MCDR-MiFLOFE/5/2023-BNG-IBM_RO_BNG INDIAN BUREAU OF MINES

MINERALS DEVELOPMENT AND REGULATION DIVISION

1/27253/2024

(v)

MCDR inspection REPORT

Bangalore regional office

Mine file No: KNT/BLR/FE/397/BNG Mine code: 30KAR03092

(i) Name of the Inspecting : SQ06) DR.SURESH PRASAD

Officer and ID No.

(ii) Designation : Regional Controller Mines

(iii) Accompaning mine : Shri Randhir Kumar, Mines Manager, Shri.Phool Singh D

Official with Designation

(iv) Date of Inspection : 05/12/2023

Prev.inspection date : 20/01/2023

PART-I : GENERAL INFORMATION

. (a) Mine Name : KUMARASWAMY

(b) Registration NO. : IBM/270/2011

(c) Category : A Fully Mechanised

(d) Type of Working : Opencast

(e) Postal address

State : KARNATAKA

District : BELLARY

Village : KAMMADARUVU

Taluka : SANDUR

Taluka : SANDUR
Post office : DEOGIRI
Pin Code : 583112

FAX No. : 040-23538711 (F)

E-mail : kiom.nmdc@gmail.com,bsahoo(
Phone : 040-23538713 (0) 083952746

(f) Police Station : SANDUR

(g) First opening date : 18/11/1991

(h) Weekly day of rest : SUN

2. Address for : NMDC Limited, Donimalai

correspondance Bellary, Karnataka. Pin-583 118

3. (a) Lease Number : KAR0212 (b) Lease area : 647.5

(c) Period of lease : 50

(d) Date of Expiry : 17/10/2022

4. Mineral worked : IRON ORE Main

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5. Name and Address of the

Lessee : NATIONAL MINERAL DEV. CORPN. LTD

10-3-311/A, CASTLE HILLS, MASAB TANK, HYDERABAD

TELANGANA
Phone:3538706
FAX:3538705

Owner : D. K. Mohanty, Director (Production)

NMDC Limited, 10-3-311/A Castle Hills, Masab Tank, Hyderabad(Telangana)-

500028. HYDERABAD TELANGANA

Phone: 040-23538706/07 FAX : 04023538711

Agent : Sanjeev Sahi

Karnataka. Pin-583118 BELLARY KARNATAKA

Phone:

FAX : 08395274624

Mining Engineer

Name : PHOOL SINGH DHRUW, Full Time

Qualification : BE (Mining), First class mines manager c

Appointment/ : 19/10/2022

Termination date

Geologist

Name : V KAUSHAL,..,Full Time

Qualification :
Appointment/ :
Termination date

Manager

Name : RANDHIR KUMAR
Qualification : DGM(Min), FCC
Appointment/ : 01/03/2022

Termination date

6. Date of approval of Mining Plan/Scheme of Mining

Existing rule 11 MCDR1988	29/07/1992
Mining Scheme rule 12 MCDR1988	21/04/1998
Renewal under rule 22 MCR1960	29/10/2002
Modif.of approved Mining Plan	06/02/2007
Mining Scheme rule 12 MCDR1988	17/09/2007
Mining Scheme rule 12 MCDR1988	16/08/2012
Modif.approved Mining Scheme	23/06/2014
MP modif under 17(3) MCR 2016	26/08/2016
MP review under 17(1) MCR 2016	03/11/2016
MP modif under 17(3) MCR 2016	06/07/2017
MP modif under 17(3) MCR 2016	13/07/2018
MP modif under 17(3) MCR 2016	13/12/2019
MP review under 17(1) MCR 2016	29/10/2021

PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	14 Nos. Bore holes with 1000 meterage	16 nos. of Core bore holes were drilled against the proposal of 14 nos. of Core bore holes. Total meterage drilled 1405.50 mts against the proposal of 1000.00 mts.	No back log
1b	Exploration over lease area for geological axis 1 or 2	-	455 nos. of Core bore holes were drilledTotal meterage 30840.00 mts	Total area under G-1=220.99
1c	Exploration Agencies and Expenditure in lakh rupees during the year	NMDC in- house(Global Exploration Center, (GEC) Raipur, M/s. NMDC Limited.Phone :07782 265347)	NMDC in-house (Global Exploration Center, (GEC) Raipur, M/s. NMDC Limited.Phone:07782 265347)Incurred cost of Rs. 2.23 Crores. (for FY 2022-23) (includes cost of drill machine, depreciation, running and maintenance cost etc.,)	Exploration cost is not properly in cost of production per tonne. Violation issued.
1d	Balance area to be explored to bring Geological axis in 1 or 2	14.50 Ha from G3 to G1, out of which 14.5 Ha planned for detailed exploration during the plan period.	Total area under G-1=220.99	Balance potentially Mineralized area of 14.50 Ha under G3 is planned for detailed exploration during the plan period to bring it under G1 Level of exploration.
1e	Balance reserve as on 01/04/20	-	Balance reserves as on 01.04.2023 is 195.17Million Tons with grade of 62.01% Fe.	As per the IBM Annual Returns submitted for the F.Y.2022-23.

1f General remarks of inspecting officers on geology, exploration etc The lease hold area contains 2 separate Iron 162.31 (un-Ore bandsviz B blockwith diverted forest strike E-W direction over 1200m length, width explored. 14.5 Ha ranging from 650m to 700m and average depth 70m. C block with strike under G3 level is E-W direction over 3500m proposed for length, average width 450m and average depth 62m. The average grade of bring it under G1 Iron Ore is 62% Fe. Out of 639.80 Ha lease area 310.2 Ha is explored under G1 level of exploration. 195.27 Ha is proved potentially Mineralized area, 168.55 proposal of 14 Ha as non-mineralized

An extent of land is yet to be potentially mineralized area exploration during the plan period to level of exploration. During the RY16 nos. of Core bore holes are drilled against the nos. of Core bore holes.Total meterage drilled 1405.50 mts against the proposal of 1000.00 mts.

Development :

Sl.No.	Item	Propasals	Actual work	Remarks
2a	Location of	Location of	Actual development	B-Block
	development	development	carried out in B-block &	Between cross
	w.r.t.lease area	proposed in B-	C-block:	sections
		Block& C-	B-Block:	B-3M to $B-11$
		Block:	E/W-672392.85 to	C-Block
			673588.73	Between cross
		B-Block:	N/S-1659682.05 to	sections C-2to C-
		E/W-672558.665	1660449.24	26-7/8
		to 673588.630	C-Block:	
		N/S-	E/W-669264.28 to	
		1659712.411 to	671703.85	
		1660444.555	N/S-1659829.84 to	
			1660391.18	
		C-Block:		
		E/W-669248.436		
		to 670866		
		N/S-		
		1659995.329 to		
		1660388.248		

Exploitation:

Item

Propasals

Sl.No.

2b	Separate benches in topsoil, overburden and minerals (Rule 15)	No separate benches inOre Body, Overburden and top soil are proposed.	All the benches consisting of ore and waste are simultaneously worked.	The minor quantity of generated TopSoilstacked and utilized for gardening purpose. B-block=14 benches & C-Block= 13 benches containing both mineral and OB.
2c	Stripping ratio or ore to OB ratio	1: 0.15 by weight	1: 0.10 by weight	Violation issued for not achieving the proposed stripping ratio.
2d	Quantity of topsoil generation in m3	Presence of Top Soil is negligible and hence no dedicated stockpile has been planned.	Top soil not traced during operation	No topsoil generation is reported during the RY.
2e	Quantity of overburden generation in m3	576923 m3	234038 m3	Violation issued for not achieving the proposed quantity of development.
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc			The Iron ore deposit is being mined by forming 6 pits in two separate blocks with 3 pits in each block namely B-block and C- block. There are no separate benches for topsoil, over burden and mineral as all the benches comprises of waste patches and mineral deposit. The pits are systematically development to win the ore and suitable for the type of deposit.

Actual work

Remarks

3a	Number of pit proposed for production	Three Pits in B-block and three pits in C-block proposed.	Total 6 pits are under operation, three each in B & C Block.	As per proposals in the approved Mining Plan
3b	Quantity of ROM mineral production proposed	10000000 Tonnes	6202763.49Tonnes	As per AR-2022-23. Violation issued for not achieving the planned production.
3c	Recovery of sailable/usable mineral from ROM production	100 %	100 %	recovery.However, a small quantity of 4500 MT of mineral reject of 48.8% Fe generated is reported to be stacked for blending in future.As per AR-2022-23.
3d	Quantity of mineral reject generation	Meagre quantities of mineral rejects/sub grade generated during excavation shall be blended suitably with higher grade ROM.	Low-grade mineral encountered have been blended suitably with higher grade ore to arrive at desired quality of product as per market demand.	Incidental sub grade ore/mineral reject being encountered is being blended with high grade ore and fed to the plant.
3e	Grade of mineral rejects generation and threshold value declared.	No proposals	48.8% Fe.	A small quantity of 4500 MT of mineral reject of 48.8% Fe generated is reported to be stacked for blending in future. As per AR-2022-23.
3f	Quantity of sub grade mineral generation.	Meagre quantities of mineral subgradegenera ted during excavation shall be blended suitably with higher grade ROM.	353456 T generated and 348956 T mineral rejects/sub grade have been blended suitably with higher grade ore to arrive at desired quality of product as per market demand.	Incidental sub grade orebeing encountered is being blended with high grade ore and fed to the plant.

3g	Grade of sub grade mineral generation	No proposals	Fe - 48.8%	A total of 4500 MT is stacked separately to be blended in future.
3h	Manual / Mechanised method adopted for segregating from ROM	Mechanized method proposed for segregated from ROM.	Mechanized method adopted for segregated from ROM.	05 units of Integrated dry crushing & screening plants of each 450 TPH capacity, 4 in C- Block and 1 in B- Block.
3i	Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects.	No Proposal	No such beneficiation study carried out.	
3j	Provision of drilling and blasting in mineral benches	Provision of drilling & blasting is proposed.	Drilling& blasting is done in combination with slurry & NONEL	4 to 4.5" dia. holes are being utilized for drilling & blasting. For 4 to 4.5"diaBurden = 2.5 to 2.8 m Spacing =2.5 to 3 m Max.Charge/delay=1 80 to 210 Kg
3k	Provision of mining machineries in mineral benches	Provision of Mining Machinery is made. Crusher: 06 nos. Diesel Generator: 6nos. Excavator- 22 nos Rock Breaker: 2 nos. Drills-4 nos. Wheel loader-14 nos. Truck - 70 nos. Water Tanker - 3 nos. Grader: 1 no. Dozer: 1 no. Dumper 100 T-02 Crane- 03 nos.	Mechanized Opencast Mining using Shovel Dumper Combination and deep hole drilling and blasting. Crusher: 06 nos. Diesel Generator: 6nos. Excavator- 22 nos Rock Breaker: 2 nos. Drills-4 nos. Wheel loader-14 nos. Truck -70nos. Water Tanker - 3 nos. Grader: 1 no. Dozer: 1 no. Dumper 100 T-02 Crane-03 nos.	The reported machineries have been found to be deployed on the day of inspection.

31	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	height =6 meters,	Bench height of 6 mts and avg width of 15 mts maintained as per the proposal.	Yes, height of the benches is suitable for the method of mining proposed in the Mining Plan.
3m	Total area covered under excavation/pits	116.785 Haproposed at the end of the Plan Period.	117.935 Ha at the end of the year 2022-23.	Violation issued for the deviation in the extent of excavation.
3n	Ore to OB ratio for the pit/mine during the year.	1: 0.15 by weight	1: 0.10 by weight	Violation issued for not achieving the proposed stripping ratio.
30	Total area put in use under different heads at the end of year	Proposed total area at the end of the year Area under Mining-116.785 Ha. Mineral storage - 11.455 Ha Roads- 13.36 Ha, Infrastructure -4.65 Ha Overburden Dump- 16.924 Ha. Others (virgin area planted)-46.149 Ha	Actual total area at the end of the F.Y.2022-23. Area under Mining- 117.935 Ha. Mineral storage - 20.604 Ha Roads- 11.82 Ha, Infrastructure-4.65 Ha Overburden Dump- 15.766 Ha. Others (virgin area planted)- 51.25 Ha	As per Annual Return FY 2022-23. Violation issued for deviation in excavation and mineral storage area.
3p	Production of ROM mineral during the last five year period as applicable	20-21 7000000 21-22 7000000	18-19 6999940	Actual production is within the proposed limits for the years from FY: 17-18 to 22-23.
3q	General remarks of inspecting officers on method of mining etc.			Method of Mining is open pit mine with shovel-dumper combination & deep hole drilling and blasting.

Sl.No.	Item	Propasals	Actual work	Remarks
4a	Separate dumping of topsoil, OB and mineral rejects (Rule 32,33)	Separate dumping proposed for the OB dumps - 16.924 Ha	15.766 На	
4b	Location of topsoil, OB and mineral reject dumps	OB dumps: AD-2 (B- Block): E/W:673324 to 673153 N/S: 1660490 to1660600 AD-1 (C- Block): E/W: 671487 to 671819 N/S: 1660210 to 1660440	AD-1 &NEW DUMP (C-Block): E/W: 671646 to 671995 N/S: 1660210 to 1660340	AD-2 (B-Block): Between Cross Sections B-8M to B-9M AD-1& NEW DUMP (C-Block): Between Cross Section C-217/8 to C-271/2
4c	Number of dumps within lease area and outside of lease area	Within lease area Active dumps: 02 nos. Outside lease area Nil	Within lease area Active dumps: 02 nos. Outside lease area Nil	
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	Location of dumps proposed outside the UPL	Dumps are located outside the UPL.	AD-2 is 50 mts, AD-1 is 30 mts and NEW Dump is 70 mts away from the UPL.
4e	Number of active and alive dumps.		Active: 02 nos.	
4f	Number of dead dumps.	NIL	NIL	
4g	Number of dumps established.	No Proposal	NIL	
4h	Whether Retaining wall or garland drain all along dumps are there.	and garland	Constructed Retaining wall and garland drain all along dumps as per the approved R &R Plan of KIOM.	
4i	Length of Retaining wall or garland drain all along dumps	NIL	NA	
4j	Number of settling ponds	No proposal	NIL	

4k Specific comments of inspecting officer on waste dump management

Two active waste dumps are located outside the UPL is systematically managed by stabilizing the inactive part of the terraces by way of coir matting and plantation. Also engineering structures like Retaining Wall and Garland drains are provided at the toe of the Dump.

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.	NA	NA	No Proposal of back filling and mineral is not exhausted.
5b	Area under backfilling of mined out area	NA	NA	No Proposal of back filling and mineral is not exhausted.
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	AN	NA	No Proposal of back filling and mineral is not exhausted.
5d	Total area fully reclaimed and rehabilitated	NA	NA	No Proposal of back filling and mineral is not exhausted.
5e	General remarks of inspecting officers on backfilling and reclamation etc.			No part of the 6 Mine Pits in operation are fully exhausted of Mineral for backfilling.

Progressive Mine Clousre Plan:

Sl.No.	Item	Propasals	Actual work	Remarks

ба	Whether Annual report on PMCP submitted on time and correctly. Rule 23 E(2).	To be submitted by 1st July every year.	Annual Report on PMCP submitted on 30.06.2023.	Submitted in time.
6b	Area available for rehabilitation (ha) .	No proposal	Working Benches in all pits under progressive, hence rehabilitation activity has not carried out	No part of the 6 Mine Pits in operation are fully exhausted of Mineral for backfilling.
6c	afforestation done (ha).	NA	NA	Mines are in developing stage. Hence, following measures have not been proposed in approved mining plan
6d	No. of saplings planted during the year	No proposal		
6e	Cumulative no .of plants	Environmental monitoring proposed in core zone & buffer zone	Environmental monitoring is being carried on quarterly basis in core zone & buffer zone for Air, Water, Noise and Soil	Air monitoring stations:06 Water monitoring stations:05 Noise monitoring stations:06 Monitoring is being done by M/s. Pragathi Labs Consultant, Hyderabad. Parameters were observed to be within the permissible limits.
6f	Any other method of rehabilitation	No Proposals	NIL	
6g	Cost incurred on watch and care during the year	Rs 50,000/- proposed for dump management	Cost incurred on watch & care during the year is Rs. 6,63,250/-	Appears to be correct.
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (Lx B x D	No Proposal	NIL	NIL

6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	No Proposal	NIL	NIL
6j	Compliance on reclamation and rehabilitation by backfilling (iii)Afforestati on on backfilled area	No Proposal	NIL	NIL
6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	No Proposal	NIL	NIL
61	Compliance on reclamation and rehabilitation by backfilling (v)any other specific means.	No Proposal	NIL	NIL
бm	Compliance of rehabilitation of waste land within lease (i)afforestation	0.85 ha on OB soil Dumps proposed with 850 nos. of saplings	0.85 ha on OB soil Dumps have been afforested with 1410 no of saplings.	NIL
6n	Compliance of rehabilitation of waste land within lease (ii)Area rehabilitation (ha)	No Proposal	NIL	
60	Compliance of rehabilitation of waste land within lease (iii)Method of rehabilitation	No Proposal	NIL	
6p	Compliance of environmental monitoring (core zone and buffer zone)	Environmental monitoring proposed.	Env. monitoring carried out with Thejus Enterprises, Banglore. Air quality, Surface Water, Ground water, Noise level, Dust & soil monitoring carried out. All parameters are within Limits	Regular environmental monitoring is carried out.

6q General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.

All the proposed PMCP activities and Environmental monitoring in core and buffer zones are carried out during the reporting year.

Mineral Conservation:

Sl.No.	Item	Propasals	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	Dry crushing and screening of ROM proposed.	Dry crushing and screening of ROM is carried out at different locations of the mines.	05 Nos. of integrated crushing &screening plants, 04 in C-Block and 1 in B-Block.
7b	Method of grade- wise mineral sorting i.e. manual or mechanical.	Mechanical method proposed for sorting	Mechanical method adopted for sorting.	Mechanical method adopted for grade wise sorting of mineral.
7c	Different grade of mineral sorted out at mines.	Lump - +10-40 mm Sized lump -20 to +10 mm Fines -10mm	Mineral sorted as per the proposal	
7d	Any beneficiation process at mines .	No proposal	NA	No beneficiation processes.
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues			The low-grade Ores encountered during mining is suitably blended with high grade Ores to bring the entire mineral production to marketable grade thereby taking care of Mineral conservation. Beneficiation of ore does not arise.

Environment:

Sl.No. Item Propasals Actual work Remarks

8a	Separate removal and utilization of topsoil (Rule 32)	Top Soil is		Top soil generated in the past has been utilized in plantation.
8b	Concurrent use or storage of topsoil	Top Soil generated is very meagre and is being utilized in green belt development in mines.	Trace amounts of Top soil encountered during opening up of virgin areas has been carefully separated and instantaneously used for development of gardens and greenbelt development measures in R&R Plan.	Top soil generated in the past has been utilized in plantation.
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	Separate dumps for OB proposed	02 nos. of Separate dumps i.e. AD-1 at C-block & AD-2 at B Block.	2 Active sumps and one separate temporary Mineral reject exists in the mine.
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	No proposal	OB dumped will be used at the conceptual stage for restoration.	
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	No proposal	Nil	No pits & benches are completely exhausted, hence, no proposal in this regard is made.
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	Baseline information on existence of plantation is available.	Within the mining lease area 25,000nos. of saplings have been planted.	Appears to be correct.
8g	Survival rate	85%	85%	
8h	Water sprinkling on roads to control airborne dust	sprinkling on haul roads proposed to control	Water sprinkling is carried out regularly on haul roads. In addition to water sprinklers mist canon is deployed at crushing units for mitigation of the airborne dust.	06nos. of water tankers of varying in capacity from 4KL to 28KL have been deployed.

8i General remarks of inspecting officer on aesthetic beauty in and around mines area

The Aesthetic beauty in and around the mine area is satisfactorily maintained by way of plantation.

Compliance of Rule 45:

Sl.No.	Item	Propasals	Actual work	Remarks
9a Status of submission of Monthly and Annual returns		Monthly Returns Submitted up to Oct, 2022. Annual Return submitted for the year 2022- 23.		
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Mining Engineer: Shri. Phool Singh Dhruw Geologist:V. Kaushal Manager: Shri.Randhir Kumar	The reported officials were present on the day of inspection.	
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	current Open cast	Violation issued for deviation in excavation and mineral storage area from the proposed extents.	Details as per the Annual return for the F.Y .2022-23.

9d	Scrutiny of Annual return on afforestation	Within ML- 25,000saplings @ 85 % survival, Outside ML-Nil	Appears to be correct.	Details as per the Annual return for the F.Y.2022-23.
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	-		Details as per the Annual return for the F.Y.2022-23.
9f	Scrutiny of Annual return on ROM stock and/or graded ore		Appears to be correct.	
9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	Ex Mine Price: Fines 3261.30 Rs/Ton Lump 4057.56 Rs/Ton Sale value: Fines 3261.30 Rs/Ton Lump 4057.56 Rs/Ton Cost of production: Rs.1458.00 per Ton		As per Annual return submitted in year F.Y. 2022-23.
9h	Scrutiny of Annual return on fixed assets	<pre>including land, machinery, plant and</pre>	The value of Land, its addition and depreciation during the year is accounted for and is in correct as the entire mining lease area comprises of forest & Revenue land only.	As per Annual return submitted in year F.Y. 2022-23.

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9k Scrutiny of

mining machineries Drills-8 no.

13 no. Excavator- 28

no.

Dozer- 1 no. Ace Crane: lnos.

sprinkler: 6

Water

Motor Grader:

1 no.

The Reported machineries Annual return on Dumper 2 T-02 were found deployed on Wheel loader- the day of inspection.

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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) 09/01/2023	27/02/2024	MCDR17 Rule	45(7)09/01/2023 27/02/2024	

MCDR17 Rule 45(7)(a; 09/01/2023 27/02/2024

Date: (DR.SURESH PRASAD)

Indian Bureau of Mines