

# MCDR INSPECTION REPORT

## 1.0 GENERAL

SN	Particulars	Details
1	Name of inspecting office & designation	S. Kartikeya, Jr. Mining Geologist, IBM Raipur
2	Date of inspection	22/07/2017
3	Name of the Mine	Bailadila Iron Ore Mine; Deposit 14
4	Total Lease Area (Ha) with breakup of Non-forest and forest land	Forest Land: 322.368 Ha Non Forest Land: NIL
5	Mine Code	30CHG03001
6	IBM Registration Number under rule 45 of MCDR, 1988	IBM/270/2011
7	Name of the lessee, Address, phone, email and fax number	NMDC Limited 10-3-311/A, Castle hills, Masab tank, Hyderabad Phone No: 040-23538704 Fax:040-23538705 E-mail: nmdchyd@hd1.vsnl.net
8	Village	Kirandul
8	Taluka / Mandal / District	Bade Bacheli, Dantewada
10	State	Chhattisgarh
11	Post office & PIN	Kirandul, Pin Code: 494556
12	Nearest police station	Kirandul
13	Nearest Railway station	Kirandul
14	Date of Grant of Mining Lease	11/02/1965
15	Date of Execution	11/09/1965
16	Date of opening of Mine	October 1968
17	Date of first Renewal, if applicable and its period & expiry	12/09/1995, 20Years, Expiry-11/09/2015
18	Date of second Renewal, if applicable and its period & expiry	Lease Executed from: 12.09.2015 to 31.03.2020 (As per MMDR Amendment act 2015 section 8A).
19	Date of submission of renewal application if Mining Operations are continuing under deemed extension	Lease Executed from: 12.09.2015 to 31.03.2020
20	Name of the Nominated Owner with Address, phone, email, fax number and date of appointment	Shri P.K. Satpathy NMDC Ltd, 10-3-311/A, Castle hills, Masab tank, Hyderabad Phone No: 040-23538704 Fax: 040-23538705 E-mail: nmdchyd@hd1.vsnl.net Date of Appointment:13.12.2014
21	Name of the Mine Agent with Address, phone, email, fax number and date of appointment	Shri T.S.Cherian, General Manager, NMDC Ltd, Kirandul, B.I.O.M. Kirandul Complex, Dantewada

		PIN-494556, Chhattisgarh, Email: tscherian@nmdc.co.in Fax no: 07857-255227, Phone 07857-255222 DOA:14/02/2016
22	Name of the Mines Manager with Address, phone, email, fax number and date of appointment in mines	Shri A.K.Prajapati, Jt.General Manager, NMDC Ltd, Kirandul, B.I.O.M. Kirandul Complex, Dantewada PIN-494556, Chhattisgarh, Fax no: 07857-255232, Phone 07857-255232 DOA:06/12/2012
23	Name of the Mining Engineer, Qualification and total experience with Address, phone, email, fax number and date of appointment in mine	Shri Anil Kumar, Dy. General Manager, B. Tech. (Mining) FCC (R), Experience: 20 Years Approximately NMDC Ltd, Kirandul, B.I.O.M. Kirandul Complex, Dantewada PIN-494556, Chhattisgarh, Phone: 9425266452 Email: anilkumar@nmdc.co.in DOA:03/05/2017
24	Whether Geologist and Mining Engineer appointed in mines satisfy the rule 55 & carrying out their duties as per rule 56 & 57 of MCDR, 2017.	Yes Shri Santosh Anand Padhye, Sr.Manager, M.Sc (Geology) Pt. Ravishankar Shukla University, Raipur NMDC Ltd, Kirandul, B.I.O.M. Kirandul Complex, Dantewada PIN-494556, Chhattisgarh, Phone – 9425266424 Email: sapadhye@nmdc.co.in DOA:03/05/2017
25	Date of Approval of Mining Plan/Modified Mining Plan with five-year period and specific condition in approval letter, if any.	<b>Modified Mining Plan</b> approved vide letter no. BST/FE/MPLN-435/NGP-15 Nagpur dated 16/03/2016 Period: 2015-16 to 2019-20
26	Date of Approval of Scheme of Mining/Modified Scheme of Mining with five-year period and specific condition in approval letter, if any.	<b>1st Scheme of Mining</b> Approved Vide Letter No: 314(3)/2002 - MCCM (C) /MP-4, Nagpur Dated:02.09.2003 Period: 2000-01 to 2004-05 <b>2nd Scheme of Mining</b> Approved Vide Letter No: 314(3)/2006 - MCCM (CZ) /S-5, Nagpur Dated:27.03.2007 Period: 2005-06 to 2009-10 <b>3rd Scheme of Mining</b> Approved vide Letter No: 314(3)/2010 - MCCM (CZ) /S-21/51, Dated:18.01.2011 Period: 2010-11 to 2014-15
27	Mineral(s) granted in lease and proved for mining	Hematite (Iron Ore)
28	Method of Mining(Opencast, Underground)	Opencast
29	Category (Fully Mechanised, Others or Manual)	Category "A" Fully Mechanized

30	Captive/Non Captive	Non Captive
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Scientific Mining: Compliance of proposals of approved mining plan/scheme of mining. –

**1.0 Exploration**

SN	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	During 2016-17: 05 nos. of boreholes with a cumulative depth 500 meters	11 nos. of boreholes have been drilled with a cumulative depth 834 meters	
1b	Exploration over lease area for Geological axis 1 or 2.	G1 Category: 101.409 Ha. G2 Category: 73.429 Ha. G3 Category: 54.869 Ha. G4 Category: 10.684 Ha Non Mineralized: 81.977 ha	G1 Category: 101.409 Ha. G2 Category: 73.429 Ha. G3 Category: 54.869 Ha. G4 Category: 10.684 Ha Non Mineralized: 81.977 ha.	-
1c	Exploration Agency & Expenditure in lakh Rupees during the year	Exploration Agency:- GEC NMDC Ltd, Raipur	Exploration Agency:- GEC NMDC Ltd, Raipur Expenditure:- Rs 161.44 Lakhs	-
1d	Balance area to be explored to bring Geological axis in 1 or 2	G3 Category: 54.869 Ha. G4 Category: 10.684 Ha Non Mineralized: 81.977 ha	G3 Category: 54.869 Ha. G4 Category: 10.684 Ha Non Mineralized: 81.977 ha	-

1e	Balance reserves as on 01.04.2017 in Million Tonnes	Under (111) Category: 324.802 MT Under (122) Category: 38.041 MT Under (211) Category: 28.256 MT Under (222) Category: 13.923 MT Under (331) Category: 401.099 MT Under (332) Category: 13.923 MT Under (333) Category: 57.349 MT Under (334) Category: 5.802 MT	Under (111) Category: 327.577 MT Under (122) Category: 38.041 MT Under (211) Category: 28.256 MT Under (222) Category: 13.923 MT Under (331) Category: 401.099 MT Under (332) Category: 13.923 MT Under (333) Category: 57.349 MT Under (334) Category: 5.802 MT	-
1f	General remarks of inspecting officer on geology, exploration etc.	NIL		

## **2.0 Development**

SN	Item	Proposals	Actual work	Remarks
2a	Location of development w.r.t. lease area	CS-3 to CS15, W 600 M to E 400 M w.r.t. CAL	CS-3 to CS15, W 600 M to E400 M w.r.t. CAL	-
2b	Separate benches in topsoil, overburden and mineral (Rule 13 of MCDR, 2017)	Topsoil: NIL OB / IB: 9 Mineral: 9	Topsoil: NIL OB / IB: 9 Mineral: 9	-
2c	Stripping ratio or ore to OB ratio	1:0.24	1:0.18	-
2d	Quantity of topsoil generation in m3	Not in the Proposal	Not Applicable	-
2e	Quantity of overburden generation in m3	444444	277554	-
2f	General remarks of inspecting officer on development of pit w.r.t. type of deposit etc.	NIL		

## **3.0 Exploitation**

SN	Item	Proposals	Actual work	Remarks
3a	Number of pits proposed for production	03 no.	03 no.	-
3b	Quantity of ROM mineral production proposed	9.30 Million Tonnes	1.31 Million Tonnes	-
3c	Recovery of salable/usable mineral from ROM production	100%	100%	-
3d	Quantity of mineral reject generation	1200000 Metric Tonnes	749396 Metric Tonnes	-
3e	Grade of mineral reject generation and threshold value declared	Below threshold value 45% Fe	Below threshold value 45% Fe	BHQ Fe 35%
3f	Quantity of sub-grade mineral generation	0.185 Million Tonnes	0.165 Million Tonnes	-
3g	Grade of sub-grade mineral generation	45 - 55 % Fe	45 - 55 % Fe	-
3h	Manual / Mechanised method adopted for segregating from ROM	By Fully Mechanised means	By Fully Mechanised means	-
3i	Any analysis or beneficiation study proposed & carried out for sub-grade mineral and reject	Not proposed in the approved document	Not applicable	-
3j	Provision of drilling & blasting in mineral benches	Primary Drilling: 250 mm dia Secondary Drilling: 150 mm dia Blasting: 250 mm dia, 5.5-6.5 m Average spacing 4.5-6.0 m burden 12.0 m height	Primary Drilling: 250 mm dia Secondary Drilling: 150 mm dia Blasting: 250 mm dia, 5.5-6.5 m Average spacing 4.5-6.0 m burden 12.0 m height	Blast hole Spacing is depending upon the hardness of the strata
3k	Provision of mining machineries in mineral benches	Yes, proposal has been given	Machineries have been deployed as per proposal	-
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Average Bench Height:12 M and Over Burden Bench Height : 30 M	Average Bench Height:12 M and Over Burden Bench Height : 30 M	-
3m	Total area covered under excavation/pits	86.550 Ha	86.550 Ha	-
3n	Ore to OB ratio for the pit/mine during the year	1:0.24	1:0.18	-
3o	Total area put in use under different heads at the end of year	Pit- 86.550 Ha Waste/reject- 44.220 Ha Others- 43.840 Ha	Pit- 86.550 Ha Waste/reject- 44.220 Ha Others- 43.840 Ha	-

3p	Production of ROM mineral during last five-year period, as applicable (In Metric Tonnes)	Yr-2012-13: 5000000  Yr-2013-14: 5000000  Yr-2014-15: 5000000  Yr-2015-16: 5000000  Yr-2016-17: 5000000	Yr-2012-13: 2978164  Yr-2013-14: 4021066  Yr-2014-15: 4320378  Yr-2015-16: 3092970  Yr-2016-17: 4132570	-
3q	General remarks of inspecting officer on method of mining etc.	NIL		

#### **4.0 Solid Waste Management-Dumping**

SN	Item	Proposals	Actual work	Remarks
4a	Separate dumping of topsoil, OB & mineral reject (Rule 36, 37 of MCDR, 2017)	OB: 03 nos.	OB: 03 nos.	-
4b	Location of topsoil, OB & mineral reject dumps	NW of Deposit, CS 02 to CS-5, -200 to 600 w.r.t CAL	NW of Deposit, CS 02 to CS-5, -200 to 600 w.r.t CAL	-
4c	Number of dumps within lease area and outside lease area	OB: 03 nos.	OB: 03 nos.	-
4d	Location of dumps w.r.t. ultimate pit limit (Rule 14 of MCDR, 2017)	Beyond ultimate pit limits	Beyond ultimate pit limits	-
4e	Number of active & alive dumps	01 no.	01 no.	-
4f	Number of dead dumps	Dead: 02 nos.	Dead: 02 nos.	-
4g	Number of dumps stabilised	NIL	NIL	-
4h	Whether Retaining wall or garland drain all along dumps are there	There was a proposal given for construction of buttress wall/retaining wall at the edge of the waste dump area to prevent flowing of waste down the slope.	Few bunds have been made around dump	Deviation has been observed

4i	Length of Retaining wall or garland drain all along dump	Not Proposed in the approved document.	100 Meter Retaining wall has been constructed.	The length of the retaining wall is insufficient to prevent wash off material from the existing dumps.
4j	Number of settling ponds	01 Nos.	01 Nos.	-
4k	Specific comments of inspecting officer	NIL		

### **5.0 Solid Waste Management-Backfilling**

SN	Item	Proposals	Actual work	Remarks
5a	Status on part or full extraction of mineral from mined out area before starting backfilling	Not proposed in the approved document	Not applicable	-
5b	Area under backfilling of mined out area	Not proposed in the approved document	Not applicable	-
5c	Concurrent use of topsoil for restoration or rehabilitation of mined out area (Rule 36 of MCDR, 2017)	Not proposed in the approved document	Not applicable	-
5d	Total area fully reclaimed & rehabilitated	Not proposed in the approved document	Not applicable	-
5e	General remarks of inspecting officer on backfilling, reclamation etc	Area not matured for backfilling, reclamation etc.		

### **6.0 Progressive Mine Closure Plan**

SN	Item	Proposals	Actual work	Remarks
6a	Whether Annual report on PMCP submitted on time and correctly - Rule 26(2) of MCDR, 2017. Details should be given in the format as given in Annexure-20.	Not submitted	-	Deviation has been observed
6b	Management of worked/mined out benches i) Area available for rehabilitation (ha) ii) Afforestation done (ha) iii) No. of saplings planted during the year	NA	An area of 1214.96 Ha has been developed under green belt development. An amount of Rs 15 Lakh has been spent for plantation	-

	<p>iv) Cumulative no. of plants</p> <p>v) Any other specific method of rehabilitation</p> <p>vi) Cost incurred on watch &amp; care during the year</p>		<p>of 5000 No of samplings in the above area. An amount of Rs. 25Cr released to Chhattisgarh Rajya van VikasNigam limited Raipur for carrying road side plantation over a length 50 KMs under Harihar Chhattisgarh programme for the FY 2016-17.</p>	
6c	<p>Compliance on reclamation and rehabilitation by backfilling</p> <p>i) Voids available for backfilling (L X B X D)</p> <p>ii) Void filled by waste/tailings</p> <p>iii) Afforestation on the backfilled area</p> <p>iv) Rehabilitation by making water reservoir</p> <p>v) Any other specific means</p>	NA	NA	-
6d	<p>Compliance of Rehabilitation of waste land within lease</p> <p>i) Afforestation</p> <p>ii) Area rehabilitated (ha)</p> <p>iii) Method of rehabilitation</p>	NA	NA	-
6e	<p>Compliance of Environmental monitoring (core zone &amp; buffer zone)</p>	<p>To be Complied as per conditions laid in EC by MOEF</p>	<p>Regular environmental quality monitoring carried out in the area by MoEF approved lab M/s Pragathi Labs &amp; Consultants pvt ltd., Hyderabad.</p>	-
6f	<p>General remarks of inspecting officer on PMCP compliance &amp; progressive</p>	NIL		

### **7.0 Mineral Conservation**

SN	Item	Proposals	Actual work	Remarks
7a	<p>ROM Mineral dispatch or grade-wise sorting within lease area</p>	<p>Above 55 Fe%</p>	<p>Above 55 Fe%</p>	-



7b	Method of grade-wise mineral sorting i.e. manual or mechanical	Crushing and Screening	Crushing and Screening	-
7c	Different grade of mineral sorted out at mines	Below 55 Fe%, 55 to 58 Fe%, 58 to 60 Fe%, 60 to 62 Fe%, 62 to 65 Fe% 65%and Above	Below 55 Fe%, 55 to 58 Fe%, 58 to 60 Fe%, 60 to 62 Fe%, 62 to 65 Fe% 65%and Above	-
7d	Any beneficiation process at mines	Dry Crushing and Screening	Dry Crushing and Screening	-
7e	General remarks of inspecting officer on Mineral conservation & beneficiation issues	NIL		

## **8.0 Environment**

SN	Item	Proposals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	Not in the proposal	Top soil not present in the quarry	Present working is being carried out in the existing pits
8b	Concurrent use or storage of topsoil	Not in the proposal	Top soil not present in the quarry	-
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	YES	YES	-
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	Not in the proposal	Not applicable	-
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	Not in the proposal	Not Applicable	-
8f	Baseline information on existence of plantation & additional plantation done (Rule 44 of MCDR, 2017)	Not in the proposal	Additional plantation done at Raipur	
8g	Survival rate	Not in the proposal	90%	-
8h	Water sprinkling on roads to control airborne dust	Water sprinkling is being carried out by water tankers	Water sprinkling is being carried out by water tankers	-

8i	General remarks of inspecting officer on aesthetic beauty in and around mines are	NIL
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### **9.0 Compliance of Rule 45**

S. N.	Item	COMMENTS		Remarks
9a	Status of submission of Monthly and Annual returns	M.R. Submitted upto – Up to June 2017 submitted  A.R. submitted upto- 2016-17 submitted		-
S. N.	Item	Details GIVEN in A.R.	Observation of I/Officer	Remarks
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Mining Engineer: Shri Anil Kumar Geologist: Shri Santosh Anand Padhye Mines Manager: Shri A. K. Prajapati	NIL	-
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	Covered under Quarry: 86.55 Ha Reclaimed/Rehabilitated: 0.00 Ha Used for waste disposal: 44.22 ha	NIL	-
9d	Scrutiny of Annual return on afforestation	Afforestation not proposed in the plan	NIL	-
9e	Scrutiny of Annual return on mineral reject generation (Grade & quantity)	BHQ & Shale Grade: 35% Fe	NIL	-
9f	Scrutiny of Annual return on ROM stock and/or graded ore	ROM: 209.00 Metric Tonnes Lumps: 23384.00 Metric Tonnes Fines: 556952.00 Metric Tonnes	NIL	-
9g	Scrutiny of Annual return on sale value, Ex. Mine price & production cost	Ex Mine price varies depending upon Fe%	NIL	-
9i	Scrutiny of Annual return on fixed assets	Rs. 551.73 Crores	NIL	
9k	Scrutiny of Annual return on mining machineries	Given	NIL	-

10- Details of violations observed during current inspection and compliance position of earlier violation pointed out:-

No outstanding violations.

Violation pointed out during inspection: Rule 11(1), 26(2), 33, and 47 of MCDR, 2017.