

INDIAN BUREAU OF MINES  
MINERALS DEVELOPEMMENT AND REGULATION DIVISION

MCDR inspection REPORT

Bhubaneshwar regional office

Mine file No : ORI/MN/KJR/MCDR-8/BBS

Mine code : 40ORI08019

- (i) Name of the Inspecting : SQ10 ) SHRI G.C. SETHI  
Officer and ID No.
- (ii) Designation : Deputy Controller Mines
- (iii) Accompanying mine : Shri Sabyasachy Mishra, QP  
Official with  
Designation
- (iv) Date of Inspection : 23-OCT-19
- (v) Prev.inspection date : 21-MAY-19

PART-I : GENERAL INFORMATION

1. (a) Mine Name : JODA WEST
- (b) Registration NO. : 4376
- (c) Category : A Manual
- (d) Type of Working : Opencast
- (e) Postal address  
State : ORISSA  
District : KEONJHAR  
Village : BICHAKUNDI  
Taluka : CHAMPUA  
Post office : BICHAKUNDI  
Pin Code : 758035  
FAX No. : 916767-72010  
E-mail : -  
Phone : 916767-72239
- (f) Police Station : Joda
- (g) First opening date : 04-JUN-35
- (h) Weekly day of rest : SUN
2. Address for : JODA WEST MN MINE, M/S TISCO LTD  
correspondance P.O.BICHHAKUNDI  
DIST-KEONJHAR, ORISSA-758034
3. (a) Lease Number : ORI0056
- (b) Lease area : 1437.72
- (c) Period of lease : up to 31.03.2030, vide lease intension letter no. M(A) SM-14/2006/5307/SM  
dated 18.07.2015
- (d) Date of Expiry : 31-MAR-30
4. Mineral worked : MANGANESE ORE Main

## 5. Name and Address of the

Lessee : TISCO  
 Bombay House 24, Homy Mody  
 Street Mumbai MUMBAI  
 (SUBURBAN) MAHARASHTRA  
 Phone:  
 FAX :

Owner : M/sTISCO  
 Mr. N.P.Sinha M/s TISCO  
 singhbhum SINGHBHUM (WEST)  
 JHARKHAND  
 Phone: 06767-72010  
 FAX :

Agent : AMIT KUMAR DUBEY  
 KEONJHAR ORISSA  
 Phone: 9238101140  
 FAX :

Mining Engineer  
 Name : SHRI SOUMYA RANJAN MOHANTA, Full Time  
 Qualification : DEGREE, FCC  
 Appointment/ : 01-AUG-18  
 Termination date

Geologist  
 Name : SHRI ANSUMAN DASGUPTA, Full Time  
 Qualification : MSC GEOLOGY  
 Appointment/ : 01-FEB-16  
 Termination date

Manager  
 Name : SHRI S S MISHRA  
 Qualification : DIPLOMA, FCC  
 Appointment/ : 05-MAY-17  
 Termination date

6. Date of approval of Mining Plan/Scheme of Mining	:	Renewal under rule 22 MCR1960	12-MAR-02
		Modif.of approved Mining Plan	24-MAR-05
		Mining Scheme rule 12 MCDR1988	17-FEB-09
		Mining Scheme rule 12 MCDR1988	21-MAY-13
		MP review under 17(1) MCR 2016	09-NOV-17

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

## Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	No backlog.	However 59 nos of bore holes were drilled during the year 2018-19.	Nil
1b	Exploration over lease area for geological axis 1 or 2	20 nos of bore holes were proposed during the year 2018-19.	59 nos of boreholes were drilled during 2018-19.	Nil
1c	Exploration Agencies and Expenditure in lakh rupees during the year	M/s TATA Steel Ltd.	Rs. 83.00 Lakhs was the expenditure done by in house agency.	Nil
1d	Balance area to be explored to bring Geological axis in 1 or 2	140 nos of boreholes were proposed during the scheme period from the year 2018-19 to 2022-23 to brought area under G1/G2.	59 nos of boreholes were drilled during the year 2018-19. area under G1: 207.545 ha, G2: 103.917 Ha, G3: 294.178 ha and the rest is non mineralised area.	Nil
1e	Balance reserve as on 01/04/20	As per the approved document on 09.11.2017 the Manganese ore reserves are 1.062 million tonnes and resources of 5.25 million tonnes. and iron reserves are 27.17 millio tonnes and resources of 79.81 million tonnes.	After depletion of reserves & resources estimated in the review of mining plan approved on 09.11.2017, the Manganese reserves as on 01.04.2019 arrived at 1.115 million tonnes and resources of 5.62 million tonne. Likewise, the iron reserves are 27.17 million tonnes and resources of 79.81 million tonnes.	Nil

1f	General remarks of inspecting officers on geology, exploration etc	59 nos of boreholes drilled against the proposal of 20 nos of boreholes during 2018-19 to increase the level confidence of reserves and resources during mine excavation.	Nil
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## Development :

Sl.No.	Item	Proposals	Actual work	Remarks
2a	Location of development w.r.t. lease area	D-Quarry: 2847 N-2569 N & 4710E-4525E, D-quarry extension: 3290 N- 3060 N & 5183E-4940E H-Quarry: 2206 N- 2058 N & 3905E-3790E and 2126N- 1882N & 3569 E-3398E.	D-Quarry: 2847 N-2569 N & 4710E-4525E, D-quarry extension: 3290 N- 3060 N & 5183E-4940E H- Quarry: 2206 N- 2058 N & 3905E-3790E and 2126N- 1882N & 3569 E-3398E.	Nil
2b	Separate benches in topsoil, overburden and minerals (Rule 15)	The top soil capping is proposed to be scrapped. Separate benches in OB and manganese ore zone are envisaged.	Separate benches in OB and manganese ore zone are made. The top soil scrapped was used for saplings plantation.	Nil
2c	Stripping ratio or ore to OB ratio	1:12.45 t/cu.m.	1:12.45 t/cu.m.	Nil
2d	Quantity of topsoil generation in m <sup>3</sup>	862 cu.m. in the year 2018-19.	227 cu.m. in the year 2018-19.	Due to lowside deviation in the excavation during 2018-19.
2e	Quantity of overburden generation in m <sup>3</sup>	1245720 cu.m. for the year 2018-19.	752934 cu.m.	Due to lowside deviation in the excavation during 2018-19.

2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc	Development was carried out in two no of quarries only.	Nil
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## Exploitation:

Sl.No.	Item	Proposals	Actual work	Remarks
3a	Number of pit proposed for production	2 nos (D-Quarry, H-Quarry) were proposed during the year 2018-19.	2 nos (D-Quarry, H-Quarry) were operational.	Nil
3b	Quantity of ROM mineral production proposed	100013 tonnes during the year 2018-19.	64866 tonnes during the year 2018-19.	less production due to developmental activities in lowerside during 2018-19.
3c	Recovery of sailable/usable mineral from ROM production	810000 tonnes	61724 tonnes	less production due to less development and less production of ROM.
3d	Quantity of mineral reject generation	1879 cum.	Nil	Due to less development and production of ROM.
3e	Grade of mineral rejects generation and threshold value declared.	+10%-25% Mn	+10%-25% Mn	Nil
3f	Quantity of sub grade mineral generation.	5726 cum. in 2018-19	12259 tonnes	Nil
3g	Grade of sub grade mineral generation	+10%-25% Mn	+10%-25% Mn	Nil
3h	Manual / Mechanised method adopted for segregating from ROM	Manual	Manual	Nil

3i	Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects.	1. Study on Mechanized processing of Manganese Ore 2. study for beneficiation of Low/ Sub Grade	Study done on Mechanized processing of Manganese Ore. study for beneficiation of Low/ Sub Grade Manganese Ore and Fines carried out by reduction roasting and magnetic separation.	Nil
3j	Provision of drilling and blasting in mineral benches	Deep hole Drilling blasting Depth of hole = 8 m +10% subgrade =8.8m Spacing= 3m Burden= 2.5 m Volume= 60 CuM Specific Gravity=2.5 Tonnage/Hole= 150 Tonnes Powder factor= 6.0 kg/Tonne	Deep hole Drilling blasting Depth of hole = 8 m +10% subgrade =8.8m Spacing= 3m Burden= 2.5 m Volume= 60 CuM Specific Gravity=2.5 Tonnage/Hole= 150 Tonnes Powder factor= 6.0 kg/Tonne	Nil
3k	Provision of mining machineries in mineral benches	Back Hoe: 6 nos. Dumper : 28, 25 tonnes Drill : 5	Back Hoe: 6 nos. Dumper : 24, 25 tonnes Drill : 1	Nil
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Bench height: 6- 8m	Bench height: 6- 8m	Nil
3m	Total area covered under excavation/pits	85.756 ha.	85.756 ha.	Nil
3n	Ore to OB ratio for the pit/mine during the year.	1:12.45 t/cu.m.	1:11.6 t/cu.m.	Nil

3o Total area put in use under different heads at the end of year

Area to be excavated: 85.756 ha,	Area excavated: 85.4330 ha,	Storage of topsoil: 0.25 ha,	Waste dump: 86.225ha,	Mineral Storage: 17.329 ha,	Infrastructure: 13.385 ha,	Roads: 20.14 ha,	Railways: 0 ha,	Greenbelt: 69.73 ha,	Tailing pond: 0 ha,	Effluent treatment plan: 0 ha,	Mineral separation plant: 0 ha,	Township area: 123.320 ha,	Area remaining untouched: 1021.907 ha
Storage of top soil: 0.45 ha,	Waste dump: 95.325ha,	Mineral storage: 35.477 ha,	Infrastructure : 38.008 ha,	Roads: 20.14 ha,	Railways: 0 ha	Greenbelt: 69.730 ha,	Tailing pond: 0 ha,	Effluent treatment plan: 0.131 ha	Mineral separation plan: 0 ha	Township area: 124.220ha,	Area remaining untouched: 966.617 ha.		

3p Production of ROM mineral during the last five year period as applicable

2014-15: 176471 MT	2014-15: 123299.077 MT	MT-Metric Tonne.
2015-16: 188235 MT	2015-16: 114585.335 MT	
2016-17: 200000 MT	2016-17: 93777.678 MT	
2017-18: 211765 MT	2017-18: 81854.524 MT	
2018-19: 100013 MT	2018-19: 64866.193 MT	

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

The mining operations are being done by opencast methods in two nos. of quarries.

Nil

### Solid Waste Management - Dumping:

Sl.No.	Item	Proposals	Actual work	Remarks
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4a	Separate dumping of topsoil, OB and mineral rejects (Rule 32,33)	Separate Dumps , OB and mineral reject has been proposed. top soil will be used for plantation.	Separate Dumps, OB and mineral reject has been maintained. top soil was used for plantation.	Nil
4b	Location of topsoil, OB and mineral reject dumps	D#1: 4636 E- 5282 E & 2768 N-1724 N D#8:3236E- 3898E & 1974N- 1360N D#11:3338E- 3605E & 1305N- 1007N D#5:5638E- 5852E& 3121 N-2961 N	D#1: 4636 E- 5282 E & 2768 N-1724 N D#8:3236E-3898E & 1974N- 1360N D#11:3338E-3605E & 1305N-1007N D#5:5638E-5852E& 3121 N-2961 N	Nil
4c	Number of dumps within lease area and outside of lease area	4 nos.	4 nos with in lease area.	Nil
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	Outside the ultimate pit limit.	Outside the ultimate pit limit.	Nil
4e	Number of active and alive dumps.	4 nos	3 nos	Nil
4f	Number of dead dumps.	Nil	Nil	Nil
4g	Number of dumps established.	3	3	Nil
4h	Whether Retaining wall or garland drain all along dumps are there.	Exists.	Exists.	Nil
4i	Length of Retaining wall or garland drain all along dumps	No fresh proposal.	Already exists.	Nil
4j	Number of settling ponds	One settling tank.	One settling tank.	Nil



4k	Specific comments of inspecting officer on waste dump management	waste dumping is being done in the designated sites.	Nil
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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.	Area not matured for reclamation	Area not matured for reclamation	Nil
5b	Area under backfilling of mined out area	Not applicable.	Nil	Nil
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	Top soil generated is proposed to be used for plantation.	top soil generated is being used for plantation.	Nil
5d	Total area fully reclaimed and rehabilitated	No area matured for reclamation & rehabilitation thereby not applicable.	Nil	Nil
5e	General remarks of inspecting officers on backfilling and reclamation etc.		Area not matured for reclamation and rehabilitation	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 return on PMCP for 2018-19 has been submitted, under rule 26(2) of MCDR, 2017.	Submitted.	Nil

6b	Area available for rehabilitation (ha) .	Nil	Nil	Nil
6c	afforestation done (ha).	1.5ha	2.39ha	Nil
6d	No. of saplings planted during the year	4412 nos. of saplings	During the period 2018-19, 24345 nos of saplings were planted.	Nil
6e	Cumulative no .of plants	No such proposal.	468938 nos of saplings planted.	Nil
6f	Any other method of rehabilitation	Not applicable.	Nil	Nil
6g	Cost incurred on watch and care during the year	Rs. 562500.00	Rs. 18,00,000.00	Nil
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling ( Lx B x D	Not applicable.	Nil	Nil
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	Not applicable.	Nil	Nil
6j	Compliance on reclamation and rehabilitation by backfilling (iii)Afforestation on on backfilled area	Not applicable.	Nil	Nil
6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	Not applicable.	Not applicable.	Nil

6l	Compliance on reclamation and rehabilitation by backfilling (v) any other specific means.	No area matured for reclamation.	No area matured for reclamation.	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)	Nil	Nil	Nil
6o	Compliance of rehabilitation of waste land within lease (iii) Method of rehabilitation	No waste land in the lease.	Not Applicable.	Nil
6p	Compliance of environmental monitoring (core zone and buffer zone)	Quarterly environmental monitoring in core zone & buffer zone.	Quarterly environmental monitoring in core zone & buffer zone is being done. Air, Water, Soil, Noise, Dust fall tests done in every quarter as per SPCB & CPCB guidelines)	Nil
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.			

#### Mineral Conservation:

Sl.No.	Item	Proposals	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	Grade wise sorting envisaged.	Grade wise sorting practised.	Nil

7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	Manual	Manual	Nil
7c	Different grade of mineral sorted out at mines.	Chemical Grade (Mn > 48% & Fe < 4%) ( +10 - 75mm, +6 - 25mm, -10mm ) High Grade (Mn > 46%) ( +10 - 75mm, +6 - 25mm, -10mm ) Low Grade (Mn > 25% & < 35%) ( +10 - 75mm, +6 - 25mm, -10mm )	Chemical Grade (Mn > 48% & Fe < 4%) ( +10 - 75mm, +6 - 25mm, -10mm ) High Grade (Mn > 46%) ( +10 - 75mm, +6 - 25mm, -10mm ) Medium Grade (Mn > 35% & Mn < 26%) ( +10 - 75mm, +6 - 25mm, -10mm ) Low Grade (Mn > 25% & < 35%) ( +10 - 75mm, +6 - 25mm, -10mm )	Nil
7d	Any beneficiation process at mines	Not applicable.	Nil	Nil
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues		Manual sorting of different grades of managanese ore is being done.	Nil

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**Environment:**

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	The topsoil generated is preserved and used for plantation purpose.	Generted top soil is used to support plantation.	Nil

8b	Concurrent use or storage of topsoil	The topsoil generated is preserved and used for plantation purpose.	Generated top soil is used to support plantation.	Nil
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	Separate Dumps for Overburden, subgrade/ Mineral rejects Proposed	Separate Dumps for Overburden, subgrade/ Mineral rejects are made.	Nil
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	Not applicable.	Nil	Nil
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	Phased restoration not proposed.	Not practised.	Nil
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	Plantation proposed in dumps: 1.5 ha (4412 nos)	Plantation carried out waste dump: 2.39 ha (24345 nos)	Nil
8g	Survival rate	90%	82%	Nil
8h	Water sprinkling on roads to control airborne dust	Haul roads are regularly sprinkled with the help of mobile water sprinklers.	Haul roads are regularly sprinkled with the help of mobile water sprinklers.	Nil

8i	General remarks of inspecting officer on aesthetic beauty in and around mines area	Plantation is carried out as proposed on the dump slopes.	Nil
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## Compliance of Rule 45:


Sl.No.	Item	Propasals	Actual work	Remarks
9a	Status of submission of Monthly and Annual returns	Monthly & Annual returns for the year 2018-19 were submitted to this office.	Submitted status is satisfactory.	Nil
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Graduate Mining engineer: 1, Geologist:1	Graduate Mining engineer: 1, Geologist:1	Nil
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	Pits: 22.832 ha, waste disposal: 21.323 ha, mineral storage: 10.813 ha, infrastructure: 0.3 ha, roads: 2.536ha.	Found to be in order.	Nil
9d	Scrutiny of Annual return on afforestation	15000 nos of saplings planted during 2018-19.	Found to be in order.	Nil
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	10032 tonnes (Mn>10%)	10032 tonnes (Mn>10%)	Nil
9f	Scrutiny of Annual return on ROM stock and/or graded ore	ROM manganese production: 66877.225 tonnes	ROM manganese production: 66877.225 tonnes	Nil

9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	Production cost: Rs 4416.15	Production cost: Rs 4416.15	Nil
9h	Scrutiny of Annual return on fixed assets	Fixed asset as Rs 88785124/- furnished in AR is Rs 88785124/-		Nil
9k	Scrutiny of Annual return on mining machineries	Back hoe: 2nos, dozer: 2 no, loader: 1no, drill: 1 no, dumper(30T & 25T): 18 nos, Water tanker-1	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 : Rule 35(2) violation letter issued

  
(SHRI G.C. SETHI)

Indian Bureau of Mines