

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

Mining Plan Modification REPORT

Bangalore regional office

Mine file No : KNT/BLR/FE-201/BNG

Mine code : 30KAR03180

- (i) Name of the Inspecting : **A101**) **ARUN KUMAR**
Officer and ID No.
- (ii) Designation : Deputy Controller Mines
- (iii) Accompanying mine :
Official with
Designation
- (iv) Date of Inspection : 04/09/2018
- (v) Prev.inspection date : 23/07/2016

PART-I : GENERAL INFORMATION

1. (a) **Mine Name** : **SMIORE ML-2678(OLD2580)**
- (b) **Registration NO.** : **IBM/35/2011**
- (c) **Category** : **A Fully Mechanised**
- (d) **Type of Working** : **Opencast**
- (e) **Postal address**
State : **KARNATAKA**
District : **BELLARY**
Village : **DEOGIRI,SB HALLI,RAM**
Taluka : **SANDUR**
Post office :
Pin Code :
FAX No. : **(080) 23613169**
E-mail : **eps@sandurgroup.com**
Phone : **(080) 23613166**
- (f) **Police Station** : **Sandur**
- (g) **First opening date** : **01/01/1954**
- (h) **Weekly day of rest** : **SUN**
2. **Address for correspondance** : **M/s THE SANDUR MANGANESE & IRON ORES LTD**
NO.9, BELLARY ROAD, SADASHIVANAGAR,
BANGALORE - 560080
3. (a) **Lease Number** : **KAR1516**
- (b) **Lease area** : **1860.1**
- (c) **Period of lease** : **20**
- (d) **Date of Expiry** : **31/12/2033**
4. **Mineral worked** : **MANGANESE ORE** Associated
IRON ORE Main

5. Name and Address of the

Lessee : SANDUR MANGANESE & IRON ORES LTD
 DEOGIRI (PO)-583 112 SANDUR
 BELLARY KARNATAKA
 Phone:08395-271025/28/29/40
 FAX :08395-271066

Owner : RAJNISH SINGH
 THE SANDUR MANGANESE & IRON
 ORE LTD DEOGIRI POST,
 SANDUR TALUKA BELLARY
 KARNATAKA
 Phone:
 FAX : (08395) 271066

Agent : Md. Abdul Saleem
 THE SANDUR MANGANESE & IRON
 ORES LT DEOGIRI POST,
 SANDUR TALUKA BELLARY
 KARNATAKA
 Phone: (08395) 271025
 FAX : (08395) 271066

Mining Engineer

Name : SUNIL KUMAR GS,Full Time
 Qualification : B.E.MINING
 Appointment/ : 01/01/2018
 Termination date

Geologist

Name : SHRIDHAR P. HEGDE,Full Time
 Qualification : M. Sc. (Geology)
 Appointment/ : 01/01/2018
 Termination date

Manager

Name : H.YELLAPPA
 Qualification : D.M.E,FCC
 Appointment/ : 01/01/2018
 Termination date

6. Date of approval of Mining	:	MP modif under MCR 1960	01/09/2015
Plan/Scheme of Mining	:	MP modif under MCR 1960	19/08/2016
	:	MP review under 17(1) MCR 2016	07/12/2017

PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	Nil	No backlogs	The maximum drilling was carried out during year from 2011-12 to 2014-15.
1b	Exploration over lease area for geological axis 1 or 2	G1-11 holes, 325 mts G2-1 holes, 55 mts G3-8 holes, 640 mts	G1- 78 DTH holes. Total of 1859 mts	G1 = 695.09 ha G2= 224.54 ha, G3= 319.17 ha. The balance area of 621.3 ha is difficult to access due to steep slope.
1c	Exploration Agencies and Expenditure in lakh rupees during the year	1.08 lakhs	1.5 lakhs	DTH drilling is done in house contract machines of wagon drill (machine used for drilling and blasting) with max depth of 30 mts. Drilling cost =Rs. App. 80/Mts.
1d	Balance area to be explored to bring Geological axis in 1 or 2	-	G1 = 695.09 ha G2= 224.54 ha, G3= 319.17 ha	Area to be explored to bring Geological axis in 1 or 2 is 319.17 ha.
1e	Balance reserve as on 01/04/20	-	Mn. Ore: 13.69 Million Tons, Iron Ore: 67.50 Million Tons, as on 01.04.2018	-
1f	General remarks of inspecting officers on geology, exploration etc	-	-	Out of 1860.10 Ha, Exploration at various levels of G1 = 695.09 ha G2= 224.54 ha & G3= 319.17 ha has been done .There is future proposals of exploration to bring G2 into G1 level.

Development :

Sl.No.	Item	Proposals	Actual work	Remarks
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2a	Location of development w.r.t. lease area	13 locations proposed for development	Actual development done in 11 locations.	No development done in Jaldikolla (JLK) & Chance pit
2b	Separate benches in topsoil, overburden and minerals (Rule 15)	Top soil Benches- Nil, Overburden benches - 5 to 6 mts, Mineral benches - 8 to 12 mts	Top soil Benches- Nil, Overburden benches - 5 to 6 mts, Mineral benches - 8 to 12 mts	The thickness of the top soil varies from 0.3 to 0.5 mts, wherever top soil encounters it is used for plantation
2c	Stripping ratio or ore to OB ratio	Mn Ore: 7.4 Fe Ore: 0.36	Mn Ore: 9.55 Fe Ore: 0.34	Stripping ratio is calculated by considering waste in cubic meter and ore in tons
2d	Quantity of topsoil generation in m3	No proposal	Nil	-
2e	Quantity of overburden generation in m3	Mn pit 1877473 Fe pit 583532	Mn pit 2410791 Fe pit 560878	Higher OB handled in Mn pit due to occurrence of Mn in pockets
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc	-	-	The development is done in 11 location as against 13 locations proposed. Separate benches are maintained for OB & mineral bench in FE & Mn pits.

Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
3a	Number of pit proposed for production	Manganese ore pits 11 Iron ore pits 2	Manganese ore pits 9 Iron ore pits 2	Out of 11 manganese pits two manganese pits were not taken for development because the prosed quantity of 4400 tons was met from remaining manganese pits.
3b	Quantity of ROM mineral production proposed	Mn Ore: 254000t Fe Ore: 1600000t	Mn Ore: 252445t Fe Ore: 1580020t	No significant change

3c	Recovery of sailable/usable mineral from ROM production	Mn Ore: 254000t Fe Ore:1600000t	Mn Ore: 252445t Fe Ore: 1580020t	-
3d	Quantity of mineral reject generation	Mn Ore: 140311m3 Fe Ore: 242744m3	Fe Ore: 89146t(45-55%Fe)	Mineral rejects are stacked separately
3e	Grade of mineral rejects generation and threshold value declared.	+10 to 22% Mn 45 to 55% Fe	10 to 22% Mn 45 to 55% Fe	Threshold value declared for Mn ore is 10% Mn and Fe ore 45% Fe
3f	Quantity of sub grade mineral generation.	No proposal	Not applicable	-
3g	Grade of sub grade mineral generation	No proposal	Not applicable	-
3h	Manual / Mechanised method adopted for segregating from ROM	For Mn Ore- Manual sorting, For Fe Ore- Mechanized	For Mn Ore- Manual sorting, For Fe Ore-Mechanized	All excavations are mechanized. However In case of Manganese ore different qualities of ore is segregated manually by hand sorting.
3i	Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects.	No proposal	Nil	-
3j	Provision of drilling and blasting in mineral benches	drilling & blasting proposed in mineral benches	Drilling & blasting is carried out in mineral benches	In Manganese ore pockets drilling and blasting is done using Jack hammer drill, whereas in iron ore benches normal deep hole drilling and blasting is carried out.
3k	Provision of mining machineries in mineral benches	Provision of mining machineries proposed in mineral bench	Mining Machineries deployed as per proposal	Excavator-31,WL-26,Trucks(20 T)-345,Drills-22 & Jack hammers-16

3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Proposed	Benches in overburden and mineral are suitable for method of mining proposed	Bench height - 7.5 m(Max.),Bench width - 7.5 m(Min.)
3m	Total area covered under excavation/pits	429.38ha	428.5 ha	No significant change
3n	Ore to OB ratio for the pit/mine during the year.	Mn Ore: 7.4 Fe Ore:0.36	Mn Ore: 9.55 Fe Ore:0.34	Occurance & chracterstic of Mn Ore .
3o	Total area put in use under different heads at the end of year	Open cast working (pit)- 429.38ha,Waste disposal - 441.75 ha,Roads, Buildings and others- 61.220 ha	Open cast working (pit)- 428.5 ha,Waste disposal - 393.71ha,Roads, Buildings and others- 61.220 ha	Total area put to use at end of the year is 883.43 ha
3p	Production of ROM mineral during the last five year period as applicable	2013-14:Mn Ore- 180000,Fe Ore- 740000 2014-15:Mn Ore- 180000,Fe Ore- 740000 2015-16:Mn Ore- 180000,Fe Ore- 740000 2016-17: ,Mn Ore-254000,Fe Ore- 1600000 2017-18:Mn Ore-254000,Fe Ore- 1600000	2013-14:Mn Ore-98989,Fe Ore-712362 2014-15:Mn Ore-153607,Fe Ore-516285 2015-16:Mn Ore-144209,Fe Ore-739744 2016-17:Mn Ore-215254,Fe Ore-1149899 2017-18:Mn Ore-252445,Fe Ore- 1579949	The actual production of Mn & Fe are within the proposed limits.All the unit are in Tonne
3q	General remarks of inspecting officers on method of mining etc.			The exploitation of Fe & Mn ore is done as per the proposal. Drilling & Blasting is carried out in mineral benches. Bench height & width maintained in both the pits.

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)	Separate locations are proposed for OB and mineral reject	OB and mineral rejects are dumped separately	-
4b	Location of topsoil, OB and mineral reject dumps	OB-13 locations, Mineral Rejects-11 location	OB-13 locations, Mineral Rejects-09 location	Dumping of OB & mineral rejects with in the ML area.
4c	Number of dumps within lease area and outside of lease area	Within lease area, total 16 numbers	As proposed	Total Numbers of dumps within the lease area are 95
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	Proposed Outside the UPL	Actual Dumping Outside UPL	-
4e	Number of active and alive dumps.	16	16	-
4f	Number of dead dumps.	Nil	Nil	Total 79
4g	Number of dumps established.	Nil	Nil	Fully stabilized-39 and partly stabilized-40
4h	Whether Retaining wall or garland drain all along dumps are there.	Yes	Yes	-
4i	Length of Retaining wall or garland drain all along dumps	No proposal	Nil	Total 43087 Cum & garland drain 43547 Cum
4j	Number of settling ponds	No proposal	Nil	Total 50 nos constructed in previous years
4k	Specific comments of inspecting officer on waste dump management			Since this is a very old mine, 95 dumps were reported by the lessee.16 dumps are alive and 39 dumps are fully stabilized. Dump management is good in the mine.

Solid Waste Management - Backfilling:

Sl.No.	Item	Propasals	Actual work	Remarks
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5a	Status of part or full extraction of mineral from mined out area before starting backfilling.	Backfilling proposed	Backfilling done in JLK pit & is in process	The mineral is extracted & backfilling is in process
5b	Area under backfilling of mined out area	1.25 Ha	0.64 Ha	Backfilling in process
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	No proposal	Nil	Top soil is used as an when generated
5d	Total area fully reclaimed and rehabilitated	No proposal	Nil	-
5e	General remarks of inspecting officers on backfilling and reclamation etc.			Backfilling in the JLK pit proposed after extraction of the ore from the pit & backfilling is in process covering an area of 0.64 Ha.

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).	-	Yearly report as per rule 26(2) of MCDR 2018 is submitted vide our letter dated 29th June 2018	-
6b	Area available for rehabilitation (ha) .	50 Ha	50 Ha	Gap plantation done as per proposal
6c	afforestation done (ha).	50 Ha	50 Ha	Gap plantation done
6d	No. of saplings planted during the year	120000 Nos.	39623 Nos	Advised to increase the density of plantation
6e	Cumulative no .of plants	30 Lakhs	Approx. 34,48,813	-

6f	Any other method of rehabilitation	No proposal	Coir matting layed on some of the dead dumps	To stabilize the dead dumps
6g	Cost incurred on watch and care during the year	Rs.5 Lakh	Rs.8 Lakhs	-
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (Lx B x D	In JLK pit=215m x35m x15 m	112600m3	Backfilling in process
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	1.25 Ha	0.64 Ha	Backfilling in process
6j	Compliance on reclamation and rehabilitation by backfilling (iii)Afforestation on on backfilled area	No proposal	Nil	-
6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	No proposal	Nil	-
6l	Compliance on reclamation and rehabilitation by backfilling (v)any other specific means.	No proposal	Nil	-
6m	Compliance of rehabilitation of waste land within lease (i)afforestation	No proposal	Nil	-
6n	Compliance of rehabilitation of waste land within lease (ii)Area rehabilitation (ha)	No proposal	Nil	-

6o	Compliance of rehabilitation of waste land within lease (iii)Method of rehabilitation	Plantation proposed	Plantation done	-
6p	Compliance of environmental monitoring (core zone and buffer zone)	Proposed	Environmental monitoring in core & buffer zone carried out	Environmental parameters observed within the limits specified.
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.			PMCP activities were carried out as envisaged in the approved document and plantation done. Environmental monitoring of air, water & noise done.

Mineral Conservation:

Sl.No.	Item	Propasals	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	Grade wise sorting proposed with in Lease area	Grade wise sorting & sizing done with in Lease area	In practise
7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	Proposed	Manual sorting for Mn Ore& mechanized for Fe	In practice
7c	Different grade of mineral sorted out at mines.	For Mn-24-26,26-28,28-30,30-32,32-34% For Fe- Below55%,55-58%,58-60%,60-62%,62 - 65% & 65% and above	Different grades sorted out as per proposal	Both Lumps & Fines(Iron) are sorted out in the graded fraction of Fe
7d	Any beneficiation process at mines .	No proposal	Only dry crushing & screening is done	No beneficiation process adopted except sizing & screening

7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues			Mineral conservation is taken care. The incidental iron ore excavated from the Mn pits is stacked separately as mineral rejects. Manual sorting for Mn Ore & dry crushing & screening for Fe ore is adopted
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Environment:

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	No proposal	Utilized as an when generated	-
8b	Concurrent use or storage of topsoil	No proposal	NA	Used when generated
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	Proposed	OB, Mineral reject & fines are stacked separately	Stacked separately
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	Proposed	OB is used for backfilling in the JLK pit for land restoration	Backfilling in progress
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	Proposed	Backfilling is in progress	-
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	Available	39623 saplings planted @70% survival rate with in the ML area	Majority of the ML area is forest land

8g	Survival rate	60 to 70%	70%	-
8h	Water sprinkling on roads to control airborne dust	Proposed	Water sprinkling on roads done regularly to control airborne dust	25 No of water tankers deployed. At some part fixed water sprinklers are installed
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area			Aesthetic beauty in & around the ML area is maintained. 25 water tankers are deployed for suppression of dust. Greenery is maintained in & around the lease area

Compliance of Rule 45:

Sl.No.	Item	Propasals	Actual work	Remarks
9a	Status of submission of Monthly and Annual returns	-	M.R. Submitted up to July 2018 A.R. Submitted up to 2017-2018	-
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Manager-H Yellappa, Mining Engineer- Sunil Kumar G S, Geologist- Shridhar P Hedge	Same as given in AR	-
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	Working(O/C)- 428.50 Ha, Reclaimed & Rehabilitated- 110.0 Ha, Infrastructure- 61.22 Ha, R & R Structures-4.7 Ha	Appears to be correct	-
9d	Scrutiny of Annual return on afforestation	WML-39623 @70%	Appears to be correct	-
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	89146 Tons (45 to 55% Fe)	Appears to be correct	-

9f	Scrutiny of Annual return on ROM stock and/or graded ore	ROM(Fe):OS- 311.51 Tons,Production-1580020.95 Tons, CS-25568.0Tons ROM(Mn):OS-23313.44 Tons,Production-252445.23 Tons, CS-23768.660 Tons	Appears to be correct
9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	Cost of production:541 6.00,Ex-Mine Price(Fe)- Rs.2302/Ton Ex-Mine Price(Mn)- Rs.5768/Ton ,Average Sale Value (Mn)- Rs.5768/Ton	Appears to be correct
9h	Scrutiny of Annual return on fixed assets	Rs.127805245/-	Appears to be correct
9k	Scrutiny of Annual return on mining machineries	Excavators-46,WL- 24,Trucks- 212,WT- 25,Explosive Van-04,Air compressors-7	Appears to be correct

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 35(2)	19/11/2018			

Date :

(ARUN KUMAR)

Indian Bureau of Mines