

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

MCDR INSPECTION REPORT

Nagpur regional office

Mine file No : MAH/NAG/MN-137/NGP

Mine code : 40MSH14010

- (i) Name of the Inspecting : **M013**) **Kewal Krishan**
Officer and ID No.
- (ii) Designation : Sr. Mining Geologist
- (iii) Accompanying mine : SHRI A. V. MASADE, AGENT, SHRI DEKATE, MINES MANAGER
Official with
Designation
- (iv) Date of Inspection : 03/12/2018
- (v) Prev.inspection date : 14/10/2018

PART-I : GENERAL INFORMATION

1. (a) **Mine Name** : **MUNSAR**
- (b) **Registration NO.** : **IBM/5711/2011**
- (c) Category : A Manual
- (d) Type of Working : Underground
- (e) Postal address
State : MAHARASHTRA
District : NAGPUR
Village : MANSAR
Taluka : RAMTEK
Post office : KHAIRI BIJEWADA
Pin Code : 441106
FAX No. :
E-mail :
Phone :
- (f) Police Station :
- (g) First opening date : 01/07/1962
- (h) Weekly day of rest : MON
2. Address for
correspondance :
3. (a) Lease Number : MSH0071
- (b) Lease area : 108.63
- (c) Period of lease : 20
- (d) Date of Expiry : 30/06/2022

MSH0085
25.15
20
13/05/2022

MSH0097

.97

31/03/2020

4. Mineral worked : MANGANESE ORE Main

5. Name and Address of the

Lessee : M/S MANGANESE ORE (INDIA) LTD.
3, MOUNT ROAD EXTENSION
POST BOX NO. 34, NAGPUR
(MP) NAGPUR MAHARASHTRA
Phone:
FAX :

Owner : G P KUNDARGI
MOIL BHAWAN, KATOL ROAD
NAGPUR MAHARASHTRA
Phone: 07122525809
FAX : 07122524996

Agent : P Karaya, DMG (Mines)
MOIL, Munsar Mine Ramtek
Nagpur NAGPUR MAHARASHTRA
Phone:
FAX :

Geologist

Name : M BHANSE, Full Time
Qualification : M.SC.
Appointment/ : 06/09/2005
Termination date

Manager

Name : M M ABDULLA
Qualification : AMIE (Mining)
Appointment/ : 25/10/2010
Termination date

6. Date of approval of Mining Plan/Scheme of Mining : Renewal under rule 22 MCR1960 06/05/2003
Renewal under rule 22 MCR1960 06/05/2003
Mining Scheme rule 12 MCDR1988 21/08/2006
Renewal under rule 24 MCR1960 14/06/2007
Mining Scheme rule 12 MCDR1988 12/08/2009
Mining Scheme rule 12 MCDR1988 29/11/2010
Mining Scheme rule 12 MCDR1988 14/12/2010
Mining Scheme rule 12 MCDR1988 16/04/2013
MP review under 17(1) MCR 2016 30/05/2017
MP review under 17(1) MCR 2016 14/08/2017

MP review under 17(1) MCR 2016

14/08/2017

PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	No backlog. 8 additional boreholes were proposed to be drilled in the year 2017-18.	8 boreholes with 240 m meterage have been drilled in the area.	In last approved SOM period from 2012-13 to 2016-17 period, 20 boreholes with 6000 meterage were proposed to be drilled in the lease area. Against the proposals, 01 borehole was drilled in 2012-13, 18 in 2013-14 and 19 in 2014-15. Total 38 boreholes with 6088 meterage have been drilled.
1b	Exploration over lease area for geological axis 1 or 2	G1, G2 & G3	G1, G2 & G3	Reserves/resources have been considered for insitu and dump both as per the exploration carried out in the area. In-situ reserves are under G-1 category.
1c	Exploration Agencies and Expenditure in lakh rupees during the year	Exploration shall be done by the lessee himself.	Exploration done by M/s MOIL Ltd. with approximate expenditure of Rs 20 Lakh.	
1d	Balance area to be explored to bring Geological axis in 1 or 2	Nil	Nil	Laterally the area has been proved for occurrence of ore. Ore zone is being established for depth persistancy. Approximately 46% of the overall lease area is mineralized that has already been established under G-1 category of UNFC.

1e	Balance reserve as on 01/04/20	Balance reserves/resources as on 01/04/2018: 111- 2104631 T 121- 205625 T 211- 407015 T 221- 303188 T 222- 1549231 T 332- 801955 T 333- 281190 T Total- 5652835 T	
1f	General remarks of inspecting officers on geology, exploration etc	The Manganese ore horizon in the area is of composite nature characterised by inter banding of manganiferous quartzite, gondite and Manganese ore. The ore horizon occur at stratigraphic contact with quartz-mica schists on the hanging wall side and muscovitesillimanite schist on the footwall side.	The Mn-ore in Munsar mine area is finely crystalline to massive in nature. The ore forming minerals are Braunite with Psilomelane and little Pyrolusite. Though the area has been proved for lateral extent, for proving further depth continuity, 52 more boreholes are proposed during 2017-18 to 2021-22 period with 50m grid interval and 8200 meterage out of which 8 boreholes with 240 m meterage have been drilled in the year 2017-18.

Development :

Sl.No.	Item	Propasals	Actual work	Remarks
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2a	Location of development w.r.t.lease area	Development was proposed in 70'L, between Ch 200 &Ch 3750, and at -30' L, - 130' L & - 230'L. Vertical shaft has been sunk upto 5th (- 330') level. In addition to this, sinking of second vertical shaft at Ch. 5100 is in progress. Apart from this, mineralized dumps are proposed for recovery of minerals.	As per the proposals.	Against the Horizontal development proposed at various levels for 575 RMT, actual achievement is 672.9 RMT and vertical developments are 140.4 RMT against the proposals of 140 RMT.
2b	Separate benches in topsoil, overburden and minerals (Rule 15)	Not applicable as the working is Underground and Dump working only.	Not applicable	
2c	Stripping ratio or ore to OB ratio	Not applicable as the working is Underground and Dump working only.		
2d	Quantity of topsoil generation in m3	Not applicable as the working is Underground and Dump working only.		
2e	Quantity of overburden generation in m3	Not applicable as the working is Underground and Dump working only.		

2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc	Development proposed from the underground workings in line with the proposals. Opencast workings shall commence only after getting permission from MoEFCC. Depending on the type of deposit and mode of occurrence, development is adequate.
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Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
3a	Number of pit proposed for production	Not applicable as the working is Underground and Dump working only.		
3b	Quantity of ROM mineral production proposed	2017-18: 50000 T (3175 T from development, 46825T from Stopes)	2017-18: 30743 T	Due to discontinuities in the orezone, actual production was less than the proposals.
3c	Recovery of sailable/usable mineral from ROM production	60% recovery of saleable minerals from ROM	~85% recovery (35955 T U/G ROM and 30743 T saleable minerals)	
3d	Quantity of mineral reject generation	2017-18: 20000 T	2017-18: 5212 T	
3e	Grade of mineral rejects generation and threshold value declared.	<15% Mn	As per proposals, threshold value is +10% Mn.	
3f	Quantity of sub grade mineral generation.	Nil	Nil	
3g	Grade of sub grade mineral generation	Not Applicable	Not Applicable	

3h	Manual / Mechanised method adopted for segregating from ROM	Manual Sorting As per the proposals of ROM within lease area.	ROM is brought to the OCF (Ore Cleaning Floor) where it is being sorted manually by gangs of 5-10 persons at a time and then graded stacks are made.
3i	Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects.	Nil Nil	
3j	Provision of drilling and blasting in mineral benches	Not applicable Nil as the working is Underground and Dump working only.	In underground, Drilling is being done by means of drills with 110 mm hole diameter. Existing blast practices involves use of detonating fuse initiation with cord relay delay detonators and NONEL's using mainly slurry explosive. The usual blast pattern is spacing at 2.5m and burden at 2.0 m with charge factor at 0.4 kg/m ³ for the ore body.
3k	Provision of mining machineries in mineral benches	Not applicable Nil as the working is Underground and Dump working only.	Mine working involves Drilling and blasting by 110 mm diameter drills, then blasted muck is loaded into tubs and hoisted to the surface OCF. Front end Loader, Backhoe are deployed for dump workings. water tanker and tippers are used at surface.

3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Not applicable Nil as the working is Underground and Dump working only.	Level intervals, size of pillars, support system etc. have been selected based on the occurrence of the orebody and in compliance to DGMS safety norms. Method of stoping as cut and fill is suitable for mining the orezone.
3m	Total area covered under excavation/pits	9.0 ha 9.0 ha	
3n	Ore to OB ratio for the pit/mine during the year.	Not applicable NA as the working is Underground and Dump working only.	
3o	Total area put in use under different heads at the end of year	Area under: Pits- 9.0 ha Waste Dumps-22.25 ha Mineral Storage- 4.0 ha Township-6.886 ha Roads-2.0 ha Infrastructure-4.802 ha Others (U/g opening, OCF etc.)-1.0 ha Total- 50.144 ha	
3p	Production of ROM mineral during the last five year period as applicable	2016-17: 83330 T 2015-16: 50000 T 2014-15: 50000 T 2013-14: 50000 T 2012-13: 41670 T	2016-17: 36666 T 2015-16: 23194 T 2014-15: 18467 T 2013-14: 23202 T 2012-13: 28135 T

3q General remarks of inspecting officers on method of mining etc.

Method of mining is Category A as average daily number of persons employed in the mine is 217 (>175). Working is semi-mechanised. It is an underground mine where dump working is also going on for recovery of minerals. Method of stoping is cut and fill. All operations are suitable as per the occurrence of orebody in the area and capital investments.

Solid Waste Management - Dumping:

Sl.No.	Item	Propasals	Actual work	Remarks
4a	Separate dumping of topsoil, OB and mineral rejects (Rule 32,33)	Not applicable as the working is Underground and Dump working only.		Waste and Mineral rejects generated are being dumped separately and no intermixing is allowed. Part of waste is being used for underground filling of voids. Top soil is not excavated and earlier excavated top soil has been utilized for plantation.

4b	Location of topsoil, OB and mineral reject dumps	Top Soil-No dumps Waste- 5 dumps at E16580 to E16900 and N13400 to N13700 (2 dumps), E16500 to E16700 and N13900 to N14200, E16000 to E16200 and N14300 to N14600 & E15300 to E15500 and N14900 to N15100 Mineral Reject: 5 Dumps at E16800 to E16900 and N13400 to N13600, E14800 to E15600 and N14500 to N15600 (4 Dumps)	As per the proposals	
4c	Number of dumps within lease area and outside of lease area	All dumps within lease area	All dumps within lease area	
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	Not applicable as the working is Underground and Dump working only.		
4e	Number of active and alive dumps.	All dumps are active	All dumps are active	
4f	Number of dead dumps.	Nil	Nil	
4g	Number of dumps established.	Nil	Nil	Progressing Reclamation work is under process but no dump has been stabilized yet.
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	Approximately 2000 m	As per the proposals	

4j	Number of settling ponds	Nil	Nil	
4k	Specific comments of inspecting officer on waste dump management			Progressing Reclamation work is under process but no dump has been stabilized yet. Overall 15.25 ha area of mined out pit and dump has been reclaimed.

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.	After exhaustion of mineral from the opencast pits, generated waste is backfilled to restore its topography. Also, after exhaustion of mineral in underground, waste is used alongwith sand for backfilling the voids.	As per the proposals, backfilling of underground voids is being done with waste generated underground. Waste brought at surface and generated in shaft and sinking is being utilized in backfilling of old exhausted pits-KL Pit and Bunglow Pit at the eastern side of the lease area.	
5b	Area under backfilling of mined out area	Till date approximately ha area has been backfilled	As per the proposals	

5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	Not applicable as the working is Underground and Dump working only. Backfilled area shall be rehabilitated by plantation after getting clearances from MoEFCC for opencast workings and after completion of backfilling work.	Nil	Previously, Top soil has been utilized for plantation work. Presently no top soil dump is there in the area.
5d	Total area fully reclaimed and rehabilitated	Nil for the year.	Nil	Overall 15.25 ha area of mined out pit and dump has been reclaimed.
5e	General remarks of inspecting officers on backfilling and reclamation etc.			Backfilling work is under process for KL pit and Bunglow pit as per the proposals. After getting approval from MoEFCC, opencast working shall be commenced in the area and generated top soil shall be used for plantation. In the last 5 years period of 2012-13 to 2016-17, waste generated from underground was approximately 16724 cuM out of which around 12124 cuM was utilized for underground void filling. rest 4700 cuM was brought to the external dumps at surface.

Progressive Mine Clousre Plan:

Sl.No.	Item	Propasals	Actual work	Remarks
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6a	Whether Annual report on PMCP submitted on time and correctly. Rule 23 E(2).	Yes	Yes	
6b	Area available for rehabilitation (ha) .	Around 20.0 ha	Area under exhausted KL pit and Bunglow pit are available for rehabilitation. The area shall be backfilled by Waste and then restored by plantation. Presently, it is under active reclamation.	
6c	afforestation done (ha) .	Approximately 22 ha	as per the proposals	Mainly dump plantation has been carried out.
6d	No. of saplings planted during the year	200 Nos. of saplings shall be planted.	2000 Nos. of saplings planted.	
6e	Cumulative no .of plants	Not available	Approximately 80000	
6f	Any other method of rehabilitation	No such proposals	Nil	
6g	Cost incurred on watch and care during the year	Approximately 22 lakhs	As per the proposals	
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (Lx B x D	Approximately 20.0 ha under KL pit and Bunglow Pit	Backfilling is under process.	
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	Approximately 2.0 ha	Backfilling is under process as per the proposals.	
6j	Compliance on reclamation and rehabilitation by backfilling (iii)Afforestation on backfilled area	No such proposals	Nil	

6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	No such proposals	Nil
6l	Compliance on reclamation and rehabilitation by backfilling (v) any other specific means.	No such proposals	Nil
6m	Compliance of rehabilitation of waste land within lease (i) afforestation	No such proposals	Nil
6n	Compliance of rehabilitation of waste land within lease (ii) Area rehabilitation (ha)	No such proposals	Nil
6o	Compliance of rehabilitation of waste land within lease (iii) Method of rehabilitation	No such proposals	Nil
6p	Compliance of environmental monitoring (core zone and buffer zone)	Yes	Yes

6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.	PMCP compliance is up to date and efforts are being made by the lessee to restore the area to its actual topography. Plantation has been carried out over waste dumps for stabilization and Garland drains and retaining walls are there to arrest any slippage or washoff. Environment monitoring is also being done in the core and buffer zone as per MoEFCC guidelines.
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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 and dispatch	As per the proposals	
7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	Manual	Manual	
7c	Different grade of mineral sorted out at mines.	(i) 25% to below 35% Mn and (ii) 35% to below 46% Mn	As per the proposals	Apart from the above, less than 15% Mn containing material is being stacked separately as mineral rejects.
7d	Any beneficiation process at mines	No	No	

7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues	Mineral conservation aspect has been thoroughly covered as even 8% Mn containing Mineral rejects are being stacked though threshold value is 10% of Mn.
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Environment:

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	Not applicable as the working is Underground and Dump working only.	Nil	
8b	Concurrent use or storage of topsoil	Not applicable as the working is Underground and Dump working only.	Nil	
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	Yes	Yes	
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	Yes, Backfilling of mined out pit is proposed.	Generated waste is being used for backfilling and restoring land.	
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	Yes	Dumps are being reclaimed and stabilized through plantation. Mined out pits are being backfilled.	
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	Yes	Yes	

8g	Survival rate		83% approximately.
8h	Water sprinkling on roads to control airborne dust	Yes	Yes
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area		Aesthetic beauty in and around the area is good. Lessee has done extensive plantation work and reclamation of old exhausted pits is underway. Also, one solar plant of 5MW capacity is proposed to be set up in the eastern part of the lease area to establish green energysource.

Compliance of Rule 45:

Sl.No.	Item	Propasals	Actual work	Remarks
9a	Status of submission of Monthly and Annual returns		Monthly returns submitted online upto Nov018 Annual returns submitted upto 2017-18	
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Mining Engineer: SHRI S. B. RAMTEKE Geologist: SHRI D. MOHANTA Manager: SHRI D. R. DEKATE	Correct information furnished.	
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	Information has been furnished regarding landuse.	Correct information furnished. Spot guidance also given for mentioning correct areas under various heads.	
9d	Scrutiny of Annual return on afforestation	Number of Saplings: 2000 Survival: 83% (within lease only)	Complete information furnished.	

9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	10000 T Mineral rejects generated with <15% Mn	Actual generation of Mineral rejects is 5212 T with <15% Mn grade. The information wrongly entered and is under correction (refer back).
9f	Scrutiny of Annual return on ROM stock and/or graded ore	ROM (Underground): Opening & Closing Stock- Nil, Production- 30743 T Dump Working: 19244 T Graded Ore: (i) 25% to below 35% Mn: Opening Stock- 7718 T, Production- 49644 T, Dispatch- 56802.686 T, Closing Stock- 559.314 T (ii) 35% to below 46% Mn: Opening Stock- 98 T, Production- 343 T, Dispatch- 437.86 T, Closing Stock- 3.14 T	Only correction arising due to refer back is in ROM (Underground): 30743 T + 5212 T (Mineral Rejects)= Total 35955 T
9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	Sale Value: (i) 25% to below 35% Mn- Rs 410415219.2/- (ii) 35% to below 46% Mn- Rs 5769590.92/- Ex-Mine Price (Per T): (i) 25% to below 35% Mn- Rs 7605.49/- (ii) 35% to below 46% Mn- Rs 13204.50/- Cost of Production (per T): Rs 8589.84/-	Complete information furnished

9h	Scrutiny of Annual return on fixed assets	Value of Fixed Assets: Rs 631168265/- Information furnished on Land, buildings, machineries etc. Information on 'Paid up share capital' and 'Reserves and Surplus' also given.	Complete information furnished	
9k	Scrutiny of Annual return on mining machineries	Complete information furnished	Correct	Mine working involves Drilling and blasting by 110 mm diameter drills, then blasted muck is loaded into tubs and hoisted to the surface OCF. Front end Loader, Backhoe are deployed for dump workings. Water tanker and tippers are used at surface.

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

Date :

(Kewal krishan)

Indian Bureau of Mines