MCDR-M<mark>HCDR-INSPECTION REPORT</mark>_RO_JBF

Name of Inspecting officer: Madhav Rao Sabre I/19864/2023 Designation Senior Mining Geologist Rajesh Kumar Singh [Agent & Jt.G.M.(Mines)], Mayank S. Jain (Mine Manager), Hemant Bawankar (UG Manager), Accompanying mine official with Designation 3 Vinay Kumar Rahangdale (Chief Manager Geology), Pawan Rana (Sr. Manager Survey) 10/10/2023 4 Date of Inspection 06/04/2022 5 Previous Inspection date

Part-I: General

S.No	Particulars	Details
1	Name of the Mine	Balaghat Manganese Mine
2	Total Lease Area (Ha) with breakup of Non-forest and forest land	182.3003 Ha
3	Mine code	40MPR01002
4	IBM Registration Number under rule 45 of MCDR,1988	IBM/5711/2011
5	Name of the lessee, Address, Phone, email and fax number	MOIL LTD. 1 A KATOL ROAD NAGPUR 440013 0712-2590050 WWW. moil.nic.in 0712-2592073
6	Village	Bharweli Awlajhari, Tawejhari, Manjhara, Manegaon, Hirapur.
7	Taluka/Mandal	Balaghat
8	District	Balaghat
9	Pin code	481102
10	State	Madhya Pradesh
11	Post Office	Bharweli
12	Nearest Police Station	Bharweli
13	Nearest Railway Station	Balaghat
13	Date of opening of Mine	1901
14	Date of opening of withe	MIRZA MOHAMMAD ABDULLA
15	Name of the Nominated Owner with Address, phone, email, fax number and date of appointment	MOIL Limited, MOIL Bhawan, 1 A KATOL ROAD, Nagpur- 440013, mma@moil.nic.in, Fax No. 0712- 2592073 Date of appointment: 10.01.2022
16	Name of the Mine Agent with Address, phone, email, fax number and date of appointment	Mr. Rajesh U Singh MOIL Limited, Balaghat Mine, Post Bharweli 481102 Mob-9404365875, agent1@moil.nic.in, Appointment-26.10.2021
17	Name of the Mine Manager with Address, phone, email, fax number and date of appointment in mines	Mr. Mayank S. Jain MOIL Limited, Balaghat Mine, Post Bharweli 481102 Mob-9755718912 mm.bg@moil.nic.in,
		Appointment-14.06.2023
18	Name of the Mining Engineer, Qualification and total experience with address, phone, email, fax number and date of appointment in the mine	Mr. Hemant R. Bawankar MOIL Limited, Balaghat Mine, Post Bharweli 481102 Mob-8999718647 hemant.2723@gmail.com, Appointment-12.06.2023
19	Whether Geologist (with details of appointment) and Mining Engineer appointment in mines satisfy the rule 42 & carrying out their duties as per rule 43 & 44.	Yes Appointed Mr. Vinay Kumar Rahangdale, Chief Manager Geology Date of Appointment-26.07.2023
20	Date of Approval of Mine Plan/Modified Mine Plan with five-year period and specific condition in approval letter, if any.	Mining Plan under Rule 17(3) of MCR,2016 & Rule 23 MCDR, 2017 approved vide letter No MP/Balaghat/Manganese/MPLN/G-06/2021-22, Dated: 29/04/2022
21	Date of Approval of Scheme of Mining/Modified Scheme of Mining with five- year period and specific condition in approval letter, if any.	-
22	Mineral(s) granted in lease and approved for Mining	Manganese

	23	Method of Mining (Opencast, Underground) MCDR-MiFLOMn/5/2	Underground 2023-JBP-IBM_RO_JBP
	24	Category (Fully Mechanized, Others or Manual)	Fully Mechanized
1/19864/202	₃ 25	Captive/Non-Captive	Non-Captive

Details about Mining Plan/Review of Mining Plan etc.

a) Letter No. and date of approval of mining plan	:	MP/Balaghat/Manganese/MPLN/G-06/2021-22, Dated: 29/04/2022
b) Letter No. and date of approval of review of mining plan	:	-
c) Condition while approving the MP/ RMP/ modification	:	-
d) Period of mining plan/ mining scheme in force:	:	2022-23 to 2026-27

PART III-MCDR Report details.

1. <u>Scientific Mining:</u> Compliance of proposals of approved mining plan/scheme of mining. (Duplication of information in existing TMIS data sheets and draft write up has been avoided.)

Exploration

S.N.	Item	Proposals	Actual Work	Remarks
1a	Backlog of previous year (before 2022-23)	5 Nos. BH Proposed	8 Nos. BH Drilled	-
1b	Exploration over lease area for Geological axis 1 or 2 (for 2022-23)	G2 to G-1	G-1 Axis	Nil
1c	Exploration Agency & Expenditure in Lakh Rupees during the year (for 2022-23)	104.80 Lakh	190.367 Lakh	Nil
1d	Balance area to be explored to bring the Geological axis in 1 or 2. (for 2022-23)	Nil	Nil	Nil
1e	Balance reserves as on 01.04.2023	At the beginning of the year 1.4.2022, reserves was 14204963 tones and resources under 211 & 332 category of UNFC was 10520861 tones.	Depletion during the year 2022-23 was 328975 tones. Balance reserves as on 01.04.2023 is 14244963 and resources is 10520861 tones.	
1f	General remarks of Inspecting officer on geology, exploration etc.			

2. <u>Development (FY 2022-23)</u>

S.N.	Item	Proposals	Actual Work	Remarks
2a	Location of Development w.r.t. lease area	Mine is worked by Underground Cut and fill method.	Mine is worked by Underground Cut and fill method. Development is proposed in 12 th , 13.5 th , 15 th , 16.5 and other deeper levels.	Violation issued for less development.
2b	Separate benches in topsoil overburden and mineral (Rule 15)	Under ground Mine (No top soil removal)	Under ground Mine (No top soil removal)	
2c	Stripping ratio or ore to OB ratio			
2d	Quantity of topsoil generation in m3	Under ground Mine (No top soil removal)	Under ground Mine (No top soil removal)	
2e	Quantity of overburden generation in m ³	44494 m ³	8810 m ³	Violation issued for less generation of OB.
2f	General remarks of Inspecting officer on development of pit w.r.t type of deposit etc.	Violation issued for sho underground.	rtfall on proposed developmen	t AND LESS OB from

3. Exploitation FY 2022-23

S. N.	Item	Proposals	Actual Work	Remarks
3a	Number of pits proposed for production	UG Mining	UG Mining	Nil

	3b	Quantity of ROM mineral production proposed MCD	In 2022-23, ROM production Rp:114054dQM:13495552Q02s3-JBI	In 2022-23, actual ROM Phantin Quas BP975 tones	Nil
I/19864/202	3c	Recovery of Salable/usable minerals from ROM production	In 2022-23, saleable ore production proposed was 314780 tones	In 2022-23, saleable ore production proposed was 292948.22 tones	Nil
	3d	Quantity of mineral reject generation	34976.00 tones	36026.78 tones	Nil
	3e	Grade of mineral reject generation and threshold value declared	Grade of mineral reject less then 20%Mn (10%Mn to below 20%Mn) and threshold value declared 10%Mn	10%Mn to below 20%Mn	Nil
	3f	Quantity of sub-grade mineral generation	Not proposed	Nil	Nil
	3g	Grade of sub-grade mineral generation	Not proposed	Nil	Nil
	3h	Manual/Mechanized method adopted for segregation from ROM	Not proposed	Manual/Mechanised.	Nil
	3i	Any analysis or beneficiation study proposed & carried out for sub-grade mineral and reject	Not proposed	Nil	Nil
	3j	Provision of drilling & blasting in mineral benches	Proposed	Carried out as per proposals	Nil
	3k	Provision of mining machineries in mineral benches	Underground Mine	Underground Mine	Nil
	31	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Under ground Mine	Under ground Mine	Nil
	3m	Total area covered under excavation /pits (Ha.)	Under ground Mine	Under ground Mine	Nil
	3n	Ore to OB ratio for the pit/mine during the year			Nil
	30	Total area put in use under different heads at the end of year	Total area proposed to be put in use under different heads at the end of plan period 2022-23 is 58.927 Ha	Lease area (surface area) utilization as at the end of year (hectares) as reported in annual return for 2022-23 is not correct.	Violation letter issued.
	3p	Production of ROM mineral during last five-years period, as Applicable	2022-23: 349755 tones 2021-22: 668566 tones 2020-21: 643983 tones 2019-20: 594813 tones 2018-19: 455897 tones	2022-23: 328975 tones 2021-22: 330440 tones 2020-21: 345072 tones 2019-20: 374374 tones 2018-19: 328731 tones	Nil
	3q	General remarks of inspecting officer on method of mining etc.	Violation letter issued for incorrec	et lease area utilization figures.	

4. Solid Waste Management-Dumping (FY2022-23)

S.N.	Item	Proposals	Actual Work	Remarks
4a	Separate dumping of topsoil, OB & mineral reject (Rule 32,33)	Under ground Mine No Top Soil Generate, OB shall be utilized for backfilling, mineral reject will be stacked separately	Total 8810m ³ Waste generated form UG used in Backfilling in UG and Mineral reject 36026.78 tones stacked at Mineral Reject Dump BD	Nil
4b	Location of topsoil, OB & mineral reject dumps	OB shall be utilized for backfilling in UG stops and mineral reject stacking	Total 8810m³ Waste generated form UG used in Backfilling in UG and Mineral reject 36026.78 tones stacked at Mineral Reject Dump BD	Nil
4c	Number of Dumps within lease area and outside lease area	Mineral Reject-Within lease area location 2416733N & 420299 Waste Dump (OLD PIT is Reclaimed by back Filled by	Mineral Reject-Within lease area location 2416733N & 420299 Waste Dump (OLD PIT is Reclaimed by backfilling by	At some places rejects stacked in 7.5 m barrier, Violation issued.

		MCD	waste generated during U/G R-MiFlbpMm/15%2i023-		
			2417184N & 421017E	2417184N & 421017E	
l/19864/202	23 _{4d}	Location of Dumps w.r.t. ultimate pit limit (Rule 16)	NIL	NIL	Nil
	4e	Number of Active & Alive dumps	Yes Mineral Reject- location 2416733N & 420299	Yes Mineral Reject-Location 2416733N & 420299	Nil
İ	4f	Number of dead dumps	Not proposed	Nil	Nil
	4g	Number of dumps established	Not proposed	Nil	Nil
	4h	Whether Retaining wall or garland drain all along dumps are there	Yes 140m each retaining wall and garland drain proposed.	Not done	Violation issued.
	4i	Length of Retaining wall or garland drain all along dump	140 m each retaining wall and garland drain proposed.	Not done.	Nil
	4j	Number of settling ponds	Not proposed	Nil	Nil
	4k	Specific comments of inspecting officer on waste dump management			

5. Solid Waste Management-Backfilling (FY 2022-23)

S.N.	Item	Proposals	Actual Work	Remarks
5a	Status on part or full extraction of mineral from mined out area before starting backfilling	Backfilling proposed 8899 m ³ in UG and 0.148 Ha area of OLD PIT will be Reclaimed by back Filled by waste generated during U/G development western part of the pit.	Backfilling done in UG stopes and 0.008 Ha area of OLD PIT is Reclaimed by back Filled by waste generated during U/G development.	
5b	Area under backfilling of mined out area	0.148 Ha. OLD PIT	0.008 Ha. OLD PIT	Nil
5c	Concurrent use of topsoil for restoration or rehabilitation of mined out area (Rule 32)	NIL	NIL	Nil
5d	Total area fully reclaimed & rehabilitated (Ha)	Not Proposed	Nil	Nil
5e	General remarks of inspecting officer on backfilling, reclamation etc. Backfilling done in UG stopes by the waste material generated during driverage of gallery, x-cut and haulage road and River Sand (Hydraulic Sand stowing) is used in this.			

6. Progressive Mine Closure Plan (FY 2022-23)

S.N.	Item	Proposals	Actual Work	Remarks
6a	Whether Annual report on PMCP submitted on time and correctly-Rule 23E (2). Details should be given in the format as given in Annexure-20	To be submitted before 1stday of July every year	The annual return on PMCP has been submitted timely.	Nil
6b	Area available for rehabilitation (Ha)	Not Proposed	Nil	Nil
6c	Afforestation done (ha)	2.5	2.5 Ha	Nil
6d	No. of saplings planted during the year	3000 nos	3000 Nos of sapling planted	Nil
6e	Cumulative no. of plants	447883 Nos.	450883 Nos	
6f	Any other specific method of rehabilitation	Backfilling will be done by River Sand (Hydraulic Sand stowing) 79855 M ³	Backfilling done by River Sand (Hydraulic Sand stowing) 77102 M ³	Nil
6g	Cost incurred on watch & care during the year	Not Proposed	NIL	Nil
6h	Compliance on reclamation and rehabilitation by backfilling	Waste Dump (OLD PIT is Reclaimed by back Filled by	Waste Dump (OLD PIT is	Nil

		(i)Voids available for backfilling (L X B X D). MCDR-MiFLO	waste generated during U/G Mn.45v£120næ3t .]BRatiBM_R	Reclaimed by	
l/19864/202	23	BAD). MCDR-MII LO	2417184N & 421017E	waste generated during U/G development.) Location: 2417184N & 421017E	
	6i	Compliance on reclamation and rehabilitation by backfilling (ii) Void filled by waste/tailings.	NIL	NIL	Nil
	6j	Compliance on reclamation and rehabilitation by backfilling (iii) Afforestation on the backfilled area.	Not Proposed	Nil	Nil
	6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir.	Not Proposed	Nil	Nil
	61	Compliance on reclamation and rehabilitation by backfilling (v) Any other specific means	Waste Dump (OLD PIT is Reclaimed by back Filled by waste generated during U/G development.) Location: 2417184N & 421017E Qunatity Proposed-35595M3	Waste Dump (OLD PIT is Reclaimed by back Filled by waste generated during U/G development.) Location: 2417184N & 421017E- Quantity Actual- 350M3	Nil
	6m	Compliance of Rehabilitation of waste land within lease (i)Afforestation	Not Proposed	Nil	Nil
	6n	Compliance of Rehabilitation of waste land within lease (ii) Area rehabilitated (ha) Method of rehabilitation	Not Proposed	Nil	Nil
	60	Compliance of Rehabilitation of waste land within lease (iii) Method of rehabilitation	Not Proposed	Nil	Nil
	6р	Compliance of Environment monitoring (core zone & buffer zone)	Proposed	Carried out	Nil
	6q	General remarks of inspecting officer on PMCP compliance & progressive closer operations	Backfilling done in old pit within	lease area.	

7. Mineral Conservation (FY 2022-23)

S.N.	Item	Proposals	Actual Work								
7a	ROM mineral dispatch or grade wise sorting within lease area	Grade wise Sorting	Grade wise Sorting								
7b	Method of grade-wise mineral sorting i.e. manual or mechanical	Beneficiation mechanical		Yes							
			Manganese Ore Details Chemical Standard								
	Different grade of mineral sort out at mine		Ore Code	Grade of Ore	Mn.%	Phos%	Sio2%	Fe%			
		ade of ineral sort Yes	BG102	1st Grade L.P.Lumpy	48.00	0.100	10.00	4.80			
			BG1408	47% L.P.Jigg.	47.00	0.100	11.00	5.50			
			BG1466	46% Jigged Fines	46.00	0.100	12.00	6.50			
7c			BGF452	Hutch /Dust Product.	30.00	0.100	30.00	6.50	Nil		
			BGF534	Hutch /Dust Product.	27.00	0.200	32.00	6.50	1111		
			BGL462	25% S.M.Grade Ore	25.00	0.100	50.00	5.00			
			BGL11	SMGR LMP	30.00	0.100	38.00	5.50			
			BGL12	30% Mn. SM Grade	30.00	0.100	38.00	5.50			
			BGL509	20% S.M.Grade Ore	20.00	0.100	58.00	3.25			
			BGL510	20% S.M.Grade Ore	20.00	0.100	56.00	3.75			

			MCD	BGL564	20% S.M.Grade Ore	20.00	0.100	58.00 46.00	5.00 5.50	
l/19864/202	23 ^{7d}	Any beneficiation process at mines	Yes	KEIMHINE	Win / S/2333335 PBP	Done	<u>0_98P</u>	10.00	3.30	Nil
	7e	General remarks of inspecting officer on Mineral conservation & beneficiation issues	Crushing & Screening Plant is installed within Balaghat Mine Lease area. The manganese ore from the underground mine is then processed through the Crushing & Screening Plant. This 5,00,000 Tones ROM handling capacity per year. ROM of the underground mine fed to receive of plant.							

8. Environment (FY 2022-23)

S.N.	Item	Proposals	Actual Work	Remarks	
8a	Separate removal and utilization of topsoil (Rule32)	NIL	NIL	Nil	
8b	Concurrent use or storage of topsoil	NIL	NIL		
8c	Separate dumps for overburden waste rock, rejects and fines (Rule 33)	Yes	Mineral Reject-Within lease area location 2416733N & 420299E	Nil	
8d	Use of overburden, waste rock, rejects and fines dump for restoring the land to its original use	Backfilling proposed 8899 m³ in UG and 0.148 Ha area of OLD PIT will be Reclaimed by back Filled by waste generated during U/G development western part of the pit.	Backfilling done in UG stopes and 0.008 Ha area of OLD PIT is Reclaimed by back Filled by waste generated during U/G development.	NIL	
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	NIL	NIL	Nil	
8f	Baseline information on existence of plantation & additional plantation done (Rule 41)	Not specified	3000 Nos of sapling planted within lease area. Cumulative plantation Done 450883 Nos.	Cumulative plantation Done 450883 Nos. Up to 31/03/2023	
8g	Survival rate	Not proposed	Survival rate: 80%		
8h	Water sprinkling on roads to control airborne dust	Proposed	Carried out	Nil	
8i	General remarks of inspecting officer on aesthetic beauty in and around mine area is maintained. Aesthetic beauty in and around mine area is maintained.				

9. Compliance of Rule 45 (MQDB)-MiFLOMn/5/2023-JBP-IBM_RO_JBP

I/19864/202

₂₃ S.N.	Item		Comments					
9a	Status of submission of monthly and Annual returns		Annual return for 2022-23 was submitted on 28.06.2023. Monthly returns for 2022-23 has been submitted timely.					
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Mining	Mining Engineer, Geologist and Manager have been employed in the mines.					
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.		Yes furnished					
9d	Scrutiny of Annual return on afforestation	3000 No	s of sapling	planted with	hin lease are	a	Nil	
9e	Scrutiny of Annual return on mineral reject generation (Grade & Quantity) Yes, Mineral reject 36026.78 tones stacked at Mineral Reject Dump BD						Nil	
9f	Scrutiny of Annual return on ROM stock and/or grade ore Closing stock of ROM is Nil							
	Grade-wise Production, Disp	Grade-wise Production, Dispatches, Stocks and Ex-mine prices:						
	Grades**	Opening stock at mine-head	Production	Despatches from mine- head	Closing stock at mine-head	Ex-mine price (₹- Tonne)		
	(i) Ore	ı	1					
l	(a) Below 25% Mn	1892.28	37734.8	21172.31	18454.77	5154.44		
	(b) 25% to below 35% Mn	1235.103	137651.42	136463.22	2423.303	3808.49		
	(c) 35% to below 46% Mn (d) 46% and above Mn	825.89	117562	112088.69	6299.2	25074.28		
	(e) Dioxide ore	0	0	0	0299.2	0		
	Scrutiny of Annual return on sale			-	·			
9g	value, Ex. Mine price & production costs Cost of production: Rs 8346.95 per tonne					Nil		
9i	Scrutiny of Annual return on Fixed assets Value of Fixed Assets reported is Rs 1605889848.00/-					Nil		
9k	Scrutiny of Annual return on mining Machineries Yes						Nil	