

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

MCDR INSPECTION REPORT

Bhubaneshwar regional office

Mine file No : ORI/IRON/KJR/MCDR-49/BBS

Mine code : 30ORI08071

- (i) Name of the Inspecting : **U11**) **DAYANAND UPADHYAY**
Officer and ID No.
- (ii) Designation : Assistant Controller Mine
- (iii) Accompanying mine : Sri A.K. Chaudhary, Geologist & Shri P.K. Mohanty, Mi
Official with
Designation
- (iv) Date of Inspection : 15/07/2017
- (v) Prev.inspection date : 25/01/2016

PART-I : GENERAL INFORMATION

1. (a) **Mine Name** : **ROIDA (185 AC)**
- (b) **Registration NO.** : **IBM/1097/2011**
- (c) Category : A Mechanised
- (d) Type of Working : Opencast
- (e) Postal address
- State : ORISSA
- District : KEONJHAR
- Village : TONTO (TANTRA)
- Taluka : CHAMPUA
- Post office : BHADRASAHI
- Pin Code : 758035
- FAX No. : 06767-270106
- E-mail : knram@athagroup.in
- Phone : 06767-275225
- (f) Police Station : Barbil
- (g) First opening date : 22/04/1958
- (h) Weekly day of rest : SUN
2. Address for : ROIDA IRON MINE (185AC) OF K.N.RAM
correspondance AT-TROANTO
PO-BHADRSAHI, DIST-KEONJHAR
3. (a) Lease Number : ORI0069
- (b) Lease area : 74.86
- (c) Period of lease : 30
- (d) Date of Expiry : 02/09/1987
4. Mineral worked : IRON ORE Main

5. Name and Address of the

Lessee : K.N.RAM&CO
 AT/PO-GUA DIST-SINGHBHUM
 WEST JHARKHAND SINGHBHUM
 (WEST) JHARKHAND
 Phone:
 FAX :

Owner : K.N.RAM
 AT/PO-GUA SINGHBHUM (W)
 JHARKHAND SINGHBHUM (WEST)
 JHARKHAND
 Phone:
 FAX :

Mining Engineer

Name : MD. MUSTAFA, Part Time
 Qualification : A.I.S.M (MINES)
 Appointment/ : 01/09/1979
 Termination date

Mining Engineer

Name : B.BEHERA, Full Time
 Qualification : DEPLOMA IN MINING& HAVING FOREMEN CERTI
 Appointment/ : 16/04/2004
 Termination date

Mining Engineer

Name : P.B.LAL, Full Time
 Qualification : AMIE MINING ENGG
 Appointment/ : 12/11/2002
 Termination date

Mining Engineer

Name : G.C.DAS, Full Time
 Qualification : DIPLOMA MINING
 Appointment/ : 01/01/2001
 Termination date

Mining Engineer

Name : G.S.BEHERA, Full Time
 Qualification : BE MINING
 Appointment/ : 01/12/2003
 Termination date

6. Date of approval of Mining Plan/Scheme of Mining : Modif.approved Mining Scheme 24/02/2004
 Renewal under rule 24 MCR1960 26/07/2005
 Renewal under rule 24 MCR1960 31/01/2008
 Mining Scheme rule 12 MCDR1988 28/03/2012
 Modif.approved Mining Scheme 25/06/2015
 MP modif under 17(3) MCR 2016 23/09/2016

PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	09 number of bore holes in 2015-16 and 09 number of bore holes in 2016-17 .	In 2015-16, total 09 number and in 2016-17 total 09 number of bore holes have been drilled by lessee.	In 2016-17, Bore holes were proposed in OB and subgrade dump to find out an average grade of sub grade dump.
1b	Exploration over lease area for geological axis 1 or 2	No lateral proposal under G1/G2 Level of exploration as whole mineralised area has been explored by lessee.	Total 69.602 ha area is explored under G1/G2 level through 78 no. of bore holes covering a total depth of 4546.05m.	Almost all the mineralised area has been explored by lessee covering 69.602 ha. under G1 / G2 level.
1c	Exploration Agencies and Expenditure in lakh rupees during the year	Not specified.	In 2016-17 total total cost incurred in drilling was Rs 6.84 Lakh.	In 2016-17 total total cost incurred in drilling was Rs Rs 6.84 Lakh. Exploration agency involved in drilling was M/s SPS Geomining & Solution..
1d	Balance area to be explored to bring Geological axis in 1 or 2	Not proposed.	Not applicable.	Almost all the mineralised area has been explored by lessee covering 69.602 ha. under G1 / G2 level.

1e	Balance reserve as on 01/04/20	Total reserve & resources estimated as per Review of mining plan which was approved on 23.09.2016 are under proved and probable category (111 & 122), 30.73MT and under mineral resources category (221 & 222), 5.76 MT.	Balance reserve as on 01/04/2017 under 111 & 122 category is 29.288 MT of Iron ore and under mineral resources category (221 & 222), 5.76 MT.	Total reserve & resources estimated as per Review of mining plan approved on 23.09.2016 was 36.50 MT.
1f	General remarks of inspecting officers on geology, exploration etc			Almost all the mineralised area has been explored by lessee covering under G1 / G2 level. Total 69.602 ha area is explored under G1/G2 level through 78 no. of bore holes covering a total depth of 4546.05m. Total reserve & resources estimated as per Review of mining plan approved on 23.09.2016 was 36.50 MT.

Development :

Sl.No.	Item	Propasals	Actual work	Remarks
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2a	Location of development w.r.t.lease area	Quarry-2 and quarry-6 and the location of development is 85N-450S & 16W-328E and quarry-6 is 106N-350N & 760W-200W.	The development is concentrated in quarry-2 and quarry-6. The location of development of quarry-2 is 80N-418S & 16W-328E and quarry-6 is 106N-350N & 760W-200W.	The development is concentrated in quarry-2 and quarry-6. The location of development of quarry-2 is 80N-418S & 16W-328E and quarry-6 is 106N-350N & 760W-200W.
2b	Separate benches in topsoil, overburden and minerals (Rule 15)	Separate benches in OB and ore with 6m height.	Quarry-2: OB- 4 benches, ore-12 benches Quarry-6: OB- 2 benches, ore- 13 benches	Separate benches in OB and ore have been maintained.
2c	Stripping ratio or ore to OB ratio	1:0.206	1:0.192	
2d	Quantity of topsoil generation in m3	Not proposed.	not applicable.	There is no generation of top soil.
2e	Quantity of overburden generation in m3	141488 cu.m	138267 cu.m	Less overburden has been removed against the proposal due to less ROM production.
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc			The whole mineralised area is fully explored and development is concentrated in two pits i.e quarry-2 and quarry-6.

Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
3a	Number of pit proposed for production	02 quarries , quarry no.-2 and quarry no.-6.	Working is concentrated in 02 quarries, quarry no.-2 and quarry no.-6.	Working is concentrated in 02 quarries, 02-quarry and 06 quarry.
3b	Quantity of ROM mineral production proposed	3503522 tonnes Iron ore .	In 2016-17, 2199409 tonnes Iron ore has been produced.	

3c	Recovery of sailable/usable mineral from ROM production	Saleable 76% w.r.t total ROM	Total ROM has been utilised by lessee.	Total ROM has been utilised by lessee.
3d	Quantity of mineral reject generation	644820 tonnes sub grade of iron ore in 2016-17.	No sub grade/mineral reject generation has been reported for the peroid 2016-17. About 342410T of sub grade mineral generated during mining has been blended with high grade.	No sub grade/mineral reject generation has been reported for the peroid 2016-17. About 342410T of sub grade mineral generated during mining has been blended with high grade.
3e	Grade of mineral rejects generation and threshold value declared.	+45% Fe to - 55% Fe.	No sub grade/mineral reject generation has been reported for the peroid 2016-17. About 342410T of sub grade mineral generated during mining has been blended with high grade.	No sub grade/mineral reject generation has been reported for the peroid 2016-17. About 342410T of sub grade mineral generated during mining has been blended with high grade.
3f	Quantity of sub grade mineral generation.	644820 tonnes in 2016-17.	No sub grade/mineral reject generation has been reported for the peroid 2016-17. About 342410T of sub grade mineral generated during mining has been blended with high grade.	No sub grade/mineral reject generation has been reported for the peroid 2016-17. About 342410T of sub grade mineral generated during mining has been blended with high grade.
3g	Grade of sub grade mineral generation	+45% Fe to - 55% Fe.	No sub grade/mineral reject generation has been reported for the peroid 2016-17.	The sub grade/mineral reject generated during 2016-17 has been blended with high garde.
3h	Manual / Mechanised method adopted for segregating from ROM	Mechanised.	No sub grade/mineral reject generation has been reported for the peroid 2016-17.	

3i	Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects.	Not proposed.	Not applicable.	
3j	Provision of drilling and blasting in mineral benches	Deep hole blasting with DTH 110mm dia. of Blast hole with nitrate mixture such as powergel explosive.	DTH drilling of 104mm dia. Blast hole with nitrate mixture such as powergel explosive are used for blasting. Ordinary detonators and nonel are used for initiation.	Depth of blasting- 6.6m Burden- 3.0m spacing- 3.5m.
3k	Provision of mining machineries in mineral benches	Drilling machine- 104 mm dia.-1, Shovel- 1.8, 0.9 & 3.4 cu.m-10, Back hoe-0.9/3.4 cu.m, Front end loader-1.8 & 1.5 cu.m-8, Tipper- 15/25T-18 etc.	DTH of 104mm dia. is used for drilling blast hole. Ore & OB are handled by excavator of 1.8 cu.m capacity with dumper of 15/25T capacity. Machineries available on site were Drilling machine- 104 mm dia.-1, Shovel- 1.8, 0.9 & 3.4 cu.m-10, Back hoe- 0.9/3.4 cu.m, Front end loader-1.8 & 1.5 cu.m-8, Tipper- 15/25T-18 etc.	Dozer is also used for road grading and two water sprinkler of 10KL capacity are used for water spraying.
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Bench height 6m.	Excavator of 1.8 cu.m capacity are used of loading the Dumper of 15/25T capacity.	Bench height is suitably matched with the loading excavator.
3m	Total area covered under excavation/pits	39.360 ha during approved plan period.	About 34.896 ha. has been covered under excavation pits.	About 34.896 ha. has been covered under excavation pits.
3n	Ore to OB ratio for the pit/mine during the year.	1:0.206	1:0.192	

3o	Total area put in use under different heads at the end of year	Total 62.153 ha. area put in use under different heads during approved plan period.	The area covered under different head are Pits- 34.791 ha, waste dump- 7.64 ha, Mineral storage- 5.464 ha, Infra structure, roads & others- 3.587 ha.	The area covered under different head are Pits- 34.791 ha, waste dump- 7.64 ha, Mineral storage- 5.464 ha, Infra structure, roads & others- 3.587 ha.
3p	Production of ROM mineral during the last five year period as applicable	Iron ore: 2012-13: 2198650T 2013-14: 5378000T 2014-15: 2188025T 2015-16: 2200826T 2016-17: 3503522T	Iron ore: 2012-13: 959144T 2013-14: 17148550T 2014-15: 90377T 2015-16: 2197896T 2016-17: 2199409T	Against the proposal less ROM production is carried out by lessee based upon demand and supply.
3q	General remarks of inspecting officers on method of mining etc.			The ROM production has been carried out from quarry-2 and quarry-6. DTH drilling of 104mm dia. Blast hole with nitrate mixture such as powergel explosive alongwith ordinary detonator is being practiced for drilling and blasting.

Solid Waste Management - Dumping:

Sl.No.	Item	Propasals	Actual work	Remarks
4a	Separate dumping of topsoil, OB and mineral rejects (Rule 32,33)	Separate dumping for overburden in extended part of active dump towards north west between grid E-330 to E0520 and N-200 to S-120.	Overburden is dumped in extended part of active dump towards north west between grid E-330 to E0520 and N-200 to S-120.	There is no top soil generation.

4b	Location of topsoil, OB and mineral reject dumps	Extended part of active dump towards north west between grid E-330 to E0520 and N-200 to S-120.	Overburden is dumped towards extended part of active dump towards north west between grid E-330 to E0520 and N-200 to S-120.	There is no top soil generation. Mineral reject generated during 20167-17 is no separately dumped and it has been blended with high grade ore.
4c	Number of dumps within lease area and outside of lease area	One OB dump within lease area.	Overburden is dumped towards extended part of active dump towards north west.	There is no dump in outside lease area.
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	OB Dump in north eastern part of quarry-2.	OB Dump is located in north eastern part of quarry-2.	Dump does not falls under ultimate pit limit.
4e	Number of active and alive dumps.	One active dump.	There is one active dump located in north eastern part of quarry-2.	
4f	Number of dead dumps.		There is no dead dump.	
4g	Number of dumps established.	Not proposed.	Not applicable.	
4h	Whether Retaining wall or garland drain all along dumps are there.	Retaining wall and garland drain along waste dump and mineral reject stack.	Proposed retaining wall and garland drain along waste dump and mineral reject stack have been completed.	
4i	Length of Retaining wall or garland drain all along dumps	About 437mX1.0mX1.0m Retaining wall 437mX1.5mX1.5m and garland drain proposed around waste dump and mineral reject stack.	About 437mX1.0mX1.0m Retaining wall 437mX1.5mX1.5mand garland drain proposed around waste dump and mineral reject stack have been completed.	About 437mX1.0mX1.0m Retaining wall 437mX1.5mX1.5mand garland drain proposed around waste dump and mineral reject stack have been completed.
4j	Number of settling ponds	Not proposed.	Not applicable.	

4k	Specific comments of inspecting officer on waste dump management	South and south-eastern part of the waste dump, slope has been stabilised by plantation. All around the waste dump garland drain and retaining wall has been constructed.
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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.	Not proposed in 2016-17.	Not applicable.	
5b	Area under backfilling of mined out area	Not proposed in 2016-17.	Not applicable.	
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	Not proposed.	Not applicable.	There is nop soil generation.
5d	Total area fully reclaimed and rehabilitated	Not proposed.	Not applicable.	
5e	General remarks of inspecting officers on backfilling and reclamation etc.			Upto the end of 2016-17 no part of the quarry touched UPL therefore backfilling has not been proposed. However during the period 2017-18 to 2019-20 it is planned to backfill the the worked out portion of quarry-2 towards east.

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 has been submitted for the year 2016-17.	Annual return on PMCP has been submitted for the year 2016-17.
6b	Area available for rehabilitation (ha) .	Not proposed.	Not applicable.	
6c	afforestation done (ha).	1.5 ha area in safety zone & dump slope.	In 2016-17, around 5110 no. saplings have been planted by lesse in area of 1.5ha in safety zone & dump slope.	In 2016-17, around 5110 no. saplings have been planted by lesse in area of 1.5ha in safety zone & dump slope.
6d	No. of saplings planted during the year	5000 saplings.	In 2016-17, around 5110 no. saplings have been planted by lesse in area of 1.5ha in safety zone & dump slope.	The area covered under plantation is safety zone & dump slope.
6e	Cumulative no .of plants		Cumulative nos. of saplings planted in the lease area is about 24970 nos..	Cumulative nos. of saplings planted in the lease area is about 24970 nos.
6f	Any other method of rehabilitation	Not proposed.	Not applicable.	
6g	Cost incurred on watch and care during the year		Around Rs 0.15 lakh cost incurred on watch and care of green belt in 2016-17.	Around Rs 0.15 lakh cost incurred on watch and care of green belt in 2016-17.
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (Lx B x D	Not proposed.	Not applicable.	
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	Not proposed.	Not applicable.	

6j	Compliance on reclamation and rehabilitation by backfilling (iii)Afforestation on backfilled area	Not proposed.	Not applicable.	
6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	Not proposed.	Not applicable.	
6l	Compliance on reclamation and rehabilitation by backfilling (v)any other specific means.	Not proposed.	Not applicable.	
6m	Compliance of rehabilitation of waste land within lease (i)afforestation	Not proposed.	Not applicable.	
6n	Compliance of rehabilitation of waste land within lease (ii)Area rehabilitation (ha)	Not proposed.	Not applicable.	
6o	Compliance of rehabilitation of waste land within lease (iii)Method of rehabilitation	Not proposed.	Not applicable.	
6p	Compliance of environmental monitoring (core zone and buffer zone)	Quarterly monitoring.	Quarterly monitoring of air, water and noise level are being carried out.	Quarterly monitoring of air, water and noise level are being carried out.

6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.	Area has not been matured for reclamation & rehabilitation and afforestation has been carried out along slope of waste dump & safety zone. Regular data of quarterly monitoring of air, water and noise level has been submitted to this office.
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Mineral Conservation:

Sl.No.	Item	Propasals	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	Gradewise sorting +45 to 55% Fe and +55% Fe.	Gradewise sorting of +45 to 55% Fe and +55% Fe is carried out	ROM produced from the mine sorted out gradewise of +45 to 55% Fe and +55% Fe.
7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	Mechanised.	Mechanised.	Mechanised method is adpoted for gradewise sorting of iron ore.
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.	Different grades of minerals sorted out at mines are +45 to 55% Fe and +55% Fe.
7d	Any beneficiation process at mines	Not proposed.	Not applicable.	

7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues	Cut off of iron ore for the mine is +55%. Different grades of minerals sorted out at mines are +55% Fe and 45 to 55% Fe. In 206-17, no sub grade production has been reported by the lessee. The sub grade generated during mining has blended with high grade. There is 01 nos. of mineral reject/subgrade stack. The total quantity of mineral reject/subgrade stack is about 156700 cu.m.
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Environment:

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	Not proposed.	Not applicable.	There is no top soil generation.
8b	Concurrent use or storage of topsoil	Not proposed.	Not applicable.	There is no top soil generation.
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	Separate dump for overburden towards extended part of active dump towards north west between grid E-330 to E0520 and N-200 to S-120..	There is Separate dump for overburden towards extended part of active dump towards north west between grid E-330 to E0520 and N-200 to S-120.	There is Separate dump for overburden and mineral rejects.

8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	Not proposed.	Not applicable.	
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	Not proposed.	Not applicable.	
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	Afforestation proposed along the slope of waste dump & safety zone with 5000nos of saplings in 2016-17.	Total 5110nos. saplings have been planted in 2016-17 along the slope of waste dump & safety zone.	As reported cumulative no. of trees planted by lessee is about 24970 nos.
8g	Survival rate		Survival rate is 97%.	
8h	Water sprinkling on roads to control airborne dust	02 water sprinkler.	Two water sprinklers are utilised to control air borne dust.	Two water sprinkler of 10 KL capacity are used for water spraying.
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area			Aesthetic beauty in and around mined area is maintained. In 2016-17, total 5110 nos of saplings have been planted by lessee. As reported cumulative no. of trees planted by lessee is about 24970 nos.

Compliance of Rule 45:

Sl.No.	Item	Propasals	Actual work	Remarks
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9a	Status of submission of Monthly and Annual returns	Annual return for the 2016-17 has not been submitted by lessee.	Annual return for the 2016-17 has not been submitted by lessee.	Violation of rule 45(5)(c) of MCDR 2017 regarding non submission of Annual return for the 2016-17 has been issued to lessee vide letter no. ORI/IRON/KJR/MCDR-49/BBS, dated 21/07/2017.
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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
MCDR17	Rule 11(1)	21/07/2017			
MCDR17	Rule 45(5)(c)	21/07/2017			

Date :

(DAYANAND UPADHYAY)

Indian Bureau of Mines