed Assets (in ?) 5829401679

9k Scrutiny of Annual return on mining machineries

Dumper 13 nos	Dumper 13 nos
Dozer 3 nos	Dozer 3 nos
Shovel 5 nos	Shovel 5 nos
Rock drill 4nos	Rock drill 4nos
Motor Grader 2nos	Motor Grader 2nos
Front End Loader 3 nos	Front End Loader 3 nos
Water Tanker 2 nos	Water Tanker 2 nos
Trucks 6nos	Trucks 6nos
Crane 1 other etc	Crane 1 other etc
Water Tanker 2 nos	
Trucks 6nos	
Crane 1 other etc.	

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)	25/02/2021			

Date :

(KEWAL KRISHAN)

Indian Bureau of Mines