

MCDR INSPECTION REPORT

1.0 GENERAL

SN	Particulars	Details
1	Name of inspecting office & designation	S. Kartikeya, Jr. Mining Geologist, Indian Bureau of Mines, Raipur
2	Date of inspection	27/10/2017
3	Name of the Mine	Mainpat Bauxite Mine
4	Total Lease Area (Ha) with breakup of Non-forest and forest land	639.169 Ha Govt. Land: 40.107 Ha Private Land: 222.138 Ha Chhote Bade Jhad ke Jungle: 376.924 Ha
5	Mine Code	07MPR42002
6	IBM Registration Number under rule 45 of MCDR, 1988	IBM/602/2011
7	Name of the lessee, Address, phone, email and fax number	Bharat Aluminium Company Limited Engineering Building BALCO Nagar, Korba, Chhattisgarh – 495684 Phone/Fax: 07759-255043, 07759-255043 Email: rajesh.mishra@vedanta.co.in
8	Village	Kesra, Kudaridih and Sapnadar
8	Taluka / Mandal / District	Tehsil Mainpat, District: Sarguja
10	State	Chhattisgarh
11	Post office & PIN	Kamleshwarpur, Pin Code: 497 111
12	Nearest police station	Kamleshwarpur
13	Nearest Railway station	Ambikapur
14	Date of Grant of Mining Lease	15/07/1988
15	Date of Execution	09/07/1992 to 08/07/2012 (20 Years)
16	Date of opening of Mine	29/03/1993
17	Date of first Renewal, if applicable and its period & expiry	As per section 8A of MMDR Act, 2015 lease period has been extended 50 years, i.e. 09/07/1992 to 08/07/2042
18	Date of second Renewal, if applicable and its period & expiry	Not Applicable
19	Date of submission of renewal application if Mining Operations are continuing under deemed extension	Not Applicable
20	Name of the Nominated Owner with Address, phone, email, fax number and date of appointment	Shri Vikas Sharma Balco Nagar, Korba Chhattisgarh-495684 Phone: 07759-242139 Fax: 07759-242139 Email: vikas.sharma@vedanta.co.in Date of Appointment: 18/03/2017
21	Name of the Mine Agent with Address, phone, email, fax number and date of appointment	Shri Rajiv Kumar Mainpat Bauxite Mine, Post: Kamleshwarpur, District: Sarguja Chhattisgarh: 497 111

		Phone: 08349001744 Fax: 07759-242139 Email: rajiv.kumar@vedanta.co.in Date of Appointment: 18/09/2017* (*Appointment Notice has not been sent to the IBM)
22	Name of the Mines Manager with Address, phone, email, fax number and date of appointment in mines	Shri Ajay Tiwari Mainpat Bauxite Mine, Post: Kamleshwarpur, District: Sarguja Chhattisgarh: 497 111 Phone: 09755091160 Fax: 07759-242139 Email: rajiv.kumar@vedanta.co.in Date of Appointment: 15/06/2009
23	Name of the Mining Engineer, Qualification and total experience with Address, phone, email, fax number and date of appointment in mine	Shri Sunil Senapati Qualification: B.Tech. (Mining) Mainpat Bauxite Mine, Post: Kamleshwarpur, District: Sarguja Chhattisgarh: 497 111 Phone: 09755091113 Fax: 07759-242139 Email: sunil.senapati@vedanta.co.in Date of Appointment: 14/01/2015
24	Whether Geologist and Mining Engineer appointed in mines satisfy the rule 55 & carrying out their duties as per rule 56 & 57.	Yes Shri Pravasa Ranjan Chinara Qualification: M.Sc.(Geology)& M.Tech. (Remote Sensing & GIS) Mainpat Bauxite Mine, Post: Kamleshwarpur, District: Sarguja Chhattisgarh: 497 111 Phone: 08349201158 Fax: 07759-242139 Email: pravasa.chinara@vedanta.co.in Date of Appointment: 14/01/2015
25	Date of Approval of Mining Plan/Modified Mining Plan with five-year period and specific condition in approval letter, if any.	Mining Plan vide letter no. 314(3)87/MCCM(C) Nagpur Dated 15/07/1988 Period: 1993-94 to 1997-98 Mining Plan vide letter no. 314(3)/2012-MCCM(CZ)/MP-07 Nagpur Dated 16/10/2012 Period: 2012-13 to 2016-17 (Start from 9th July 2012) Modified Mining Plan approved vide letter no. SRG/BXT/MPLN-46/2016/RPR Raipur Dated 26/09/2016 Period: 2016-17 to 2020-21
26	Date of Approval of Scheme of Mining/Modified Scheme of Mining with five-year period and specific condition in approval letter, if any.	1st Scheme of Mining vide letter no. SRG/BX/MPLN-14/NGP Nagpur Dated 08/04/1999 Period: 1998-99 to 2002-03 2nd Scheme of Mining vide letter no. SRG/BX/MPLN-14/NGP Nagpur Dated 26/03/2004 Period: 2003-04 to 2007-08 Modified Scheme of Mining vide letter no.

		SRG/BX/MPLN-14/NGP Nagpur Dated 04/04/2004 Period: 2005-06 to 2007-08 Modified Scheme of Mining vide letter no. SRG/BX/MPLN-14/NGP Nagpur Dated 30/11/2006 Period: 2006-07 to 2007-08 3rd Scheme of Mining vide letter no. 314(3)/2008-MCCM(CZ)/S-4 Nagpur Dated 13/10/2008 Period: 2008-09 to 2012-13 (valid up to 8th July 2012)
27	Mineral(s) granted in lease and proved for mining	Bauxite
28	Method of Mining(Open cast, Underground)	Open cast
29	Category (Fully Mechanised, Others or Manual)	Category 'A' Fully Mechanised
30	Captive/Non Captive	Captive

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	Exploration proposal has not been given in the approved document	Not Applicable	-
1b	Exploration over lease area for Geological axis 1 or 2.	Under G1 Category: 639.169 Ha	Under G1 Category: 639.169 Ha	Entire lease area has been explored in 50X50m grid interval
1c	Exploration Agency & Expenditure in lakh Rupees during the year	M/S APC M/S GEIM M/S Balco	Rs 923 Lakhs	
1d	Balance area to be explored to bring Geological axis in 1 or 2	NIL	NIL	Entire lease area has been explored in 50X50m grid interval
1e	Balance reserves as on 01.04.2017	Under (111): 4720752.00 Metric Tonnes Under (211): 383922.00 Metric Tonnes	Under (111): 6901052.00 Metric Tonnes Under (211): 383922.00 Metric Tonnes	-
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 (Range in UTM/Local Coordinate/Plot No./Location)	<p>Sapanadand Block</p> <p>2016-17: North-eastern and central part of the block.</p> <p>2017-18: Eastern and western part of the lease area.</p>	<p>Sapanadand Block</p> <p>2016-17: The production and development was carried out from different locations and proposed area has been extended without proposal, i.e. the north-eastern quarry has been extended towards northern side and the central quarry has been extended towards southern part of the block.</p> <p>2017-18: Presently production and development is being carried out from different locations, i.e. the existing quarry is situated at central part of the lease area, the same has been extended towards southern part of the lease area.</p>	Deviation has been pointed out.
2b	Separate benches in topsoil, overburden and mineral (Rule 13)	<p>Top Soil: 0.00-3.00m</p> <p>OB: 0.00-6.00m</p> <p>Bauxite: 0.00-3.00m</p>	<p>Top Soil: 2.00m</p> <p>OB: 3.00m</p> <p>Bauxite: 3.00m</p>	-
2c	Stripping ratio or ore to OB ratio	1:1.62	1:5.03	Increased due to thick overburden
2d	Quantity of topsoil generation in m3	300952 Cubic Meters	119445 Cubic Meters	-
2e	Quantity of overburden generation in m3	2428256 Cubic Meters	367576 Cubic Meters	-
2f	General remarks of inspecting officer on	NIL		

	development of pit w.r.t. type of deposit etc.	
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3.0 Exploitation

SN	Item	Proposals	Actual work	Remarks
3a	Number of pits proposed for production	03 Blocks (Kesara, Kudardih and Sapnadar Block)	01 Block (Sapnadar Block)	-
3b	Quantity of ROM mineral production proposed	2999389.00 Metric Tonnes	106526.92 Metric Tonnes	-
3c	Recovery of salable/usable mineral from ROM production	75%	75%	-
3d	Quantity of mineral reject generation	749849.00 Metric Tonnes	23030.00 Metric Tonnes	-
3e	Grade of mineral reject generation and threshold value declared	Al ₂ O ₃ : 25% TiO ₂ : 10% SiO ₂ : 15% LOI: 22% Fe ₂ O ₃ : 28%	Al ₂ O ₃ : 25% TiO ₂ : 10% SiO ₂ : 15% LOI: 22% Fe ₂ O ₃ : 28%	-
3f	Quantity of sub-grade mineral generation	Not proposed in the approved document	Approx 40,000 Metric Tonnes of screened subgrade ore/mineral has been stacked in the existing mined out quarries situated at north-eastern part of the Sapnadar Block	Deviation has been pointed out.
3g	Grade of sub-grade mineral generation	Not proposed in the approved document	Not Applicable	-
3h	Manual / Mechanised method adopted for segregating from ROM	Mechanised means (Dry Screening)	Mechanised means (Dry Screening)	-
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	DTH Drilling Spacing: 2.5m Burden: 2.0m Depth: 2.25m Volume: 11.25 cum Charge: 5.0 Kg Powder Factor: 5.18 T/Kg	DTH Drilling Spacing: 2.5m Burden: 2.0m Depth: 2.25m Volume: 11.25 cum Charge: 5.0 Kg Powder Factor: 5.18 T/Kg	-
3k	Provision of mining machineries in mineral benches	Proposed in the approved document	Carried out as per proposal	-

3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	OB: 0.00-6.00m Bauxite: 0.00-3.00m	OB: 3.00m Bauxite: 3.00m	-
3m	Total area covered under excavation/pits	75.24 Ha	2.22 Ha.	-
3n	Ore to OB ratio for the pit/mine during the year	1:1.62	1:5.03	Due to thick overburden
3o	Total area put in use under different heads at the end of year	Pit- 602.38 Ha Waste/reject-0.0 Others- 7.20 Ha At the end of Plan period	Pit- 20.170 Ha Waste/reject-0.0 Others- 360.78 Ha	-
3p	Production of ROM mineral during last five-year period, as applicable	Yr- 2012-13: 1153772.00 Metric Tonnes Yr- 2013-14: 1154314.00 Metric Tonnes Yr- 2014-15: 1156591.00 Metric Tonnes Yr- 2015-16: 1155508.00 Metric Tonnes Yr- 2016-17: 2999391.00 Metric Tonnes	Yr- 2012-13: NIL Yr- 2013-14: NIL Yr- 2014-15: NIL Yr- 2015-16: 700.00 Metric Tonnes Yr- 2016-17: 106526.00 Metric Tonnes	-
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)	Concurrent backfilling in the mined-out area has been proposed	Not applicable as concurrent backfilling is in practiced.	-
4b	Location of topsoil, OB & mineral reject dumps (Range in UTM/Local Coordinate/Plot No./Location)	Concurrent backfilling in the mined-out area has been proposed	Not applicable as concurrent backfilling is in practiced.	-
4c	Number of dumps within lease area and outside lease area	Not proposed in the approved document	Not applicable	-
4d	Location of dumps w.r.t. ultimate pit limit (Rule 14)	Concurrent backfilling in the mined-out area has	Not applicable as concurrent backfilling is in	-

		been proposed	practiced.	
4e	Number of active & alive dumps	Not proposed in the approved document	Not applicable	-
4f	Number of dead dumps	Concurrent backfilling in the mined-out area has been proposed	Not applicable as concurrent backfilling is in practiced.	-
4g	Number of dumps stabilized	Concurrent backfilling in the mined-out area has been proposed	Not applicable as concurrent backfilling is in practiced.	-
4h	Whether Retaining wall or garland drain all along dumps are there	Concurrent backfilling in the mined-out area has been proposed	Not applicable as concurrent backfilling is in practiced.	-
4i	Length of Retaining wall or garland drain all along dump	Concurrent backfilling in the mined-out area has been proposed	Not applicable as concurrent backfilling is in practiced.	-
4j	Number of settling ponds	Concurrent backfilling in the mined-out area has been proposed	Not applicable as concurrent backfilling is in practiced.	-
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	Concurrent backfilling in the mined-out area has been proposed	Not applicable as concurrent backfilling is in practiced.	-
5b	Area under backfilling of mined out area	81.98 Ha	2.20 Ha	-
5c	Concurrent use of topsoil for restoration or rehabilitation of mined out area (Rule 36)	Concurrent backfilling in the mined-out area has been proposed	Not applicable as concurrent backfilling is in practiced.	-
5d	Total area fully reclaimed & rehabilitated	50.00 Ha	NIL	Only infilling plantation has been carried out due to less production
5e	General remarks of inspecting officer on backfilling, reclamation etc	NIL		

6.0 Progressive Mine Closure Plan

SN	Item	Proposals	Actual work	Remarks
6a	Whether Annual report on PMCP submitted on time and correctly - Rule 23. Details should be given in the format as given in Annexure-20.	Yes Submitted	NIL	-
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 of rehabilitation vi) Cost incurred on watch & care during the year	50.00 Ha 50.00 Ha 125000 nos. 1244214 nos. 12.50 Lakhs	NIL NIL 15000 nos 1149214 nos. 3.50 Lakhs	Only infilling plantation has been carried out
6c	Compliance on reclamation and rehabilitation by backfilling i) Voids available for backfilling (L X B X D) ii) Void filled by waste/tailings iii) Afforestation on the backfilled area iv) Rehabilitation by making water reservoir v) Any other specific means	37.65 Ha 37.65 Ha 50.00 Ha 10.00 Ha NIL	19.82 Ha 2.20 Ha NIL NIL NIL	Only infilling plantation has been carried out
6d	Compliance of Rehabilitation of waste land within lease i) Afforestation ii) Area rehabilitated (ha) iii) Method of rehabilitation	50.00Ha 10.00 Ha Water reservoir	NIL NIL NIL	Due to less production during 2016-17
6e	Compliance of Environmental monitoring (core zone & buffer zone)	Air, Water and Noise parameters will be maintained up to permissible limit	Done as per proposal	-
6f	General remarks of inspecting officer on PMCP compliance & progressive	NIL		

7.0 Mineral Conservation

SN	Item	Proposals	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	2999389.00 Metric Tonnes	106526.92 Metric Tonnes	-
7b	Method of grade-wise mineral sorting i.e. manual or mechanical	Mechanised screening	Mechanised screening	-
7c	Different grade of mineral sorted out at mines	Not proposed in the approved document	Not Applicable	-
7d	Any beneficiation process at mines	Dry Screening	Dry 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 36)	Concurrent backfilling in the mined-out area has been proposed	Not applicable as concurrent backfilling is in practiced.	
8b	Concurrent use or storage of topsoil	Concurrent backfilling in the mined-out area has been proposed	Not applicable as concurrent backfilling is in practiced.	
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 37)	Concurrent backfilling in the mined-out area has been proposed	Not applicable as concurrent backfilling is in practiced.	
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	Concurrent backfilling in the mined-out area has been proposed	Not applicable as concurrent backfilling is in practiced.	
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	Concurrent backfilling in the mined-out area has been proposed	Not applicable as concurrent backfilling is in practiced.	
8f	Baseline information on existence of plantation & additional plantation done (Rule 44)	Reclamation: 81.98 Ha Afforestation: 50.00 Ha	Reclamation: 2.20 Ha Afforestation: NIL	
8g	Survival rate	70%	85%	
8h	Water sprinkling on roads to control airborne dust	Water sprinkling by water tankers	Water sprinkling 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
	Status of submission of Monthly and Annual returns	M.R. Submitted upto – September 2017 A.R. submitted upto- F.Y. 2016-17	

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 Sunil Senapati Geologist: Shri Pravasa Ranjan Chinara Mine Manager: Shri Ajay Tiwari	NIL	-
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	Pit: 20.170 Ha Reclaimed: 354.960 Ha Dumps: NIL Others: 5.82 Ha	NIL	-
9d	Scrutiny of Annual return on afforestation	15000 nos.	NIL	Only infilling plantation has been carried out
9e	Scrutiny of Annual return on mineral reject generation (Grade & quantity)	Not given	NIL	-
9f	Scrutiny of Annual return on ROM stock and/or graded ore	5682.00 Metric Tonnes	NIL	-
9g	Scrutiny of Annual return on sale value, Ex. Mine price & production cost	Ex Mine Price: Rs. 926.00 Production Cost: Rs. 2586.50	Difference between Ex-Mine Price and Cost of Production has been pointed out.	Deviation has been pointed out
9i	Scrutiny of Annual return on fixed assets	RS. 260264.00	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.

Rule 11(1), 26(2), 45(7) and 46 of MCDR, 2017

Date of Last Inspection, Name and Designation of the Inspecting Officer:

Last date of Inspection: 28/07/2016

Name of the inspecting officer: Shri R. K. Das Sr. ACOM, IBM Raipur

Details of the Violations Pointed-out during Inspections:

नियम	उल्लंघन के प्रकार का विस्तृत ब्यौरा
Rule 11(1)	<p>The following deviations have been found in the mine from the approved Modified Mining Plan vide SRG/BXT/MPLN-46/2016-Raipur dated 26/09/2016 for the period of 2016-17 to 2020-21:</p> <p>Development: (i) In the approved Modified Mining Plan, there was a proposal given in the Sapanadand Block for the production of mineral in the year 2016-17 from north-eastern and central part of the block. Whereas, the production and development was carried out from different locations and proposed area has been extended without proposal, i.e. the north-eastern quarry has been extended towards northern side and the central quarry has been extended towards southern part of the block.</p> <p>(ii) In the approved Modified Mining Plan, there was a proposal given in the Sapanadand Block for the production of Mineral in the year 2017-18 from eastern and western part of the lease area. Whereas, presently production and development is being carried out from different locations, i.e. the existing quarry is situated at central part of the lease area, the same has been extended towards southern part of the lease area.</p> <p>Stacking of Sub Grade Mineral/Ore: Concurrent backfilling in the mined out area has been proposed in the approved Modified Mining Plan, whereas, in the existing mined out quarries situated at north-eastern part of the Sapnadar Block, approx 40,000 Metric Tonnes of screened sub-grade ore/mineral has been stacked.</p>
Rule 26 (2)	<p>A yearly report as per the format specified by the Indian Bureau of Mines, before 1st day of July every year setting forth the extent of protective and rehabilitative works carried out has not been submitted for the year 2015-16 and 2016-17.</p>
Rule 45 (7)	<p>Annual Returns of 2016-17 has been scrutinized and it has been found that the cost of production is Rs 2586.50 whereas; Ex-mine price is Rs 926.00. The difference between Cost of Production and Ex-Mine Price may be clarified, as the mineral/ore will be consumed in the Captive Plant.</p>
Rule 46	<p>Appointment notice of newly appointed Mine Agent and Termination/Resignation of earlier Mine Agent has not been sent to the Regional Controller of Mines, IBM, Raipur, in prescribed form H within fifteen days of new appointment.</p>

Shri Shaival Kartikeya
Jr. Mining Geologist
Indian Bureau of Mines, Raipur
Date of Inspection: 27/10/2017
(Name of the Inspecting Officer and Designation and Date)