

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

**MCDR inspection REPORT**

**Goa regional office**

**Mine file No :** MAH/KLP/BX-14/GOA

**Mine code :** 07MSH13017

- (i) Name of the Inspecting : **SP01** ) **SURESH PRASAD**  
Officer and ID No.
- (ii) Designation : Deputy Controller Mines
- (iii) Accompanying mine : Shri V.K.S.Chauhan, Mines Manager  
Official with  
Designation
- (iv) Date of Inspection : 27-NOV-19
- (v) Prev.inspection date : 21-FEB-19

**PART-I : GENERAL INFORMATION**

1. (a) **Mine Name** : **DHANGARWADI**
- (b) **Registration NO.** : **IBM/935/2011**
- (c) Category : A Fully Mechanised
- (d) Type of Working : Opencast
- (e) Postal address
- State : MAHARASHTRA
- District : KOLHAPUR
- Village : DHANGARWADI
- Taluka : DHANGARWADI
- Post office : SHAHUWADI
- Pin Code : 416514
- FAX No. : 02320-215301
- E-mail : mainak\_c@adityabirla.com
- Phone : 02320-202072
- (f) Police Station : SHAHUWADI
- (g) First opening date : 27-APR-09
- (h) Weekly day of rest : SUN
2. Address for : HINDALCO INDUSTRIES LIMITED  
correspondance : DHANGARWADI MINES, SHAHUWADI 416 212  
KOLHAPUR DISTRICT, MAHARASHTRA
3. (a) Lease Number : MSH0371
- (b) Lease area : 41.8
- (c) Period of lease : 50
- (d) Date of Expiry : 04-MAY-58
4. Mineral worked : BAUXITE Main

## 5. Name and Address of the

Lessee : HINDALCO INDUSTRIES LIMITED  
 Ahura Centre, 1st Floor, B  
 wing, MC Rd Andheri  
 (East), Mumbai MAHARASHTRA  
 MUMBAI (SUBURBAN)  
 MAHARASHTRA  
 Phone: 022-66917000  
 FAX : 022-66907001

Owner : A.K.AGARWALA  
 AHURA CENTRE, 1ST FLOOR, B  
 WING, MC ROAD, ANDHERI  
 (EAST), MUMBAI MAHARASHTRA  
 MUMBAI (SUBURBAN)  
 MAHARASHTRA  
 Phone: 022-66917000  
 FAX : 022-66907001

Agent : MAINAK CHAKRABORTY  
 HINDALCO INDUSTRIES LTD  
 P.O. RADHANAGARI, KOLHAPUR-  
 MAHARASHTRA KOLHAPUR  
 MAHARASHTRA  
 Phone: 02321-202133  
 FAX :

## Mining Engineer

Name : V.K.S. Chauhan, Full Time  
 Qualification : B.Tech. Mining  
 Appointment/ : 01-APR-13  
 Termination date

## Geologist

Name : U,V.PAWAR, Full Time  
 Qualification : M.Sc. Geology  
 Appointment/ : 26-MAR-12 01-JUL-19  
 Termination date

## Geologist

Name : Ramdas D. Patil, Full Time  
 Qualification : M.Sc (Applied Geology)  
 Appointment/ : 01-JUL-19  
 Termination date

## Manager

Name : VIJAYKUMAR SINGH CHAUHAN  
 Qualification : B. Tech. Mining with FCC  
 Appointment/ : 01-APR-13  
 Termination date

6. Date of approval of Mining	:	Modif.of approved Mining Plan	25-MAR-09
Plan/Scheme of Mining		Mining Scheme rule 12 MCDR1988	02-DEC-13
		Modif.approved Mining Scheme	12-MAR-15
		MP modif under 17(3) MCR 2016	08-JUL-16
		MP review under 17(1) MCR 2016	01-DEC-17
		MP modif under 17(3) MCR 2016	07-JUN-19

## PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

## Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	NIL	NIL	Area was already explored.
1b	Exploration over lease area for geological axis 1 or 2	Not proposed	NIL	Area already explored
1c	Exploration Agencies and Expenditure in lakh rupees during the year	NIL	Not applicable	
1d	Balance area to be explored to bring Geological axis in 1 or 2	NIL	NIL	Entire area was explored. and lease is in the verge of exhaustion of minerals.
1e	Balance reserve as on 01/04/20	NIL	NIL	
1f	General remarks of inspecting officers on geology, exploration etc		Entire area were already explored	

## Development :

Sl.No.	Item	Proposals	Actual work	Remarks
2a	Location of development w.r.t.lease area	Lat N 16054'18.64''- 16054'21.86''( Insitu),Long E 73050'43.20'' - 73050'54.25''( Insitu)	Lat N 16054'18.64''- 16054'20.01''(Insitu) Long E 73050'43.20'' - 73050'52.7''(Insitu)	Proposal and achivement on float area also reported.
2b	Separate benches in topsoil, overburden and minerals (Rule 15)	Bauxite - 1 Top Soil -1 OB -1 (Avg.Ht( Bx) 5 - 6Mtr.)	Bauxite - 1 Top Soil -1 OB - 1 (Avg.Ht in Bx. 5- 6 Mtr.)	Yes. already in place.
2c	Stripping ratio or ore to OB ratio	1 : 0.95	1: 0.76	Sufficient area were developed wrt proposal.

2d	Quantity of topsoil generation in m3	20890.43 m3	25393 m3	Back filled simultaneously directly into the mined out pits.
2e	Quantity of overburden generation in m3	125378.57 m3	91487 m3	Back filled simultaneously directly into the mined out pits
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc		Back filled simultaneously directly into the mined out pits.	Systematic developement of pits and simulteneous backfilling procedure were observed.

### Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
3a	Number of pit proposed for production	2 (1 Pit in insitu & 1 Pit in float)	2 nos. (1 Pit in insitu & 1 Pit in float)	
3b	Quantity of ROM mineral production proposed	305662 T	305469 T	Slightly less than proposed.
3c	Recovery of sailable/usable mineral from ROM production	Recovery % : 100%	Recovery % : 100%	Alumina grade used in their own plant.
3d	Quantity of mineral reject generation	NIL	NIL	
3f	Quantity of sub grade mineral generation.	NIL	NIL	quantity of Low grade minerals is being Included in ROM.
3g	Grade of sub grade mineral generation	Al2O3 - +30% SiO2 - +10%	Al2O3 - +30% SiO2 - +10%	Quantity of Low grade minerals is being Included in ROM.
3h	Manual / Mechanised method adopted for segregating from ROM	Mechanised	Mechanised	

3i	Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects.	NIL	NIL	
3j	Provision of drilling and blasting in mineral benches	Yes (only in insitu)	Yes (only in insitu)	100 mm dia drillhole m/c used & NONEL technique used for Blasting.
3k	Provision of mining machineries in mineral benches	Yes	Yes	HEMM deployed in mineral Benches as per proposal.
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Yes	Yes	Separate benches are formed as per MP/SOM.
3m	Total area covered under excavation/pits	3.343 Ha.	2.539 Ha.	
3n	Ore to OB ratio for the pit/mine during the year.	1 : 0.96	1: 0.76	
3o	Total area put in use under different heads at the end of year	Area of excavation: 29.127 Ha Waste Dump: 0.0 Ha Infrastructure : 0.5 Ha Road : 0.75 Ha Others : 0.218 Ha Untouched area : 11.203 Ha	Area of excavation: 28.323 Ha Waste Dump: 0.0 Ha Infrastructure: 0.5 Ha Road : 0.75 Ha Others : 0.218 Ha Untouched area : 12.007 Ha	
3p	Production of ROM mineral during the last five year period as applicable	2014-15 - 452586 T 2015-16 - 501043 T 2016-17 - 382519 T 2017-18 - 303565 T 2018-19 - 305662 T	2014-15 - 406500 T 2015-16 - 389737 T 2016-17 - 362270 T 2017-18 - 291705 T 2018-19 - 305469 T	

3q General remarks of inspecting officers on method of mining etc. Exploitation is being carried out with systematic and scientific manner.

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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)	Yes	Yes	The top soil and OB stacked temporary in dumps is rehandled and used for mine restoration directly and presently, mining activities are restricted to float bearing area, where soil is leveled after exploitation of bauxite boulders simultaneously.
4b	Location of topsoil, OB and mineral reject dumps	NIL	NIL	There is no such dumps are made during the year, all the soil and reject or waste (after recovering sub grade by screening) are being utilised for backfilling of mined out voids and same are scientifically vegetated through afforestation.
4c	Number of dumps within lease area and outside of lease area	Lease area = NIL Non Lease area = NIL	Lease area = Not Applicable Non Lease area = Not Applicable	
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	NIL	NOT APPLICABLE	
4e	Number of active and alive dumps.	Nil	NOT APPLICABLE	
4g	Number of dumps established.	NIL	NOT APPLICABLE	

4h	Whether Retaining wall or garland drain all along dumps are there.	NIL	NOT APPLICABLE	
4i	Length of Retaining wall or garland drain all along dumps	nil	NOT APPLICABLE	
4j	Number of settling ponds	Nil	Being Maintained the existing.	The run-off mine is channelised towards initially constructed settling tanks and silt check dams.
4k	Specific comments of inspecting officer on waste dump management		Waste dump generation were not proposed and achieved.	However, the waste material is being used for backfilling the mined out area towards R&R.

#### 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.	Yes	Yes	The area is taken up for restoration after removal of entire bauxite in the specific area.
5b	Area under backfilling of mined out area	6.2 Ha	5 Ha	During the year 2018-19, 12000 saplings have been planted to cover 5 Ha.
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	Fully Utilization of top soil	Fully Utilization of soil	
5d	Total area fully reclaimed and rehabilitated	19.2 Ha	18 Ha	Cumulative area reclaimed area reported till Oct - 2019 is 18 Ha.
5e	General remarks of inspecting officers on backfilling and reclamation etc.		Obsrved the systematic backfilling practices and backfilled areas are being scientifically vegetated through afforestation.	

## Progressive Mine Closure Plan:

Sl.No.	Item	Proposals	Actual work	Remarks
6a	Whether Annual report on PMCP submitted on time and correctly. Rule 23 E(2).	Yes	Yes	Submitted on 05-06-2019
6b	Area available for rehabilitation (ha) .	6.2 Ha	5 Ha	Less achievement of OB handling.
6c	afforestation done (ha).	6.2 ha	5.0 ha	
6d	No. of saplings planted during the year	6200No.s	12000 No.s	Observed higher achievement.
6e	Cumulative no .of plants		33400 No.s	Cummulative plants as per the report.
6f	Any other method of rehabilitation	Backfilling with subsequent plantation.	Backfilling with subsequent plantation.	
6g	Cost incurred on watch and care during the year	Rs.55,000/-	Rs.6,20,068/-	As per the report submitted by lessee.
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling ( Lx B x D	Insitu - (300m * 40m * 12.2m)	Insitu - (230m * 7m)	
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	OB -125378CUM Top Soil-20896CUM	OB - 91487 CUM Top Soil-25393 CUM	
6j	Compliance on reclamation and rehabilitation by backfilling (iii)Afforestation on on backfilled area	6.2 Ha	5 Ha	
6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	0.785 Ha	0.785 Ha	



6l	Compliance on reclamation and rehabilitation by backfilling (v)any other specific means.	Check bund -2 Nos.	Check bund -2 Nos.	Water harvesting pond maintained for water recharging.
6m	Compliance of rehabilitation of waste land within lease (i)afforestation	NIL	NIL	
6n	Compliance of rehabilitation of waste land within lease (ii)Area rehabilitation (ha)	NIL	NOT APPLICABLE	
6p	Compliance of environmental monitoring (core zone and buffer zone)	Compliance of Environmental monitoring.	The monitoring is carried out as per the schedule through MOEF approved third party and reports are maintained.	Yes
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.		Observed systematic and scientific method for PMCP and progressive closure operations.	

#### Mineral Conservation:

Sl.No.	Item	Propasals	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	ROM has been sorted by crushing / screening.	ROM has been sorted by crushing / screening.	+44% Al <sub>2</sub> O <sub>3</sub> & > 10% SiO <sub>2</sub>  +30% Al <sub>2</sub> O <sub>3</sub> & +10% SiO <sub>2</sub>
7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	Mechanical	Mechanical	
7c	Different grade of mineral sorted out at mines.	Bauxite & Sub grade bauxite	Bauxite & Sub grade bauxite	
7d	Any beneficiation process at mines	Dry Screening	Dry Screening	

7e General remarks of inspecting officer on Mineral conservation and beneficiation issues

Satisfactory

### Environment:

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	YES	YES	Presently mining activities are restricted to float bearing area, where soil is leveled after exploitation of bauxite boulders simultaneously.
8b	Concurrent use or storage of topsoil	Concurrent use	Concurrent use of soil	
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	Yes	Yes	The backfilled areas are being scientifically vegetated through afforestation.
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	Use of overburden, soil & waste for backfilling of mined out area.	All the OB , soil & waste are being utilised for backfilling of mined out voids and The backfilled areas are being scientifically vegetated through afforestation.	
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	Phased restoration, reclamation and rehabilitation	Restoration / Reclamation of the mined pits are being done every year as per plan.	

8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	The vegetation is generally limited to slopes that to strewed and stunted due to lack of plant nutrients in the soil.	Mined out area are scientifically afforested. Care has been taken to plant mostly local flora along with some exotic species.
8g	Survival rate	90%	85%
8h	Water sprinkling on roads to control airborne dust	Dust suppression	Water tanker mounted trucks are being used for dust suppression.
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area		The mines area has maintained with sytematic by adopting the optimum method towards the aesthetic beauty of the area.

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Compliance of Rule 45:

Sl.No.	Item	Propasals	Actual work	Remarks
9a	Status of submission of Monthly and Annual returns	Submission of AR 2019 & MR till Oct 2019	Submitted till date of inspection.	
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Mining Engineer - 1 Geologist - 1 Manager - 1	Mining Engineer - 1 Geologist - 1 Manager - 1	
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	Yes	Area of excavation: 28.323 Ha Waste Dump: 0.0 Ha Infrastructure: 0.5 Ha Road : 0.75 Others : 0.218 Ha Untouched area : 12.007 Ha	
9d	Scrutiny of Annual return on afforestation	12000 nos.	12000 nos.	
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	NIL	NIL	

9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	Yes	The Ex mine price of processed ore, other than alumina and aluminium metal extraction is not found satisfactory.	Violation issued.
9h	Scrutiny of Annual return on fixed assets	Furnished	Found in order	
9k	Scrutiny of Annual return on mining machineries	Furnished	Found in order.	

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

Violation observed			Show couse position		
Rule NO.	Issued on	Compliance on	Rule NO.	Issued on	Compliance on
MCDR17 Rule 45(7)(a)	11-DEC-19	21-JAN-20			

**Date :**

**(SURESH PRASAD)**

Indian Bureau of Mines