INDIAN BUREAU OF MINES
MINES CONTROL AND CONSERVATION OF MINERAL DIVISION

MCDR INSPECTION REPORT

Bhubaneshwar regional office

Mine file No : ORI/MN/KJR/MCDR-2/BBS **Mine code : 40ORI08003**

(i) Name of the Inspecting Officer and ID No. : **25**) **SHRI IBRAHIM SARIF**

(ii) Designation : Assistant Controller Mine

(iii) Accompaning mine Official with Designation : R L Joshi Mines Manager

(iv) Date of Inspection : 21/04/2015

(v) Prev.inspection date : 22/07/2013

PART-I : GENERAL INFORMATION

1. (a) **Mine Name** : **BAMEBARI**

(b) Category : A Manual

(c) Type of Working : Opencast

(d) Postal address

State : ORISSA
District : KEONJHAR
Village : BAMEBARI
Taluka : CHAMPUA
Post office : BAMEBARI
Pin Code :
FAX No. : 06767-272027,272246
E-mail :
Phone : 06767-279208

(e) Police Station :

(f) First opening date : 01/03/1939

2. Address for correspondance : BAMEBARI MN MINES
VIL/PO-BAMEBARI
DIST-KEONJHAR,ORISSA-758034

3. (a) Lease Number : ORI0187
(b) Lease area : 464
(c) Period of lease : 20
(d) Date of Expiry : 31/03/2000

4. Mineral worked : MANGANESE ORE Main

5. Name and Address of the

Lessee : TATA IRON & STEEL CO. LTD.
TATA IRON & STEEL CO. OMQ,
NUAMUNDI JHARKHAND
SINGHBHUM (WEST) JHARKHAND
Phone:
FAX :

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

Agent : A.DIXIT
KEONJHAR ORISSA
Phone:
FAX :

Mining Engineer
Name : A.K.DUBEY,Full Time
Qualification : BE MINING
Appointment/ Termination date : 07/08/2002

Mining Engineer
Name : P.K.MISHRA,Full Time
Qualification : AMIE (MINING)
Appointment/ Termination date : 16/06/2001

Geologist
Name : RAJIV RANJAN,Full Time
Qualification : M.Sc (GEOLOGY)
Appointment/ Termination date : 16/06/2001

Geologist
Name : B.K.DAS,Full Time
Qualification : M.Sc (GEO)
Appointment/ Termination date : 05/08/2002

Manager
Name : S.SATPATHY
Qualification : DIPLOMA IN MINING ENGINEERING
Appointment/ Termination date : 01/04/2004

6. Date of approval of Mining Plan/Scheme of Mining : 26/03/2015

PART - II : TECHNICAL DETAILS/COMMENTS

1. Details about Average employment :

Maximum number of persons employed on any day during the year

Employment category	No.of employment	Av. yearly working days
DIRECT		
Managerial	2	308
Plant	7	
Supervisory	7	
Others	11	
Ministrial	4	
CONTRACT		
Others	123	
Supervisory	1	
Workers	208	

2. Community Development Plan (in and around the mines) : Proposed action and expenditure towords socio-economic development.

Action during the year	Expenditure in Rs. Lakhs for previous year		Expenditure in Rs. Lakhs for current year		Remarks
	Proposed	Incurred	Proposed	Incurred	
General					
Medical facility	12.20	0.00	1.60	10.05	
Water supply	26.00	9.48	28.12	25.52	
Sanitation	6.22	6.04	5.40	10.54	
Sub total	**44.42**	**15.52**	**35.12**	**46.11**	
Infrastructure					
Public transport	12.85	57.58	0.00	53.17	
Sub total	**12.85**	**57.58**	**15.52**	**53.17**	
Training	**21.00**	**33.46**	**0.00**	**18.06**	
Total	**78.27**	**126.16**	**15.52**	**117.34**	

3. Status of compliance of MCDR, 1988, including therewith the rectification of the outstanding violation of rules.

Outstanding violation of rule 13(1) of MCDR, 1988 was observed which was communicated to the party vide office letter dated 02.09.2013.
During current inspection violation of rule 13(1) and 27(4) of MCDR 1988 was pointed out to the party vide this office letter dated 08.05.2015. by violation cum show cause notice.

4. A note on the justification in case of suspension of mining operation under rule 13(2) or prohibition of deployment of any person under rule 56 of MCDR, 19888, if recommended.

Not recommended at present

5. Scientific Mining

Items	Proposal	Actual work done	Remarks
A. Exploration (Rule 13)			
a.Type of prospecting and exploration i.e. pitting, drilling	: Core BH -45 Nos. Meterage-1750 Mtr.	Core BH-22 Nos. Meterage-1109.95 Mtr.	
B. Working (Rule 13)			
a.Number and size of each pit (LxWxH)	: Bamebari : 830m X 523m X 80m Joribar : 480m X 400m X 108m Bonaikela ; 342m X 100m X 45m	Bamebari : 830m X 522m X 82m Joribar : 470m X 379m X 107m Bonaikela ; 180m X 70m X 38m	
b.Bench size(LxWxH)length can be defined as regular/irregular	: Irregular Length with 6 - 8m (min) width & 6 - 8m (max) height.	Irregular Length with 6 - 8m (min) width & 6 - 8m (max) height.	
c.Ore to waste ratio pit wise if possible otherwise for mine	: Bamebari : 1:18.4 Joribar : 1:9.2 Bonaikela : NA Avg. for Mine : 1:9.8	Bamebari : 1:16.67 Joribar : 1:0.92 Bonaikela : NA Avg. for Mine1 : 2.31	
d.Total area covered under excavation/pits	: 91.514 ha	91.514 Ha	
C. Waste disposal (Rule 13)			
a.Location of dumps	: Over the non-mineralised ground within lease hold.	Over the non-mineralised ground within lease hold.	
e.Yearly generation of waste quantity.	: 384923 CuM	149387 CuM	
b.Method of dumping whether advancing/retreat	: Retreating	Retreating	
c.Total area covered under waste dump.	: 50.883 ha	43.323 Ha	
d.No.and size of each waste dump with No of steps/lift/bench	: Bamebari Block: 700m X 250M X 55m - 4 Lifts Joribar Block: 676m X 375m X 46m - 3Lifts Bonaikela Block: 151m X 116m X 24m - 2 Lift	Bamebari Block: L-700m X B-250M X H-52m - 3 Lifts Joribar Block: L-700m X B-173m X H-41m - 3 Lifts L-195 X B-73m X H-25m -2 Lifts Bonaikela Block: L-151m X B-116m X H-24m - 1 Lift	
D. Production			

b.Year wise production of last five year.	:	Chem.Grade - 4812.279 MT High Grade - 12039.716 MT Med.Grade - 21520.843 MT Low Grade - 14125.722 MT Total - 52498.560 MT

D. Reserve

a.Reserve position as per latest MP/MS and at the time of inspection.	:	(2) Mn. Ore Reserve : As on 01.04.2015 Proved Mineral Reserve (111) - 975488MT Probable Mineral Reserve (121 & 122) - 0 MT Prefeasibility Minerals Resource (121& 122)- 310875 MT Indicated Mineral Resource (332) - 161690 MT Inferred Mineral Resource (333) - 500000 MT Total Mineral Resources - 1948053 MT

RESERVE POSITION AS ON 01/04/2015

MANGANESE ORE

Category	Quantity in Tonnes	Grade
Proved	975488	
Probable	0	
Possible	972565	
Total	1948053	

PRODUCTION FOR THE PREVIOUS YEAR 2014 - 2015

Mineral	Production	Unit
MANGANESE ORE	52498	TON

6. Conservation of Mineral - both quantitative and qualitative

Beneficiation (Rule 20 and 26)

Efforts for improving low grade and sub grade mineral.	:	The low grade ore are considered as production and are sold in both domestic markets.
Efforts for improving percentage of recovery of ore.	:	Manual screening of mineral rejects and fines generated during sorting & sizing is in practice to recover -6 +10mm and < 6mm sized Mn.Ore. The stacks are separately made and kept at stack yard as finished product.

Minearl Rule 15

Percentage of recovery of ore pitwise w.r.t. ROM and total material	:	Overall Avg. - 85% w.r.t. ROM & 16% of Total Excavation
Number of benches in ore and waste.	:	Area: Waste Ore Bamebari- 12 4 Joribar 12 4 Bonaikela 3 2

Sub/grd mineral/fines (Rule16)

Qty of yearly generation and total qty available during inspection with grade	:	About 24536 MT having Mn. Content > 15%.
Number and size of each stack	:	2 nos. (Max Size - 50m X 30m X 15m)
Location of stacking.	:	Within RML applied area
Separate stacking from waste	:	Stacking of sub-grade has been carried over waste dump yard in Bamebari block and in Joribar block
Total area covered for stacking	:	3.0 Ha

Exploration data as on 31/03/ 2015

No. of Boreholes	No. of Pits	No. of Trenches
821		

OVERBURDEN HANDLED DURING PREVIOUS YEAR 2014 - 2015

Overbuden/waste removed (in m3) : 386519

Utilisation of Sub Grade Mineral and Mineral Rejects

	Generated	Utilised	Stacked

(In Ton.)

7. Environment Management - both quantitative and qualitativ

A. Land environment

a. Landscape.	:	It is envisaged that, mining pits at Joribar and Bamebari Block will required lateral development to go deeper as well as new area will be utilized for extraction of manganese ore. Reclamation by back filling at Bamebari Block is continuing.
b. Aesthetic environment	:	Mining operations open ugly sights of excavations and large waste dumps at times visible from long distances. It is desirable to screen away such sights so that, the visible unpleasantness if the operations is not exposed to public. Well planned plantation with 417230 nos. of saplings over an area on 69.37 ha. of local forestry species has been done to improve the aesthetic value of the land.
c. Soil and land use pattern	:	82.38% of total lease area is forest land (382.269 Ha out of 464 Ha Lease area(surface area) utilization as at the end of the year(hectares) As on 01.04.2014 1 Already exploited & abandoned by opencast (O/C) mining 0 2 Covered under current (O/C) Working :90.591 3 Reclaimed/rehabilitated : 27.78 4 Used for waste disposal : 47.753 5 Occupied by plant, buildings, residential, welfare buildings & roads : 38.856 6 Mineral Storage : 10.390 7 Green Belt : 18.660
d. Agriculture	:	In the intermountain valleys and other areas, the crop land exists as small patches. The mining operation does not affect any agriculture land inside or outside the lease hold area. Private land covers over 16.994 ha. (3.66% of total RML applied area of 464 ha)
e. Forest(flora and fauna)	:	The forest area covered over 382.269 ha (Khesra Forest - 62.844 ha, Reserve Forest - 170.157 ha & DLC - 149.268 ha). The area consists of thin vegetation covered with different species of flora. Fauna like Langur, Jackal, Wolf, Jungle cat, Bat, Jungle owl Squirrels are found in the area. The impact of noise due to mining operation and blasting on wild life is inevitable. Presently controlled blasting technique is practiced by improving the blasting efficiency by reducing the blast induced noise.
f. Vegetation	:	The overall impact on vegetation is limited to the temporary deterioration of land due to mining and allied activities for which suitable reclamation scheme has been made besides compensatory afforestation for forest land. The bio-diversity closer to and away from mining areas does not show any significant deviations.
h. Public building, places	:	There are no protected monuments and historical

and monuments (protected, historical), placec of worship and places of tourist		monuments inside the core and buffer zone.

B Water environment.

a. Surface water	:	Major part of the area has dendritic drainage pattern. The hill ranges are drained by seasonal nallahs in all directions. A few seasonal streams flow through the lease. High flood level of Baitarani river and Suna nadi is much below the mining lease.
c. Quality of water	:	Potable
b. Ground water	:	No ground water table has been intersected during mining at existing pit depth. In order to ensure the quality of ground water, seasonal monitoring at nearby wells is being monitored and results are well within the permissible limits.

C. Air environment

a. Noise	:	The noise level is being monitored and no significant impact has been observed as of now. Existing control measures to preserve environment caused by noise pollution are; a) Mufflers and silencers are used in mining and earth moving equipments, b) Noise level from dumpers and other vehicles are kept low by avoiding travel in excess gradient. c) Maintenance schedules are adhered strictly. d) Operating personnel working near the machine are provided with ear plugs.
b. Air	:	The monitoring results show that, the mining activities has not created a significant impact on ambient air quality primarily due to medium scale operation and secondarily due to dense vegetation around the mining area.
c. Climatic condition	:	Sub tropical region. Summer is typically from March to mid June when temperature ranges from a maximum of 42.0°C during daytime to a minimum of 23.2°C at night. Winter is from December to February when the maximum temperature during day goes up to 20.7°C and minimum temperature at night becomes as low as 5.4°C.

D. Socio economic environment

b. Recommending health and safety.	:	The climate and vegetation along with the topography have made the area fairly inhospitable. Dense tropical forest, abundant stagnant water and humidity are conducive to giving rise to a number of diseases. However, Tata Steel Rural Development Society put the continuous effort towards awareness of people and rendering the medical support inside the core and buffer zone.
a. Social and demographic	:	The area has primarily forest, agriculture and fallow

profile. land. The people are mainly forest dwellers with agriculture as their main activity. Other than this, a large number of people are employed as labourers in the various mining companies.

c. Human settlement : Excluding the urban population the average settlement size is 501. 69% of the settlements have a population less than 501 while almost 92% of the settlements have less than 1000 inhabitants. The terrain and ecology do not permit larger settlements.

7.1 Comments on the steps taken by the lessee towards maintaining environment and monitoring of environmental parameters to ensure the qualitative improvement in the environment and ecology.

Water Management

Season	Station type	Station name	Parameter	Value	
				Actual	Excess

Air data for excess parameters

Season	Station name	Type of area	Parameter	Value	
				Actual	Excess

PLANTATION DURING THE PREVIOUS YEAR 2014 - 2015

Area in Hect.

TOP SOIL MANAGEMENT

Quantity as on 31/03/2015

8. Scrutiny of annual returns on cost of production, reserve, production, pit mouth value, stock, land use pattern and fixed assets.

2014-15
(1) Cost of operation (during 2014-15) : Rs 3235.73
(2) Mn. Ore Reserve : As on 01.04.2015

Proved Mineral Reserve (111) - 975488MT
Probable Mineral Reserve (121 & 122) - 0 MT
Prefeasibility Minerals Resource (121& 122)-310875 MT
Indicated Mineral Resource (332) - 161690 MT
Inferred Mineral Resource (333) - 500000 MT
Total Mineral Resources - 1948053 MT

(3) Production during 2014-15

Chem.Grade - 4812.279 MT
High Grade - 12039.716 MT
Med.Grade - 21520.843 MT
Low Grade - 14125.722 MT
Total - 52498.560 MT

(4) Pit's Mouth Value during 2014-15

Chem Grade - Rs. 3176.42/MT
High Grade - Rs. 3549.85/MT
Med.Grade - Rs. 3606.73/MT
Low Grade - Rs. 3440.10/MT

(5) Stock as on	As on 01.04.2015	As on 31.01.2016
Chem..Grade -	1.834 MT	555.964 MT
High Grade -	150.903 MT	1043.454 MT
Med.Grade -	9018.251 MT	8840.419 MT
Low Grade -	9201.536 MT	14091.609 MT
Total -	18372.524 MT	24536.108 MT

(6) Land use pattern : As on 01.04.2014

S.no.	Lease area(surface area) utilization as at the end of the year(hectares)
1	Covered under current (O/C) Working 90.591
2	Reclaimed/rehabilitated 27.78
4	Used for waste disposal 47.753
5	Occupied by plant, buildings, residential, welfare buildings & roads 38.856
6	Storage of Top Soil 0
7	Mineral Storage 10.390
8	Green Belt 18.660

(7) Fixed assets as on 01.04.2014:
Building (Industrial & residential : Rs. 189631.00
Plant, machinery including transport equipment : NIL

PART - III : PERFORMANCE OF MINE OWNER
(In case of lease expiring within 2 years - as per guidelines)

PART - IV : PROPOSALS FOR FURTHER ACTION FOR :

Indian Bureau of Mines (any issue related to CGPB, SGPB, Assistance, Consultancy, Annual Programme and studies, etc.)

None

State Government (Illegal mining, mining dispute, infrastructure, Mineral based industry, Mineral policy, etc.)

None

The Central Government (Infrastructure, Development, Mineral policy and Legislation, Mineral based industry, etc.)

None

Date :

(**SHRI IBRAHIM SARIF**)

Indian Bureau of Mines