

**MCDR INSPECTION REPORT****General**

<b>S.N.</b>	<b>Particulars</b>	<b>Details</b>
1	Name of inspecting office & designation	Shri Rajesh Kumar Das (Senior ACOM)
2	Date of inspection	07.02.2019
3	Name of the Mine	<b>Bailadila Iron Ore Mines, Kirandul Complex, DEP-14 NMZ</b>
4	Total Lease Area (Ha) with breakup of Non-forest and forest land	Forest Land: 506.742 HA, Non forest Land : NIL
5	Mine code, File No.	30MPR02002, CHG/BST/FE-2/NGP-VOL-II
6	IBM Registration Number under rule 45 of MCDR, 1988	IBM/270/2011
7	Name of the Lease, Address, Phone, email and fax number	NMDC Ltd, Masab Tank, Hyderabad, PIN-500028, Telangana. pksatpathy@nmdc.co.in Fax no: 040-27172569, Phone 040-23538713-21,23538723 & 23538767
8	Village	Kirandul
9	Taluka/Mandal, District	Bade Bachel, Dantewada
10	State	Chhattisgarh
11	Post office & PIN	Kirandul, 494556
12	Nearest Police Station	Kirandul
13	Nearest Railway Station	Kirandul
14	Date of Grant of Mining Lease	20/04/1965
15	Date of Execution	07/12/1965
16	Date of opening of Mine	In the year 1987
17	Date of First Renewal, if applicable and its period & expiry	07/12/1995, 20Years, Expiry-06/12/2015
18	Date of Second Renewal, if applicable and its period & expiry	Lease Executed from:07/12/2015 to 31.03.2020 Further, in the provision of as per Rule 8A (6)ofMMDR (Amendment) Act, 2015 Lease has been extended upto 31.03.2020.
19	Date of submission of renewal application if Mining Operations are continuing under deemed extension	Lease Executed from: 07/12/2015 to 31.03.2020 (As per MMDR Amendment act 2015 section 8A).
20	Name of the Nominated Owner with Address, phone, email, fax number and date of appointment	Shri P.K. Satpathy Director (Prodn.), NMDC Ltd, Masab Tank, Hyderabad, PIN-500028, Telangana. pksatpathy@nmdc.co.in Fax no: 040-27172569, Phone No:040- 23538701, 23538704. DOA:13/12/2014
21	Name of the Mine Agent with Address, phone, email, fax number and date of appointment	Shri A.K. Prajapati, General Manager, NMDC Ltd, Kirandul, B.I.O.M. Kirandul Complex, Dantewada PIN-494556, Chhattisgarh, akprajapati@nmdc.co.in Fax no: 07857-255227, Phone 07857-255222

		DOA:30/09/2018
22	Name of the Mine Manager with Address, phone, email, fax number and date of appointment in mines	ShriVinay Kumar, Jt.General Manager, NMDC Ltd, Kirandul, B.I.O.M. Kirandul Complex, Dantewada PIN-494556, Chhattisgarh, Fax no: 07857-255226, Phone 07857-255232 DOA:30/09/2018
23	Name of the Mining Engineer, Qualification and total experience with address, phone, email, fax number and date of appointment in the mine	ShriRandhir Kumar, Dy.General Manager,B.Tech (Mining), FCC (R), Experience: 21 Years Approximately NMDC Ltd, Kirandul, B.I.O.M. Kirandul Complex, Dantewada PIN-494556, Chhattisgarh, 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.	Appointed under Rule-55 and carrying out duties as per rule 56 & 57 of MCDR-2017.
25	Date of Approval of Mine Plan/Modified Mine Plan with five- year period and specific condition in approval letter, if any.	Vide Letter No: 314(3)/95 MCCM (c) /MP-6, Dated: 08.02.1996. Vide Letter No: 314(3)/2005MCCM (cz) /MP-31, Dated: 01.04.2006. <b>Vide Letter No: BST/FE/MPLN-434/NGP/2015/08-RAIPUR-II/265, Dated:05.08.2016</b>
26	Date of Approval of Scheme of Mining/Modified Scheme of Mining with five- year period and specific condition in approval letter, if any.	Vide Letter No: 314(3)/2002 - MCCM (C) /MP-5, Dated:02.09.2003 Vide Letter No: 314(3)/2006 - MCCM (CZ) /MP-6, Dated:27.03.2007 Vide Letter No: 314(3)/2010 - MCCM (CZ) /S-22/51, Dated:18.01.2011
27	Mineral(s) granted in lease and approved for Mining	Hematite
28	Method of Mining (Opencast, Underground)	Opencast
29	Category (Fully Mechanised, Others or Manual)	Fully Mechanised
30	Captive/Non-Captive	Non-Captive
31	EC Status	The EC of Lease 14NMZ is 5.5 MTPA and is coterminous of Mine Lease.

**Scientific Mining:** Compliance of proposal of approved mining plan/scheme of mining.

### 1.0 Exploration

S.N.	Item	Proposals	Actual Work	Remarks
1a	Backlog of previous year	NIL	NIL	
1b	Exploration over lease area for Geological axis 1 or 2.	7BH/450Mts	10BH/727Mts	
1c	Exploration Agency & Expenditure in Lakh Rupees during the year	Applicant itself is the exploration Agency.	Applicant itself is the exploration Agency. Expenditure during 2017-18:94.37 Lakh	
1d	Balance area to be explored to bring Geological axis in 1 or 2.	G3 level = 54.881 Ha G4 level = 10.051 Ha	G3 level = 54.881 Ha G4 level = 10.051 Ha	Nearly 250 bore holes of

		Non mineralised area = 67.592 Ha	Non mineralised area = 67.592 Ha	approximately 20,000 meter length.																										
1e	Balance reserves as on 01.04.2018	<table border="1"> <thead> <tr> <th>Code</th> <th>Quantity</th> </tr> </thead> <tbody> <tr> <td colspan="2">A. Mineral Reserve</td> </tr> <tr> <td>111</td> <td>147.20</td> </tr> <tr> <td>121</td> <td>-</td> </tr> <tr> <td>122</td> <td>15.36</td> </tr> <tr> <td colspan="2">B. Remaining Resources</td> </tr> <tr> <td>211</td> <td>35.71</td> </tr> <tr> <td>221</td> <td>-</td> </tr> <tr> <td>222</td> <td>11.56</td> </tr> <tr> <td>331</td> <td>198.27</td> </tr> <tr> <td>332</td> <td>11.56</td> </tr> <tr> <td>333</td> <td>30.36</td> </tr> <tr> <td>334</td> <td>1.03</td> </tr> </tbody> </table>		Code	Quantity	A. Mineral Reserve		111	147.20	121	-	122	15.36	B. Remaining Resources		211	35.71	221	-	222	11.56	331	198.27	332	11.56	333	30.36	334	1.03	
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1f	General remarks of Inspecting officer on geology, exploration etc.	The ore deposit located at the extreme southern end to the eastern ridge of Bailadila range. The deposit extends over a strike length of 1900 meter ,trending N-S direction. The ore body is dipping flat/sub-horizontal to sub-vertically dips. The width varying from 180m to 880m.Maximum ore thickness of 221m is encountered in section line CS 5,drill hole C5E8. The Ore body extends from 1150m RL to 814m RL.																												

## **2.0 Development**

S.N.	Item	Proposals	Actual Work	Remarks
2a	Location of Development w.r.t. lease area	CS 3 to CS17,W 300 M to E500 M w.r.t. CAL	CS 3 to CS17,W 300 M to E500 M w.r.t. CAL	
2b	Separate benches in topsoil overburden and mineral (Rule 13 of MCDR 2017)	Top soil is not available	Top soil is not available	
2c	Stripping ratio or ore to OB ratio	1:0.18	1.0.09	
2d	Quantity of topsoil generation in m <sup>3</sup>	Top soil is not available	Top soil is not available	
2e	Quantity of overburden generation in m <sup>3</sup>	333333	164866	
2f	General remarks of Inspecting officer on development of pit w.r.t type of deposit etc.	The development is broadly within proposed area.		

## **3.0 Exploitation**

S.N.	Item	Proposals	Actual Work	Remarks
3a	Number of pits proposed for production	Pit-1	Pit-1	
3b	Quantity of ROM mineral production proposed	5500000 Tonne	4672228 Tonne	
3c	Recovery of Salable/usable mineral from ROM production	100%	100 %	

3d	Quantity of mineral reject generation	NIL	NIL	
3e	Grade of mineral reject generation and threshold value declared	-	-	
3f	Quantity of sub-grade mineral generation	220000Tonne	125000 Tonne	
3g	Grade of sub-grade mineral generation	45-55 Fe %	45-55 Fe %	
3h	Manual/Mechanised method adopted for segregation from ROM	Mechanised	Mechanised	
3i	Any analysis or beneficiation study proposed & carried out for sub-grade mineral and reject	No study Proposed	No study Proposed	
3j	Provision of drilling & blasting in mineral benches	As per Rule 106 MMR-1961, doing drilling and blasting	As per Rule 106 MMR-1961, doing drilling and blasting	
3k	Provision of mining machineries in mineral benches	As per Rule 106 MMR-1961,	As per Rule 106 MMR-1961,	
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Bench Height:12Mtr and Over Burden Bench Height : 3Mtr	Broadly as per proposal	
3m	Total area covered under excavation /pits	80.250 HA	80.250 HA	
3n	Ore to OB ratio for the pit/mine during the year	1:0.18	1.0.09	
3o	Total area put in use under different heads at the end of year	239.627HA	239.627 HA	
3p	Production of ROM mineral during last five-years period, as Applicable	2013-14: 5500000 Tonne 2014-15: 5500000 Tonne 2015-16: 5500000 Tonne 2016-17: 5500000 Tonne 2017-18: 5500000 Tonne	2013-14: 3912817 Tonne 2014-15: 3695030 Tonne 2015-16: 1840275 Tonne 2016-17: 4963875 Tonne 2017-18: 4672228 Tonne	
3q	General remarks of inspecting officer on method of mining etc	The method of mining is by fully mechanized opencast mine using shovel dumper combination and various activities-drilling, blasting, excavation, quality control, crushing & screening, loading of finished products, subgrade stacking and waste dumping.		

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

S.N.	Item	Proposals	Actual Work	Remarks
4a	Separate dumping of topsoil, OB & mineral reject (Rule 36,37 of MCDR 2017)	OB : 01	OB : 01 NOS	
4b	Location of topsoil, OB & mineral reject dumps	SW of Deposit, CS 14 to CS18, -300 to -700 w.r.t CAL	SW of Deposit, CS 14 to CS18, -300 to -700 w.r.t CAL	
4c	Number of Dumps within lease area and outside lease area	OB outside : 1 NOS	OB outside : 1 NOS	
4d	Location of Dumps w.r.t. ultimate pit limit (Rule 14 of MCDR 2017)	Out Side UPL	Out Side UPL	
4e	Number of Active & Alive dumps	Active & Alive : 1	Active & Alive : 1 NOS	

		NOS		
4f	Number of deed dumps	Not available	Not available	
4g	Number of dumps stabilized	NIL	NIL	
4h	Whether Retaining wall or garland drain all along dumps are there	Not Proposed	Not actually done	
4i	Length of Retaining wall or garland drain all along dump	Not Proposed	Not actually done	
4j	Number of settling ponds	Not proposed	Not actually done	
4k	Specific commends of inspecting officer on waste dump management	Broadly as per proposal		

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

S.N.	Item	Proposals	Actual Work	Remarks
5a	Status on part or full extraction of mineral from mined out area before starting backfilling	Back Filling not proposed	Back Filling not proposed	
5b	Area under backfilling of mined out area	Nil	Nil	
5c	Concurrent use of topsoil for restoration or rehabilitation of mined out area (Rule 36)	Top soil storage not proposed	Topsoil not available	
5d	Total area fully reclaimed & rehabilitated	Reclaimed & Rehabilitated not proposed	Nil	
5e	General remarks of inspecting officer on backfilling, reclamation etc	Area not matured for backfilling.		

### **6.0 Progressive Mine Closer Plan**

S.N.	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	For 2017-18PMCP proposed	PMCP compliance report submitted	
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 iv) Cumulative no.of plants v) Any other specific method ofrehabilitation vi) Cost incurred on watch & care during the year	Not proposed within Mining Lease	All along the Safety Zone 1000 plantation	
6c	Compliance on reclamation and rehabilitation by backfilling i) Voids available for backfilling (L*B*D)			

	ii) Void filled by waste/tailings iii) Afforestation on the backfilling iv) Rehabilitation by making water reservoir v) Any other specific means	Nil	Nil	
6d	Compliance of Rehabilitation of waste land within lease i) Afforestation ii) Area rehabilitation iii) Method of rehabilitation iv) Any other specific means	As per PMCP	PMCP report submitted	
6e	Compliance of Environment monitoring (core zone & buffer zone)	As per PMCP	Compliance Enclosed Annexure -1	
6f	General remarks of inspecting officer on PMCP compliance & progressive closer operations	Broadly as per proposal		

### **7.0 Mineral Conservation**

S.N.	Item	Proposals	Actual Work	Remarks
7a	ROM mineral dispatch or grade wise sorting within lease area	Above 55 Fe%	Above 55 Fe%	
7b	Method of grade-wise mineral sorting i.e. manual or mechanical	mechanical	mechanical	
7c	Different grade of mineral sort out at mine	Not mentioned specifically	Blending is done to meet the require quality	
7d	Any beneficiation process at mines	Crushing and Screening	As per proposal	
7e	General remarks of inspecting officer on Mineral conservation & beneficiation issues	No specific beneficiation done except crushing and screening to upgrade ROM in several stages so that it suits the different customer. There is no wet beneficiation plant operated and the fines generated mostly dispatch. In view of mineral conservation proper blending is done to cater required grade.		

### **8.0 Environment**

S.N.	Item	Proposals	Actual Work	Remarks
8a	Separate removal and utilization of topsoil (Rule32)	Top soil not available	Top soil generation negligible	
8b	Concurrent use or storage of topsoil	Top soil not available	afforestation	
8c	Separate dumps for overburden waste rock, rejects and fines (Rule 33)	Yes for OB	As per proposal	
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	Not Proposed	NA	
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	Not Proposed as no voids available for R&R	NA	
8f	Baseline information on existence of plantation & additional plantation done (Rule 44 of MCDR 2017)	Not proposed	Lease Safety zone area.	
8g	Survival rate	100 %	100%	

8h	Water sprinkling on roads to control airborne dust	yes	Water sprinkling is done on road to control the airborne dust, Wet Drilling, Water mist spray at crusher.	
8i	General remarks of inspecting officer on aesthetic beauty in and around mine area	Water sprinkling is done on road to control the airborne dust, Wet Drilling, Water mist spray at crusher and no adverse impact on aesthetic beauty observed in and around mine during mine visit.		

### **9.0 Compliance of Rule 45**

S.N	Item	Comments		Remarks
9a	Status of submission of monthly and Annual returns	Monthly Return Form F1 upto the month December-2018 submitted and Annual Return for the year 2017-18 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 Randhir Kumar, Geologist: Shri Srikanth Basani Mines Manager: Shri A.K.Prajapati	Mines Manger changed Shri Vinay Kumar	
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	Mining:80.25 Ha. Infrastructure:159.377Ha		
9d	Scrutiny of Annual return on afforestation	1000 nos within lease area	Total area is forest area	
9e	Scrutiny of Annual return on mineral reject generation (Grade & Quantity)	Nil		
9f	Scrutiny of Annual return on ROM stock and/or grade ore	ROM stock Closing Balance:19180Tonne	ROM stock Closing Balance:19180Tonne	
9g	Scrutiny of Annual return on sale value, Ex.Mine price & production costs	Ex-Mine price: Lump 65% and above-3217.19 Fines :62% to below 65-2753.33, Production Cost:1277.88PMT	Ex-Mine price: Lump 65% and above-3217.19 Fines :62% to below 65-2753.33, Production Cost:1277.88PMT	
9i	Scrutiny of Annual return on Fixed assets	Rs: 5184433534		
9k	Scrutiny of Annual return on mining Machineries	Given in Annual Return Form-H1	Shovel-8.0 cum bucket capacity(electrical,Dumper of various capacity-85 & 100 tons,drill m/c-100mm and 254mm dia electrical),in addition Dozer,grader,crane,water tanker,etc.	

10. Details of Validations observed during current inspection and compliance position of earlier violation pointed out:- During Current inspection following violation pointed out & earlier violation pointed out already complied.

Rule	Nature of Violation observed
45(5)	On scrutiny of annual return of mine it is noticed that DMF and NMET contribution is not included in the cost of production of Iron ore per tone and also in MR and AR it is mentioned dispatches for the grade but which was actually not dispatch i.e +65fe fines,. Needs to be rectified.

**(Rajesh Kumar Das, Senior Assistant controller of Mines, IBM)**