

**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 : 26/08/2021
- (v) Prev.inspection date : 11/02/2021

**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	2019-20 26 bhs 2020-21 9 Bhs	2019-20 no back logs ( drilled 37nos of Bhs ) 2020-21 2nos	Issued violation under rule 11(10 of MCDR 2017
1b	Exploration over lease area for geological axis 1 or 2	In the year 2019-2020, a total of 26 nos of boreholes were proposed in grid interval of 200x200m for proving the barren area & in year 2020-21 09 nos of bhs are proposed	37 nos of boreholes were drilled in grid interval of 200x200m to prove the barren area during the year 2019-20 & 02 nos of bhs in the year 2020-21	The total area drilled under G1,G2, and G3 level of exploration is 357.9 ha, 222.1ha and 91.1 ha respectively.
1c	Exploration Agencies and Expenditure in lakh rupees during the year	Tata Steel Limited	Tata Steel Limited & expenditure 13.84 lakh	Tata Steel Limited & expenditure 13.84 lakh
1d	Balance area to be explored to bring Geological axis in 1 or 2	A total of 09 nos of boreholes were proposed in the last document period ie 2020-21	02 nos of borholes are drilled in the mineralized zone	a total of 09 nos of bhs are proposed with meterage of 211 m to prove the non mineralized area including 02 no of bhs in adjacent bhs in the existing drilled bhs inside the mineralized zone that have been closed prematurely in ore zone
1e	Balance reserve as on 01/04/20		balance reserves as on 1/4/2021 168.54 million tonnes (under 111 & 121/122)	balance reserves as on 1/4/2021 168.54 million tonnes (under 111 & 121/122)

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	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
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Development :

Sl.No.	Item	Propasals	Actual work	Remarks
2a	Location of development w.r.t.lease area	North Quarry 1200E to 2400E 3000N to 4500N South Quarry 1350E to 2300E 1550N to 2850N	North Quarry 1317 E to 2340 E 3241N to 4500N South Quarry 1620E to 2200E 1639N to 2650N	
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	11.03	as per proposal	
2d	Quantity of topsoil generation in m3	no such proposal	no such proposal	
2e	Quantity of overburden generation in m3	320000	311183	

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.	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.
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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	12.3 MT	11.93 MT	
3c	Recovery of sailable/usable mineral from ROM production	93%	95.3%	Higher recovery of ore achieved by using Hydrocyclones
3d	Quantity of mineral reject generation	0.30MT	0.40MT	
3e	Grade of mineral rejects generation and threshold value declared.	+45% to <58%	as per proposal	
3f	Quantity of sub grade mineral generation.	0.30MT	0.40MT	
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 is proposed by 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	251.187 ha	320.282 ha ( for the plan peroid)	320.282 ha ( for the plan peroid)
3n	Ore to OB ratio for the pit/mine during the year.	10.03	as per proposal	

3o	Total area put in use under different heads at the end of year	as per approved plan area put to use under different activities(ha)	as per the AR submitted are under different activities(ha) covered under working used for waste disposal occupied by palnts, building etc other purpose (storage of mineral , top soil, magazine etc)
		251.187	70.319
		Mineral Storage 110.548	194.851
		Mineral Beneficication Plant 73.59	
		Talling Pond 99.074	
		Railways 7.89	
		Roads 22.423	
		Infrastructure 29.352	
		OB/waste Dump 59.725	
		Top soil 0.09	
		Others 6.569	
		Total 660.448	

3p	Production of ROM mineral during the last five year period as applicable	2016-2017 14.62 2017-2018 12.0 2018-2019 12.0 2019-2020 12.0 2020-2021 12.3	Years Actual(Mt.) 2016-2017 11.17 2017-2018 11.25 2018-2019 11.72 2019-2020 10.96 2020-2021 11.93
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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	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
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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/subgrade envisaged	Separate dumping for overburden and mineral reject/subgrade are being done	
4b	Location of topsoil, OB and mineral reject dumps	Waste Dump6 1986N-2245N 2014E-2341E  Waste Dump3 4127N-4848N 1909E-2173E  Waste Dump2(Backfilling Area) 3312N-3723N 1230E-1350E  Mineral Reject Dump 2A 2228N-2285N 2069E-2567E  Mineral Reject Dump 2 3199N-3303N 2432E-2599E  Mineral Reject Dump 1A 3689N-3978N 1291E-1600E	Waste Dump6 1986N-2190N 2014E-2341E  Waste Dump3 4127N-4813N 1909E-2173E  Waste Dump2(Backfilling Area) 3441N-3703N 1230E-1350E  Subgrade Dump-2A 2234N - 2285N 2070E - 2567E  Mineral Reject Dump 2 3199N - 3250N 2440E - 2550E  Mineral Reject Dump 1A 3690N-3975N 1291E-1377E	
4c	Number of dumps within lease area and outside of lease area	6 nos	as per proposal	Three waste dumps and three mineral rejects for the year 2020-21. However in total there are 08 nos of dumps, Four of mineral rejects and four of waste dumps. all the dumps are within the lease area.

4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	Out side the UPL	outside the UPL	one no of dump is in the backfill area.
4e	Number of active and alive dumps.	six nos	as per proposal	
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.	Retaining wall and garland drain proposed along the dumps	not constructed as per the proposal	issued violation under rule 11(1) of MCDR 2017
4i	Length of Retaining wall or garland drain all along dumps	retaining wall and garland drain proposed 915m along the dumps.	Not fully constructed as proposed	issued violation under rule 11(1) of MCDR 2017
4j	Number of settling ponds	one no	as per proposal	
4k	Specific comments of inspecting officer on waste dump management		retaining wall and garland draing has not constructed along the over burden/waste generation/mineral rejects as per the proposal. Violation for the same has been issued under rule 11(1) of MCDR 2017.	retaining wall and garland draing has not constructed along the over burden/waste generation/mineral rejects as per the proposal. Violation for the same has been issued under rule 11(1) of MCDR 2017.

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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.	back filling proposed in the minedout area by waste dumps.	backfilling in mined out area by waste dumps.	

5b	Area under backfilling of mined out area	1.72 ha	as per the proposal	
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	
5e	General remarks of inspecting officers on backfilling and reclamation etc.		The party has proposed the reclamation of mined out area of 1.72 ha during the year. .	The party has proposed the reclamation of mined out area of 1.72 ha during the year

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 before stipulated date
6b	Area available for rehabilitation (ha) .	no such proposal	no such proposal	
6c	afforestation done (ha).	1.34	3.11	
6d	No. of saplings planted during the year	3365	9104 approxi	species like karanja, amlatas, ficus and kachnnur
6e	Cumulative no .of plants	682149 approxi	682149 approxi	682149 approxi
6f	Any other method of rehabilitation	no such proposal	no such proposal	
6g	Cost incurred on watch and care during the year	9.03 Lakhs	28.47 Lakhs	

6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling ( Lx B x D	1.72 ha	as per proposal
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	0.27 Mcum	0.27 Mcum
6j	Compliance on reclamation and rehabilitation by backfilling (iii)Afforestation on 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 lessee has carriedout the compliance as proposed on reclamation and rehabalitation by backfilling of waste dumps 1.72ha area.	The lessee has carriedout the compliance as proposed on reclamation and rehabalitation by backfilling of waste dumps 1.72ha area.

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#### Mineral Conservation:

Sl.No.	Item	Propasals	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	grade-wise sorting	grade wise sorting is being practiced	
7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	mechanised	mechanised	
7c	Different grade of mineral sorted out at mines.	+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 being carriedout	

7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues	Wet beneficiation is carried out as proposed	Wet beneficiation is carried out as proposed
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**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	as per proposal	

8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	3365 saplings are planned for plantation	9104 saplings were planted	
8g	Survival rate		78%	78%
8h	Water sprinkling on roads to control airborne dust	sprinklers for dust suppression is proposed	sprinklers for dust suppression.	
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	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

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Compliance of Rule 45:

Sl.No.	Item	Propasals	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	3365	9104 approxi
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	404980 Tonnes Grade - 52.68% Fe	404980 Tonnes Grade - 52.68% Fe
9f	Scrutiny of Annual return on ROM stock and/or graded ore	Closing stock - lump, Fe 65% &above 482955.997T Closing stock- Fines , Fe 65% and above 642169.676 T	Closing stock - lump, Fe 65% &above 482955.997T Closing stock- Fines , Fe 65% and above 642169.676 T
9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	Cost of production 1315.76	Cost of production 1315.76
9h	Scrutiny of Annual return on fixed assets	Value of Fixed Assets (in Rs) 5401945646/-	Value of Fixed Assets (in Rs) 5401945646/-
9k	Scrutiny of Annual return on mining machineries	Dumper 13 nos Dozer 3 nos Shovel 5 nos Rock drill 4nos Motor Grader 2nos Front End Loader 3 nos Water Tanker 2 nos Trucks 6nos Crane 1 other etc.	Dumper 13 nos Dozer 3 nos Shovel 5 nos Rock drill 4nos Motor Grader 2nos Front End Loader 3 nos Water Tanker 2 nos Trucks 6nos Crane 1 other etc.

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**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)	11/09/2021			

**Date :****(KEWAL KRISHAN)**

Indian Bureau of Mines