

**INDIAN BUREAU OF MINES
MINERALS DEVELOPEMMENT AND REGULATION DIVISION**

MCDR INSPECTION REPORT

Bhubaneshwar regional office

Mine file No : ORI/IRON/SNG/MCDR-11/BBS

Mine code : 30ORI13035

- (i) Name of the Inspecting : **RAM**) **RAMKISHAN R**
Officer and ID No.
- (ii) Designation : Sr. Asst. Contrl. Mines
- (iii) Accompanying mine : Shri T.D.Behera, Mine Manager
Official with
Designation
- (iv) Date of Inspection : 24/10/2018
- (v) Prev.inspection date : 11/09/2017

PART-I : GENERAL INFORMATION

1. (a) **Mine Name** : **RAIKELA & TANTRA**
- (b) **Registration NO.** : **IBM/4124/2011**
- (c) Category : A Other than Fully Mech.
- (d) Type of Working : Opencast
- (e) Postal address
- State : ORISSA
- District : SUNDARGARH
- Village : RAIKELA
- Taluka : BONAI
- Post office : DENGULA
- Pin Code : 770048
- FAX No. : 06767-275621
- E-mail : penguinbbl@gmail.com
- Phone : 06767-275621
- (f) Police Station : Koira
- (g) First opening date : 01/08/1991
- (h) Weekly day of rest : SAT
2. Address for : PO.DENGULA
correspondance VILL: RAIKELA
VIA.KOIRA,TQ.BONAI,DIS.SUNDERGARH,PIN.770048
3. (a) Lease Number : ORI0725
- (b) Lease area : 49.37
- (c) Period of lease : 30
- (d) Date of Expiry : 02/12/2036
4. Mineral worked : IRON ORE Main

5. Name and Address of the

Lessee : PENGUIN TRADING & AGENCIES LTD.
 PENGUIN TRADING AGENCIES
 CHATTERJEE INTER NATIONAL
 18 FLOOR33AJ.N.ROAD KOLKATA
 WEST BENGAL
 Phone:033-2267866
 FAX :

Owner : PENGUIN TRADING AGENCIES
 CHATTERJEE INTERNATIONAL
 18TH FLOOR,33A JAWAHARLAL
 NEHRU ROAD KOLKATA WEST
 BENGAL
 Phone: 033-2267866
 FAX : 033-2267866

Agent : S.K.GUPTA
 C/O RAIKELA TANTA IRON MINE
 , M/S PT&A LTD KEONJHAR
 ORISSA
 Phone: 06767 75621
 FAX : 06767 75621

Mining Engineer

Name : K. K. Sahoo,Full Time
 Qualification : AMIE
 Appointment/ : 01/10/2003
 Termination date

Geologist

Name : A K SETHI,Full Time
 Qualification : MSC (GEOLOGY)
 Appointment/ : 14/08/2014
 Termination date

Manager

Name : T. D. Behra
 Qualification : BE (MINING)
 Appointment/ : 14/08/2013
 Termination date

6. Date of approval of Mining	:	Mining Scheme rule 12 MCDR1988	08/02/2002
Plan/Scheme of Mining	:	Renewal under rule 24 MCR1960	28/04/2006
	:	Modif.of approved Mining Plan	22/12/2009
	:	Modif.of approved Mining Plan	28/09/2010
	:	Mining Scheme rule 12 MCDR1988	17/03/2011
	:	Modif.approved Mining Scheme	13/06/2012
	:	Modif.approved Mining Scheme	17/10/2014
	:	Mining Scheme rule 12 MCDR1988	30/12/2015
	:	MP modif under 17(3) MCR 2016	18/10/2017

PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	No proposal.	Nil	Nil
1b	Exploration over lease area for geological axis 1 or 2	No proposal of exploration.	Nil	Nil
1c	Exploration Agencies and Expenditure in lakh rupees during the year	No proposal.	Nil	Nil
1d	Balance area to be explored to bring Geological axis in 1 or 2	49.372 ha explored under G1 level of exploration.	49.372 ha explored under G1 level of exploration.	Nil
1e	Balance reserve as on 01/04/20	As per the approved document on 18.10.2017 the iron ore reserves are 111: 18.267 million tonnes and resorces are 211: 2.450 million tonnes.	Due to depletion over period of time the reserves as on 01.04.2018 are 111: 17.4 million tonnes and resources are 211: 2.45 million tonnes.	Nil
1f	General remarks of inspecting officers on geology, exploration etc	No comments to offer.	Entire area has been explored under G1 level.	Nil

Development :

Sl.No.	Item	Proposals	Actual work	Remarks
2a	Location of development w.r.t.lease area	Raikela quarry and Tantra quarry between setion lines C-C' and F-F'	Development work is carried out in Raikela and Tantra quarry between setion lines C' and F-F'.	Nil

2b	Separate benches in topsoil, overburden and minerals (Rule 15)	No generation of top soil is proposed and separate benches in OB and mineral are proposed.	no top soil is produced during the period and separate benches in OB and mineral are maintained.	Nil
2c	Stripping ratio or ore to OB ratio	1: 0.4 t/cu.m.	1: 0.26 t/cu.m.	The reason for deviation is due to the change in recovery percentage of waste, mineral reject in time series data for which lesse has modified the mining plan which was approved on 17.01.2019.
2d	Quantity of topsoil generation in m3	No proposal.	Nil	Nil
2e	Quantity of overburden generation in m3	442309 cu.m. for the year 2017-18.	224400 cu.m.	The reason for deviation is due to the change in recovery percentage of waste, mineral reject in time series data for which lesse has modified the mining plan which was approved on 17.01.2019.
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc	No comments to offer.	development is concentrated in two quarry i.e Tantra quarry and Raikela quarry.	Nil

Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
3a	Number of pit proposed for production	Tantra Quarry Raikela Quarry	Tantra Quarry Raikela Quarry	Nil

3b	Quantity of ROM mineral production proposed	891518 tonnes for the year 2017-18.	858560 tonnes	Nil
3c	Recovery of sailable/usable mineral from ROM production	825380 tonnes	668400 tonnes	The reason for deviation is due to the change in recovery percentage of mineral reject and salebale ore in time series data for which less has modified the mining plan which was approved on 17.01.2019.
3d	Quantity of mineral reject generation	66138 tonnes	190160 tonnes	The reason for deviation is due to the change in recovery percentage of waste, mineral reject and salebale ore in time series data for which leses has modified the mining plan which was approved on 17.01.2019.
3e	Grade of mineral rejects generation and threshold value declared.	+45%Fe-55%Fe	+45%Fe-55%Fe	Nil
3f	Quantity of sub grade mineral generation.	Nil	Nil	Nil
3g	Grade of sub grade mineral generation	Nil	Nil	Nil
3h	Manual / Mechanised method adopted for segregating from ROM	Mechanised	Mechanised	Nil

3i	Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects.	No proposal.	Nil	Crushing, screening and manual sorting is practiced at the mine site
3j	Provision of drilling and blasting in mineral benches	DTH drilling of 100mm dia. Blast hole with ammonium nitrate/slurry explosive as column charge and booster alongwith delay detonator.	DTH drilling of 100mm dia. Blast hole with ammonium nitrate/slurry explosive as column charge and booster alongwith delay detonator is being practiced for drilling and blasting.	Nil
3k	Provision of mining machineries in mineral benches	Shovel and dumper combination is proposed.	shovel and dumper combination utilised.	Nil
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Bench height 6m.	Bench height 6m.	Nil
3m	Total area covered under excavation/pits	33.039 Ha at the end of Plan period	29.912 Ha as on 01.04.2018	Nil
3n	Ore to OB ratio for the pit/mine during the year.	1:0.4 t/cu.m.	1:0.26 t/cu.m.	Nil

3o	Total area put in use under different heads at the end of year	Excavation-33.039 Ha. Top soil-0.250 Ha. OB/Back Filling-4.797 Ha. Mineral Storage-2.604 Ha. Infrastructure -0.442 Ha. Plot Raising-7.468 Ha. Road-0.692 Ha. Safety Zone-3.207 Ha. till the end of plan period.	Excavation-29.912 Ha. Top soil-0.250 Ha. OB/Back Filling-8.281 Ha. Mineral Storage-2.604 Ha. Infrastructure-0.442 Ha. Plot Raising-3.204 Ha. Road-0.692 Ha. Safety Zone-3.207 Ha. as on 01.04.2018	land use is with in the limits of approved document.
3p	Production of ROM mineral during the last five year period as applicable	2013-14 832320.000 t 2014-15 945048.000 t 2015-16 1080144.000 t 2016-17 829020.000 t 2017-18 891518.000 t	2013-14 687860.000 t 2014-15 876100.000 t 2015-16 830722.040 t 2016-17 764020.000 t 2017-18 858560.000 t	Variation is due to market demand.
3q	General remarks of inspecting officers on method of mining etc.	No comments to offer.	The ROM production has been carried out from Tantra quarry and Raikela quarry. DTH drilling of 100mm dia. Blast hole with ammonium nitrate/ slurry explosive alongwith delay detonator is being practiced for drilling and blasting	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)	no generation of top soil proposed. Separate dumping for overburden and mineral reject proposed.	Separate dumping for overburden and mineral reject.	Nil
4b	Location of topsoil, OB and mineral reject dumps	Dumping in south-eastern part of the lease over mined out area. Location of sub grade stack is S400 to S700 & E390 to E510.	Waste is dumping in south-eastern part of the lease over mined out area. The sub grade stack is lies between grid S400 to S700 & E390 to E510.	Nil
4c	Number of dumps within lease area and outside of lease area	One dump in south-eastern part within lease area.	There is one waste dump in southeastern part of the lease over mined out area.	Nil
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	One dump in southeastern part of lease area.	One dump in south-eastern part of lease area over mined out area.	Nil
4e	Number of active and alive dumps.	Nil	Nil	Nil
4f	Number of dead dumps.	Not proposed.	Nil	There is one active waste dump in south-eastern part of the lease over mined out area. The other old dump is fully stabilised by plantation.
4g	Number of dumps established.	Not proposed.	Not applicable	The old dump is fully stabilised by plantation.
4h	Whether Retaining wall or garland drain all along dumps are there.	retaining wall of 130 m and gaeland drain of 126 m are proposed.	retaining wall of 75 m and garland drain of 126 m carried out	violation issued.

4i	Length of Retaining wall or garland drain all along dumps	retainingwall of 130 m and gaeland drain of 126 m are proposed.	retaining wall of 75 m and garland drain of 126 m carried out	violation issued.
4j	Number of settling ponds	Not proposed.	Nil	Nil
4k	Specific comments of inspecting officer on waste dump management	No comments to offer.	The old dump is fully stabilised by lessee by coir mating and plantation. The proposed retaining wall has not been completed and deficiency has been pointed out to the lessee through violation letter.	Nil

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.	Backfilling of south-eastern part of the lease area.	The south-eastern part of the mined out lease area is partially backfilled after exhaustion of mineral.	Nil
5b	Area under backfilling of mined out area	0.5 ha	Not carried out.	violation issued.
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	Not proposed.	Nil	Nil
5d	Total area fully reclaimed and rehabilitated	0.5 ha	Not carried out	violation issued
5e	General remarks of inspecting officers on backfilling and reclamation etc.	No comments to offer.	backfilling not carried out as proposed in the mining plan.violation issued.	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).	submitted.	submitted.	Nil
6b	Area available for rehabilitation (ha) .	0.5 ha by way of plantation on waste dumps for the year 2017-18.	0.5 ha on waste dumps.	Nil
6c	afforestation done (ha).	0.5 ha on waste dump management	0.5 ha on waste dump plantation.	Nil
6d	No. of saplings planted during the year	2125 no.	6500 nos. planation carried out on waste dump.	Nil
6e	Cumulative no .of plants	No such proposal.	Nil	Nil
6f	Any other method of rehabilitation	Not proposed	Nil	Nil
6g	Cost incurred on watch and care during the year	Not proposed.	Rs. 1,14,000.00	Nil
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (Lx B x D	0.5 ha	Nil	violation issued
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	0.5 ha	Nil	violation issued
6j	Compliance on reclamation and rehabilitation by backfilling (iii)Afforestati on on backfilled area	0.5 ha	0.5 ha	on already backfilled area.

6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	Not proposed	Nil	Nil
6l	Compliance on reclamation and rehabilitation by backfilling (v)any other specific means.	Not proposed.	Nil	Nil
6m	Compliance of rehabilitation of waste land within lease (i)afforestation	Not proposed.	Nil	Nil
6n	Compliance of rehabilitation of waste land within lease (ii)Area rehabilitation (ha)	Not proposed.	Nil	Nil
6o	Compliance of rehabilitation of waste land within lease (iii)Method of rehabilitation	Not proposed.	Nil	Nil
6p	Compliance of environmental monitoring (core zone and buffer zone)	Quarterly monitoring of air, water and noise level are being proposed.	Quarterly monitoring of air, water and noise level are being carried out.	Nil
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.	No comments to offer.	backfilling as proposed not carried out.	Nil

Mineral Conservation:

Sl.No.	Item	Propasals	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	Gradewise sorting proposed.	carried out.	Nil
7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	Mechanised and manual	Mechanised and manual sorting of iron ore is practiced at mine site.	Nil
7c	Different grade of mineral sorted out at mines.	45% to 55% Fe and +55% Fe.	Different grades of minerals sorted out at mines are 45% to 55% Fe and +55% Fe.	Nil
7d	Any beneficiation process at mines	Not proposed.	Nil	Nil
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues	No comments to offer	Cut off grade of iron ore for the mine is +55%. Different grades of minerals sorted out at mines are -65% Fe, 62 to 58% fe and 58 to 55% Fe.	Nil

Environment:

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	Not proposed.	Nil	Nil
8b	Concurrent use or storage of topsoil	Not proposed.	Nil	Nil
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	Separate dump for overburden and mineral rejects.	Waste is dumping in south-eastern part of the lease over mined out area. The sub grade stack is lies between grid S400 to S700 & E390 to E510.	Nil

8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	Backfilling in temporarily stacked mined out area.		violation issued
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	Reclamation by not carried out backfilling.		violation issued.
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	Plantation over dump and backfilled area.	6500 nos saplings were planted over dump and backfilled area.	Nil
8g	Survival rate	Not proposed.	85%	Nil
8h	Water sprinkling on roads to control airborne dust	mobile water sprinkling is proposed. with tanker.	water sprinkler are used to control air borne dust.	Nil
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area	No comments to offer.	Aesthetic beauty in and around mined area is maintained.	Nil

Compliance of Rule 45:

Sl.No.	Item	Propasals	Actual work	Remarks
9a	Status of submission of Monthly and Annual returns	Monthly & Annual returns are being regularly submitted by lessee.	submitted.	Nil

9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Mining Engineer-4 Geologist-2	Mining Engineer-4 Geologist-2	Nil
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	Area under pits-29.912 Ha. Dumps-2.275 Ha. ther Purpose (TOP SOIL, PLOT RAISING AREA, MINERAL STORING & SAFETY ZONE): 15.891 ha	Area under pits-29.912Ha. Dumps-2.275 Ha. ther Purpose (TOP SOIL, PLOT RAISING AREA, MINERAL STORING & SAFETY ZONE): 15.891 ha	Nil
9d	Scrutiny of Annual return on afforestation	6500 nos	6500 nos	Nil
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	190160 tonnes	190160 tonnes	Nil
9f	Scrutiny of Annual return on ROM stock and/or graded ore	ROM closing stock: NIL a) Below 55% 9423.610 (b) 55% to below 58% 51415.780 (c) 58% to below 60% 3438.640 (d) 60% to below 62% 289.04 (e) 62% to below 65% 15514.047 closing stock	a) Below 55% 9423.610 (b) 55% to below 58% 51415.780 (c) 58% to below 60% 3438.640 (d) 60% to below 62% 289.04 (e) 62% to below 65% 15514.047 closing stock	Nil
9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	Production cost: Rs:1588.57	Production cost: Rs:1588.57	Nil

9h	Scrutiny of Annual return on fixed assets	Rs 2756029	Rs 2756029	Nil
9k	Scrutiny of Annual return on mining machineries	Crusher- 150TPH-2, Excavator- 1.7/0.9 cu.m-12, Loader-2.5 cu.m-6, Dumper-20T-16, Dozer-1, Rock breaker-2 etc.	Crusher- 150TPH-2, Excavator- 1.7/0.9 cu.m-12, Loader-2.5 cu.m-6, Dumper-20T-16, Dozer-1, Rock breaker-2 etc.	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)	13/11/2018			

Date :

(RAMKISHAN R)

Indian Bureau of Mines