

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

MCDR inspection REPORT

Nagpur regional office

Mine file No : MP/BGT/MN-191/NGP

Mine code : 40MPR01017

- (i) Name of the Inspecting : **SQ32**) **SANDEEP KUMAR SINGH**
Officer and ID No.
- (ii) Designation : Deputy Controller Mines
- (iii) Accompanying mine :
Official with
Designation
- (iv) Date of Inspection : 10-DEC-20
- (v) Prev.inspection date : 17-JAN-20

PART-I : GENERAL INFORMATION

1. (a) **Mine Name** : **TIRODI**
- (b) **Registration NO.** : **IBM/5711/2011**
- (c) Category : A Mechanised
- (d) Type of Working : Opencast
- (e) Postal address :
State : MADHYA PRADESH
District : BALAGHAT
Village : TIRODI
Taluka : KATANGI
Post office : TIRODI
Pin Code :
FAX No. :
E-mail :
Phone : 76735
- (f) Police Station :
- (g) First opening date : 22-JUL-62
- (h) Weekly day of rest : MON
2. Address for : M/S MANGANESE ORE INDIA LTD.
correspondance : P.O. -TIRODI, DISTT. BALAGHAT
PIN - 481 449
3. (a) Lease Number : MPR0573
- (b) Lease area : 254.59
- (c) Period of lease : 20
- (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 : C.P.N.PATHAK
 3, MOUNT ROAD EXTN. POST
 BOX NO. 34 NAGPUR NAGPUR
 MAHARASHTRA
 Phone: 0712 - 2545703
 FAX : 0712 - 2524996

Agent : M.D.SORTHIA
 BHANDARA MAHARASHTRA
 Phone:
 FAX :

Mining Engineer

Name : P.KARAIYA, Full Time
 Qualification :
 Appointment/ :
 Termination date

Mining Engineer

Name : MANOJ SINGH, 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	12-NOV-03
Plan/Scheme of Mining		Mining Scheme rule 12 MCDR1988	22-SEP-05
		Mining Scheme rule 12 MCDR1988	22-SEP-05
		Mining Scheme rule 12 MCDR1988	03-MAR-06
		Mining Scheme rule 12 MCDR1988	05-FEB-08
		Mining Scheme rule 12 MCDR1988	07-MAR-12
		Mining Scheme rule 12 MCDR1988	21-JAN-13
		Modif.of approved Mining Plan	23-DEC-15

PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	NIL	NIL	
1b	Exploration over lease area for geological axis 1 or 2	19-20 (15 Nos.)	8 (DTH)	shortfall .violation pointed out
1c	Exploration Agencies and Expenditure in lakh rupees during the year	NIL	NIL	NIL
1d	Balance area to be explored to bring Geological axis in 1 or 2	G-2	G-2=34.8 Ha. G-3=5.33	214 Non-mineralized
1e	Balance reserve as on 01/04/20		122- 213673 ,111-1650,resources-222-252655, 332 -146082 ,333- 56000	
1f	General remarks of inspecting officers on geology, exploration etc			Maganese ore and Gondite horizon is assigned to Munsar stage and Lohani stage of sausar Group.It belongs to startiform, stratabond and tubular deposit of irregular habit.Ore horizon is between micaschist and in form of small large lenses.In north ore body is 1.5 to 10 mtr.In south it is 6 to 20 mtr.In 2019-20,there is proposal to drill 15 Nos holes but only 8 Nos.DTH are drilled.

Development :

Sl.No.	Item	Propasals	Actual work	Remarks
2a	Location of development w.r.t.lease area	North Bed, South Bed, Pit-4, Pit-7,8 Jhamarpani	North Bed, South Bed, Pit-4, Pit-7,8 Jhamarpani	As per proposal
2b	Separate benches in topsoil, overburden and minerals (Rule 15)	YES	YES	
2c	Stripping ratio or ore to OB ratio	13.22 M3/T ,waste in M3: ore in ton	14.28 M3/T ,waste in M3: ore in ton	
2d	Quantity of topsoil generation in m3	No topsoil	No topsoil	
2e	Quantity of overburden generation in m3	410000 M3	440000M3	Benches in waste have been developed upto 8-9 mtr and in ore it is upto 3 mtr depending on thickness.No. of benches vary pit wise.Work is done in 4 pits for wining insitu ore.
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc			Benches in waste have been developed upto 8-9 mtr and in ore it is upto 3 mtr depending on thickness.No. of benches vary pit wise.Work is done in 4 pits for wining insitu ore.

Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
3a	Number of pit proposed for production	03	03	3 pits are worked.and recovery from dumps is made.
3b	Quantity of ROM mineral production proposed	31000 + 78000	30801+78000	78000 is from dump.

3c	Recovery of sailable/usable mineral from ROM production	YES	YES	all ROM is saleable. grade seperation done.
3d	Quantity of mineral reject generation	nil	nil	
3e	Grade of mineral rejects generation and threshold value declared.	nil	nil	not generated
3f	Quantity of sub grade mineral generation.	20,600 t	nil	not generated
3g	Grade of sub grade mineral generation	15% Mn in ore	nil not generated	
3h	Manual / Mechanised method adopted for segregating from ROM	na	na	all ROM is sold
3i	Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects.	-	-	
3j	Provision of drilling and blasting in mineral benches	YES	YES	
3k	Provision of mining machineries in mineral benches	YES	YES	
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Yes 7.5 Mtr. - 7.0 Mtr.	Yes 7.5 Mtr. - 7.0 Mtr.	
3m	Total area covered under excavation/pits	63.5 hect	63.5 hect	

3n	Ore to OB ratio for the pit/mine during the year.	13.22 M3/T ,waste in M3: ore in ton	14.28 M3/T ,waste in M3: ore in ton	ob to ore
3p	Production of ROM mineral during the last five year period as applicable	2017-18- 105500 2018-19- 107000 2019-20- 109000	104900 106900 108801	Total ore from insitu mining and ore from dump recovery.
3q	General remarks of inspecting officers on method of mining etc.			The Mine is worked from year 1962.The mines is developed in many pits at four locations. 8 to 10 mtr bench ht with 12 mtr width is practiced/maintained in over burden and 3 by 4 mtr in ore horizon.the ore body varies from 1.5 mtr to 6 mtr av.

Solid Waste Management - Dumping:

Sl.No.	Item	Propasals	Actual work	Remarks
4a	Separate dumping of topsoil, OB and mineral rejects (Rule 32,33)	over burden and SG stack	Yes overburden dumps are made,	No MR is Generated from bed ore.subgrade not generated.
4b	Location of topsoil, OB and mineral reject dumps	CH 46-50 South Bed CH-26 South Bed CH 2-6 south section dump CH-62-72 North Magazene CH-60-72 North Magnese Dump Subgrade-20,600 CH-72,78 Mineral reject area	CH 46-50 South Bed CH-26 South Bed CH 2-6 south section dump CH-62-72 North Magazene CH-60-72 North Magnese Subgrade-20,600 CH-72,78 Mineral reject area	

4c	Number of dumps within lease area and outside of lease area	17	17	Within lease.
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	outside upl	outside upl	Outside ultimate pit.
4e	Number of active and alive dumps.	04	04	
4f	Number of dead dumps.	11	11	
4g	Number of dumps established.	04	04	
4h	Whether Retaining wall or garland drain all along dumps are there.	-	-	
4i	Length of Retaining wall or garland drain all along dumps	No	No	
4j	Number of settling ponds	Yes	Yes	
4k	Specific comments of inspecting officer on waste dump management			Dumps plantation has been done on many dumps. some old dumps are being worked or ore recovery as per proposal.

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.	Full	Full	
5b	Area under backfilling of mined out area	1 hect,	1 hect	

5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	NA	NA	No top soil.
5d	Total area fully reclaimed and rehabilitated	-	3.32 Ha	
5e	General remarks of inspecting officers on backfilling and reclamation etc.			Backfilling is being done in pit.

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).	-	Not submitted	violation pointed out
6b	Area available for rehabilitation (ha) .	NP	NA	
6c	afforestation done (ha) .	NP	NA	
6d	No. of saplings planted during the year	NP	NA	
6e	Cumulative no .of plants	NP	NA	
6f	Any other method of rehabilitation	NP	NA	
6g	Cost incurred on watch and care during the year	NP	NA	

6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (Lx B x D		16 HECT area
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	1 hect	1 HECT
6j	Compliance on reclamation and rehabilitation by backfilling (iii)Afforestation on backfilled area	NA	NA
6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	NA	NA
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	NP	NA
6n	Compliance of rehabilitation of waste land within lease (ii)Area rehabilitation (ha)	NP	NA

6o	Compliance of rehabilitation of waste land within lease (iii)Method of rehabilitation	NA	NA	
6p	Compliance of environmental monitoring (core zone and buffer zone)	Proposed	Being done.	
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.			Plantation of Dumps is done.Around 3.2 hect area is reclaimed/rehabilitated in mines..

Mineral Conservation:

Sl.No.	Item	Propasals	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	Grade wise	Grade wise	
7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	Manual	Manual	
7c	Different grade of mineral sorted out at mines.	1. Below 25% 2. 25%-35% 3. 35%-46%	1. Below 25% 2. 25%-35% 3. 35%-46%	
7d	Any beneficiation process at mines .	-	-	
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues			Manual sizing & sorting is done for ore of various grades.

Environment:

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	YES	YES	
8b	Concurrent use or storage of topsoil	YES	YES	
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	Yes Proposed	Yes Being maintained	
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	Backfilling	yes done	
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	yes	done	
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	baseline -nil, green belt on dumps	green belt development on dumps	done ,shortfall of 1500 ,violation issued.
8g	Survival rate	70%	70%	
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			Plantation is done on Dumps.shortfall noticed.violation pointed out.

Compliance of Rule 45:

Sl.No.	Item	Propasals	Actual work	Remarks
9a	Status of submission of Monthly and Annual returns	Yes	Yes	
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager		Shri D.V. Ratnaparkhi-ME Shri M.R. Bhanse- Geologist	
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.		(i) Already exploited & abandoned by opencast (O/C) mining 20.000 (ii) Covered under current (O/C) Workings 39.240 (iii) Reclaimed/Rehabilitated 27.240 Final Submitted(iv) Used for waste disposal 41.228 (v) Occupied by plant, buildings, residential, welfare buildings & roads 0.000 5.455 5.455 (vi) Other Purpose (FOR COLLECTION & CLEANING OF ORE) 162.9400.	Information not correct.violation given.
9d	Scrutiny of Annual return on afforestation	details not given	violation issued	-
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	nil	Nil, as per plan	
9f	Scrutiny of Annual return on ROM stock and/or graded ore	various grades given	As on 01.04.2020a) Below 25% Mn- 8863.880 t (b) 25% to below 35% Mn -2497.010 t (c) 35% to below 46% Mn- 241.130 t, stock of various grades given	

9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	Cost of production: - 5770 Grade Ex- mine Price Below 25%- 2029.17 25%-35%- 6099.73 35%-46%- 11000.75
9h	Scrutiny of Annual return on fixed assets	Value of Fixed Assets = 398039428,given
9k	Scrutiny of Annual return on mining machineries	Major machineries are Hydraulic Shovel, Dumper, Tipper, Dozer etc. WHEEL LOADER 1.000 CUM 1 SHOVEL (HYDRAULIC) 2.200 CUM 1 SHOVEL (HYDRAULIC) 2.400 CUM 2 Non Electrical Opencast DUMPER 35.000 TONNE 10 Non Electrical Opencast SHOVEL (HYDRAULIC) 0.900 CUM 1 DOZER 385.000 HP 1 DOZER 230.000 HP 1 GENERATOR (DIESEL) 500.000 KWH 1 ROCK DRILL (NON-ELEC.) 169.000 MM 4

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 11(1)	21-APR-21			
MCDR17	Rule 45(5) (c)	21-APR-21			
MCDR17	Rule 26(2)	21-APR-21			

Date :

(SANDEEP KUMAR SINGH)

Indian Bureau of Mines