

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

MCDR INSPECTION REPORT

Nagpur regional office

Mine file No : MAH/BHD/MN--33/NGP

Mine code : 40MSH05001

- (i) Name of the Inspecting : M017) ASHISH MISHRA
Officer and ID No.
- (ii) Designation : Sr. Asst. Contrl. Mines
- (iii) Accompanying mine : SHRI RAJESH BHATTACHARYA, AGENT AND SHRI CHAUKSEY, MI
Official with
Designation
- (iv) Date of Inspection : 01/10/2018
- (v) Prev.inspection date : 01/09/2017

PART-I : GENERAL INFORMATION

1. (a) **Mine Name** : CHIKLA
- (b) **Registration NO.** : IBM/5711/2011
- (c) **Category** : A Other than Fully Mech.
- (d) **Type of Working** : Underground
- (e) **Postal address**
- State : MAHARASHTRA
- District : BHANDARA
- Village : SITASAONGI
- Taluka : TUMSAR
- Post office : SITASAONGI
- Pin Code :
- FAX No. :
- E-mail :
- Phone : 07183 - 220231
- (f) **Police Station** :
- (g) **First opening date** : 01/07/1962
- (h) **Weekly day of rest** : FRI
2. **Address for** : AT - SITASAONGI,
correspondance TAH.: TUMSAR
DISTT.: BHANDARA (MS) - 441 920
3. (a) **Lease Number** : MSH0062
- (b) **Lease area** : 150.64
- (c) **Period of lease** : 20
- (d) **Date of Expiry** : 30/06/2022
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 : C P KUNDARGI
 MOIL BHAWAN, KATOL ROAD
 NAGPUR NAGPUR MAHARASHTRA
 Phone:
 FAX :

Agent : C B ATULKAR
 CHIKLA MINE PO - SITASAONGI
 BHANDARA MAHARASHTRA
 Phone:
 FAX :

Mining Engineer

Name : R.K.SAH, Full Time
 Qualification :
 Appointment/ :
 Termination date

Geologist

Name : Shri A.K.Singh, Full Time
 Qualification : M.Sc. (Geology)
 Appointment/ :
 Termination date

6. Date of approval of Mining	:	Renewal under rule 22 MCR1960	30/05/2003
Plan/Scheme of Mining		Mining Scheme rule 12 MCDR1988	22/07/2008
		Mining Scheme rule 12 MCDR1988	02/05/2013
		MP review under 17(1) MCR 2016	30/06/2017

PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	2 Boreholes were proposed in 2017-18	2 boreholes were drilled in 2017-18	Earlier in 2012-13 to 2016-17 approved SOM period , 17 boreholes were proposed with total 4730 m meterage against which 22 boreholes were drilled with approximately 3700 m meterage. In 2017-18, 2 boreholes were proposed with 1020 m meterage at 100 m X 100 m grid interval against which 2 boreholes were drilled with 763 m meterage.
1b	Exploration over lease area for geological axis 1 or 2	G1 & G2	G1 & G2	Complete area has been proved on G-1 level for lateral extent. Below - 470' L, occurrence of Mn Ore needs further exploration and exploratory mining. thats why mineral occuring below -470'L has been considered under G-2.
1c	Exploration Agencies and Expenditure in lakh rupees during the year	By the lessee himself.	Exploration was carried out by lessee himself. Expenditure over the exploration during the year was approximately Rs 50 Lakhs (~Rs 6500/- per m drilling)	
1d	Balance area to be explored to bring Geological axis in 1 or 2	Nil	Nil, as complete lateral extent has been proved under G-1, exploration proposals are incorporated only for proving depth continuity of the deposit.	In 2017-18 to 2021-22 period, total 8 boreholes are proposed to be drilled with 1900 m meterage. Out of these 8 boreholes, 6 shall be drilled at 100 m X 100 m grid and rest 2 shall be drilled at 50 m X 50 m grid interval.

1e Balance reserve as on 01/04/20

Balance reserves as on 01.04.2018,
 111- 1939726 T
 121- 434331 T
 211- 368355 T
 222- 1839079 T
 332- 84000 T
 Total- 4665491 T (4.665 MT)

1f General remarks of inspecting officers on geology, exploration etc

Exploration is being done continuously as per the geology of the area and in the last 5 years proposal period, total 22 bore holes with total meterage of approximately 3700 m have been drilled. In the next 5 years period, i.e., 2017-18 to 2021-22, total 8 boreholes are proposed to be drilled to prove upto -770 mRL level.

Development :

Sl.No.	Item	Propasals	Actual work	Remarks
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2a	Location of development w.r.t.lease area	For 2017-18, Chikla Main & Chikla A: - 270' L, -370'L & -470'L (Hz Dev: 850 RMT, Vertical Dev.: 160 RMT), Capital Development to Connect Chikla B section: - 270/ L, -370'L (Hz Dev.: 120 RMT) 2nd Vertical Shaft: 60 m shaft sinking, 60 m OTC sinking, and 115 m shaft cross-cut (Total 235 RMT)	Development in 2nd Shaft: 192.183 RMT Hz. Development: 1231.05 Vertical Development: 77.3 RMT
2b	Separate benches in topsoil, overburden and minerals (Rule 15)	Not applicable being underground workings only.	NA
2c	Stripping ratio or ore to OB ratio	Not applicable being underground workings only.	NA
2d	Quantity of topsoil generation in m3	Nil	Nil
2e	Quantity of overburden generation in m3	Not applicable being underground workings only.	N A

2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc	Presently the workings are limited to Underground and dump workings only and for underground, exploration for deeper level is also being proposed and carried out. Adjacent to this lease area, M/s MOIL Ltd. has been granted additional area which is under prospecting and after grant of ML, the area can be well developed for the entire orezone. Opencast developments and working of blocked ore in the underground at upper levels can be done only after grant of necessary clearances by MoEF.		
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Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
3a	Number of pit proposed for production	Not aplicable being underground workings only.	N. A.	For Underground, 2 Stopes at -170'L, 8 Stopes at -270'L, 3 Stopes at -370'L in Chikla Main and Chikla A and 4 Stopes at -60'L in Chikla B section are proposed and being worked.
3b	Quantity of ROM mineral production proposed	2017-18: 175000 T	2017-18: 162745 T	

3c	Recovery of sailable/usable mineral from ROM production	80% of the ROM shall be cleaned ore production. For 2017-18: Cleaned Ore- 140000 T Mineral Rejects- 35000 T	Generation of Mineral Rejects below 20% Mn was only 7625 T and the generated reject was blended and dispatched alongwith high grade. Thus, recovery was on a higher side.
3d	Quantity of mineral reject generation	For 2017-18: 35000 T	Nil
3e	Grade of mineral rejects generation and threshold value declared.	10-20% Mn containing material has been considered as Mineral Rejects whereas Threshold Value for Mn is +10% Mn.	As per the proposals.
3f	Quantity of sub grade mineral generation.	Nil	Nil
3g	Grade of sub grade mineral generation	N. A.	N. A.
3h	Manual / Mechanised method adopted for segregating from ROM	Mechanised Crushing and Screening and Manual Sorting both.	As per the proposals, mechanized crushing and screening is being done. Dump working is associated with manual sorting.
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	Yes	Yes, drilling and blasting is proposed in the Underground Levels for ore extraction.

3k	Provision of mining machineries in mineral benches	For underground workings, 16 cft and 24 cft tubs are there which shall be loaded manually with the blasted muck. These tubs shall be hauled through Loco and hoisted through cage winding system at the mine.	As per the proposals.	
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Not applicable being underground workings only.	As per the geological conditions of the deposit in the area, method of mining and method of stoping are suitable and as per the approved MP/ SOM.	
3m	Total area covered under excavation/pits	4.465 ha	4.465 ha (No opencast working due to pending MoEF Clearance)	
3n	Ore to OB ratio for the pit/mine during the year.	Not applicable being underground workings only.	N. A.	
3o	Total area put in use under different heads at the end of year		Area under: Excavation/ Pits: 4.465 ha Mineral Storage: 3.6045 ha Overburden/ Waste Dump: 2.80 Ha Infrastructure: 3.0 ha Roads: 3.50 ha Township Area: 2.23 ha Total: 19.5995 ha	Apart from the above details, 18.4497 ha area of waste dumps has been already reclaimed and rehabilitated by plantation with approximately 336686 nos. of trees.

3p	Production of ROM mineral during the last five year period as applicable	2013-14: 240587 T	2013-14: 95142 T	Proposals for 2013-14 to 2016-17 include opencast ROM proposals also and actual is for underground only as working is limited to underground mining and dump working. For 2017-18, figures given are for Underground only as proposed in the document.
		2014-15: 262574 T	2014-15: 105069 T	
3q	General remarks of inspecting officers on method of mining etc.	2015-16: 242552 T	2015-16: 115683 T	Method of mining is underground by cut and fill method and dump workings for exploitation of ore. For ore locked at upper levels while underground workings, and also for working of surficial deposit occurring at Chikla Main, opencast working proposals were made by mechanised method deploying dumper shovel combination but the same could not be done as clearance could not be obtained from MoEF for opencast workings.
		2016-17: 241080 T	2016-17: 129515 T	
		2017-18: 175000 T	2017-18: 162745 T	

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)	Yes, separate dumps for waste and mineral rejects/subgrade is proposed. As no top soil is proposed to be generated during the ensuing period, dumping for top soil is not commented upon.	Separate dumps for Waste and Mineral rejects/ Sub-grade is there at the site.	
4b	Location of topsoil, OB and mineral reject dumps	Waste dumping is proposed on WD-2 located in southern part of the lease area. Subgrade/ Mineral rejects are proposed to be dumped on the existing Mineralised dumps located in Chikla Main.	As per the proposals.	
4c	Number of dumps within lease area and outside of lease area	Total 17 Waste Dumps and 3 Black dumps all within lease area.	As per the proposals.	
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	Dumps are within as well as outside pit limits (opencast).	All dumps are outside limits for underground workings. For opencast workings, dumps are within as well as outside the pit limits.	
4e	Number of active and alive dumps.	1 waste dump active and all 3 black dumps active	As per the proposals	WD-2 is under Active Waste dumping activities.
4f	Number of dead dumps.	16 Waste dumps are dead and stabilized by reclamation and rehabilitation through plantation	As per the proposals.	

4g	Number of dumps established.	16 dead waste dumps are stabilized	As per the proposals	
4h	Whether Retaining wall or garland drain all along dumps are there.	Yes	Yes	Most of the small dumps are located within pit limits where no retaining wall is there but dumps located at / near the ML boundaries are surrounded by protective workings like garland drains and retaining walls.
4i	Length of Retaining wall or garland drain all along dumps	390 m Garland drain and retaining wall were proposed to be constructed in 2017-18	401 m garland drain and retaining wall constructed in 2017-18	Earlier also approximately 1050 m retaining wall / garland drain has been constructed along the toe of the dumps.
4j	Number of settling ponds	Nil	Nil	
4k	Specific comments of inspecting officer on waste dump management			Waste dump management is an aspect that is required to be looked into for the mine. There are total 17 dumps within the lease area out of which 16 dumps (except WD-2) were stabilized through plantation. Dumps are located within pit limits for open cast that will be shifted upon commencement of opencast operations. Dumps located at the ML boundary such as WD-1,2,8,9 etc are equipped with protective structures like garland drains and retaining walls at the toe end.

Sl.No.	Item	Propasals	Actual work	Remarks
5a	Status of part or full extraction of mineral from mined out area before starting backfilling.	No proposals for backfilling as opencast mining is not being done.	Underground waste is being filled underground itself for around 30% of total waste generation. Other than this no backfilling is proposed or being done at the mine.	
5b	Area under backfilling of mined out area	Nil	Nil	
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	No top soil is excavated for the year and also no rehabilitation is proposed for any mined out area.	N. A.	Earlier excavated Top soil has already been used for stabilization of dumps through plantation.
5d	Total area fully reclaimed and rehabilitated	Nil	Nil	As on date 18.4497 ha od waste dump area has already been reclaimed and rehabilitated. But the same has not been considered as waste dumps may be required to be re-handled upon grant of Opencast working permission by MoEF.
5e	General remarks of inspecting officers on backfilling and reclamation etc.			Backfilling has not yet started as mineral is available in the ML area and opencast mining is yet to commence. Reclamation and rehabilitation works was done over the inactive dumps.

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).	Yes	Yes	

6b	Area available for rehabilitation (ha) .	Nil	Nil	Presentle available dumps are either active or required to be shifted for opencast mining. Therefore, no area is available for rehabilitation purposes.
6c	afforestation done (ha).	18.4497 ha	18.4497 ha of waste dump area	
6d	No. of saplings planted during the year	2000 Nos. of saplings	As per the proposals	The plantation proposed has already been covered by the lessee in plantation carried out in the lease area.
6e	Cumulative no .of plants	Not available	336686 Nos of plants	
6f	Any other method of rehabilitation	No such proposals	Nil	
6g	Cost incurred on watch and care during the year	Approximately 1.5 lakhs	Around 6 Lakhs	
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (Lx B x D	No such proposals	Nil	
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	No such proposals	Nil	
6j	Compliance on reclamation and rehabilitation by backfilling (iii)Afforestation on 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	Environment monitoring is being done in the core zone and buffer zone as per MoEF guidelines.

6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.	Progressive closure for available land/area is being done properly. Till permission for opencast workings is not obtained, mined out area may not be available for any backfilling and reclamataion activities. Environment monitoring is also being done properly as per the guidelines in this regard. Expenditure on watch and care is well above the proposals and is evident of the fact that progressive closure is being practiced in true spirits.
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Mineral Conservation:

Sl.No.	Item	Propasals	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	Mineral is being dispatched after gradewise sorting and ROM is not being dispatched from the lease area.	As above	
7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	Mechanical crushing and manual sorting	As per the proposals	
7c	Different grade of mineral sorted out at mines.	<25% Mn, 25-35% Mn and 35-46% Mn	As per the proposals	

7d	Any beneficiation process at mines .	Yes	Crushing and screening plant for size-wise and grade-wise recovery of ROM.	
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues			Mineral is being extracted from underground and dump working. Subgrade/ Mineral rejects not saleable having 10-20% Mn are blended or being stacked separately for future usage. Opencast proposals for extraction of blocked ore in the underground pillars is in line with full extraction of ore body and thus in coherence with the objectives of Mineral Conservation. Beneficiation is in form of crushing and screening only for grade-wise size wise dispatch of mineral.

Environment:

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	No top soil removal is proposed.	Not applicable	
8b	Concurrent use or storage of topsoil	Not applicable	Nil	
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	Yes	Separate dumps for waste, mineral rejects/sub-grade and fines is there at the mine site.	

8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	Waste rock is being used for filling in underground itself.	Around 30% of the waste generated underground is being used for filling purposes in underground and rest 70% is brought to the surface for dumping. Other than this, no backfilling is proposed or practiced as opencast working operations are yet to commence.	
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	No such proposals	Nil	16 dead waste dumps are already stabilized through plantation. There is only one active dump for waste. Further, Phased restoration of pit could not be done due to existence of mineral at pit bottom and also not having permission for opencast operations.
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	Yes	Yes	
8g	Survival rate		More than 80%	
8h	Water sprinkling on roads to control airborne dust	Yes	Yes.	For dump workings and for haulage roads, water sprinkling is being done.

8i	General remarks of inspecting officer on aesthetic beauty in and around mines area	Apart from degradation of the land due to mining operations, aesthetic beauty of the area is unsatisfactory as total saplings planted by the lessee in the area are in good numbers (336686 Nos.). Degradation and environment issues are well under control as opencast mining operations are yet to commence in the lease area.
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Compliance of Rule 45:

Sl.No.	Item	Proposals	Actual work	Remarks
9a	Status of submission of Monthly and Annual returns		AR submitted online upto 2017-18 MR submitted online upto October'2018	
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Mining Engineer: Shri Prashant Dakre Geologist: Shri Sudhanshu Chavan Manager: Shri A. K. Chauksey	Correct information furnished	
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	Correct information was furnished except for the area already exploited and abandoned.	Discussed with the mine officials regarding already exploited and abandoned area. It was informed that earlier opencast working was there in the area but now as MoEF clearance is not obtained, the area is devoid of any working by opencast mining method. hence the area has been mentioned under it inadvertently.	Spot guidance given for revising the returns and deleting the area shown as abandoned.

9d	Scrutiny of Annual return on afforestation	Nil	Plantation as proposed in the SOM for the year has already been carried out in previous years. Hence correct information has been furnished in the Annual returns.	
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	7625 T of Mineral rejects are generated in 2016-17 with quality 10-20% Mn content	Information furnished	These mineral rejects have not been counted in ROM for which spot guidance provided and it was advised to correct the returns accordingly. The returns are under correction with MMS Div.
9f	Scrutiny of Annual return on ROM stock and/or graded ore	ROM: Opening and closing Stocks-Nil (as complete ROM has been graded), Production: 162745 T Graded Ore: Below 25% Mn: Opening Stock: Nil, Production: 7292 T, Dispatch: 728 T, Closing Stock: 6564 T 25-35% Mn: Opening Stock- 7039 T/ Closing Stock- 3198 T/ Production- 69483 T/ Dispatches- 73324 T 35-46% Mn: Opening Stock- 12596 T/ Closing Stock- 9641 T/ Production- 102921 T/Dispatches- 105876 T	Alongwith above, Dump working of 16951 T under ROM also furnished. Complete information furnished.	

9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	Ex Mine Price for Below 25% Mn is Rs 2300/- per T, for 25-35% Mn is Rs 4438.67/- per T and for 35-46% Mn is Rs 12834/- per T. Cost of production is Rs 4487.80/- per T. Sale values given for domestic consumption are found correct.	Complete information furnished.	Sample Invoices also checked to see whether Royalty is added to ASP or not and found that Royalty was furnished separately. Hence no double pricing or enhancement in ASP observed. It is under examination with MMS Div. as well as Regional Office separately and suitable actions shall be initiated in case of any discrepancy.
9h	Scrutiny of Annual return on fixed assets	Value of Fixed Assets (in Rs.) 513624690	Complete details furnished.	
9k	Scrutiny of Annual return on mining machineries	Details furnished as per the extent of mechanization given in the approved MP.	Correct information furnished.	

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 :
(ASHISH MISHRA)

Indian Bureau of Mines