INDIAN BUREAU OF MINES
MINES CONTROL AND CONSERVATION OF MINERAL DIVISION

MCDR INSPECTION REPORT

Bhubaneshwar regional office

Mine file No : ORI/MN/KJR/MCDR-8/BBS **Mine code : 40ORI08019**

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

(ii) Designation : Assistant Controller Mine

(iii) Accompaning mine Official with Designation : Shri Pankaj Kumar Mines Maqnager

(iv) Date of Inspection : 25/04/2015

(v) Prev.inspection date : 19/09/2013

PART-I : GENERAL INFORMATION

1. (a) **Mine Name** : **JODA WEST**

(b) Category : A Manual

(c) Type of Working : Opencast

(d) Postal address

State : ORISSA
District : KEONJHAR
Village : BICHAKUNDI
Taluka : CHAMPUA
Post office : BICHAKUNDI
Pin Code :
FAX No. : 916767-72010
E-mail :
Phone : 916767-72239

(e) Police Station :

(f) First opening date : 04/06/1935

2. Address for correspondance : JODA WEST MN MINE, M/S TISCO LTD
P.O.BICHHAKUNDI
DIST-KEONJHAR, ORISSA-758034

3. (a) Lease Number : ORI0056

(b) Lease area : 1437.72

(c) Period of lease : 20

(d) Date of Expiry : 16/01/2003

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 : MR SAMBHUNATH JHA
JODA WEST MN MINE KEONJHAR ORISSA
Phone: 09439118352
FAX :

Mining Engineer
Name : P.K.MISHRA,Full Time
Qualification : AMIE WITH F.C.C(REST)
Appointment/ Termination date :

Mining Engineer
Name : B.P.CHOURASIA,Full Time
Qualification : Dip in Mining Engg,1st class mining cert
Appointment/ Termination date :

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

Geologist
Name : S.ADHIKARI,Full Time
Qualification : M.Sc. Applied Geology
Appointment/ Termination date :

Geologist
Name : RAJEEV RANJAN,Full Time
Qualification : MSC GEOLOGY
Appointment/ Termination date : 16/06/2001

Manager
Name : P.K.MISHRA
Qualification : A.M.I.E MINING
Appointment/ Termination date : 16/06/2001

Manager
Name : S.PANDA
Qualification : DIP. IN MINING ENGG WITH F.C.C.(REST)
Appointment/ Termination date :

6. Date of approval of Mining Plan/Scheme of Mining : 17/02/2009

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	**3**	**307**
Plant	**11**	**307**
Supervisory	**8**	**307**
Ministrial	**9**	**307**
Others	**15**	**307**
CONTRACT		
Others	**231**	**307**
Plant	**5**	**307**
Workers	**432**	**307**
Supervisory	**14**	**307**
Ministrial	**1**	**307**

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					
Housing	20.00	13.50	11.00	14.00	
Water supply	6.05	6.04	0.00	6.04	
Health	2.40	2.00	2.40	2.20	
Sanitation	7.72	7.33	8.55	7.75	
Sub total	**36.17**	**28.87**	**21.95**	**29.99**	
Infrastructure					
Sub total			**28.87**		
Recreation		**5.00**			
Others	**3.49**	**5.00**	**3.40**	**3.40**	
Total	**39.66**	**31.95**	**32.27**	**33.39**	

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

There was no outstanding violations.
During current inspection violation of rules 13(1), 27(4) & 33(2) of MCDR 1988 was pointed to the party vide office letter dated 01.09.2015.

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 Bore holes- 20 nos. Rc bore holes - 30 nos	COre bore holes - 44 nos, 1105.9 mtrs	
B. Working (Rule 13)			
b.Bench size(LxWxH)length can be defined as regular/irregular	: Height 6 to 8 meters Width 10 meters	Height 6 to 8 meters Width 10 meters	
c.Ore to waste ratio pit wise if possible otherwise for mine	: D' Quarry (Incl. Extension) - 1 : 6.94 H' Quarry (New & Old) - 1 : 9.45 Gangaigora Quarry - No Excavation Sankhaiburu Quarry - No Excavation I' Quarry - No Excavation Total (Avg.) - 8.04	D' Quarry (Incl. Extension) - 1 : 6.99 H' Quarry (New & Old) - 1 : 5.55 Gangaigora Quarry - No Excavation Sankhaiburu Quarry - No Excavation I' Quarry - No Excavation Total (Avg.) - 1 : 6.32	
a.Number and size of each pit (LxWxH)	: D' Quarry - 590m X 508m X 63m D' Quarry (Extn) - 296m X 228m X 45m H' Quarry - 390m X 360m X 72m Old H' Quarry - 335m X 281m X 66m Gangaigora Quarry - 234m X 222m X 28m Sankhaiburu Quarry - 247m X 14	D' Quarry- 590m X 493m X 63m D' Quarry (Extn) - 245m X 228m X 44m H ' Quarry - 385m X 341 X 72m Old H' Quarry - 325m X 264m X 64m Gangaigora Quarry - No Excavation during year Sankhaiburu Quarry - No Excavation during year I' Quarry - No Excavation during year	
d.Total area covered under excavation/pits	: 89.64 Ha	84.302 Ha	
C. Waste disposal (Rule 13)			
a.Location of dumps	: Non Mineralised	Non mineralised area	

		area	
b.Method of dumping whether advancing/retreat	:	98.46 Ha	76.616
d.No.and size of each waste dump with No of steps/lift/bench	:	D#1 - 8 Lift (10m. max each) 1000m X 700m X 74 m D#8 8 Lift (10m. max each) 712m X 532m X 89 m D#11 3 Lift (10m. max each) 285m X 182m X 25 m	D#1 - 7 Lift (11m. max each) 974m X 461m X 74 m D#8 8 Lift (10m. max each) 517m X 434m X 76 m D#11 3 Lift (10m. max each) 185m X 126m X 23m
e.Yearly generation of waste quantity.	:	1419412 CuM	779755 CuM

D. Reserve

a.Reserve position as per latest MP/MS and at the time of inspection.	:	Proved probable possible

RESERVE POSITION AS ON 01/04/2015

MANGANESE ORE

Category	Quantity in Tonnes	Grade
Proved	1306177	+35% Mn
Probable	305000	+35% Mn
Possible	316000	+10% Mn
Total	1927177	+10% Mn

PRODUCTION FOR THE PREVIOUS YEAR 2014 - 2015

Mineral	Production	Unit

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 partly sold in domestic markets. The sub-grade ore a in the course of mining is stored separately for future use.
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 & 15% of Total Excavation
Number of benches in ore and waste.	:	Ore- 6 Waste - 9

Sub/grd mineral/fines (Rule16)

Qty of yearly generation and total qty available during inspection with grade	:	Sub grade Ore: 479348 CuM having Mn. Content < 25%. Mineral reject : 238602 CuM (fines ore)
Number and size of each stack	:	Dump#7a = 290m X 155m X 28m Dump#7b = 195m X 121m X 16m Dump#7c = 263m X 170m X 12m Dump#7d = 212m X 109m X 10m
Location of stacking.	:	within 1.5 KM from quarries
Separate stacking from waste	:	Yes
Total area covered for stacking	:	34.04 ha

Exploration data as on 31/03/ 2015

No. of Boreholes	No. of Pits	No. of Trenches
863		

OVERBURDEN HANDLED DURING PREVIOUS YEAR 2014 - 2015

Overbuden/waste removed (in m3) : 779755

Utilisation of Sub Grade Mineral and Mineral Rejects

	Generated	Utilised	Stacked
(In Ton.)			

7. Environment Management - both quantitative and qualitativ

A. Land environment

b. Aesthetic environment	:	Well planned plantation with 371224 nos. of saplings over an area on 25.987 ha. of local forestry species over inactive dump slopes and exhausted pits has been done to improve the aesthetic value of the land. In addition to this, 707859 nos. of saplings has been planted over 198.563 ha. of non-mineralised and vacant area till Sept'2014.
c. Soil and land use pattern	:	81.20 % of total lease area is forest land (1167.313 ha out 1437.719 ha.). All fig in Ha.) Covered under current (O/C) Working : 82.678 Reclaimed/rehabilitated : 24.68 Used for waste disposal : 74.316 Occupied by plant,buildings,residential,welfare buildings & roads : 156.12 Used for any other purpose (specify) a) Storage of Top Soil : :1.0 a) Mineral Storage : 32.24 b) Green Belt : 70.43
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 90.797 ha. (6.31% of total lease area)
e. Forest(flora and fauna)	:	: The forest area covered over 1167.313 ha (Khesra Forest - 40.698 ha, Reserve Forest - 505.392 ha & DLC - 621.223 ha). The area consists of 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. With the passage of time, controlled blasting technique is being practiced by improving the blasting efficiency by reducing
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 and monuments (protected, historical), placec of	:	There are no protected monuments and historical monuments inside the core and buffer zone.

worship and places of tourist

B Water environment.

a. Surface water	:	The natural drainage system is distinct due to hilly topography in most part of the study circle. Baitarani River flowing at a distance of about 3.5 km on eastern side of the Joda West lease forms the major drainage system of the area. Kundra nala originating from a little distance beyond the Southern hilly region flows adjacent to the Western and Northern boundary of Joda West lease. Major part of the area has dendritic drainage pattern.
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. Quality of water	:	Regular monitoring of water is benng carried out and are within permissible limit.

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	:	Regular monitoring is being carried and are within permissible limit.
c. Climatic condition	:	The core area lies in tropical region having an extreme climate. The winter temperatures of the study area indicate that it is in the sub-tropical region. Summer is typically from March to mid June when temperature ranges from a maximum of 44°C during daytime to a minimum of 23°C at night. Winter is from December to February when the maximum temperature during day goes up to 29°C and minimum temperature at night becomes as low as 4°C.

D. Socio economic environment

a. Social and demographic profile.	:	The area has primarily forest and fallow land. Most of the smaller villages and hamlets consist of a single tribe or caste population. The local tribes are Munda, Savara, Santhal, Ho, Oroan, Kahala, Dhibar, Naik, Patra, Sohri, Manjhi, Gopa, Korwa, Mahakut, Doon.

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.

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.

c. Human settlement : Population within the core and buffer zone is little less than 1 lakh. . 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.

d. Recreational facility. : Free housing, electricity, water, Tata Sky facility, conveyance allowance, school bus to Joda, medical facilities, LTC, bonus and other hosts of welfare facilities are being provided to the workers and other employees.

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.

Within lease area			Outside lease area		
Area	Trees planted	Survival rate	Area	Trees planted	Survival rate
3.2	29125	70	0	0	0

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.

(1) Cost of operation (during 2013-14) : Rs. 2794.58
(2) Mn. Ore Reserve : As on 01.04.2014
Proved Mineral Reserve (111) - 1306177 MT
Probable Mineral Reserve (121 & 122) - 305000 MT
Indicated Mineral Resource (332) - Nil
Inferred Mineral Resource (333) - 316000 MT
Total Mineral Resources - 1927177 MT

(3) Production during 2013-14 :
Chem.Grade - 12659.627 MT
High Grade - 23565.829 MT
Med.Grade - 57054.377MT

Low Grade - 46666.144 MT

Total - 139945.977 MT

(4) Pit's Mouth Value during 2012-13 :
Chem Grade - Rs. 2806.34/MT
High Grade - Rs. 2871.25/MT
Med.Grade - Rs. 2788.37/MT
Low Grade - Rs. 4505.56/MT

(5) Stock as on 01.04.2014	as on 01.04.2015
Chem..Grade - 905.564 MT	5.063 MT
High Grade - 1051.607 MT	584.516 MT
Med.Grade - 4484.765 MT	19050.544 MT
Low Grade - 4168.967 MT	26454.073 MT
Total - 10610.903 MT	46094.196 MT

(6) Land use pattern
Covered under current (O/C) Working : 82.678
Reclaimed/rehabilitated : 24.68
Used for waste disposal : 74.316
Occupied by plant,buildings,residential,welfare buildings & roads : 156.12
Used for any other purpose (specify)
a) Storage of Top Soil : 1
b) Mineral Storage : 32.24
c) Green Belt : 70.43
(7)Fixed assets as on 01.04.2014 :
Land : Rs. Rs.285654.00
Building (Industrial & Residential) : Rs. 9761473
Total : Rs. 10047127

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