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 : M008) J. MOHANTA

Officer and ID No.

(ii) Designation : Assistant Mining Engineer

(iii) Accompaning mine : Shri A.K Pandey, (AGM-Mines), Shri Syed Abdul Mannan,

Official with Designation

(iv) Date of Inspection : 10/01/2017
(v) Prev.inspection date : 26/07/2016

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 | No proposal of exploration in the scheme of mining approved for the period from 2010-11 to 2014-15. | No backlog of exploration of previous year. The entire area has been explored in detail and systematically by drilling boreholes on a regular grid. The entire estimated reserves have been put under proved category. | e |
| 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. | Not applicable as no exploration carried out in the form of BH. | |
| 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, balance reserve (111) as on 01/04/2015 is 852382.25. | After depleting production for the year 2015-16, 64488 MT balance reserve as on 01/04/2016 is (852382 MT- 64488 MT) = 787894 MT. | |

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

Not applicable.

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. 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.

Development :

| Sl.No. | Item | Propasals | Actual work | Remarks |
|--------|--|--|---|---------|
| 2a | Location of development w.r.t.lease area | During the year 2016-17, it was proposed to work in quarry no. 3A around boreholes RNH 17,RNC 22, RNH 017,RNH 108 and RNH 111. | 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 the year 2015-16 the stripping ratio achieved was 1:0.44. Production of bauxite was 64488MT against the generation of OB of 28616 cum. | |
| 2d | Quantity of topsoil generation in m3 | Proposed quantity of generation of top soil during the year 2016-17 was 4965 cum. | As reported there was no generation of topsoil during the year. Quantity of OB generated during the year 2015-16 was 28616 cum. | |

| 2e | Quantity of overburden generation in m3 | Proposed quantity of generation of OB during the year 2016-17 was 18418 cum. | |
|----|---|--|---|
| 2f | General remarks of inspecting officers on development of pit w.r.t. type of deposit etc | Not applicable. | During the year 2016-17, it was proposed to work in quarry no. 3A and mining operation is being carried out as per the approved document. |

Exploitation:

| Sl.No. | Item | Propasals | Actual work | Remarks |
|--------|---|--|---|---------|
| 3a | Number of pit proposed for production | During the year 2016-17, it was proposed to work in quarry no. 3A. | Production from the mine was as per the approved document. | |
| 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, as on date of inspection, production achieved from the mine was 37624 MT against the proposed production of 99316 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. | |

Grade of sub 3q grade mineral generation

sub grade mineral generation.

No proposal of 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.

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

There is no proposal of any analysis 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 mineral suitable height of the 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 benches in ore is 3.5m to 4m.

3m Total area covered under excavation/pits

Total area to 2016-17 is date of inspection. quarry 3.24ha and reclaimed area 2.39ha as per the approved document.

As reported an extent of proposed under 2.1 ha area degraded by excavation up opencast working as on

3n Ore to OB ratio during the year. during the

Ore to OB

The stripping ratio for the pit/mine ratio proposed achieved during the year 2015-16 was 1:0.44.

year 2015-16 was 1: 0.35 and 2016-17 was 1:0.24.

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

put in use under different heads during 17 was:

quarry-3.24ha, reclaimed area 2.39 ha, road 0.13ha and green belt 0.24ha.

Proposed area As reported the area put in use under different heads are as on date of inspection are as follows: Quarry-2.1 ha, the year 2016- area reclaimed 0.552ha.

Production of 3p ROM mineral during the last five year period proposed as applicable

As per approved document, 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.

General remarks 3q 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.

Solid Waste Management - Dumping:

Sl.No. Remarks Item Propasals Actual work

| 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. |
| 4 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 | the approved | 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. | 17, quarry no. 3 was proposed for mining and backfilling | Concurrent backfilling was in progress in the mine. | |
| 5b | Area under backfilling of mined out area | was proposed to be reclaimed by back filling during the | As reported 0.552 ha area was reclaimed by backfilling during the year 2015-16 and a cumulative area of 2.1 ha has already been backfilled as on date of inspection. | |

| 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 the year 2015-16, an extent of 0.26 ha area and as on date of inspection 0.552ha was reported to be reclaimed. |
| 5e | General remarks of inspecting officers on backfilling and reclamation etc. | Not applicable. | Concurrent backfilling of mined out areas as proposed in the approved document was in practice in the mine. As reported 0.552 ha area was reclaimed by backfilling during the year 2015-16 and a cumulative area of 2.1 ha has already been backfilled as on date of inspection. The backfilling and reclamation status is by and large satisfactory. |

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). | Not applicable. | 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. | As reported 0.26ha area has been matured for reclamation. | |

| 6c | afforestation done (ha). | As per approved document, about 3.240ha area was proposed for afforestation. | As reported 0.08 ha area covered under afforestation as on date of inspection. | |
|----|--|--|---|--|
| 6d | No. of saplings planted during the year | 620 nos. of saplings proposed for plantation during the year 2016-17. | As on date of inspction total number of saplings planted is 125nos. | |
| 6e | Cumulative no .of plants | 3920 nos. of saplings were proposed for plantation during the plan period from 2015-16 to 2019-20. | As on date of inspction total number of saplings planted is 125nos. over an area of 0.08ha. | |
| 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 | backfilled in the worked out areas during | As on date of inspection about 0.552 ha mined out area has been reclaimed. | |
| 6i | ВхD | 17. | | |

| 6j | Compliance on reclamation and rehabilitation by backfilling (iii)Afforestati on on backfilled area | | As reported an extent of about 0.552 ha of mined out area has been reclaimed and 125 nos. of saplings planted over an area of 0.08 ha. |
|----|---|--|--|
| 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. | |
| 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) |
| | |
| | |
| | |
| | |
| | |

Proposal for regular water, air, within the lease area and core zone have been made in the approved document.

As reported, regular monitoring of air, water monitoring of and noise is being carried out by the soil and noise lessee and are within permissible limit.

бq 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.

Mineral Conservation:

| Sl.No. | Item | Propasals | Actual work | Remarks |
|--------|--|---|--|---------|
| 7a | ROM Mineral dispatch or grade-wise sorting within lease area | captive consumption at Muri / Renukut plant of M/s Hindalco Ind. Ltd. The specification | No grade wise sorting is done within lease area. 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. | |

| 7b | Method of grade-wise mineral sorting i.e. manual or mechanical. | Mechanical method of sorting and screening of ROM was proposed in the approved document. | No grade wise sorting is done. 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. |
|----|--|--|---|
| 7c | Different grade of mineral sorted out at mines. | No proposal of grade wise sorting of mineral in the approved document. | Not applicable. |
| 7d | Any beneficiation process at mines . | No proposal of beneficiation at mines 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 monocable ropeway to Lohardaga railway siding. |
| 7e | General remarks of inspecting officer on Mineral conservation and beneficiation issues | Not applicable. | No problem of mineral conservation and beneficiation issues in the mines. 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. |

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. During the year 2015-16, about 28616cu.m of OB/waste generated was used for backfilling. |
| 8e | Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc.) | | The OB and waste genearted from the mine are simultaneouly backfilled in the mined out areas. As reported, an extent of 0.26 ha area has been reclaimed during 2015-16. |

etc)

Remarks

| 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 reported 125 nos of saplings planted during the year 2015-16 over an area of 0.08 ha. | |
|------|--|--|--|--|
| 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 | oliance of Rule | 45: | | |

Propasals Actual work

Sl.No.

Item

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 2015-16 and 2016-17 within stipulated time.

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

Engineer, Manager have in the Annual Return.

Name of Mining Since it is a A-FM mine, full time Mining Geologist and Engineer and Geologist have been appointed as been furnihed per the provision. Name of Manager: Shri A.K. Pandey, B.E (Mining), Geologist: Shri Syed Abdul Mannan, M.Sc (Geology).

| 9c | Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc. | 17,area already exploited- | 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 | Under Part-V, item no. 4.4 of the Annual Return, 2016-17, plantation was made within the ML area during the year has been furnished with 75% survival rate. | As reported lessee has planted 125 nos of saplings during the year. |
| 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 | 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 fixed assets | on | The value of fixed assets was given as Rs. 231172773/- under Capital Structure. | The information given in support of the value of fixed asstes appears to be correct. |
|----|--|----|---|--|
| 9k | Scrutiny of Annual return mining machineries | | List mining machinery furnished under Part-V, Sec 5/6/8/9 of annual return 2016-17 are as follows: Excavator having capacity 0.9cum-01, 1.5cum-01, 1.7cum-1, dumper-25T-03, 32T-01, crusher-60tph-01, 120tph-01, air compressor-02. | machinery provided in annual return seems to be correct. |

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| Details of violations observed during current inspection and compliance position of violation pointed out | | | | |
|---|-------------------------|---------------------|-------------------------|--|
| Violat | cion observed | Show couse position | | |
| Rule NO. | Issued on Compliance on | Rule NO. | Issued on Compliance on | |

Date: (J. MOHANTA)

Indian Bureau of Mines