

**INDIAN BUREAU OF MINES
MINERALS DEVELOPEMMENT AND REGULATION DIVISION**

Inspection under SDF for star rating of mines REPORT

Ranchi regional office

Mine file No : JHK/GML/BX/253/RRO

Mine code : 07JHK09005

- (i) Name of the Inspecting : **K03**) **G. S. KANNAN**
Officer and ID No.
- (ii) Designation : Senior Mining Geologist
- (iii) Accompanying mine : Shri. P.Bhalekar (Mines Manager) & Shri. Victor Basu
Official with
Designation
- (iv) Date of Inspection : 12/08/2021
- (v) Prev.inspection date : 15/02/2021

PART-I : GENERAL INFORMATION

1. (a) **Mine Name** : **KUJAM - II BAUXITE MINE**
- (b) **Registration NO.** : **IBM/935/2011**
- (c) **Category** : **A Fully Mechanised**
- (d) **Type of Working** : **Opencast**
- (e) **Postal address**
- State : **JHARKHAND**
- District : **GUMLA**
- Village : **KUJAM**
- Taluka : **BISHNUPUR**
- Post office : **JOBHIPAT**
- Pin Code : **835207**
- FAX No. : **06526-224112, 224015, 22311**
- E-mail : **bijesh.jha@adityabirla.com**
- Phone : **06526-224118**
- (f) **Police Station** : **BISHUNPUR**
- (g) **First opening date** : **01/07/2008**
- (h) **Weekly day of rest** : **SUN**
2. **Address for correspondance** : **VILL -KUJAM & CHIRODIH,**
PO & PS -BISHUNPUR,
DIST - GUMLA (JHARKHAND).
3. (a) **Lease Number** : **JHK0160**
- (b) **Lease area** : **157.38**
- (c) **Period of lease** : **50**
- (d) **Date of Expiry** : **23/03/2056**
4. **Mineral worked** : **BAUXITE** **Main**

5. Name and Address of the

Lessee : M/S HINDALCO INDUSTRIES LTD.
 AT - COURT ROAD,
 LOHARDAGA, LOHARDAGA
 JHARKHAND
 Phone:06526-22401112, 224446 & 224016.
 FAX :06526-224112 & 224445

Owner : A.K AGRAWAL
 M/S HINDALCO INDUSTRIES
 LTD. CENTURY BHAWAN, 3rd
 FLOOR, Dr. ANNIE BASANT
 ROAD, WORLY, MUMBAI (MH)
 KOLKATA WEST BENGAL
 Phone:
 FAX :

Agent : B.K.JHA
 M/s HINDALCO INDUSTRIES
 Ltd. COURT ROAD PO& DIST -
 LOHARDAGA (JHK) LOHARDAGA
 JHARKHAND
 Phone: Mob- 941708929, 06526-224112/224015
 FAX : 06526-224118

Mining Engineer

Name : P. K. BHALEKAR, Full Time
 Qualification : B.E. (MINING)
 Appointment/ : 01/06/2013
 Termination date

Geologist

Name : SRI KAILASH PRASAD, Full Time
 Qualification : M. Sc. (GEOLOGY)
 Appointment/ : 01/10/2013
 Termination date

6. Date of approval of Mining	:	Fresh under rule 22 MCR1960	12/04/2005
Plan/Scheme of Mining	:	Modif.of approved Mining Plan	22/07/2011
	:	Mining Scheme rule 12 MCDR1988	21/11/2014
	:	MP review under 17(1) MCR 2016	18/02/2019

PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	293 Core Boreholes has been Proposed during 2019-2020	As per proposal no boreholes has been drilled during 2019-2020	Violation has been issued under Rule 11(1)
1b	Exploration over lease area for geological axis 1 or 2	No Additional exploration was proposed during 2020-2021 in the lease area for Geological axis - 1.	No Additional exploration was been drilled during 2020-2021	Total 170 boreholes have been drilled during previous plan period with 2261 meterage at 100m grid interval in the entire lease area.
1c	Exploration Agencies and Expenditure in lakh rupees during the year	50 Lakhs approx	Nil	
1d	Balance area to be explored to bring Geological axis in 1 or 2	No Exploration was proposed out at 50m X50m grid interval. No Additional exploration was proposed in plan period (2020-2021)	119.43 hectares has explored to G-1. 37.94 hectares is under Non-mineralised area.	Total 170 boreholes have been drilled during previous plan period with 2261 meterage at 100m grid interval in the entire lease area.
1e	Balance reserve as on 01/04/20	Reserves & Resources as on 01.04.2021 Proved Mineral Reserves (111) = 1055781 tons Feasibility Mineral Resources (211) = 316091 tons	Reserves & Resources as on 01.04.2021 Proved Mineral Reserves (111) = 1437744 tons Feasibility Mineral Resources (211) = 316091 tons	Reserves and Resources are updated based approved Review of Mining plan.

1f	General remarks of inspecting officers on geology, exploration etc	It is part of Chotanagpur Granite gneiss. Laterite, Bauxite and Lithomerge occur in the plateau top as capping of Chotanagpur Granite gneiss.	Bauxite deposit is not extensive and continuous but found in limited area only.	Lease is having Same Geology. Hence borehole has to be drilled at closer interval to get quantity and quality
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Development :

Sl.No.	Item	Propasals	Actual work	Remarks
2a	Location of development w.r.t.lease area	Proposed to work in Quarry-Nawatoli, Nawatoli-A & D during 2020-2021.	Development has been carried out as per the proposal	
2b	Separate benches in topsoil, overburden and minerals (Rule 15)	It is proposed to form Separate Bench's in Topsoil, Overburden and Mineral	As per proposal benches are formed.	
2c	Stripping ratio or ore to OB ratio	1 : 0.88	1 : 0.27	
2d	Quantity of topsoil generation in m3	It is proposed to remove 224497 cu.m of topsoil during 2020-2021	163174 cu.m of topsoil has been generated.	
2e	Quantity of overburden generation in m3	During 2020-2021 it is proposed OB as 95602 Cu.m	32641 cu.m of OB has been removed.	
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc	Proposed to work in Quarry-Nawatoli, Nawatoli-A & D during 2020-2021.	195815 cu.m of waste has been removed including 163174 cu.m of Topsoil and 32641 cu.m of OB	

Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
3a	Number of pit proposed for production	Proposed to work in Quarry-Nawatoli, Nawatoli-A & D during 2020-2021.	Production has been carried out as per the proposal	
3b	Quantity of ROM mineral production proposed	The total target of Production was 299223 tons during 2020-2021.	136158 tons of production have been achieved during 2020-2021.	Due to market condition only 50% of target has been achieved.
3c	Recovery of sailable/usable mineral from ROM production	70%	100%	Violation has been issued under Rule 45(7) for achieving 100% recovery
3d	Quantity of mineral reject generation	It is proposed to produced 58291 cu.m of mineral rejects during 2020-2021	No mineral rejects has been achieved against proposal.	Violation has been issued under Rule 45(7) for achieving 100% recovery
3e	Grade of mineral rejects generation and threshold value declared.	Mineral reject- below the threshold value and outside the ore zone.	Mineral reject- below the threshold value and outside the ore zone.	
3f	Quantity of sub grade mineral generation.	No Sub Grade Generation	No Sub Grade Generation	
3g	Grade of sub grade mineral generation	There is No Generation of Subgrade Mineral	There is No Generation of Subgrade Mineral	
3h	Manual / Mechanised method adopted for segregating from ROM	Manual	Manual	
3i	Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects.	No Proposal	Nil	Only Manual Picking of Ore from Intercalated Waste.

3j	Provision of drilling and blasting in mineral benches	Spacing - 3.5m Burden - 3m Depth - 3m for OB & 6m for mineral. It is Proposed to drill by 88-100mm dia, wagon drill. Blasting is done by using Slurry explosives.	Drilling & Blasting are done as per proposal.	
3k	Provision of mining machineries in mineral benches	Excavators Compressor Water Pump Tippers Tractor Water Tanker	As per proposal machineries are available in field.	
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Bench height of 6m was proposed in Mineral.	Benches are formed as per proposal.	
3m	Total area covered under excavation/pits	5.56 hectares are under Pit during 2020-2021.	4.00 hectares are under Pit during 2020-2021.	
3n	Ore to OB ratio for the pit/mine during the year.	1 : 0.88	1 : 0.27	
3o	Total area put in use under different heads at the end of year	Land use Pattern as on 01.04.2021. Mines = 81.84 hect Reclaimed =66.63 hect Dump = 0.20 hect Roads = 1.58 hect Green Belt =4.14 hect	Land use Pattern as on 01.04.2021. Mines = 80.89 hect Reclaimed =71.54 hect Dump = 0.20 hect Roads = 1.58 hect Green Belt =4.14 hect	Violation has been issued under Rule 11(1) for working in Non-mineralized zone and reclaimed
3p	Production of ROM mineral during the last five year period as applicable	2020-2021 = 299223 tons 2019-2020 = 299293 tons 2018-2019 = 299446 tons 2017-2018 = 298804 tons 2016-2017 = 295634 tons	2020-2021 = 136158 tons 2019-2020 = 80395 tons 2018-2019 = 260995 tons 2017-2018 = 291458 tons 2016-2017 = 294830 tons	

3q	General remarks of inspecting officers on method of mining etc.	Mechanised Method is Proposed	136158 tons have been achieved during 2020-2021 against 299223 tons of proposal	Violation has been issued under Rule 11(1) for working in Non-mineralized zone and reclaimed
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Solid Waste Management - Dumping:

Sl.No.	Item	Propasals	Actual work	Remarks
4a	Separate dumping of topsoil, OB and mineral rejects (Rule 32,33)	There is no proposal for dumping during 2020-2021. It is proposed to backfill the area simultaneously	As per proposal the backfilling is not done concurrently.	Violation has been issued under Rule 11(1)
4b	Location of topsoil, OB and mineral reject dumps	It is proposed to backfill during 2020-2021 nearer to Quarry - Nawatoli, Nawatoli- A & D.	As per proposal the backfilling has carried out nearer to Quarry - Nawatoli, Nawatoli- A & D and in unproposed area Quarry-3A, 4-I & 4-F	Violation has been issued under Rule 11(1)
4c	Number of dumps within lease area and outside of lease area	Lease area =Nil Non Lease area= Nil	Lease area =Nil Non Lease area= Nil	
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	There is no proposal of Dump.	Nil	
4e	Number of active and alive dumps.	Active Dump =Nil Alive Dump =Nil	There is no active dump within lease area for waste dumping.	Excavated area is backfilled simultaneously. So dumping is not proposed.
4f	Number of dead dumps.	Dead Dumps = Nil	Dead Dumps = Nil	
4g	Number of dumps established.	No dumps have been established.	No dumps have been established.	
4h	Whether Retaining wall or garland drain all along dumps are there.	No Proposal	Nil	It is proposed to maintain the existing retaining wall and garland drainage.

4i	Length of Retaining wall or garland drain all along dumps	No Proposal	Nil	It is proposed to maintain the existing retaining wall and garland drainage.
4j	Number of settling ponds	No Proposal	Nil	
4k	Specific comments of inspecting officer on waste dump management	It is proposed to backfill during 2020-2021 nearer to Quarry - Nawatoli, Nawatoli- A & D.	As per proposal the backfilling has carried out nearer to Quarry - Nawatoli, Nawatoli- A & D and in unproposed area Quarry-3A, 4-I & 4-F	There is no proposal for dumping during 2020-2021. It is proposed to backfill the area simultaneously

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.	It is proposed to backfill during 2020-2021 nearer to Quarry - Nawatoli, Nawatoli- A & D.	As per proposal the backfilling has not carried out and backfilled in unproposed area Quarry-3A, 4-I & 4-F	Violation has been issued under Rule 11(1)
5b	Area under backfilling of mined out area	It is proposed to backfill 5.55 hectares during 2020-2021	8.10 hectares has Backfilled against proposal	
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	Concurrent use	Concurrent use	
5d	Total area fully reclaimed and rehabilitated	Reclaimed = 66.63 hect	Reclaimed = 71.54 hect	
5e	General remarks of inspecting officers on backfilling and reclamation etc.	It is proposed to backfill during 2020-2021 nearer to Quarry - Nawatoli, Nawatoli- A & D.	8.10 hectares has Backfilled during 2020-2021	

Sl.No.	Item	Propasals	Actual work	Remarks
6a	Whether Annual report on PMCP submitted on time and correctly. Rule 23 E(2).	It should be on or before 1st July every year.	Submitted for the year 2020-2021.	
6b	Area available for rehabilitation (ha) .	5.55 hectares	8.10 hectares	
6c	afforestation done (ha).	Proposed 0.55 hect in 2020-2021	0.55 hectares has been Afforested	
6d	No. of saplings planted during the year	1375 saplings proposed in Safety barrier area for 2020-2021	2063 saplings have been achieved.	
6e	Cumulative no .of plants	2625 nos of saplings proposed from during the 2019-2021 in the safety barrier.	4511 saplings have been planted during 2019-2021 inside the Safety Barrier area.	
6f	Any other method of rehabilitation	No Proposal	Nil	
6g	Cost incurred on watch and care during the year	No Proposal	Nil	
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (Lx B x D	5.55 hectares	8.10 hectares	
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	No Proposal	Nil	
6j	Compliance on reclamation and rehabilitation by backfilling (iii)Afforestati on on backfilled area	Proposed 0.55 hect in 2020-2021	0.55 hectares has been Afforested	

6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	No Proposal	Nil	
6l	Compliance on reclamation and rehabilitation by backfilling (v) any other specific means.	No Proposal	Nil	
6m	Compliance of rehabilitation of waste land within lease (i) afforestation	1375 saplings proposed in Safety barrier area for 2020-2021	2063 saplings have been achieved.	
6n	Compliance of rehabilitation of waste land within lease (ii) Area rehabilitation (ha)	Proposed 0.55 hect in 2020-2021	0.55 hectares has been Afforested	4511 saplings have been planted during 2019-2021 inside the Safety barrier area.
6o	Compliance of rehabilitation of waste land within lease (iii) Method of rehabilitation	Simultaneously Backfilling	Simultaneously Backfilling	
6p	Compliance of environmental monitoring (core zone and buffer zone)	Bi-Annually Survey	Environment monitoring is carried out through own as well as private agency.	
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.	Environment monitoring is carried out through own as well as private agency.	2063 saplings have been achieved in 0.55 hectares during 2020-2021	4511 saplings have been planted during 2019-2021 inside the backfilled area.

Mineral Conservation:

Sl.No.	Item	Proposals	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	The total target of Production was 299223 tons during 2020-2021.	136158 tons of production have been achieved during 2020-2021.	

7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	Mechanical Process and Manual Picking of Ore from Intercalated Waste	Mechanical Process and Manual Picking of Ore from Intercalated Waste	
7c	Different grade of mineral sorted out at mines.	Average Grade:- Al2O3 = +41% Sio2 = 4.6% Cut Off Grade:- Al2O3 = +30% Sio2 = 5%	Average Grade:- Al2O3 = +41% Sio2 = 4.6% Cut Off Grade:- Al2O3 = +30% Sio2 = 5%	Low grade are Blended with High grade ores to get the desired plant feed materials.
7d	Any beneficiation process at mines .	Manually sizing and sorting are proposed	sorting and sizing is being done	
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues	The total target of Production was 299223 tons during 2020-2021.	136158 tons of production have been achieved during 2020-2021.	Low grade are Blended with High grade ores to get the desired plant feed materials.

Environment :

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	Proposal of removing topsoil separately and spreading over mined out area.	Concurrent backfilling and spreading of topsoil over backfilled areas is practiced for reclaimed and rehabilitation of mined out areas.	
8b	Concurrent use or storage of topsoil	Concurrent use	Concurrent use	
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	Proposal of removing topsoil separately and spreading over mined out area.	Concurrent backfilling and spreading of topsoil over backfilled areas is practiced for reclaimed and rehabilitation of mined out areas.	

8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	The OB and Waste generated are to be proposed to backfilled simultaneously in the mined out areas	Backfilling has done in proposed & un-proposed area and restoring the land to its original use.	
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	No Proposal	Nil	
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	1375 saplings has proposed in 0.55 hectares Safety barrier area for 2020-2021	2063 saplings have been achieved in 0.55 hectares during 2020-2021	4511 saplings have been planted during 2019-2021 inside the backfilled area.
8g	Survival rate	No such proposal in the approved document	60%	
8h	Water sprinkling on roads to control airborne dust	Yes, it is proposed for water sprinkling on haul roads.	Water sprinkling on road is observed during the inspection.	
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area	Scanty vegetation, agriculture are observed in lease area	Surrounding area beyond lease area is greenery. The area is hilly terrain.	

Compliance of Rule 45:

Sl.No.	Item	Propasals	Actual work	Remarks
9a	Status of submission of Monthly and Annual returns	MR Submitted up to = July 2021 AR Submitted up to = 2020-2021	Both Annual & Monthly returns are submitting in online system.	

9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Mining Engineer and Geologist has shown	As per record Mining Engineer and Geologist are present during Inspection
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	Land use Pattern as on 01.04.2021. Exploited area = 80.890 hect Reclaimed = 71.540 hect Current working = 9.350 hect	Landuse Pattern is filled as per approved Mining Plan
9d	Scrutiny of Annual return on afforestation	2063 saplings have been achieved in 0.55 hectares during 2020-2021.	Nil
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	There is no Mineral Rejects Generation	There is no Mineral Rejects Generation
9f	Scrutiny of Annual return on ROM stock and/or graded ore	Bauxite Stock as on 01.04.2021 ROM Closing stock = Nil Dispatches of Processed ore 40% to below 45% Al ₂ O ₃ = 151287 tons	Mine has produced 136158 tons of Production during 2020-2021
9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	Cost of Production & Ex. Mine Price has shown	It is captive mine of Hindalco
9h	Scrutiny of Annual return on fixed assets	Fixed Assets is given	Fixed Assets is filled
9k	Scrutiny of Annual return on mining machineries	Machineries details given	As available in field

Details of violations observed during current inspection and compliance position of violation pointed out

Violation observed		Show cause position	
Rule NO.	Issued on Compliance on	Rule NO.	Issued on Compliance on

Date :

(G. S. KANNAN)

Indian Bureau of Mines