

**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 : **S010**) **SHRI G.C. SETHI**
Officer and ID No.
- (ii) Designation : Deputy Controller Mines
- (iii) Accompanying mine : Shri Rajesh Kumar, Mines Manager
Official with
Designation
- (iv) Date of Inspection : 10-JAN-18
- (v) Prev.inspection date : 29-JAN-16

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-APR-56
- (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-MAR-30
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 : Mukesh Ranjan
 At + Post- Joda Dist-
 Keonjhar KEONJHAR ORISSA
 Phone: 9238101370
 FAX : 06767211789

Mining Engineer

Name : Rajesh Kumar, Full Time
 Qualification : B.E. MINING, FCC
 Appointment/ : 14-SEP-16
 Termination date

Geologist

Name : SANJAY KUMAR BHUYAN, Full Time
 Qualification : Msc Tech Geology
 Appointment/ : 01-JUL-15
 Termination date

Manager

Name : RAJESH KUMAR
 Qualification : B.E. MINING, FCC
 Appointment/ : 17-MAY-14
 Termination date

6. Date of approval of Mining	:	Renewal under rule 22 MCR1960	07-JUN-04
Plan/Scheme of Mining	:	Modif.of approved Mining Plan	19-JUL-07
	:	Mining Scheme rule 12 MCDR1988	02-JUL-10
	:	Mining Scheme rule 12 MCDR1988	26-MAR-15

PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	In the year 2016-17, it was proposed to drill 9 nos. of bore holes as envisaged in the scheme of mining, approved on 26.03.2015.	During the year 2016-17, only one bore hole was drilled.	The violation of rule 11(1) was pointed out to the party vide letter No. ORI/IRON/KJR/MCDR-32/BBS, Vol. III, dated 12.01.2018. for deviation in the exploration schedule during the year 2016-17.
1b	Exploration over lease area for geological axis 1 or 2	As per the modification of mining plan, dated 21.02.2018, for the period from 2017-18, an extent of 107.18ha has been expored upto G1 level & 144.70ha has been explored upto G2 level.	An extent of 107.18ha has been expored upto G1 level & 144.70ha has been explored upto G2 level.	Nil

1c	Exploration Agencies and Expenditure in lakh rupees during the year	The lessee M/s TATA Stelel Ltd is the exploration agency for the mine and 2.3lakhs has been spent on account of exploration during 2016-17 as envisaged in the modification of mining plan approved on 21.02.2018.	During the year 2016-17, Nil only 2.3lakhs was spent for drilling one of borehole in the lease area.
1d	Balance area to be explored to bring Geological axis in 1 or 2	As per the modification of approved mining plan,dated 28.02.2018 the balance area of 216.18ha has not been explored.	The balance area of Nil 216.18ha to be explored.

1e	Balance reserve as on 01/04/20	In the modification of approved mining plan, dated the reserves/resources for iron ore have been estimated as on 01.10.2017 and the same is as follows:- Proved reserves (111): 139.58 million tonnes, Probable reserves(122) : 12.72 million tonness & total remaining resources of 71.08 million tonnes.	The reserves/resources for iron ore as on 01.10.2017 is as given below:- Proved reserves (111): 139.58 million tonnes, Probable reserves(122): 12.72 million tonness & total remaining resources of 71.08 million tonnes.	Nil
1f	General remarks of inspecting officers on geology, exploration etc	In the approved scheme of mining, 09 nos. of core bore holes were proposed to be drilled in the year 2016-17.	The Joda East iron deposit lies in the western portion of Singhbhum-Orissa cration. The iron ore group sorrounds the batholic complex and consists of low grade meta sediments etc. The eastern basin extnds from south of Jamshedpur through Gorumahisani & Badampahar and the southern basin lies between Daitari-Tomka. During the year only one bore hole was drilled agianst the proposal of 9 holes.	During the year 2016-17, only one bore hole was drilled in the lease area and the rule 11(1) of MCDR,2017 was pointed out to the party for deviation in the exploration schecule.

Sl.No.	Item	Propasals	Actual work	Remarks
2a	Location of development w.r.t.lease area	(i) E/W 1300 to E/W 2200 & N/S 2500 to N/S 4000 (ii) E/W 1550 to E/W 2450 & N/S 1500 to N/S 2300.	(i) E/W 1300 to E/W 2200 & N/S 2500 to N/S 4000 (ii) E/W 1550 to E/W 2450 & N/S 1500 to N/S 2300.	Nil
2b	Separate benches in topsoil, overburden and minerals (Rule 15)	There is no top soil in the mine. However, separate benches for overburden & mineral zone are envisaged in the approved scheme of mining.	Separate benches in overburden and in iron ore zone are made in both the quarries available in the mine.	Nil
2c	Stripping ratio or ore to OB ratio	The proposed Ore:OB ratio is 1: 0.22 for the year 2016-17.	The actual Ore:OB ratio was 1: 0.107	The achieved Ore:OB ratio is in lower side due to less production and waste handling during 2016-17.
2d	Quantity of topsoil generation in m3	No proposal for topsoil generation during 2016-17.	No top soil was generated during the year 2016-17.	Nil
2e	Quantity of overburden generation in m3	Only 3.22 million tonnes of Over burden material was proposed to be generated in the year 2016-17.	During the year 2016-17, 1.20 million tonnes of overburden material was generated.	The generation of overburden material was in lower side due to low production from the mine during the year 2016-17.
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc	No comments on the proposed development of the mine for the year 2016-17.	The production & development were lagging behind against the proposal envisaged in the approved scheme of mining due to less intake of iron ore in the captive plant..	The lessee could not develop the mine to the extent proposed in the approved document due to lack of intake of iron ore by the captive steel plant.

Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
3a	Number of pit proposed for production	Two nos. of Quarries are proposed for production as per the approved scheme of mining.	Two quarriess viz. North Quarry and South Quarry were under operation during the year 2016-17.	Nil
3b	Quantity of ROM mineral production proposed	In the year 2016-17, 14.62 million tonnes of ROM was proposed to be produced as envisaged in the approved scheme of mining.	During the year 2016-17, 11.17 million tonnes of iron ore was produced.	The iron ore production was in lower side of the proposed quantities due to less intake of iron ore by thr captive steelplant as reported during the field visit.
3c	Recovery of sailable/usable mineral from ROM production	No such specific proposal.	The reported recovery was about 90% of ROM.	Nil
3d	Quantity of mineral reject generation	Nil	Nil	Nil
3e	Grade of mineral rejects generation and threshold value declared.	Not applicable.	Nil	Nil
3f	Quantity of sub grade mineral generation.	2.62 million tonnes in 2016-17.	1.39 million tonnes during 2016-17.	Nil
3g	Grade of sub grade mineral generation	45-58%Fe	45-58%Fe	Nil
3h	Manual / Mechanised method adopted for segregating from ROM	Mechanised method is proposed to adopted for segregation from ROM.	The same practice is being followed in the mine.	Nil
3i	Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects.	No beneficiation study has been proposed in the approved scheme of mining.	No such study was carried out in the mine.	No such study was carried out in the mine.

3j	Provision of drilling and blasting in mineral benches	Provisions for drilling by wagon drills & blasting by putting explosives in the drilled holes in the mineral as well as in overburden benches are envisaged.	The drilling & blasting are being practised as per the approved document.	Nil
3k	Provision of mining machineries in mineral benches	Heavy mining machineries like excavators, dumpers, Dozers, graders & wheel loaders etc, are proposed.	Heavy mining machineries like excavators, dumpers, Dozers, graders & wheel loaders etc, were deployed in the mine. proposed.	Nil
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	The proposed height & width of the benches are 9m & 25m respectively.	The height & width of the benches are restricted to 9m & 25m respectively as per the proposal.	Nil
3m	Total area covered under excavation/pits	No specific land degradation proposal for 2016-17. However, an 324.706ha has been proposed at the end of 2019-2020.	389.995ha as indicated in the annual return submitted by yhre party for the year 2017-18.	Nil
3n	Ore to OB ratio for the pit/mine during the year.	The proposed Ore:OB ratio was for 1:0.22 for the year 2016-17.	The actual Ore:OB ration was for 1:0.107 during the year 2016-17.	Nil

30	Total area put in use under different heads at the end of year	The item wise land use under different heads at the end of the year 2016-17 has not been furnished in the approved scheme of mining. However, the land use at the end of the scheme of mining period i.e. 2019-20 is as given below:- (i) Area to be excavated: 442.42ha (ii) OB dump/slime: 110.332ha (iii) Mineral storage: 31.547ha (iv) Storing of tool/machinery : 18.396ha (v) Road etc. : 18.522ha (vi) Infrastructure : 42.399ha & (vii) Magazine: 8.063ha.	As per the annual return submitted by the party for the year 2016-17, the land degradation status in different counts is as given below:- (i) Current opencast working: 389.995ha (ii) Waste disposal: 110.332ha (iii) Plant, buildings etc.: 60.921ha & (iv) other purposes : 68.611ha.	Nil
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3p	Production of ROM mineral during the last five year period as applicable	The original scheme of mining approved for the period from 2015-16 to 2019-20 & modification for 2017-18 to 2019-20, the production proposed for the period from 2015-16 to 2016-17 is as given below:- 2015-16: 14.14 million tonnes & 2016-17: 14.62 million tonnes.	Actual production achieved during the period from 2015-16 to 2016-17 is as given below:- 2015-16: 9.97 million tonnes & 2016-17: 11.17 million tonnes	During the above two years the achievements in production is lagging behind the proposal due to lack of intake of iron ore by the captive steel plant.
3q	General remarks of inspecting officers on method of mining etc.	The method of mining was proposed for fully mechanised opencast methods.	The mining operations were carried out by fully mechanised open cast method as per the proposal envisaged in the approved scheme of mining.	Nil

Solid Waste Management - Dumping:

Sl.No.	Item	Propasals	Actual work	Remarks
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4a	Separate dumping of topsoil, OB and mineral rejects (Rule 32,33)	There is no proposal for top soil generation from the mine. However, the OB/waste generated from the mine is propose to be dumped in the designated site as envisaged in the of approved scheme of mining.	No top soil was generated from the mine during the year 2016-17 & no separate dump for the same was made. The OB & waste generated was dumped in designated site.	Nil
4b	Location of topsoil, OB and mineral reject dumps	The OB & waste was proposed to be dumped in designated site. The mineral rejects are consumable after dry screening & provisions for stacking the same also made in the approved document.	The OB & waste generated was dumped in designated site during the year 2016-17. The mineral reject so generated was sold out/stacked in the designated site as per the approved scheme of mining.	Nil
4c	Number of dumps within lease area and outside of lease area	Waste Dump-I & II are the existing waste dumps in the lease area as per the approved scheme of mining.	The existing dump-I & II are the active dump in the mine.	Nil

4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	The dump-I & II has been proposed beyond the ultimate pit limit as per the approved scheme of mining.	The dump-I & II were found located beyond the ultimate pit limit.	Nil
4e	Number of active and alive dumps.	Dump-I & II are proposed for active/alive dump as envisaged in the approved scheme of mining.	The two existing dumps viz. dump-I & II are considered as the active dumps.	Nil
4f	Number of dead dumps.	No such proposal.	Nil	Nil
4g	Number of dumps established.	Two	Dump-I & II	Nil
4h	Whether Retaining wall or garland drain all along dumps are there.	Yes.	Yes	Nil
4i	Length of Retaining wall or garland drain all along dumps	No such specific proposal.	Nil	Nil
4j	Number of settling ponds	No specific proposal.	No settling tank seen.	Nil
4k	Specific comments of inspecting officer on waste dump management	The waste dumping was proposed in dump-I & II as per the proposal.	Dumping is being done in dump-I & II as observed during the inspection.	Nil

Solid Waste Management - Backfilling:

Sl.No.	Item	Propasals	Actual work	Remarks
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5a	Status of part or full extraction of mineral from mined out area before starting backfilling.	No such backfilling proposal for 2016-17.	No such backfilling was undertaken during the year 2016-17.	Nil
5b	Area under backfilling of mined out area	Nil	No backfilling was done during the year 2016-17.	Nil
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	No proposal for topsoil generation.	No restoration by use of topsoil has been done during the year 2016-17.	Nil
5d	Total area fully reclaimed and rehabilitated	No such proposal.	Not done during the year 2016-17.	Nil
5e	General remarks of inspecting officers on backfilling and reclamation etc.	No reclamation was proposed during the year 2016-17 in the approved scheme of mining.	No reclamation has been done during the year 2016-17 as per the proposal.	Nil

Progressive Mine Closure Plan:

Sl.No.	Item	Proposals	Actual work	Remarks
6a	Whether Annual report on PMCP submitted on time and correctly. Rule 23 E(2).	No such proposal in the approved scheme of mining.	The annual report on PMCP for the year 2016-17 has been submitted by the party under rule 26(2) of MCDR, 2017.	Nil
6b	Area available for rehabilitation (ha) .	No such specific proposal in the approved document.	Nil	Nil

6c	afforestation done (ha).	In the year 2016-17, there are 3000 nos. of saplings were proposed to be planted but no specific information about the extent of plantation area is available.	During the year 2016-17, 7884 nos. of saplings were planted within the lease area.	The actual plantation done during the year 2016-17 is in higher side of the proposed numbers.
6d	No. of saplings planted during the year	3000 nos. of saplings are proposed for the year 2016-17.	7884 nos. of saplings were planted during the year 2016-17.	More plantation has been done during 2016-17 against the proposed number.
6e	Cumulative no .of plants	No such proposal in the approved scheme of mining.	Commulatively, 35477 nos. of plantation has been done till the end of the year 2016-17. (For the period 2015-16 to 2017-18).	Nil
6f	Any other method of rehabilitation	No such proposal.	Nil	Nil
6g	Cost incurred on watch and care during the year	No such proposal.	Not available.	Nil
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (Lx B x D	Nil	No such backfilling was done during the year 2016-17.	Nil
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	Nil	No such backfilling was done during the year 2016-17.	Nil

6j	Compliance on reclamation and rehabilitation by backfilling (iii) Afforestation on backfilled area	Nil	No such backfilling was done during the year 2016-17.	Nil
6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	No such proposal.	No water reservoir by way of rehabilitation measures has been made and no such proposal is given in the approved scheme of mining.	Nil
6l	Compliance on reclamation and rehabilitation by backfilling (v) any other specific means.	No any other specific proposal.	Not applicable.	Nil
6m	Compliance of rehabilitation of waste land within lease (i) afforestation	3000 nos. of saplings are proposed for the year 2016-17 in the lease area.	7884 nos. of saplings were planted during the year 2016-17.	More plantation has been done during the year against the proposal made in the approved scheme of mining.
6n	Compliance of rehabilitation of waste land within lease (ii) Area rehabilitation (ha)	Nil	Nil	Nil
6o	Compliance of rehabilitation of waste land within lease (iii) Method of rehabilitation	No such proposal.	Nil	Nil

6p	Compliance of environmental monitoring (core zone and buffer zone)	No such specific proposal for core zone and buffer zone has been furnished in the approved scheme of mining.	The ambient air quality, water quality, noise level, vibration level etc. were being monitored in every quarter and found within the permissible limits.	Nil
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.	No comments to offer.	The party has submitted the PMCP reports on regular basis.	Nil

Mineral Conservation:

Sl.No.	Item	Propasals	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	The ROM produced from the mining operations are processed through dry circuit plan/wet circuit plant as per the requirement.	The ROM produced from the mining operations are processed through dry circuit plan/wet circuit plant as per the requirement.	Nil
7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	The ROM produced from the mining operations are processed through dry circuit plan/wet circuit plant as per the requirement.	The ROM produced from the mining operations are processed through dry circuit plan/wet circuit plant as per the requirement.	Nil
7c	Different grade of mineral sorted out at mines.	+58%Fe & 45-58%Fe.	+58%Fe & 45-58%Fe.	Nil

7d	Any beneficiation process at mines .	The ROM produced from the mining operations are processed through dry circuit plan/wet circuit plant as per the requirement.	The ROM produced from the mining operations are processed through dry circuit plan/wet circuit plant as per the requirement.	Nil
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues	No comment is offered.	The ROM produced from the mining operations are processed through dry circuit plan/wet circuit plant as per the requirement before supplied to the captive steel plants.	There is no mineral conservation problems in the mine.

Environment:

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	No topsoil generation was proposed in the approved scheme of mining.	No topsoil was generated during the year 2016-17.	Nil
8b	Concurrent use or storage of topsoil	No such proposal.	Nil	Nil
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	the over burden material generated was proposed to be dumped in dump-I & II.	Dumped in dump I & II. as per the proposal.	Nil
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	No such proposal.	No reclamation of the mined out area was done during the year 2016-17.	Nil

8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	Phased restoration was not proposed.	Nil	Nil
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	There was a proposal to plant 3000 nos. of saplings within the lease area during the year 2016-17.	During the year 2016-17, 7884 nos. of saplings were planted in the lease area.	The actual plantation done was in higher side of the proposed number given in the approved scheme of mining.
8g	Survival rate	No specific proposal for survival rate of plantation furnished in the approved document.	The reported survival rate of plantation was about 80%	Nil
8h	Water sprinkling on roads to control airborne dust	Water sprinkling was proposed on the haul road to control the airborne dust.	Water sprinkling was a regular practice as reported during the field visit.	Nil
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area	No comment to offer.	Plantation on the inactive portion of the dump enhances the aesthetic beauty of the mine.	Nil

Compliance of Rule 45:

Sl.No.	Item	Propasals	Actual work	Remarks
9a	Status of submission of Monthly and Annual returns	The party has submitted all the monthly & annual returns for the year 2016-17.	The submission status of all the returns has been verified and found in order for the year 2016-17.	Nil

9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	The employment status of mining engineer, geologist & mine manager have been furnished in the annual return submitted by the party for the year 2016-17.	The employment status of mining engineer, geologist & mine manager was verified in the field & found in order.	Nil
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	The land use pattern in different counts furnished in the annual return 2016-17 is as given below:- (i) Covered under current (O/C) workings: 389.995ha (ii) Reclaimed/rehabilitated: Nil (iii) Waste disposal: 110.332ha (iv) Plant, buildings etc.: 60.921ha & (v) Magazine, green belt etc. : 68.611ha	The land use pattern furnished in the annual return is found to be satisfactory.	Nil
9d	Scrutiny of Annual return on afforestation	As per the annual return 2016-17, 7884 nos. of saplings were planted in the lease area.	The same was verified and found in order.	Nil

9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	1394438 tonnes during 2016-17. Grade: 52.79%Fe	Found to be in order.	Nil
9f	Scrutiny of Annual return on ROM stock and/or graded ore	During the year 2016-17, 97803338 tonnes of iron ore was produced from the mine and the grade of such ore +65% Fe.	The production figures of iron ore furnished in the annual return 2016-17 is found in order.	Nil
9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	The ex-mine price for iron ore is indicated to be for Rs.1026.56 and the cost of production is same as the production is for captive purpose.	The ex-mine price furnished in the annual return is appears to be correct.	Nil
9h	Scrutiny of Annual return on fixed assets	The value of the fixed assets is indicated to be for Rs. 10802393690/- in the annual return.	The value of the fixed assets furnished in the annual return was not available for verification.	Nil
9k	Scrutiny of Annual return on mining machineries	A good number of heavy earth moving mining machineries are deployed in the mine as indicated in the annual return submitted for the year 2016-17.	The deployment status of all mining machineries furnished in the annual return are found to be satisfactory.	Nil

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)	12-JAN-18			

Date :

(SHRI G.C. SETHI)

Indian Bureau of Mines