

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

MCDR INSPECTION REPORT

Nagpur regional office

Mine file No : MAH/NAG/MN-103/NGP.V

Mine code : 40MSH14008

- (i) Name of the Inspecting : **K02**) **Kalmata.M.K.**
Officer and ID No.
- (ii) Designation : Regional Mining Geologist
- (iii) Accompanying mine : Shri A.K.Chouksey, Mines Manager & Shri R.U.Singh, Ag
Official with
Designation
- (iv) Date of Inspection : 24-SEP-21
- (v) Prev.inspection date : 02-FEB-21

PART-I : GENERAL INFORMATION

1. (a) **Mine Name** : **KANDRI**
- (b) **Registration NO.** : **IBM/5711/2011**
- (c) Category : A Manual
- (d) Type of Working : Underground
- (e) Postal address :
State : MAHARASHTRA
District : NAGPUR
Village : KANDRI
Taluka : RAMTEK
Post office : KANDRI
Pin Code : 441401
FAX No. :
E-mail : mm.kd@moil.nic.in
Phone : 07114--68148
- (f) Police Station :
- (g) First opening date : 01-JUL-82
- (h) Weekly day of rest : THU
2. Address for :
correspondance :
3. (a) Lease Number : MSH0074
(b) Lease area : 83.06
(c) Period of lease : 60
(d) Date of Expiry : 30-JUN-22
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 : **Shri.P.V.V.Patnaik.**
 3, MOUNT ROAD EXTN. POST
 BOX NO. 34 NAGPUR NAGPUR
 MAHARASHTRA
 Phone: 0712 - 2545703
 FAX : 0712 - 2524996

Agent : Shri S.S.Chakravorty
 PO- Kandri Distt.
 Nagpur(MS) NAGPUR
 MAHARASHTRA
 Phone: 07114-- 68148
 FAX :

Mining Engineer

Name : **Shri D.Thakur.**
 Qualification : B.E. MIning
 Appointment/ :
 Termination date

Mining Engineer

Name : **Shri C.P.N.Patra.** Full Time
 Qualification : B.Tech. Mining
 Appointment/ : 21-JUN-04
 Termination date

Geologist

Name : **Shri Prafulla Kumar Singh.**
 Qualification : M.Sc. (Geology)
 Appointment/ :
 Termination date

6. Date of approval of Mining	:	Renewal under rule 22 MCR1960	01-APR-03
Plan/Scheme of Mining	:	Mining Scheme rule 12 MCDR1988	04-OCT-07
	:	Mining Scheme rule 12 MCDR1988	16-JAN-13
	:	MP review under 17(1) MCR 2016	30-MAY-17

PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	There was a proposals to drill 04 boreholes in the year 2020-21.	No exploration has been carried out in the year 2020-21.	Lessee has drilled total 41 boreholes in the present plan period. 37 boreholes in the year 2017-18 and four boreholes in the year 2018-19. In the approved document there was a proposal to drill total 36 boreholes (in the present plan period (2017-18 to 2021-22)). Proposed exploration was completed in first two years only.
1b	Exploration over lease area for geological axis 1 or 2	proposal was given to explore entire mineralized area under G1 level.	Entire mineralized area is explored under G-1 level.	Total 41 boreholes were drilled in the present plan period with total meterage of 13458m.
1c	Exploration Agencies and Expenditure in lakh rupees during the year	Proposal not given in the approved document.	Exploration was carried out by M/S MOIL and expenditure incurred on exploration is approximately 38.67 Lakh.	
1d	Balance area to be explored to bring Geological axis in 1 or 2	Nil.	Entire mineralized area is explored under G-1 level.	Total 59.80 ha is explored under G-1 level exploration and remaining 23.26 ha is nonmineralized area.

1e	Balance reserve as on 01/04/20	Reserves/resources as per approved document dated 30.05.2017 Proved Reserves (111) 15,68,451 tonnes Presfeasibility Resources (221/222) 72,81,938 tonnes Total 88,50,389 tonnes	Reserves/resources as on 01.04.2021 Mineral reserves (111) 13,57,922 tonnes Mineral Resources(221) 72,81,938 tonnes Total : 86,39,860 tonnes	Depleted 210529 tonnes of insitu production caried b/w the year 201718 to 2020-21. Lessee has drilled total 41 boreholes in the present plan period, however status of incremental increase in resources based on exploration is not submitted to this office.
1f	General remarks of inspecting officers on geology, exploration etc		The deposit in Kandri Mine is of S shape due to techtonic activites and are named as North Limb, South Limb and South Extension. Total 132 boreholes were drilled in the lease area and entire mineralized area is explored under G-1 level.	

Development :

Sl.No.	Item	Propasals	Actual work	Remarks
2a	Location of development w.r.t.lease area	Under ground: 250'L, &, - 450' L Dump Working: MD-3 (Mineralized Dump) in the year 2020-21.	Development is made in the -450L as proposed in the approved document. Further, some working was observed in the -350 (cross cut 10 and 11) Level also, where no such proposal was given in the approved document. No dump working has been carried out in the year 2020-21.	Violation is pointed out for working at -350 L, under Rule 11(1) of MCDR-2017.
2b	Separate benches in topsoil, overburden and minerals (Rule 15)	Not applicable as it is an underground mine.	Not applicable as it is an underground mine.	

2c	Stripping ratio or ore to OB ratio	Not applicable as it is an underground mine.	Not applicable as it is an underground mine.
2d	Quantity of topsoil generation in m3	Not applicable as it is an underground	Not applicable as it is an underground mine.
2e	Quantity of overburden generation in m3	Not applicable as it is an underground mine.	Not applicable as it is an underground mine.
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc		Development was done at the proposed location and as per the approved RMP. Further, during inspection some working has been observed at - 350 level, whereas no such proposal was given in the approved document and Violation is pointed out for the same under Rule 11(1) of MCDR-2017.

Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
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3a	Number of pit proposed for production	Not applicable as it is an underground mine.	Not applicable as it is an underground mine.	Opencast working is also proposed in the present plan period with condition after getting EC from MoEF, since EC is pending with MoEF the opencast working is not done in the present plan period. However, winz/raise of 54mtr was made at 1150L, 29mts at -250L and 42.4mtr at -450L. X-cuts- 24mts at -250L, 38.96mtr at -350L and 4.50ntr at -450L. Working has been not carried out a per the proposal and Violation was pointed out for the same under Ruke 11(1) of MCDR-2017.
3b	Quantity of ROM mineral production proposed	63,000 tonnes from underground working and 8400 tonnes from dump in the year 2020-21.	52,716 tonnes from underground working.	No dump working has been carried out in the year 2020-21.
3c	Recovery of sailable/usable mineral from ROM production	80%	Almost 100% (99.9%)	Lessee is mentioned that entire ROM is utilizing by blending high grade ore with lowgrade as per the requirement of the buyer.
3d	Quantity of mineral reject generation	12,600 tonnes in the year 2020-21.	Nil.	Entire ROM was processed under different gards, as per the requirement of the buyer.
3e	Grade of mineral rejects generation and threshold value declared.	Below 25% Mn . Nil.	Nil.	No mineral reject was generated in the year 2020-21.

3f	Quantity of sub grade mineral generation.	Not proposed.	Nil.	
3g	Grade of sub grade mineral generation	Not applicable.	Nil.	
3h	Manual / Mechanised method adopted for segregating from ROM	Manual sorting.	Manual sorting.	
3i	Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects.	Not proposed.	Nil.	
3j	Provision of drilling and blasting in mineral benches	Not applicable	Not applicable	Drilling and blasting is being carried out in the underground.
3k	Provision of mining machineries in mineral benches	Not applicable.	Not applicable.	
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Not applicable.	Not applicable.	
3m	Total area covered under excavation/pits	Not proposed in the present plan period.	Nil in the present plan period.	About 8.630Ha is covered under old opencast workings. No fresh opencast workings have been carried out in the lease area.
3n	Ore to OB ratio for the pit/mine during the year.	Not applicable.	Not applicable.	
3o	Total area put in use under different heads at the end of year		Area covered under old working (pit):- 8.630 Ha, Waste dump-24.28Ha, Occupied by plant, buildings, residential, welfare buildings & roads-16.230Ha, Mineral storage-4.22.	

3p	Production of ROM mineral during the last five year period as applicable	2020-21 63000 T(U/G) 2019-20 63000T(U/G) 2018-19 63000 T(U/G) 2017-18 63000 T(U/G) 2016-17 108600 T	2020-21 52,716 t 2019-20 60,173.93 T 2018-19 57,127T 2017-18 40,513T 2016-17 37,946T	Additionally lessee has produced 22,487 T in the year 2017-18 and 5859 T in the year 2018-19 from dump working. Proposal for dump working is given in the approved document.
3q	General remarks of inspecting officers on method of mining etc.		Method of working adopted was cut and fill with sand stowing. Some deviation was observed in the proposed working area and Violation was pointed out for the same under Rule 11(1) of MCDR-2017.	

Solid Waste Management - Dumping:

Sl.No.	Item	Propasals	Actual work	Remarks
4a	Separate dumping of topsoil, OB and mineral rejects (Rule 32,33)	Yes, separate duming was proposed for waste and mineral reject.	Underground waste generated during development was used for filling of stope itself and no mineral reject generated as all the ROM was saleable.	
4b	Location of topsoil, OB and mineral reject dumps		Top Soil- No Dump Waste and OB- N400 to N1000 & E200 to E550 (Western part of the lease area), N800 to N1150 & E650 to E1050, N700 to N1000 & E950 to E1300 (both in N-E part of the lease area) and Mineral dump B/w 600N to 800N and E 920 to E1150.	
4c	Number of dumps within lease area and outside of lease area	Six dumps (Including waste and mineral dump)	Six dumps (including waste and mineral dump)	All the dumps are existing within the lease area.
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	Not applicable.	Not applicable.	
4e	Number of active and alive dumps.	Three	Three	
4f	Number of dead dumps.	Three.	Three.	

4g	Number of dumps established.	Three.	Three.	
4h	Whether Retaining wall or garland drain all along dumps are there.	No such proposals.	Nil.	Retaining wall and garland drains are already built at the toe of the dumps during previous plan period.
4i	Length of Retaining wall or garland drain all along dumps	No such proposals.	Nil.	Approximately 1550 m long retaining walls and garland drains already built up at the toe of dumps (OB/Waste dumps).
4j	Number of settling ponds	No such proposal.	Nil	
4k	Specific comments of inspecting officer on waste dump management			Waste dumps are already reclaimed through plantation. About, 3.0 ha of exhausted pit area has been backfilled. Underground waste is being backfilled in the voids after exhaustion of minerals. Garland drains and retaining walls are already constructed at the toe of the dumps.

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 applicable as it is an underground mine.	Not applicable as it is an underground mine.	
5b	Area under backfilling of mined out area	Not applicable as it is an underground mine.	Not applicable as it is an underground mine.	
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	Not applicable as it is an underground mine.	Not applicable as it is an underground mine.	

5d	Total area fully reclaimed and rehabilitated	0.5Ha.	0.5Ha	About 3.00 ha of old mineral exhausted pit is backfilled and about 0.5 Ha of the worked out benches were covered by plantation.
5e	General remarks of inspecting officers on backfilling and reclamation etc.		The reclamation of voids created in the underground by stoping are filled back by sand stowing and waste rock generated by development. The part of the opencast pit no.1 of 3.00 ha area is reclaimed by back filling with waste rock and about 0.5 ha, top benches of the old worked out pit is covered by plantation . The opencast pit no.2 will be used as a water reservoir in the future for rainwater harvesting.	

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).	Before 1st July of every year for the preceding year.	Submitted yearly report on PMCP , for the year 2020-21 within time limit.	
6b	Area available for rehabilitation (ha) .	No such proposal is given.	About 3.00Ha of worked out pit (Pit No-1) is backfilled by the waste rock and about 0.5 ha of top benches of worked out pit is covered by plantation.	The opencast pit no.2 is using as a water reservoir for rainwater harvesting.
6c	afforestation done (ha).	No such proposal given in the approved document.	1.20Ha. in the year 2020-21.	

6d	No. of saplings planted during the year	No such proposal is given in the approved document.	3500 saplings were planted in the year 2020-21.	
6e	Cumulative no .of plants	Not proposed.	17,500 saplings were planted in the present plan period i.e from 2017-18 to 2020-21.	Total plantaion made so far is about 75,500.
6f	Any other method of rehabilitation	Not proposed.	Nil.	
6g	Cost incurred on watch and care during the year	Not proposed.	Two lakhs.	
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (Lx B x D	Not proposed.	Nil.	Earlier, about 3.00Ha of old pit is backfilled (185M(l) x 160(W)).
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	Not proposed.	Nil.	Earlier, about 3.00Ha old pit is backfilled by waste rock.
6j	Compliance on reclamation and rehabilitation by backfilling (iii)Afforestation on on backfilled area	Not proposed.	Nil.	
6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	Not proposed.	Nil.	
6l	Compliance on reclamation and rehabilitation by backfilling (v)any other specific means.	Not proposed.	Nil.	
6m	Compliance of rehabilitation of waste land within lease (i)afforestation	Not proposed.	Nil.	

6n	Compliance of rehabilitation of waste land within lease (ii)Area rehabilitation (ha)	Not proposed.	Nil.	
6o	Compliance of rehabilitation of waste land within lease (iii)Method of rehabilitation	Not proposed.	Nil.	
6p	Compliance of environmental monitoring (core zone and buffer zone)	Monitoring in core and buffer zone proposed	Environment monitoring was done for air, water, noise and ground vibrations in the core and buffer zone. Reports were seen during site inspection and all the parameters were within the permissible limits.	Environmental monitoring is carried out by Anacon Laboratories Pvt.Ltd., Nagpur. Accredited by NABET.
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.		Inactive waste dumps are already reclaimed through plantation and environmental monitoring is also being done properly in the mine. About 3.00ha of old exhausted pit is backfilled by waste rock. Retaining walls and garland drains were made at the toe of the waste dumps.	

Mineral Conservation:

Sl.No.	Item	Proposals	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	Grade-wise sorting within the lease area and then dispatch.	As per the proposals.	
7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	Manual sorting.	Manual	
7c	Different grade of mineral sorted out at mines.	No such proposal given.	(a) Below 25 to 35% Mn (b) 35% to below 46% Mn (c) Above 46% Mn.	

7d	Any beneficiation process at mines	Not proposed.	Nil.
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues		Lessee is consuming entire ROM, by grade wise sorting and blending low grade ore with high grade ore as per the requirement of the buyer.

Environment:

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	No such proposals.	Nil.	
8b	Concurrent use or storage of topsoil	Not proposed.	Nil.	
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	Yes proposed.	Dumping was made separately for waste and mineral.	
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	Yes	Yes waste rock generated was utilized for backfilling of old opencast pit.	
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	yes.	Plantation was made on inactive dumps and part of the old pit is backfilled by waste rock.	
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	No such information is available.	Less has planted 17,500 saplings in the preset plan period.	Total plantation made so far is about 75,500.
8g	Survival rate	Not proposed.	80 to 85%	

8h	Water sprinkling on roads to control airborne dust	Yes.	Water sprinkling is being done in surface operations.	For the purpose, one water tanker with capacity 12000 Ltr is being utilized.
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area		Apart from normal degradation due to mining, aesthetic beauty is satisfactory in the area. Lessee has planted around 75,500 saplings so far and survival rate is around 80 to 85%. Further, working is mostly underground due to which, surface is not that much affected.	

Compliance of Rule 45:

Sl.No.	Item	Proposals	Actual work	Remarks
9a	Status of submission of Monthly and Annual returns	A monthly return shall be submitted before the tenth day of every month in respect of the preceding month and an annual return shall be submitted before the 1st day of July each year for the preceding financial year.	Lessee is regularly submitted Monthly and annual returns within time limit as prescribed under Rule 45 of MCDR-2017.	Submitted Annual Returns for the year 2020-21 and Monthly returns upto August-2021.
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	As per the annual returns submitted for the year 2021-21, Name of the Mining Engineer:-Shri D Thakur. Geologist:- Shri Prafulla Kumar Singh, Manager:-Shri A.K.Choukse.	The details of Mining engineer, Geologist and Manager were found correct as per the office records.	

9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	Already exploited & abandoned by opencast (O/C) mining: 8.63Ha, Reclaimed/Rehabilitated- 0.5Ha, Used for waste disposal- 24.28Ha, Occupied by plant, buildings, residential, welfare buildings & roads-16.23Ha. Mineral storage- 4.22Ha.	The land use details given in the annual returns submitted for the year 2020-21 are found correct.	
9d	Scrutiny of Annual return on afforestation	3500 saplings were planted in the year 2020-21 and survival rate 82%.	The information provided in the annual returns is found correct.	
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	Nil	No mineral reject was generated in the year 2020-21.	Entire ROM is utilized by proper sorting and blending.

9f	Scrutiny of Annual return on ROM stock and/or graded ore	<p>ROM:- Opening and closing stock-Nil, Production:- 52,716 tonnes (under ground working), Gradewise details shown as follows, 25 to below 35% ore, OS- 673.950 T, Prod 13079T, Dis 13460.830T and CS-292.120 T, 35 to below 46%Mn ore, OS 1415.440 T, prod:- 20043T, Dis 21224.830 T and CS- 233.610 T. Above 46%Mn ore, OS 1427.670 T, Prod-19561T, Dis-20789.190 T and CS 199.480 T.</p>	The details of stocks, production and dispatch figures given in the annual returns are found in order.	
9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	<p>Sale value of the minerals is shown as follows, 25 to below 35%- Rs 111693727 , 35 to below 46% ore Rs 262147486 and above 46%Mn ore Rs 343435968 . Exmine price 25 to below 35%Mn ore, Rs 8297.68 /T , 35 to below 46%Mn ore Rs 12350.98/T and Above 46% Rs 16545.59/T and cost of production is shown Rs 10225.51 /T</p>	The exmine price given in the monthly returns submitted for the year 2020-21 and Exmine price mentioned in the Annual returns submitted for the year 2020-21 are mismatching. Other details mentioned in the annual returns were found in order.	Violation is pointed out for the mismatch of Exmine price in monthly and annual returns under Ruke 45(7) of MCDR- 2017.

9h	Scrutiny of Annual return on fixed assets	Value of Fixed Assets was shown Rs , 623942390 for the year 2020-21.	The information was found correct.
9k	Scrutiny of Annual return on mining machineries	ROCK DRILL (NON ELEC.) 33 mm-16 nos, ROCK DRILL (NON ELEC. 57mm-06 nos, TIPPER 11.3Cum-03 nos, FRONT END LOADER (1.7cum) - 01no, BACK HOE- 01no, LOCOMOTIVE (NON ELEC.)- (4.00T) 03 nos, water tanker 6000lts capacity-01 no, LOCOMOTIVE (NON ELEC.)- 04, LOCOMOTIVE (NON ELEC.)-08 nos.	Machinery report seems correct.

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
MCDR17	Rule 11(1)	06-OCT-21			
MCDR17	Rule 11(4)	06-OCT-21			
	Rule 45(7)	06-OCT-21			

Date :

(Kalmata.M.K.)

Indian Bureau of Mines