

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

**MCDR INSPECTION REPORT**

**Goa regional office**

**Mine file No :** MAH/SDG/Fe-46/GOA

**Mine code :** 30MSH28029

- (i) Name of the Inspecting : **J003** ) **JANGID G K**  
Officer and ID No.
- (ii) Designation : Deputy Controller Mines
- (iii) Accompanying mine : Shri Suresh Kulal, G M (Mines)  
Official with  
Designation
- (iv) Date of Inspection : 16/03/2016
- (v) Prev.inspection date : 16/02/2015

**PART-I : GENERAL INFORMATION**

1. (a) **Mine Name** : **KALANE IRON & MANGANESE O**
- (b) **Registration NO.** : **IBM/6114/2011**
- (c) Category : A Fully Mechanised
- (d) Type of Working : Opencast
- (e) Postal address
- State : MAHARASHTRA
- District : SINDHUDURG
- Village : KALANE
- Taluka : DODAMARG
- Post office : KALANE
- Pin Code : 416511
- FAX No. : 022-23630045
- E-mail : Shrivashtra@Boms5.vsnl.in.
- Phone : 022-23630045
- (f) Police Station : DODAMARG
- (g) First opening date : 10/03/2009
- (h) Weekly day of rest : SUN
2. Address for : Minerals & Metals AT-KALANE  
correspondance TQ-DODAMARG, DIST- SINDHDURG  
MAHARASHTRA
3. (a) Lease Number :
- (b) Lease area :
- (c) Period of lease :
- (d) Date of Expiry :
4. Mineral worked : MANGANESE ORE Associated  
IRON ORE Main

## 5. Name and Address of the

Lessee : MINERALS AND METALS  
 32, ASHUTOSH, NEPEAN SEA  
 ROAD, MUMBAI GREATER BOMBAY  
 MAHARASHTRA  
 Phone:  
 FAX :

Owner : SANDEEP SRIVASTAVA  
 NIRMAL, 16th Floor NARIMAN  
 POINT GREATER BOMBAY  
 MAHARASHTRA  
 Phone: 022-22025893, 2  
 FAX : 022-22854417

Agent : MANOJ THAKUR  
 WSH 4,W BLOCK,SUNSET  
 BOULVARD, ALTO DHULER,  
 MAPUSA-GOA SINDHUDURG  
 MAHARASHTRA  
 Phone: 0832-2253864, 9769111533  
 FAX : 832-2253863

## Geologist

Name : Rajan S Patil,Full Time  
 Qualification : M Sc Geology  
 Appointment/ : 01/02/2015  
 Termination date

## Manager

Name : SURESH KULAL  
 Qualification : B.TECH (MINING)  
 Appointment/ : 01/06/2011  
 Termination date

6. Date of approval of Mining	:	Fresh under rule 22 MCR1960	20/10/2000
Plan/Scheme of Mining		Modif.of approved Mining Plan	11/12/2008
		Modif.of approved Mining Plan	03/02/2011
		Mining Scheme rule 12 MCDR1988	20/03/2014

## PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

## Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	12 boreholes were proposed in approved scheme during 2014-15 and 5 holes were proposed during 2015-16.	19 bore holes were drilled during last 2014-15.	
1b	Exploration over lease area for geological axis 1 or 2	Additional exploration is proposed over remaining part of lease upto 2016-17.	Lease area is 32.25ha and 25ha has been explored for G-1. Remaining 7.25ha area is under G-3.	
1c	Exploration Agencies and Expenditure in lakh rupees during the year	Exploration was proposed by private agency and Rs.24.48 lacs was estimated under exploration for 19 holes.	Actual expenditure is 22 lacs for 19 holes drilled during 2014-15.	
1d	Balance area to be explored to bring Geological axis in 1 or 2	Balance 7.25ha was proposed for exploration and convert G-3 into G-1 by drilling at 100m grid interval.	Balance 6.00ha is yet to explore to convert G-3 into G-1 by drilling at 100m grid interval.	
1e	Balance reserve as on 01/04/20	Scheme of mining was approved on 20.03.2014 and reserves were re-estimated as proved 2338469t and feasible under 221 as 1624000t.	Additional exploration was carried out during 2014-15 and balance reserves at the end of 2014-15 are 2338469t under 111, 1624000t under 211.	
1f	General remarks of inspecting officers on geology, exploration etc	Nil	Additional exploration was carried out to know grade and width of ore body.	

## Development :

Sl.No.	Item	Propasals	Actual work	Remarks
2a	Location of development w.r.t.lease area	Proposal was to develop & advance western face of Pit for production of iron ore from lower benches.	Advancement on western face in Pit during 2014-15 & 2015-16 is as per proposals.	
2b	Separate benches in topsoil, overburden and minerals (Rule 15)	Top soil is not present and separate benches in OB were proposed.	Top soil is not present and separate benches in OB are maintained. There are two benches in OB towards hill side and slope side.	
2c	Stripping ratio or ore to OB ratio	Planned Ore to OB ratio is 1.30.	Actual ore to OB ratio is 1.30.	
2d	Quantity of topsoil generation in m3	Nil	Nil	
2e	Quantity of overburden generation in m3	OB generation was 565290t.	OB generation was 564607t during 2014-15.	
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc	Nil	Nil	

## Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
3a	Number of pit proposed for production	Working in one pit was proposed for iron ore production.	Working in one pit is carried out for iron ore production.	
3b	Quantity of ROM mineral production proposed	ROM production of 737884 tonnes was proposed.	ROM production of 737681 tonnes was reported.	
3c	Recovery of sailable/usable mineral from ROM production	The recovery of grade-wise ore from ROM was planned 100% after screening.	The recovery of ore from ROM was 100% after screening. The graded ore is being sold to M/s Samruddha Resources Pvt. Ltd. for export to China & other countries.	
3d	Quantity of mineral reject generation	Nil	Nil	

3e	Grade of mineral rejects generation and threshold value declared.	NA	NA
3f	Quantity of sub grade mineral generation.	Nil	Nil
3g	Grade of sub grade mineral generation	NA	NA
3h	Manual / Mechanised method adopted for segregating from ROM	Diesel operated mechanical screen plant was proposed.	Diesel operated mechanical screen plant is in use for grade wise production of iron ore. Fe grade of below 55% is produced.
3i	Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects.	Generation of mineral reject and sub-grade ore was not proposed and beneficiation study was also not proposed.	Analysis is being carried out regularly for maintaining the salable ore grade; being sold at mine head to the M/s Samruddha Resources Pvt. Ltd. for export to China & other countries.
3j	Provision of drilling and blasting in mineral benches	No deep hole drilling & blasting was proposed. Ripper is proposed for excavation of hard OB excavation from faces.	Drilling & blasting is not in use and one ripper dozers is in use.
3k	Provision of mining machineries in mineral benches	Yes, three backhoe Excavators, two loaders, one ripper dozers and seven dumpers were proposed for loading of ROM ore and waste.	Yes, three backhoe Excavators, two loaders, one ripper dozers and seven dumpers were proposed for loading of ROM ore and waste.

3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Yes, it is suitable for machineries used in Mines with maximum height upto 6-7m and backhoe is used for excavation of ore.	Yes, it is suitable for machineries used in mines with maximum height upto 6-7m and backhoe is used for excavation of ore.
3m	Total area covered under excavation/pits	Total areaproposed under pit was 14.46ha as per SOM.	Total area under pit is 14.46ha as on 01.04.2015 i.e. end of the year. Present working is within pit in lower benches.
3n	Ore to OB ratio for the pit/mine during the year.	Planned Ore to OB ratio was 1.30.	Ore to OB ratio is 1.30 during the year.
3o	Total area put in use under different heads at the end of year	Area under pit- 14.46ha, area under dump-1.0ha, roads-0.70ha, plant & building 0.45ha.	Area under pit- 14.46ha, area under dump-1.0ha, roads-0.70ha, plant & building 0.45ha at the end of 2014-15.
3p	Production of ROM mineral during the last five year period as applicable	Proposed production was 728880t, 736020t, 731316t, 298620t, 737884t from 2010-11 to 2014-15 respectively.	Actual production was 730683t, 894906t, 742069t, 312097t, 737681t from 2010-11 to 2014-15 respectively.
3q	General remarks of inspecting officers on method of mining etc.	Nil	Nil

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Solid Waste Management - Dumping:

Sl.No.	Item	Propasals	Actual work	Remarks
4a	Separate dumping of topsoil, OB and mineral rejects (Rule 32,33)	Topsoil and OB dumps were not proposed.	Topsoil and OB dumps are not made during the year.	

4b	Location of topsoil, OB and mineral reject dumps	Topsoil and mineral reject generation & stacking was not proposed. OB was proposed for backfilling in eastern part of pit.	Topsoil and mineral reject generation & stacking was not proposed. OB was backfilled in eastern part of pit.
4c	Number of dumps within lease area and outside of lease area	Topsoil stack is not there. Old OB dumps are made within and outside the lease.	Surface dumping was not carried out.
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	Two old dumps are beyond ultimate pit limit on southern boundary and western part of lease.	Maximum dump height is upto 7-8m and located on slope of the hillock.
4e	Number of active and alive dumps.	Backfilling was proposed.	Both the dumps are old and non- active.
4f	Number of dead dumps.	Two dumps are there on southern lease boundary and plantation has been carried out on dumps.	Two dumps are there.
4g	Number of dumps established.	Two dumps are there on southern lease boundary and plantation has been carried out on one dump.	One dump is established with plantation.
4h	Whether Retaining wall or garland drain all along dumps are there.	Retaining wall was proposed in first MP.	Retaining wall is made all along the slope side of dump.
4i	Length of Retaining wall or garland drain all along dumps	No proposals were there during 2014-15.	The length of retaining wall is around 1000m.

4j	Number of settling ponds	Nil	Lower benches in Pit are used for storage of rainy water for water sprinkling; which settles silt exist in water.
4k	Specific comments of inspecting officer on waste dump management	Nil	Nil

#### Solid Waste Management - Backfilling:

Sl.No.	Item	Proposals	Actual work	Remarks
5a	Status of part or full extraction of mineral from mined out area before starting backfilling.	Backfilled was planned in the working pit from one end of the pit.	Eastern part of pit has been backfilled and further advancing.	
5b	Area under backfilling of mined out area	Around 2.7ha is under backfilling, which is part of working pit.	Around 2.7ha is under backfilling, which is part of working pit.	
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	No topsoil is available in the area.	No topsoil is available in the area.	
5d	Total area fully reclaimed and rehabilitated	Backfilling is still in progress and 2.4ha is reclaimed. Plantation has been carried out on upper terraces.	Backfilling is still in progress and 2.4ha is reclaimed. Plantation has been carried out on upper terraces; which is located outside the lease area.	
5e	General remarks of inspecting officers on backfilling and reclamation etc.	Nil	Backfilling is still in progress in eastern part of pit and further advancing in west direction as per advancement & mining of iron ore from lower benches.	



Sl.No.	Item	Propasals	Actual work	Remarks
6a	Whether Annual report on PMCP submitted on time and correctly. Rule 23 E(2).	Proposed to submit by 1st July 2015.	Submitted on 07.08.2015.	
6b	Area available for rehabilitation (ha) .	2.7ha is available in eastern part of pit.	2.7ha is being used for backfilling and it is still in advancing stage. Advancement of backfilling is in relation to mining of iron ore from lower benches.	
6c	afforestation done (ha).	Afforestation was proposed on 1.0ha backfilled area, as per attainment of its full height.	Afforestation has been carried out on southern slope side of backfilled area for stablisation.	
6d	No. of saplings planted during the year	3050 saplings were proposed over backfilled area.	3050 saplings were planted on slopes of the hillock and backfilled area.	
6e	Cumulative no .of plants	Total 180000 saplings were proposed since beginning of mining operations.	90190 saplings were planted on slopes of the dump and backfilled area.	
6f	Any other method of rehabilitation	Nil	Nil	
6g	Cost incurred on watch and care during the year	Cost details were not given.	Rs. 25000/- were spent on plantation during the year.	
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling ( Lx B x D	It was proposed that 15.57ha area will be put under mining and around 2.7ha area will be available for rehabilitation . The proposed available void was 160m X 150m X 50m.	An area of 14.46ha was degraded and around 2.30ha was under reclamation.	

6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	It was proposed to backfill the waste with a height of 50m in five terraces of 10m each.	Total waste generated since beginning of mining operations was 1525000t and it was used for reclamation of 2.7ha mined out land. An average 45m height was attained after backfilling of waste in five stages.
6j	Compliance on reclamation and rehabilitation by backfilling (iii) Afforestation on backfilled area	Yearly 2000 nos trees were proposed over reclaimed area.	Around 3050 trees were planted during 2014-15 over reclaimed area and cumulative plantation was 5000 trees.
6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	NA	Not applicable at present; however at the end of life of mine, part of the pit will be used as water reservoir.
6l	Compliance on reclamation and rehabilitation by backfilling (v) any other specific means.	NA	NA
6m	Compliance of rehabilitation of waste land within lease (i) afforestation	No proposal for the year.	NA, however in past 90180 saplings were planted on dumps and 33000 saplings were planted on waste land.
6n	Compliance of rehabilitation of waste land within lease (ii) Area rehabilitation (ha)	Not applicable.	Not applicable.
6o	Compliance of rehabilitation of waste land within lease (iii) Method of rehabilitation	Nil	Nil
6p	Compliance of environmental monitoring (core zone and buffer zone)	Quarterly environment monitoring is required and report has to be sent to IBM Regional office.	Quarterly environment monitoring is carried out through private agency.

6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.	NA	It is as per proposals and cashew have been planted on backfilled area.
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#### Mineral Conservation:

Sl.No.	Item	Propasals	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	Grade-wise sorting of ore is proposed within lease area.	Grade-wise sorting of ore is carried out outside lease area behind office buidling on southern boundary during screening operation. Mineral is screened in lumps and fines.	
7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	Mechanical diesel operated mobile screen plants are proposed.	Three to five mechanical diesel operated mobile screen plants are in use.	
7c	Different grade of mineral sorted out at mines.	The grades of iron ore estimated in the mining plan are +45-55% Fe, +55% Fe.	The grades of iron ore reported in the annual return of 2014-15 are below 55% Fe for lumps and fines.	
7d	Any beneficiation process at mines .	No	No, mechanical screening is carried out by three to five diesel operated mobile plants.	
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues	No	Nil, the stacking of mineral is carried out outside the lease area for grade-wise sorting and sell to Samrudhha resources Pvt. Ltd.	

#### Environment:

Sl.No.	Item	Propasals	Actual work	Remarks
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8a	Separate removal and utilization of topsoil (Rule 32)	Topsoil generation is not there in the area.	Topsoil generation is not there.
8b	Concurrent use or storage of topsoil	Nil	Nil
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	Proposal was to backfill the waste on eastern part of pit.	Waste was backfilled inside the pit as per proposal.
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	There is one working pit and backfilling was proposed.	There is one working pit and backfilling is followed within the pit. Mineral reject generation is not there.
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	Mineral is persisting in depth and partly being used for backfilling after total mining of iron ore from lower benches.	The mineral is persisting in depth and partly being used for backfilling from eastern face was started during 2013-14 after total mining of iron ore from lower benches.
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	Existence of plantation is there on slopes of the hillocks, along the road and all part of lease area. Additional plantation was proposed after mining over backfilled area.	Existence of plantation is there on slopes of the hillocks, along the road and all part of lease area. Additional plantation has been carried out over dump area and total 30500 trees were planted during the year on backfilled area.
8g	Survival rate	Proposed survival rate was 80%.	Actual survival rate is 85% since last five years. Plantation carried out from 2010-11 to 2014-15 was 7200, 6746, 5016, 5320, 3050 trees.

8h	Water sprinkling on roads to control airborne dust	Proposal is there for water sprinkling on the haul road upto nearby village road connecting mine; which is 1-1.5kms long.	Regular water sprinkling is carried out inside the mine roads with two water tankers of 6000 liters.
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area	Nil	Surrounding area beyond lease area is lush green and lessee has carried out plantation on dumps, near office building, backfilled area, waste land etc.

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Compliance of Rule 45:

Sl.No.	Item	Propasals	Actual work	Remarks
9a	Status of submission of Monthly and Annual returns	Annual return of mine for year 2014-15 submitted in online system on 30.06.2015. Monthly returns are submitted in online system upto February 2016.	All the monthly returns and annual return are submitted online.	
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Appointment of Shri Suresh Kulal as Mining Engineer and Shri Staish Naik as Geologist is reported in the A.R. of 2014-15.	Shri Suresh Kulal as Mining Engineer and Shri Rajen Patil as Geologist w.e.f. 15.01.2015 is working as Geologist in the mine.	

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9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	Area under current working pit- 14.46ha, already exploited & abandoned - 0ha, Reclaimed & rehabilitated - 2.40ha, Used for waste disposal - 1.0ha, Occupied by plant/building , residential, welfare building & roads - 1.6ha.	Details given in the annual returns are correct and found at par with information given in scheme of mining approved on 20.03.2014. However, reclaimed & rehailitated area is 1.5ha only and remaining is in advance stage for further backfilling.
9d	Scrutiny of Annual return on afforestation	550 nos trees within lease area and 1505 trees outside the lease were reported in the A.R.	Yes, cashew trees are planted on backfilled southern slopes.
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	Mineral reject generation was wrongly reported in AR.	Mineral reject generation is not there and violation has been issued for rule 45(5).
9f	Scrutiny of Annual return on ROM stock and/or graded ore	ROM opening stock from opencast workings - 27456.48t, Production - 737681.56t and closing stock - 0t. Grade-wise opening stock of below 55% Fe lumps- 90t, Production - 167094t and closing stock - 0t. below 55% Fe fines- 0t, Production - 597163.44t and closing stock - 0t.	ROM and grade-wise production reported in A.R. is in order.

9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	Sale value of below 55% Fe is Rs. 1128/- for lumps and Rs. 1020/- for below 55 fines-. Ex. mine price of lumps below 55% Fe is Rs. 1128/- and Rs. 1020/- for below 55% Fe fines. Production cost - Rs. 850.40/-.	Sale value and Ex. mine price are same; as iron ore is sold to trader before export. The trader M/s Samruddha Resources Pvt. Ltd. is raising contractor also at mines. The transportation cost from mines to Reddi Port is around Rs.450 per tonne for 35kms distance.
9h	Scrutiny of Annual return on fixed assets	Fixed assests detail is not given and depriciation is indicated Rs. 124000000/-	All the fixed assests ie.machineries belongs to M/s Samruddha Resources Pvt. Ltd, except office building.
9k	Scrutiny of Annual return on mining machineries	Sis hydraulic shovels of 0.7 to 2.3 cum bucket, one dozer of 400 tph, fifteen tippers of 10t and two water tanker of 6000 ltrs are indicated.	Use of mobile screening plants are not reported in the return.

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**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
Rule 13(1)	13/04/2016				
Rule 45(5)	13/04/2016				

**Date :**

**(JANGID G K)**

Indian Bureau of Mines