

INDIAN BUREAU OF MINES  
MINERALS DEVELOPMENT AND REGULATION DIVISION

MCDR inspection REPORT

Goa regional office

Mine file No : MAH/KLP/Bx-7/GOA-0011

Mine code : 07MSH13005

- (i) Name of the Inspecting : K04 ) DR. Y.G.KALE  
Officer and ID No.
- (ii) Designation : Regional Controller Mines
- (iii) Accompanying mine : Shri.Kumar Sanjay Prasad, Mines Manager.  
Official with  
Designation
- (iv) Date of Inspection : 20/09/2017
- (v) Prev.inspection date : 19/12/2013 & 06.04.2016 for MPI

PART-I : GENERAL INFORMATION

- (a) Mine Name : DURGMANWADI
- (b) Registration NO. : IBM/935/2011
- (c) Category : A Fully Mechanised
- (d) Type of Working : Opencast
- (e) Postal address  
State : MAHARASHTRA  
District : KOLHAPUR  
Village : DURGMANWADI  
Taluka : RADHANAGARI  
Post office : RADHANAGARI  
Pin Code : ~~416003~~ 416 212  
FAX No. : 02320-215301  
E-mail : mainak\_c@adityabirla.com  
Phone : 02320-202072
- (f) Police Station : Radhanagari
- (g) First opening date : 17/04/1992
- (h) Weekly day of rest : SUN
- Address for  
correspondance : Durgmanwadi Bauxite Mine of M/s ~~INDAL~~ Hindalco Ltd.  
At-Durgmanwadi, Po-Radhanagri  
Dist-Kolhapur-416212

- (a) Lease Number : MSH0133
- (b) Lease area : 182.23
- (c) Period of lease : ~~20~~ 50
- (d) Date of Expiry : ~~20/05/2018~~ 31/03/2020 Deemed extension of lease  
executed on 7.8.2017.

Mineral worked : LATERITE Associated  
BAUXITE Main

## 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.AGRAWAL  
 Ahura centre, 1st Floor, B  
 wing, MCRD  
 Andheri (East), Mumbai Pin  
 400093 MUMBAI (SUBURBAN)  
 MAHARASHTRA  
 Phone: 022-66917000  
 FAX :

Agent : MAINAK CHAKRABORTY  
 HINDALO INDUSTRIES LTD Po.  
 Radhanagari KOLHAPUR  
 MAHARASHTRA  
 Phone: 02321-202133  
 FAX :

## Geologist

Name : R D PATIL, Full Time  
 Qualification : MSC (GEOLOGY)  
 Appointment/ : 08/10/2007  
 Termination date

## Manager

Name : S K DASH  
 Qualification : BE MINING  
 Appointment/ : 01/07/2014  
 Termination date

## Manager

Name : Kumar Sanjay Prasad  
 Qualification : BE Mining Sambalpur University  
 Appointment/ : 24/07/2014  
 Termination date

Date of approval of Mining Plan/Scheme of Mining	:	Mining Scheme rule 12 MCDR1988	17/01/2003
		Mining Scheme rule 12 MCDR1988	11/10/2007
		Mining Scheme rule 12 MCDR1988	01/02/2013
		Modif. approved Mining Scheme	26/03/2014
		Modif. approved Mining Scheme	11/12/2014
		MP modif under 17(3) MCR 2016	11/08/2016

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

## Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	Nil	Nil	
1b	Exploration over lease area for geological axis 1 or 2	Nil	Nil	
1c	Exploration Agencies and Expenditure in lakh rupees during the year	Nil	Nil	
1d	Balance area to be explored to bring Geological axis in 1 or 2	Nil	Nil	
1e	Balance reserve as on 01/04/20		Probable Mineral reserves (122)- 0.63 million tonnes Pre-feasibility Mineral resources (221/222)- 1.468 million tonnes.	
1f	General remarks of inspecting officers on geology, exploration etc		Entire mineralized area has been explored over an area of 97.7609Ha in insitu bauxite deposit. Similarly entire float area over an area of 59.562Ha has been explored by 58nos of pitting in 200-400m grid pattern. The reserves are almost exhausted in the mine.	

## Development :

Sl.No.	Item	Proposals	Actual work	Remarks
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2a	Location of development w.r.t. lease area	1.E/W-388387-388424 & N/S-1819169-1819377, 2. E/W-386358-386448 N/S-1818443-1818541, 3.E/W-386131-386203 N/S-1818268-1818339, 4. E/W-386806-387575, N/S-1819039-1819317.	1.E/W-388387-388424 & N/S-1819169-1819377, 2. E/W-386358-386448 N/S-1818443-1818541, 3.E/W-386131-386203 N/S-1818268-1818339, 4. E/W-386806-387575, N/S-1819039-1819317.	
2b	Separate benches in topsoil, overburden and minerals (Rule 15)	Not applicable	Not applicable	Mining was restricted to breaking of surface boulders varying in size from 1 mtr to 3 mtr height. So excavation was restricted only upto one meter depth.
2c	Stripping ratio or ore to OB ratio	1:0.80	1:1.13	
2d	Quantity of topsoil generation in m3	Nil	Nil	Topsoil generation was proposed in float ore working.
2e	Quantity of overburden generation in m3	<del>Nil</del> 240074	<del>29533</del> 217056	
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc		The development is commensurate with production. The overburden of 217056 m3 has been generated and utilized for creation of harvesting pond over an area of 1.17Ha.	

## Exploitation:

Sl.No.	Item	Proposals	Actual work	Remarks
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3a	Number of pit proposed for production	One pit for Insitu working in C3-C3' , C4-C4' C15-C15' sections and one pit in central block for float ore.	As per proposal.	Mining was restricted to breaking of surface boulders varying in size from 1 mtr to 3 mtr height. So excavation was restricted only upto one meter depth.
3b	Quantity of ROM mineral production proposed	288255 tonnes	246186 tonnes	
3c	Recovery of sailable/usable mineral from ROM production	288255 tonnes	246186 tonnes	
3d	Quantity of mineral reject generation	NA	NA	
3e	Grade of mineral rejects generation and threshold value declared.	NA	NA	
3f	Quantity of sub grade mineral generation.	Nil	Nil	
3g	Grade of sub grade mineral generation	NA	NA	
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	No drilling and blastin is proposed.	Nil.	
3k	Provision of mining machineries in mineral benches	Yes	Yes	

3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Yes	Yes
3m	Total area covered under excavation/pits	23.118 Ha	19.00 Ha
3n	Ore to OB ratio for the pit/mine during the year.	1:0.80	1:1.13
3o	Total area put in use under different heads at the end of year		Area under working- 110.560Ha, Reclaimed and Rehabilitated area- 56.53Ha, Infrastructure- 8.630Ha and others- 6.562ha.
3p	Production of ROM mineral during the last five year period as applicable	2016-17 288255 tonnes 2015-16 298800 tonnes 2014-15 347646 tonnes 2013-14 262832 tonnes 2012-13 477206 tonnes	2016-17 246186 tonnes 2015-16 240065 tonnes 2014-15 309595 tonnes 2013-14 400231 tonnes 2012-13 724596 tonnes
3q	General remarks of inspecting officers on method of mining etc.		The maximum production proposed and achieved during the last year was from float ore zone of central block. The mining practice adopted is scientific and float ore area after mining is being immediatly taken up for reclamation and rehabilitation.

## Solid Waste Management - Dumping:

Sl.No.	Item	Proposals	Actual work	Remarks
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4a	Separate dumping of topsoil, OB and mineral rejects (Rule 32,33)	Nil	Nil	Presently mine workings are restricted to float bearing area. The soil removed during mining activity is being used for levelling of land reclamation after exploitation of ore.
4b	Location of topsoil, OB and mineral reject dumps	Nil	Nil	There is no such dumps are available at mines, all the top soil and OB dumps are being utilized for backfilling of minedout voids.
4c	Number of dumps within lease area and outside of lease area	Nil	Nil	
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	Nil	Nil	
4e	Number of active and alive dumps.	Nil	Nil	
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.	Nil	Nil	
4i	Length of Retaining wall or garland drain all along dumps	NA	NA	
4j	Number of settling ponds	Nil	Nil	

4k Specific comments of inspecting officer on waste dump management

No issue of waste dump management ~~is~~ exist in the mine. The mining is mainly restricted in the float ore zone wherein after recovery of Bauxite ore, waste material is dumped on the mined out land and being levelled and rehabilitated.

#### 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	Complied	The area is taken up for restoration only after removal of entire bauxite in the specific area.
5b	Area under backfilling of mined out area	6.60Ha	8.63Ha	
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	Yes	Fully utilized for backfilling.	
5d	Total area fully reclaimed and rehabilitated	6.06 ha	8.63Ha	
5e	General remarks of inspecting officers on backfilling and reclamation etc.		So far more than 56.530 Ha of area has been backfilled and reclaimed during 2016-17, 8.63Ha area has reclaimed and rehabilitated through saplings, plantation and grass plantation.	

#### Progressive Mine Clousre Plan:

Sl.No.	Item	Propasals	Actual work	Remarks
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6a	Whether Annual report on PMCP submitted on time and correctly. Rule 23 E(2).		Annual return on PMCP has been filed.
6b	Area available for rehabilitation (ha) .	6.60 Ha	8.63Ha
6c	afforestation done (ha) .	6.6Ha	8.63Ha
6d	No. of saplings planted during the year		150
6e	Cumulative no .of plants		
6f	Any other method of rehabilitation		Nil
6g	Cost incurred on watch and care during the year	Rs-55,000	Rs-2,21,657
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling ( Lx B x D	6.6Ha	8.63Ha
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	Proposed.	Complied.
6j	Compliance on reclamation and rehabilitation by backfilling (iii)Afforestation on backfilled area	Proposed.	Complied.
6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	1.20Ha	1.17Ha of pond 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)	Nil	NA
6o	Compliance of rehabilitation of waste land within lease (iii) Method of rehabilitation	Nil	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.

#### Mineral Conservation:

Sl.No.	Item	Proposals	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	31349 tonnes from insitu and 256906 tonnes from float ore.	As per the annual returns submitted to this office about 61082 tonnes of ore with Al2O3 below 40% and about 182737 tonnes of ore having Al2O3 % between 40 to 45 is despatched in the year 2016-17.	
7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	Mechanical	Mechanical	

7c	Different grade of mineral sorted out at mines.	NA	NA
7d	Any beneficiation process at mines	NA	Nil
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.

## Environment:

Sl.No.	Item	Proposals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	Nil	Nil	The topsoil stacked initially in dumps is rehandled and used for mine restoration.
8b	Concurrent use or storage of topsoil	Proposed	Soil which is generated during float ore mining is utilized for backfilling and levelling of the minedout area.	
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	Nil	Nil	
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	Proposed	All the OB dumps are utilized for backfilling of mined out voids.	

8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	Proposed	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)		Mined out area are scientifically afforested with local flora along with some exotic species.
8g	Survival rate	80-90%	91%
8h	Water sprinkling on roads to control airborne dust	Water spraying proposed.	Two number of water tank mounted trucks are being used for dust suppression.
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 housekeeping of the mine is well maintained.

## Compliance of Rule 45:

Sl.No.	Item	Propasals	Actual work	Remarks
9a	Status of submission of Monthly and Annual returns		Lessee is sumbmitting online Monthly and Annual returns regularly.	
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager		In the annual returns submitted for the year 2016-17, Shri Kumar Sanjay Prasad has shown as Mining Enginner and Mr.R.D.Patil as Geologist.	
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.		Area under working - 110.560Ha, Reclaimed area-56.530Ha	
9d	Scrutiny of Annual return on afforestation		Total 150 saplings were planted in the year 2016-17.	

9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	No minerals reject 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 110 tons of ore having Al <sub>2</sub> O <sub>3</sub> % below 40 and 5434 tonnes of ore having Al <sub>2</sub> O <sub>3</sub> % between 40-45 is stacked in the mine head.	
9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	Exmine price is shown as Rs-610.60/tonne which is higher than the PMV declared by IBM for March 2017.	
9h	Scrutiny of Annual return on fixed assets	Value of fixed assets is shown Rs-12333130.	
9k	Scrutiny of Annual return on mining machineries	Dozer-02, Shovel-04, Dumper-04, Crusher-1, Wheel loader-1, Rock drill-5, Crane-1	Few minor discrepancies in part-IIA, Taxes and cess, fine size, NMI grade etc were observed during the scrutiny of annual returns 2016-17. since the lessee has already submitted the online return, the MMS division vide letter dated 04.10.2017 requested to refer back the return to the lessee for rectification of the same. Copy of the same is endorsed to the lessee.

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

Violation observed		Show couse position	
Rule NO. 67 of MCR 2017	Issued on Compliance on 27.09.2017	Rule NO.	Issued on Compliance on <u>                    </u> (DR. Y.G.KALE) 27/10/2017
Date : 27-10-2017			

Indian Bureau of Mines