# INDIAN BUREAU OF MINES MINERALS DEVELOPMENT AND REGULATION DIVISION

#### MCDR INSPECTION REPORT

### Ranchi regional office

Mine file No : JHK/LOH/BX/248/RRO Mine code : 07JHK12009

(i) Name of the Inspecting : S001 ) B K SINGH

Officer and ID No.

(ii) Designation : Assistant Mining Geologis

(iii) Accompaning mine : Sri A K Pandey AGM, Sri S A Manan Geologist , Sri Victo

Official with Designation

(iv) Date of Inspection : 10/10/2017
(v) Prev.inspection date : 10/01/2017

PART-I : GENERAL INFORMATION

(a) Mine Name : HISRI EXTENSION (19.58 H)

(b) Registration NO. : IBM/935/2011

(c) Category : A Fully Mechanised

(d) Type of Working : Opencast

(e) Postal address

State : JHARKHAND
District : LOHARDAGA
Village : HISRI

Taluka : LOHARDAGA

Post office :
Pin Code :

FAX No. : 033-22883964

E-mail : N.A.

Phone : 06526-295526/27, 294611,

(f) Police Station : KISKO

(g) First opening date : 10/10/1951

(h) Weekly day of rest : FRI

2. Address for : VILL.- HISRI,

correspondance P.O.- BAGRU HILL,

DISTT. - LOHARDAGA (JHK)

3. (a) Lease Number : BHR0266 (b) Lease area : 14.55

(c) Period of lease : 15

(d) Date of Expiry : 18/07/1996

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 : AJAY KUMAR PANDEY, Full Time Qualification : B.E.(MINING), ISM, DHANBAD

Appointment/:
Termination date

Geologist

Name : B.K. MAHAPATRA, Full Time

Qualification : M.Sc(Geo)
Appointment/ : 20/02/2014

Termination date

6. Date of approval of Mining : Existing rule 11 MCDR1988
Plan/Scheme of Mining Renewal under rule 24 MCR1960

Renewal under rule 24 MCR1960 18/12/1995
Renewal under rule 24 MCR1960 20/05/2006
Mining Scheme rule 12 MCDR1988 06/10/2010
Modif.of approved Mining Plan 06/10/2010
FMCP under 23C(1) 05/08/2014
MP modif under MCR 1960 23/12/2015

13/01/1994

PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

## Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	During the approved plan period from 2015-16 to 2019-20, additional 13 nos. of boreholes have been proposed.	The entire lease area has been explored in detail and systematically by core drilling at a regular grid interval of 45m x 45m. The entire estimated reserves have been put under proved category. No boreholes drilled during the year 2016-17 by the lessee.	
1b	Exploration over lease area for geological axis 1 or 2	During the approved plan period from 2015-16 to 2019-20, additional 13 nos. of boreholes have been proposed.	The entire lease area has been explored in detail and systematically by core drilling at a regular grid interval of 45m x 45m. The entire estimated reserves have been put under proved category. No boreholes drilled during the year 2016-17 by the lessee.	
1c	Exploration Agencies and Expenditure in lakh rupees during the year	No proposal in the last approved document.	No exploration carried.	
1d	Balance area to be explored to bring Geological axis in 1 or 2	During the approved plan period from 2015-16 to 2019-20, additional 13 nos. of boreholes have been proposed.	The entire lease area has been explored in detail and systematically by core drilling at a regular grid interval of 45m x 45m. The entire estimated reserves have been put under proved category. No boreholes drilled during the year 2016-17 by the lessee.	
1e	Balance reserve as on 01/04/20	As approved modification in approved MP approved on 23.12.2015, reserve as on 01.04.2015. (111): 852382.25.MT	Reserve as on 01.04.201 : (111): 852382.25.MT Productin 2015-16 :6448 MT 2016-17:98608 MT Reserve As on 01.04.201 : 852382-163096=689286 MT	8

General remarks 1f of inspecting officers on geology, exploration etc

NA

The bauxite in the area is both boehmitic and gibbsitic and is found suitable for low temperature and low pressure leaching by American Bayers process. exploration The entire lease area has been explored in detail and systematically by core drilling at a regular grid interval of 45m x

The entire estimated reserves have been put under proved category.No further carred.

### Development :

Sl.No.	Item	Propasals	Actual work	Remarks
2a	Location of development w.r.t.lease area	it was	Mining work was going on as per the proposal made in the approved document.	
2b	Separate benches in topsoil, overburden and minerals (Rule 15)	There is proposal for formation of separate benches in OB and mineral	Separate benches in top soil, two benches in OB and one bench in mineral have been formed.	
2c	Stripping ratio or ore to OB ratio	As per the approved document the proposed stripping ratio during the year 2016-17 was 1:0.24.	During 2016-17 ROM production was 98608 MT and OB generation was 144896 MT	
2d	Quantity of topsoil generation in m3	Proposed quantity of generation of top soil during the year 2016-17 was 4965 cum.	Top soil generated during 2016-17 was 7735 MT	
2e	Quantity of overburden generation in m3	Proposed quantity of generation of OB during the year 2016-17 was 18418 cum.	OB generated during 2016-17 was144896 MT	

45m.

2f General remarks Not of inspecting appl officers on development of pit w.r.t. type of deposit etc

applicable.

Mining was carried in quarry no-4 .

Mining devlopment was in progress as per approved document.

## Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
3a	Number of pit proposed for production	During the year 2017-18, it was proposed to work in quarry no. 4.	During the year 2017-18 devlopment was in progress in quarry no - 4.	
3b	Quantity of ROM mineral production proposed	Proposed production during the year 2016-17 was 99316 MT as per the approved document.	During the year 2016-17, Production of ROM was 98608 MT.	
3с	Recovery of sailable/usable mineral from ROM production	Proposed recovery of bauxite is 90% from ROM.	90% recovery of bauxite from ROM was reported during the inspecton.	
3d	Quantity of mineral reject generation		No mineral reject generation was reported from the mine.	
3e	Grade of mineral rejects generation and threshold value declared.		Not applicable as no mineral reject generation was reported from the mine.	
3f	Quantity of sub grade mineral generation.	No proposal of sub grade mineral generation.	No subgrade mineral generation was reported from the mine. The low grade bauxite ore produced from the mine is blended with the high grade material to make suitable for consumption in the lessee's captive alumina plant at Muri. There is no separate generation of sub grade ore from the mine.	
3g	Grade of sub grade mineral generation	No proposal of sub grade mineral generation.	Not applicable as no subgrade mineral generation was reported from the mine.	

3h Manual / Mechanised method adopted for segregating from ROM

Mechanical crushing and screening is proposed in the approved document.

The ore produced from the mine is crushed by two jaw type crushers to 100-130 mm size and crushed ore taken by a 900 mm wide belt conveyor to the 450 t ropeway loading bunker. The crushed and screened ore is loaded into 35 t buckets of the mono cable ropeway to Lohardaga railway siding.

3i Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects.

There is no proposal of any analysis or beneficiation study for subgrade mineral and approved scheme of mining.

No mineral processing was done in the lease area. The ore is transported from the quarry by dumpers to the crushing plant. The ore is crushed by two jaw type crushers to 100-130 rejects in the mm size and crushed ore taken by a 900 mm wide belt conveyor to the 450 t ropeway loading bunker. The crushed and screened ore is loaded into 35 t buckets of the mono -cable ropeway to Lohardaga railway siding.

3 ј Provision of drilling and blasting in mineral benches

There is provision of drilling of 115 mm dia holes and blasting by charging the holes with slurry explosives in the approved document.

The drilling and blasting as proposed in the approved document is being practiced in the mine.

3k Provision of mining machineries in mineral benches

Fully mechanised method of mining has been proposed in the approved document. As per approved document deployment of excavator having capacity 0.9cum-01, 1.5cum-01, 1.7cum-1, dumper-25T-03, 32T-01, crusher-60tph-01, 120tph-01, air compressor-01, crawler drill-115mm dia-01, aerial ropeway-BRECO, USA-01 have been proposed.

Machineries as proposed in the approved document have been deployed in the mines.

31 Whether height of benches in overburden and for method of mining proposed in MP/SOM

As per the approved document. proposed benches in OB 4.5m & height of the benches in ore 4m to 8m.

Height of the benches maintained in OB is 1.5m to 2.5m and height of mineral suitable height of the benches in ore is 3.5m to 4m.

3m Total area covered under excavation/pits

Total area quarry 3.24ha and reclaimed area 2.39ha as per the approved

During 2016-17 total proposed under broken area was 3.37 excavation up ha, Area reclaimed-1.53ha to 2016-17 is and area afforested-1.71ha

3n Ore to OB ratio Ore to OB was 1:0.24

document.

and1:0.42 during 2017-

18.

Total ROM production for the pit/mine ratio proposed during 2016-17 was during the year. during 2016-17 98608MT and OB generated was 144896MT

30 Total area put in use under different heads at the end of year

put in use under different heads during the year 2016-17 was: quarry-3.24ha, reclaimed area 2.39 ha, road 0.13ha and green belt

0.24ha.

Proposed area During 2016-17 total put in use broken area was 3.37 under ha,Area reclaimed-1.53ha different and area afforested-heads during 1.71ha

3p Production of As per ROM mineral approved during the last document, five year period proposed as applicable production

As per approved document, proposed production of ROM during last five years are as follows: 2015-16-99087 MT, 2016-17-99316 MT, 2017-18-99904 MT, 2018-19-99026 MT and 2019-20-99458 MT.

Actual production achieved during the last five years are as follows: 2012-13- 99651 MT, 2013-14-93813 MT, 2014-15- 54529 MT, 2015-16- 64488 MT and 2016-17- 98608 MT.

3q General remarks
 of inspecting
 officers on
 method of mining
 etc.

Not applicable.

The mining operation is being carried out by fully mechanised method by introducing deep-hole blasting and shovel - dumper combination. By and large mining operation is being carried out as per the proposal made in the approved document.

During 2016-17 total broken area was 3.37 ha, Area reclaimed-1.53ha and area afforested-1.71ha

Solid Waste Management - Dumping:

Sl.No. Item Propasals Actual work Remarks

4a	Separate dumping of topsoil, OB and mineral rejects (Rule 32,33)	separate	Concurrent backfilling of the mined out areas by OB and mineral rejects is under progress.
4b	Location of topsoil, OB and mineral reject dumps	No proposal of separate dumping of top soil, OB and mineral reject in the lease area. There is proposal for concurrent backfilling of OB and mineral rejects in the mined out areas followed by spreading of top-soil over it.	Not applicable.
4c	Number of dumps within lease area and outside of lease area	No such proposal in the approved document.	There is no waste dump in the lease area.
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	No such proposal in the approved document.	Not applicable.
4e	Number of active and alive dumps.		No active and alive dumps in the lease area.
4f	Number of dead dumps.	No such proposal in the approved document.	No dead dumps in the lease area.
<b>4</b> g	Number of dumps established.	No such proposal in the approved document.	Nil.

4h	Whether Retaining wall or garland drain all along dumps are there.	the approved	Not applicable.
4i	Length of Retaining wall or garland drain all along dumps		Not applicable.
4j	Number of settling ponds	No such proposal in the approved document.	Not applicable.
4k	Specific comments of inspecting officer on waste dump management	Not applicable.	Concurrent backfilling of OB and waste materials over the mined out areas followed by spreading of topsoil over it for reclamation was in practice in the mine.

## 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.	Simultaneous backfilling on mined out areas has been proposed.	simultaneous backfilling was practiced.	
5b	Area under backfilling of mined out area	total area proposed to be	During 2016-17 total area backfilled was 1.27ha and total reclamation 1.71ha	
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	OB and waste materials over the mined out	Topsoil generated during the mining operation was utilised over the backfilled areas by spreading it over the reclaimed areas.	

5d	Total area fully reclaimed and rehabilitated	2.39 ha area was proposed to be reclaimed by back filling during the year 2016-17.	During 2016-17 total area backfilled was 1.27ha and total reclamation and rehabilitated -1.71ha	
5e	General remarks of inspecting officers on backfilling and reclamation etc.	Not applicable.	Concurrent backfilling of OB and waste materials over the mined out areas followed by spreading of topsoil over it was proposed in the approved document.	During 2016-17 total area backfilled was 1.27ha and total reclamation and rehabilitated - 1.71ha

### Progressive Mine Clousre Plan:

Sl.No.	Item	Propasals	Actual work	Remarks
6a	Whether Annual report on PMCP submitted on time and correctly. Rule 23 E(2).	Annual report on PMCP is regularly submitted by the lessee.	Annual report on PMCP is regularly submitted by the lessee.	
6b	Area available for rehabilitation (ha) .	As per approved mining plan proposed reclaimed area during 2016-17 was 2.39 ha.	Total area reclaimed - 1.27 and rehabilitated - 0.552 ha during 2016-17.	
6c	afforestation done (ha).	As per approved document proposed area for afforestation was 0.3245ha by planting 620ha.	During 2016-17about 2471 plants planted over an area of 1.27ha with survival rate75%.	
6d	No. of saplings planted during the year	As per approved document proposed area for afforestation was 0.3245ha by planting 620ha.	During 2016-17about 2471 plants planted over an area of 1.27ha with survival rate75%.	

бе	Cumulative no .of plants	Proposed plantation during the plan period 2015-16 to 2019-20 was 3920 trees covering an area 2.13ha.	During 2016-17 total plantatio was 3576 trees covering an area 1.71ha.
6f	Any other method of rehabilitation	No such proposal in the approved document.	Not applicable.
6g	Cost incurred on watch and care during the year		Information not available with regard to cost incurred on watch and care during the year.
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling ( Lx B x D	As per approved mining plan proposed reclaimed area during 2016-17 was 2.39 ha.	Total area reclaimed - 1.27 and rehabilitated - 0.552 ha during 2016-17.
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	As per approved mining plan proposed reclaimed area during 2016-17 was 2.39 ha.	Total area reclaimed - 1.27 and rehabilitated - 0.552 ha during 2016-17.
6j	Compliance on reclamation and rehabilitation by backfilling (iii) Afforestati on on backfilled area		During 2016-17 total plantatio was 3576 trees covering an area 1.71ha.
6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	No proposal have been made in the approved document.	Not applicable.

61	Compliance on reclamation and rehabilitation by backfilling (v)any other specific means.	No proposal have been made in the approved document.	Not applicable.	
6m	Compliance of rehabilitation of waste land within lease (i)afforestation	No proposal have been made in the approved document.	No waste land within lease area.	
6n	Compliance of rehabilitation of waste land within lease (ii)Area rehabilitation (ha)	No proposal have been made in the approved document.	Not applicable.	
60	Compliance of rehabilitation of waste land within lease (iii)Method of rehabilitation	No proposal have been made in the approved document.	Not applicable.	
бр	Compliance of environmental monitoring (core zone and buffer zone)	water, air,		
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.	Not applicable.	Concurrent backfilling of mined out areas is being practiced in the mine and efforts also made to achieve the proposal made in the approved mining plan with regard to excavation schedule, production target, reclamation / backfilling proposal, afforestation proposal, environmental monitoring proposal etc.	During 2016-17 total plantatio was 3576 trees covering an area 1.71ha.

## Mineral Conservation:

Sl.No. It	tem Propasal	s Actual work	Remarks	
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7a ROM Mineral The entire No grade wise sorting dispatch or bauxite ore is done within lease grade-wise produced from area. The ore produced sorting within the mine is from the mine is crushed lease area meant for by two jaw type crushers captive to 100-130 mm size and consumption at crushed ore taken by a Muri / Renukut 900 mm wide belt plant of M/s conveyor to the 450 t Hindalco Ind. ropeway loading bunker. Ltd. The The crushed and screened specification ore is loaded into 35 t of ore is (+) buckets of the mono -10mm to (-) cable ropeway to 200 mm. Lohardaga railway siding. 7b Method of grade- Mechanical No grade wise sorting wise mineral method of is done. The ore sorting and sorting i.e. produced from the mine manual or screening of is crushed by two jaw mechanical. ROM was type crushers to 100-130 proposed in mm size and crushed ore the approved taken by a 900 mm wide belt conveyor to the 450 document. t ropeway loading bunker. The crushed and screened ore is loaded into 35 t buckets of the mono -cable ropeway to Lohardaga railway siding. 7с Different grade No proposal Not applicable. of grade wise of mineral sorting of sorted out at mineral in the mines. approved document. 7d No proposal of The ore produced from Any beneficiation beneficiation the mine is crushed by process at mines at mines in two jaw type crushers to the approved 100-130 mm size and document. crushed ore taken by a 900 mm wide belt conveyor to the 450 t ropeway loading bunker. The crushed and screened ore is loaded into 35 t buckets of the monocable ropeway to Lohardaga railway siding. 7e General remarks Not. No problem of mineral of inspecting applicable. conservation and officer on beneficiation issues in Mineral the mines.

conservation and beneficiation

issues

### Environment:

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	removed during the mining is to be utilised to spread over	The topsoil removed during the mining operation is spread over the backfilled areas as per the propsal made in the approved document.	
8b	Concurrent use or storage of topsoil	the mining is to be utilised concurrently	The topsoil removed during the mining operation is spread over the backfilled areas as per the propsal made in the approved document.	
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)		The OB, waste generated from the mine during the mining operation was concurrently backfilled in the 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 genearted are to be backfilled simultaneously in the mined out areas areas for reclamation and rehabilitation as per the propsal made in the approved document.	The OB and waste genearted from the mine are backfilled in the mined out areas areas as per the propsal made in the approved document.	

8e	Phased restoration,	During the year 2016-17,	During 2016-17about 1.27 ha area backfilled		
	reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	2.39 ha area proposed to be backfilled and reclaimed as proposed in the approved document.	and reclaimed.		
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	No existing plantation has been reported in the approved document. There is proposal for 620 nos. of plantation during the year 2016-17.	as on 01.04.2017 total no of plantion carried was 2471 and cumulative plantation was 3576 trees.		
8g	Survival rate	No such proposal in the approved document.	About 75% survival rate has been reported by the party.		
8h	Water sprinkling on roads to control airborne dust	proposal for	Water sprinkling is done in the haul roads from time to time to supress the air borne dust during transportation.		
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area	Not applicable.	Concurrent backfilling of the mined out areas and spreading of topsoil over it for reclamation alongwith plantation are carried out by the lessee in the lease area. The aesthetic beauty in and around the mines area has not been disturbed due to mining operation.		
Comp	Compliance of Rule 45:				
Sl.No.	Item	Propasals	Actual work	Remarks	

9a Status of submission of Monthly and Annual returns

The information furnished in the Annual year 2016-17 I of General information about mine and Labour employment, Part-II about Employment & wages, Part-II A about Capital Structure, Part-III consists of Consumption of materials, Part-IV about consumption of explosives, Part-V consists of General Geology & Mining under various sections, Part-VI about production, despatch & stock and Part-VII cost of production.

The lessee has submitted the Monthly Returns regularly within the stipulated time in every Return for the month. Party has also submitted Annual Return covering Part- for the year 2016-17 within stipulated time.

Scrutiny of 9b Annual return for information on Mining Engineer, Geologist and Manager

Engineer, Manager have been furnished manager. in the Annual Return.

Name of Mining Sri Prakash Ranjan ME and Sri B K Mahapatra Geologist and Geologist and Sri Ajay Kumar Pandey mines

9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.		The land use pattern for the area under pits, reclaimed area, dump etc. furnished in the annual return appears to be in order.
9d	Scrutiny of Annual return on afforestation	of the Annual Return, 2016- 17, 2471	Under Part-V, item no. 4.4 of the Annual Return, 2016-17, 2471 sapplings were planted within the ML area during the year has been furnished with 75% survival rate.
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)		During the year no mineral reject generation has been reported from the mine.
9f	Scrutiny of Annual return on ROM stock and/or graded ore		The figures given on ROM stock are appears to be in order.
9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	The Ex-Mine price of bauxite furnished as Rs. 820.54 in the annual return for the year 2016-17.	The Ex-Mine price of bauxite furnished in the annual return is satisfactory. The entire production of bauxite is used for captive purpose.

9h	Scrutiny of Annual return on fixed assets	The value of fixed assets was given as Rs. 231172773/- under Capital Structure.and Depreciation on fixed asset was 1769583/	The value of fixed assets was given as Rs. 231172773/- under Capital Structure.and Depreciation on fixed asset was 1769583/
9k	Scrutiny of Annual return on mining machineries	machinery	The list of mining machinery provided in annual return seems to be correct.

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

Violation observed				Show couse position	
Rule I	NO.	Issued on	Compliance on	Rule NO.	Issued on Compliance on
MCDR17	Rule 26(2)	11/12/2016	25/01/2018		
MCDR17	Rule 33	11/12/2016	25/01/2018		
MCDR17	Rule 55(1)(3	11/12/2016	25/01/2018		

Date: (B K SINGH)

Indian Bureau of Mines