

**INDIAN BUREAU OF MINES  
MINERALS DEVELOPMENT 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 : KQ4 ) DR. Y.G.KALE  
Officer and ID No.
- (ii) Designation : Regional Controller Mines
- (iii) Accompanying mine : SHRI. V.K.S.CHAUHAN, MINING ENGINEER AND MINES MANAGE  
Official with  
Designation
- (iv) Date of Inspection : 21/09/2017
- (v) Prev.inspection date : 03/02/2016

**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 : 416519  
FAX No. : 02320-215301  
E-mail : mainak\_c@adityabirla.com  
Phone : 02320-202072
- (f) Police Station : SHAHUWADI
- (g) First opening date : 27/04/2009
- (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 : 30
- (d) Date of Expiry : 04/05/2038
4. Mineral worked : BAUXITE

*Deemed extension of lease upto  
04.05.2038 has been granted by Govt.  
of Maharashtra on 2nd march 2016.*

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/ : 01/04/2013  
 Termination date

## Geologist

Name : U, V. PAWAR, Full Time  
 Qualification : M.Sc. Geology  
 Appointment/ : 26/03/2012  
 Termination date

## Manager

Name : VIJAYKUMAR SINGH CHAUHAN  
 Qualification : B. Tech. Mining with FCC  
 Appointment/ : 01/04/2013  
 Termination date

6. Date of approval of Mining Plan/Scheme of Mining : Modif.of approved Mining Plan 25/03/2009  
 Mining Scheme rule 12 MCDR1988 02/12/2013  
 Modif.approved Mining Scheme 12/03/2015  
 MP modif under 17(3) MCR 2016 08/07/2016

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

## Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	Nil	Nil	No proposals were made in the last approved document.
1b	Exploration over lease area for geological axis 1 or 2	Nil 3 pits (9760m2) in Float area	3 pits (9760m2)	Previously four borehole were drilled during May 2016 to a total depth of 60mtrs and two boreholes were drilled in the year 2017-18. Having maximum and minimum depth of 16 and 13 mtrs.
1c	Exploration Agencies and Expenditure in lakh rupees during the year	Nil	Rs, 0.50 Lakhs and exploration is carried out by M/s Rocktech Engineers.	
1d	Balance area to be explored to bring Geological axis in 1 or 2	Nil	Two boreholes were drilled in the year 2017-18.	
1e	Balance reserve as on 01/04/20		Probable mineral Reserves (121)- 318796 tonnes Probable mineral Reserves (122)-27368 tonnes	Entire mineralised area has been explored under G1 and g2 category. Two DTH boreholes were proposed in 2017-18 which have been completed and Form 'J' has been received in May 2017.
1f	General remarks of inspecting officers on geology, exploration etc			

## Development :

Sl.No.	Item	Proposals	Actual work	Remarks
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2a	Location of development w.r.t. lease area	N-16o54'26" to N-16o 54'33" and E-73o50'28" to 73o54'42"	Working has been carried out as per the proposal.
2b	Separate benches in topsoil, overburden and minerals (Rule 15)	Bauxite-01 Topsoil-01 OB-01	Benches were made as per the proposal.
2c	Stripping ratio or ore to OB ratio	1:1.5	1:0.58
2d	Quantity of topsoil generation in m3	Insitu-35683.28 and in float ore 12938.233	45398
2e	Quantity of overburden generation in m3	134383 in Insitu + 12938 in Float	163904
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc		The development is commensurate with production. Bauxite deposit is such that no much development is required. The development work is carried out more than proposed in Mining Plan.

## Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
3a	Number of pit proposed for production	Two	Two	
3b	Quantity of ROM mineral production proposed	382519 tonnes	362271 tonnes.	
3c	Recovery of sailable/usable mineral from ROM production	80%	82%	



3d	Quantity of mineral reject generation	-	Nil	No mineral reject is handled during the year 2016-17.
3e	Grade of mineral rejects generation and threshold value declared.	NA	NA	
3f	Quantity of sub grade mineral generation.		82500 tonnes	
3g	Grade of sub grade mineral generation		Al2O3- 44% SiO2-10-12%	
3h	Manual / Mechanised method adopted for segregating from ROM	Mechanized	Mechanized.	
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	Yes	100mm dia drill hole m/c used and NONEL technique used for blasting.
3k	Provision of mining machineries in mineral benches	Yes	Yes	HEMM deployed in mineral benches as per the proposal.
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Yes	Yes	Separate benches form as per MP/SOM.
3m	Total area covered under excavation/pits	23.59 Ha	18.00 Ha	
3n	Ore to OB ratio for the pit/mine during the year.	1:1.5	1:0.58	

3o	Total area put in use under different heads at the end of year	24.84 Ha	24.85 Ha
3p	Production of ROM mineral during the last five year period as applicable	2016-17 382519 tonnes 2015-16 501043 tonnes 2014-15 452586 tonnes 2013-14 550000 tonnes 2012-13 600000 tonnes 2011-12-316100 tonnes	2016-17 362271 tonnes 2015-16 389737 tonnes 2014-15 406500 tonnes 2013-14 429797 tonnes 2012-13 338705 tonnes 2011-12 1833 tonnes

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

In general the  
mining practice  
adopted is  
scientific and  
systematic as per  
the proposals made  
in the mining  
plan. Conservation  
of minerals is  
being practised by  
working in Insitu,  
Float and dumps  
and blending the  
mineral to suit  
the required  
grade.

Solid Waste Management - Dumping:

Sl.No.	Item	Propasals	Actual work	Remarks
4a	Separate dumping of topsoil, OB and mineral rejects (Rule 32,33)		The soil which is generated during mining operation is utilized for réclamation of the mined out area.	
4b	Location of topsoil, OB and mineral reject dumps		No external dumping is made during 2016-17.	

4c	Number of dumps within lease area and outside of lease area	One	One	
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	within ultimate pit limit.	with in ultimate pit limit.	Part of the dump is rehandled for recovery of ore and waste soil is used for reclamation of minedout pit.
4e	Number of active and alive dumps.	one	one	
4f	Number of dead dumps.	Nil	Nil	
4g	Number of dumps established.	Nil	Nil	
4h	Whether Retaining wall or garland drain all along dumps are there.	Yes	yes	
4i	Length of Retaining wall or garland drain all along dumps	234.87 mtrs	250mtrs	
4j	Number of settling ponds	01	01	
4k	Specific comments of inspecting officer on waste dump management			No issue of waste dump exist in the mine. The overburden or side burden from Insitu and Float ore working is being restored back in mined out areas for concurrent reclamation. Present waste dump is spread over 1.00 Ha.

#### Solid Waste Management - Backfilling:

Sl.No.	Item	Propasals	Actual work	Remarks
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5a	Status of part or full extraction of mineral from mined out area before starting backfilling.	Proposed	All the mineral has been extracted from the minedout area before backfilling.	
5b	Area under backfilling of mined out area	3.5 Ha.	3.5Ha	
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	Proposed	Entire soil generated during mining operation has been utilized for backfilling of minedout area and plantation was made in the same area.	
5d	Total area fully reclaimed and rehabilitated	3.5Ha	3.5Ha	
5e	General remarks of inspecting officers on backfilling and reclamation etc.			So far 3.5 Ha. area has been reclaimed and rehabilitated. Another 3.5 Ha. is proposed in PMCP which is under process.

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).	Condition inserted in MP approval	lessee has not submitted Annual report on PMCP for the year 2016-17.	violation is pointed out for the same.
6b	Area available for rehabilitation (ha) .	4.5 ha	4.5ha.	About 6000 plants were planted on the backfilled area.
6c	afforestation done (ha).	4.5Ha	4.5Ha	
6d	No. of saplings planted during the year	4500	6500	



6e	Cumulative no .of plants		14150
6f	Any other method of rehabilitation		Created water harvesting pond
6g	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	Insitu- 500m x 70m x 5m and Float Area- 500m x 90m x 0.3 mtr	500m x 70m x 2m Float area reclamation is being taken immediately
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	186566.4 CM3	161001.5 CM3
6j	Compliance on reclamation and rehabilitation by backfilling (iii)Afforestati on on backfilled area	4500 plants	6500 plants
6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir		Water harvesting pond is created.
6l	Compliance on reclamation and rehabilitation by backfilling (v)any other specific means.	NA	NA
6m	Compliance of rehabilitation of waste land within lease (i)afforestation	NA	NA

6n	Compliance of rehabilitation of waste land within lease (ii)Area rehabilitation (ha)	NA	NA
6o	Compliance of rehabilitation of waste land within lease (iii)Method of rehabilitation	NA	NA
6p	Compliance of environmental monitoring (core zone and buffer zone)	Proposed	The monitoring is carried out as per the schedule through MOEF approved third party and reports are maintained.
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.		In general the proposals in the approved PMCP are being implemented. The environmental parameters are found to be within the standards prescribed for the same. All the slopes has been covered with soil arresting local species. Garden, Kitchen Garden has been developed over backfilled area. Drip irrigation is also implemented for water conservation.

#### Mineral Conservation:

Sl.No.	Item	Propasals	Actual work	Remarks
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7a	ROM Mineral dispatch or grade-wise sorting within lease area	As per the annual returns submitted to this office for the year 2016-17, about 192982 tons of 40 to 45% Al <sub>2</sub> O <sub>3</sub> and about 96885 tons of 45 to 50% Al <sub>2</sub> O <sub>3</sub> has been dispatched for use in alumina and aluminium extraction. and about 72179 tons of cement grade ore dispatched for other than alumina and aluminium extraction.
7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	Mechanical
7c	Different grade of mineral sorted out at mines.	Cement grade and alumina and aluminium extraction grade. the grade of ore which is used for alumina and aluminium extraction is between 40-40% Al <sub>2</sub> O <sub>3</sub> . and below is cement grade.
7d	Any beneficiation process at mines	Only Crushing and screening.
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues	Entire ore is being recovered from the float ore zone and thus mineral conservation is being practiced. During 2017-18 current year mining is proposed and practiced through Float ore zone only.

## Environment:

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	Yes	Yes	

8b	Concurrent use or storage of topsoil		all the soil generated during mining operation has been utilized for backfilling of minedout area and plantation.	separate stacking has been practiced.
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	Yes	Yes	separate stacking has been practiced.
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use		OB, and soil generated during mining operation is utilized for back filling of mined out pit.	
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)		Phased restoration , reclamation has been done in mined out pits.	
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)		Minedout area are scientifically afforested with local flora along with ome exotic species.	
8g	Survival rate	85%	85%	
8h	Water sprinkling on roads to control airborne dust		Truck mounted water tanker is deployed for sprinkling in road to control airborne dust.	
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area		In general the various environmental ameliorative measures proposed in mining plan and PMCP are practiced and implemented. the house keeping of the mine is well maintained.	



## Compliance of Rule 45:

Sl.No.	Item	Proposals	Actual work	Remarks
9a	Status of submission of Monthly and Annual returns		Lessee is submitting online Monthly and Annual returns regularly.	
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager		Mr. V. K. S. Chauhan is the Mining Engineer and Mr.U.V. Pawar is the Geologist for the said lease and same is mentioned in the annual returns submitted for the year 2016-17.	
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.		Area under Mining 22.00Ha, Reclaimed/Rehabilitated area-3.5Ha, Area under waste disposal-1.00Ha, Area under infrasture-1.25Ha.	
9d	Scrutiny of Annual return on afforestation		6500 plants were planted in the year 2016-17	
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)		No mineral rejection was shown in the annual returns submitted for the year 2016-17.	
9f	Scrutiny of Annual return on ROM stock and/or graded ore		About 32701 tons of cement grade ore shown as closing stock in the annual returns submitted for the year 2016-17.	
9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost		Exmine price is shown as shown Rs- 575.56 for aluminium grade and Rs 675 for cement grade. And Cost of production is shown as Rs-575.96.	The amount paid towards DMF and NMET has not been shown. The same should have been indicated in item "others".
9h	Scrutiny of Annual return on fixed assets		Total value of fixed assets is shown as Rs-2765573.	

9k	Scrutiny of Annual return on mining machineries	Back hoe-04 numbers, wheel loader -03 numbers, crusher -02 number, Air compressor-01, Dumper-07 number.	The machineries were deployed as mentioned in the annual returns.	Few minor discrepancies in Part-IIA, Taxes and Cesses, Fine size, NMI Grade etc. were observed while scrutiny of Annual Returns 2016-17. Since the lessee has already submitted online returns, the MMS Division vide letter dated 04.10.2017 requested to refer back the returns to lessee for rectification of the same. Copy of the same is also endorsed to the lessee.
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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
MCDR17	Rule 26(2) <sup>67 &amp;</sup> 27/09/2017		

Date :

ccccc  
o/c (DR. Y.G.KALE) 10/11/2017

Indian Bureau of Mines