

**INDIAN BUREAU OF MINES
MINES CONTROL AND CONSERVATION OF MINERAL DIVISION**

MCDR INSPECTION REPORT

Bhubaneshwar regional office

Mine file No : ORI/MN/KJR/MCDR-21/BBS

Mine code : 40ORI08033

- (i) Name of the Inspecting : **DEY**) **NARENDRA MOHAN DEY**
Officer and ID No.
- (ii) Designation : Assistant Mining Engineer
- (iii) Accompanying mine : S/SHRI S N JHA, AGENT, R L JOSHI, MINES MANAGER, L SH
Official with
Designation
- (iv) Date of Inspection : 04/11/2015
- (v) Prev.inspection date : 14/01/2014

PART-I : GENERAL INFORMATION

1. (a) **Mine Name** : **TIRINGPAHAR**
- (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. :
- E-mail :
- Phone : 06767 279208
- (e) Police Station :
- (f) First opening date : 08/02/1972
2. Address for : VILL&PO: BAMEBARI
correspondance DIST: KEONJHAR,ORISSA
PIN:758030
3. (a) Lease Number : ORI0186
- (b) Lease area : 169
- (c) Period of lease : 20
- (d) Date of Expiry : 28/02/2000
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 : TISCO
 24,HOMI MODY STREET FORT
 MUMBAI-1 GREATER BOMBAY
 MAHARASHTRA
 Phone:
 FAX :

Agent : P.C.SAHOO
 C/O MONMORA MN MINES M/S
 TISCO LTD P.O.JODA KEONJHAR
 ORISSA
 Phone: 06767-72289
 FAX :

Mining Engineer

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

Mining Engineer

Name : S.S. MISHRA,Full Time
 Qualification : A.M.I.E
 Appointment/ : 24/10/2002
 Termination date

Mining Engineer

Name : P.K.MISHRA,Full Time
 Qualification : A.M.I.E (MINING) 1ST CLASS CERTIFICATE
 Appointment/ :
 Termination date

Geologist

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

Geologist

Name : RAJIV RANJAN,Full Time
 Qualification : DEGREE IN GEOLOGY
 Appointment/ :
 Termination date

Manager Name : S.SATPATHY Qualification : DIPLOMA IN MINING ENGINEERING Appointment/ : 01/04/2004 Termination date
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6. Date of approval of Mining : 29/04/2015
 Plan/Scheme of Mining

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	1	38
Supervisory	3	38
Others	3	307
Ministrial	1	38
CONTRACT		
Workers	285	38

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

Action during the year	Expenditure in Rs. Lakhs for				Remarks
	previous year		current year		
	Proposed	Incurred	Proposed	Incurred	
General					
Sanitation	6.22	6.04	7.04	2.30	CLEANING, DRAIN
Health	15.12	13.51	15.84	4.60	MOBILE HEALTH SE
Water supply	35.00	33.27	14.99	8.57	WATER SUPPLY BY
Sub total	56.34	52.82	37.87	15.47	
Infrastructure					
Roads	12.85	16.25	11.50	11.66	CONSTRUCTION ROA
Sub total	12.85	16.25	52.82	11.66	
Sports activities	31.14	1.50	28.84	1.00	FOR PALSA KA CLU
Training	21.00	70.00	17.60	10.50	CONSTRUCTION OF
Others	0.00	21.05	0.00	0.00	DESILTING OF PON
Total	121.33	146.67	110.76	38.63	

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

THERE IS NO OUTSTANDING VIOLATION AND DURING CURRENT INSPECTION NO VIOLATION IS OBSERVED.

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.

5. Scientific Mining

Items	Proposal	Actual work done	Remarks
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A. Exploration (Rule 13)

a.Type of prospecting : and exploration i.e. pitting, drilling	2014-15 : 15 NUMBER CORE BH 750 MTR 2015-16: 10 NUMBER CORE BH 500 MTR	2014-15 : NIL 2015-16 : NIL UPTO DATE OF INSPECTION	MINING OPERATION WAS DISCONTINUED FROM 17.05.2014 TO 22.05.2015.
b.Total area covered :		TOTAL LEASE AREA 169 HA HAS ALREADY BEEN EXPLORED AS PER UNFC NORMS IS AS FOLLOWS: UNDER G1 LEVEL 41.24 HA NO.OF BH DRILLED 325 UNDER G2 LEVEL 20.34 HA NO. OF BH DRILLED 9 UNDER G3 / G4 LEVEL 77.29 HA EXPLORED AND FOUND NON- MINERALISED G1 LEVEL 10.43 HA BH DRILLED 76 NUMBER. G2 LEVEL: 19.70 HA BH DRILLED 41 NUMBER UNEXPLORED LEASE AREA : NIL	ADDL EXPLORATION REQUIRED FOR UPGRADING RESOURCES , FOR THIS FOREST CLEARANCE IS REQUIRED.

B. Working (Rule 13)

a.Number and size of : each pit (LxWxH)		TWO GURUDA BLOCK A : 505 M X 418 M X 85 M GURUDA BLOCK B : 515 M X 239 M X 51 M	MINING OPERATION WAS DISCONTINUED FROM 17.05.2014 TO 22.05.2015
b.Bench : size(LxWxH)length can be defined as regular/irregular		IRREGULAR LENGTH WITH 6 M HEIGHT AND 8 M WIDTH	
c.Ore to waste ratio : pit wise if possible otherwise for mine	GURUDA BLOCK A 1: 6 GURUDA BLOCK B 1: 5.27 TOTAL 1: 5.74	GURUDA BLOCK A 1:1.77 GURUDA BLOCK B 1: 2.50 TOTAL 1:2.01	MINING OPERATION WAS DISCONTINUED FROM 17.05.2014 TO 22.05.2015.
d.Total area covered : under excavation/pits		29.210 HA	

C. Waste disposal (Rule 13)

a.Location of dumps :		NON-MINERALISED AREA	
e.Yearly generation of waste quantity.	574000 CUM	44122 CUM	MINING OPERATION WAS DISCONTINUED FROM 17.05.2014

TO 22.05.2015.

b.Method of dumping : RETREATING RETREATING
 whether
 advancing/retreat

c.Total area covered : 26.181 HA 17.293 HA
 under waste dump.

d.No.and size of each : GURUDA BLOCK A : GURUDA BLOCK A : 473 M X
 waste dump with No of 490 M X 324 M X 86 320 M X 86 M WITH 8 LIFT
 steps/lift/bench M WITH 8 LIFT GURUDA BLOCK B: 503 M X
 GURUDA BLOCK A : 482 M X 46 M WITH 5 LIFT
 490 M X 324 M X 86
 M WITH 8 LIFT
 GURUDA BLOCK B:
 504 M X 482 M X 46
 M WITH 4 LIFT

D. Production

b.Year wise : 2014-15 : 85000 MT 2014-15: 18623 MT MINING
 production of last 2015-16: 85000 MT 2015-16: 16195 MT (UPTO OPERATION WAS
 five year. DATE OF INSPECTION DISCONTINUED
 i.e.04.11.2015) FROM 17.05.2014
 TO 22.05.2015.

D. Reserve

a.Reserve position as : RESERVE POSITION AS ON
 per latest MP/MS and 01.11.2014 AS PER LATEST
 at the time of SCHEME OF MINING
 inspection. APPROVED ON 29.04.2015
 IS AS FOLLOWS:
 AS PER UNFC 111 : 0.763
 MILLION TONNES
 MANGANESE > 25%
 AS PER UNFC 121 & 122:
 0.003 MILLION TONNE MN >
 25%
 AS PER UNFC 221 & 222 :
 0.531 MILLION TONNES MN
 > 25%
 AS PER UNFC 331, 332 &
 333 : 0.81 MILLION TONNE
 IRON ORE HAVING FE >
 58%

RESERVE POSITION AS ON 01/04/2015**MANGANESE ORE**

Category	Quantity in Tonnes	Grade
Proved	762615	MN > 25% AS PER UNFC 111
Probable	3350	AS PER UNFC 121 & 122 HAVING GRADE MN > 25%
Possible	531000	AS PER UNFC 221 & 222 HAVING GRADE MN >25%
Total	1296965	

PRODUCTION FOR THE PREVIOUS YEAR 2014 - 2015

		Unit
Mineral	MANGANESE ORE 18622.97 Production	TON

6. Conservation of Mineral - both quantitative and qualitative**Beneficiation (Rule 20 and 26)**

- Efforts for improving low grade and sub grade mineral. : THE SUB-GRADE ORE IN THE COURSE OF MINING IS STORED SEPARATELY FOR FUTURE USE. THE LOW GRADE ORE ARE CONSIDERED AS PRODUCTION AND ARE SOLD IN DOMESTIC MARKETS.
- Efforts for improving percentage of recovery of ore. : MANUAL SCREENING OF MINERAL REJECTS AND FINES GENERATED DURING SORTING AND SIZING IS IN PRACTICE TO RECOVER -6 +10 MM AND <6 MM SIZED MN ORE. THE STACKS ARE SEPARATELY MADE AND KEPT AT STACK YARD AS FINISHED PRODUCT.

Mineral Rule 15

- Percentage of recovery of ore pitwise w.r.t. ROM and total material : OVERALL AVERAGE : 86.40% WITH REFERENCE TO THE ROM AND 14.01% OF TOTAL EXCAVATION
- Number of benches in ore and waste. : NUMBER OF BENCHES IN ORE: 8 AND IN WASTE 12.

Sub/grade mineral/fines (Rule 16)

- Qty of yearly generation and total qty available during inspection with grade : 46681 CUM HAVING MN CONTENT <25%
- Number and size of each stack : GURUDA BLOCK A : 130 M X 30 M X 14 M
GURUDA BLOCK B: 65 M X 58 M X 10 M
- Location of stacking. : WITH IN ONE KM FROM THE QUARRY
- Separate stacking from waste : THE SUB-GRADE MINERAL IS BEING STACKED SEPARATELY FROM WASTE
- Total area covered for stacking : 0.75 HA

Exploration data as on 31/03/ 2015

No. of Boreholes	No. of Pits	No. of Trenches
451		

OVERBURDEN HANDLED DURING PREVIOUS YEAR 2014 - 2015

Overburden/waste removed (in m3) :	44122
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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. : UNDULATED AND HILLY
- b. Aesthetic environment : WELL PLANNED PLANTATION WITH 147399 NOS OF SAPLINGS OF LOCAL SPECIES OVER AN AREA OF 38.2 HA HAS BEEN DONE TO IMPROVE THE AESTHETIC VALUE OF THE LAND
- c. Soil and land use pattern : 40.77 % OF TOTAL LEASE AREA IS FOREST LAND 68.914 HA FOREST AND 100.086 HA NON-FOREST.
- d. Agriculture : THERE IS NO LAND USED FOR AGRICULTURE PURPOSE WITHIN LEASE AREA.
- e. Forest(flora and fauna) : THE AREA CONSISTS OF THIN VEGETATION COVERED WITH DIFFERENT SPECIES OF FLORA. FAUNA LIKE LANGUR, JACKEL, WOLF, JUNGLE CAT, BAT, JUNGLE OWL & AQUIRELS ETC ARE FOUND IN THE AREA.
- f. Vegetation : THE OVERALL IMPACT ON VEGETATION HAS LIMITED DETERIORATION OF LAND DUE TO MINING AND ALLIED ACVTIVITIES FOR WHICH SUITABLE RECLAMATION SCHEME HAS BEEN MADE BESIDES COMPENSATORY AFFORESTATION FOR FOREST LAND.
- h. Public building, places and monuments (protected, historical), place of worship and places of tourist : NO SUCH MONUMENTS ETC EXCEPT ONE TEMPLE IS LOCATED NEAR THE COLONY AT AN AERIAL DISTANCE OF NEARLY 1 KM FROM THE ACTIVE MINING AREA.

B Water environment.

- a. Surface water : THE HILL RANGES ARE DRAINED BY SEASONAL NALLAHAS IN ALL DIRECTIONS. A FEW SEASONAL STREAMS FLOW THROUGH THE LEASE. HIGH FLOOD LEVEL OF BAITARANI RIVER FLOWING AT A DISTANCE OF ABOUT 4.5 KM ON THE EASTERN SIDE OF LEASE AND SONA RIVER FLOWING AT A DISTANCE OF ABOUT 6.6 KM ON THE NE OF THE LEASE , IS MUCH BELOW THE MINING LEASE..
- b. Ground water : THE GROUND WATER OCCURS UNDER UNCONFINED TO SEMI-CONFINED CONDITIONS. THE AREA RECEIVES RECHARGES MAINLY FROM PRECIPITATION AND SURFACE SOURCES . SUBSURFACE AND SURFACE DRAINAGE IS CONTROLLED BY BAITARANI RIVER AND SONA RIVER OR KUNDRA NALA.
- c. Quality of water : SAMPLES WERE DRAWN FROM KUNDRA NALA NEAR TIRINGPAHAR BLOCK . THE AVERAGE RESULT FOR LAST 6 MONTHS IS ENCLOSED AS ANNEXURE.

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 :
 1. MUFFLERS AND SILENCERS ARE USED IN MINING AND EARTH MOVING EQUIPMENTS.
 2. NOISE LEVEL FROM DUMPERS AND OTHER VEHICLES ARE KEPT LOW BY AVOIDING TRAVEL IN EXCESS GRADIENT.
 3. MAINTENANCE SCHEDULES ARE ADHERED STRICTLY.

4. OPERATING PERSONNEL WORKING NEAR THE MACHINE ARE PROVIDED WITH EAR PLUGS.NOISE MONITORING ARE ENC
- 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 SECONCARILY DUE TO DENSE VEGETATION AROUND THE MINING AREA. THE AMBIENT AIR QUALITY FOR LAST 6 MONTHS IS ENCLOSED AS ANNEXURE IV.
 - c. Climatic condition : SUMMER IS FROM MARCH TO JUNE TEMPERATURE MAXIMUM 42 DEGREE DURING DAY TIME TO A MINIMUM OF 23 DEGREE AT NIGHT.
WINTER IS FROM DECEMBER TO FEBRUARY TEMPERATURE MAXIMUM 20 DEGREE DURING DAY TIME TO A MINIMUM OF 5 DEGREE AT NIGHT.

D. Socio economic environment

- a. Social and demographic profile. : 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. : DENSE TROPICAL FOREST, ABUNDANT STAGNANT WATER, HUMIDITY AND TOPOGRAPHY ARE CONDUCIVE TO GIVING RISE TO A NUMBER OF DISEASES.HOWEVER TSRDS (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 IN THE AREA IS LITTLE LESS THAN 1 LAKH. THE TERRAIN AND ECOLOGY DO NOT PERMIT LARGER SETTLEMENTS. AVERAGE SETTLEMENT SIZE IS 501 POPULATION.
- d. Recreational facility. : FREE HOUSING, ELECTICITY WATER, TATA SKY FACILITY , CONVEYANCE ALLOWANCE, SCHOOL BUS TO NEAREST TOWN JODA, MEDICAL FACILITY, LTC, BONUS AND OTHER HOSTS OF WELFARE FACILITIES ARE BEING PROVIDED TO THE WORKERS AND OTHER EMPLOYEES OF THE MINE.

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.

<u>Water Management</u>					
Season	Station type	Station name	Parameter	Value	
				Actual	Excess

<u>Air data for excess parameters</u>					
Season	Station name	Type of area	Parameter	Value	
				Actual	Excess

<u>PLANTATION DURING THE PREVIOUS YEAR</u>	<u>2014 - 2015</u>
	Area in Hect.

<u>TOP SOIL MANAGEMENT</u>
Quantity as on 31/03/2015
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8. Scrutiny of annual returns on cost of production, reserve, production, pit mouth value, stock, land use pattern and fixed assets.

ANNUAL RETURN FOR THE YEAR 2014-15 HAS BEEN RECEIVED AND SCRUTINISED.

COST OF OPERATION : Rs.2479.02 /-.

PRODUCTION : 18622.97 MT

CHEMICAL GRADE ;2890.806 MT PIT MOUTH VALUE: Rs.2514.17 /-

HIGH GRADE : 472.172 MT PIT MOUTH VALUE: Rs. 2442.63 /-

MEDIUM GRADE : 3098.756 MT PIT MOUTH VALUE Rs.2514.17 /-

LOW GRADE : 12161.236 MT PIT MOUTH VALUE Rs 2482.05 /-

TOTAL : 18622.97 MT

LAND USE PATTERN:

COVERED UNDER CURRENT O/C WORKING : 29.210 HA, RECLAIMED / REHABILITATED: 11.548 HA

USED FOR WASTE DISPOSAL : 17.293 HA, OCCUPIED BY PLANT, BUILDING, RESIDENTIAL ROAD

ETC : 2.100 HA, MINERAL STORAGE : 4.200 HA AND GREEN BELT : 2.000 HA

FIXED ASSETS COMBINED WITH OTHER MANGANESE MINES UNDER SAME MANAGEMENT CONTROL.

PART - III : PERFORMANCE OF MINE OWNER

(In case of lease expiring within 2 years - as per guidelines)

a. Compliance of terms and conditions of lease deed.

PERIOD OF LEASE DEED WAS VALID FROM 01.03.1980 TO 29.02.2000.

GOVT. OF ODISHA HAS DECIDED TO EXTEND THE VALIDITY PERIOD OF THE LEASE UPTO 31.03.2030.AND SUPPLEMENTARY LEASEDEED HAS BEEN EXECUTED ON 08.05.2015.

b. Compliance of the provisions of MCDR, 88 and advise given.

DURING CURRENT INSPECTION NO VIOLATION IS OBSERVED.

PART - IV : PROPOSALS FOR FURTHER ACTION FOR :

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

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

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

Date :

(NARENDRA MOHAN DEY)

Indian Bureau of Mines