

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

MCDR INSPECTION REPORT

Nagpur regional office

Mine file No : MAH/RGH/BX-17/NGP

Mine code : 07MSH12008

- (i) Name of the Inspecting : **M017**) **ASHISH MISHRA**
Officer and ID No.
- (ii) Designation : Sr. Asst. Contrl. Mines
- (iii) Accompanying mine : Shri Ashok Patil, Geologist
Official with
Designation
- (iv) Date of Inspection : 21/06/2018
- (v) Prev.inspection date :

PART-I : GENERAL INFORMATION

1. (a) **Mine Name** : **MAHAL MIRYA (79.98 H.)**
- (b) **Registration NO.** : **IBM/10453/2012**
- (c) **Category** : **A Other than Fully Mech.**
- (d) **Type of Working** : **Opencast**
- (e) **Postal address**
- State : **MAHARASHTRA**
- District : **RAIGAD**
- Village :
- Taluka :
- Post office :
- Pin Code :
- FAX No. :
- E-mail :
- Phone :
- (f) **Police Station** :
- (g) **First opening date** : **01/04/2010**
- (h) **Weekly day of rest** :
2. **Address for** :
correspondance
3. (a) **Lease Number** : **MSH0138**
- (b) **Lease area** : **79.98**
- (c) **Period of lease** : **20**
- (d) **Date of Expiry** : **12/12/2018**
4. **Mineral worked** : **BAUXITE** **Main**

5. Name and Address of the

Lessee : M/S VYAGHRESHWAR MINERALS
DATTATRAY SMRUTI, HANUMAN
ALI PEN DISTRICT : RAIGAD
(M.S.) RAIGAD MAHARASHTRA
Phone:
FAX :

6. Date of approval of Mining : Renewal under rule 24 MCR1960 19/10/2010
Plan/Scheme of Mining MP review under 17(1) MCR 2016 18/12/2017

PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	No proposals	Nil	
1b	Exploration over lease area for geological axis 1 or 2	G1 & G2	G1 & G2	
1c	Exploration Agencies and Expenditure in lakh rupees during the year	Not applicable	Nil	Till date exploration carried out is: 1. In 1961-62 by DGM, Maharashtra through 87 trial pits at an interval of 60-90 m 2. 4 Trial pits dug by lessee prior to 2010 3. 4 Trial pits during 2017-18
1d	Balance area to be explored to bring Geological axis in 1 or 2	No proposals	2.50 ha area is unexplored	Out of total 79.981 ha area, break up on G axis is as below: G1: 5.6214 ha Unexplored: 2.50 ha Non-mineralised: 71.8596 ha
1e	Balance reserve as on 01/04/20		Balance reserves as on 01.04.2018: 111 & 122: 778933 T	

1f	General remarks of inspecting officers on geology, exploration etc	Occurrence of ore zone has been proved in the central plateau which is for upto 6 m depth. Exploration done is in form of trial pits in the lease area in 1961-62 by DGM, maharashtra with 87 number of trial pits and later 4 number of trial pits by the lessee on a systematic grid pattern. Some pits have also been dug in the slope to prove depth continuity of the deposit upto 6 m. As per the lithology, after 6 m, occurrence of clayey Bauxite is mentioned which is required to be proved further.
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Development :

Sl.No.	Item	Proposals	Actual work	Remarks
2a	Location of development w.r.t. lease area	No proposals.	In the Central Part of the lease area between: E304900 to E305500 & N206600 to N2066400	
2b	Separate benches in topsoil, overburden and minerals (Rule 15)	The operations shall be done in a single bench mostly where Laterite capping over the Bauxite bed is Dozed and then one bench in Buaxite ore is made.	Soil is either nil or minimal (0.03 m), then a coverage of Laterite for around 1.2-1.5 m. This material is dozed and stacked near the pit. Then one bench in Bauxite ore is prepared. Presently 2 benches in Bauxite are present both of 3 m having a total depth of working of 6 m.	Top layer of around 1 m is also mechanically screened at the site and 90% of this material is also readily saleable. Only 10% of the material which is size rejects (-5 mm) is being left for backfilling in future. ROM is 100% saleable.

2c	Stripping ratio or ore to OB ratio	No proposals	For 2016-17- 1:0.0005 (overburden/waste being very less) For 2017-18- Only ore is produced.
2d	Quantity of topsoil generation in m3	Nil	Nil
2e	Quantity of overburden generation in m3	No proposals.	For 2016-17: Nil For 2017-18: Nil
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc		The deposit is occurring as blanket over the plateau as per the formation of Bauxite upto a maximum depth of 6 m. The development is in form of 10 small pits over the mineralized area where the upper layer of Laterite is dozed and kept besides the pit and as soon as the pit is mined out, it is again dozed back to the pit for backfilling. As Bauxite is occurring with clay beyond 6 m depth and is yet to be proved, no backfilling has been done yet.

Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
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3a	Number of pit proposed for production	No proposals.	10 small pits have been made in the area as below: Pit 1: 0.0685 ha Pit 2: 0.5722 ha Pit 3: 0.0229 ha Pit 4: 0.0682 ha Pit 5: 0.0727 ha Pit 6: 0.3346 ha Pit 7: 0.1105 ha Pit 8: 0.1464 ha Pit 9: 0.0994 ha Pit 10: 0.1331 ha Total: 1.6287 ha All pits are located in between E304900 to E305500 & N206600 to N2066400
3b	Quantity of ROM mineral production proposed	No proposals	2016-17: 94796 T 2017-18: 18720 T
3c	Recovery of sailable/usable mineral from ROM production	No proposals	100%
3d	Quantity of mineral reject generation	No proposals	Nil
3e	Grade of mineral rejects generation and threshold value declared.	No proposals	Not applicable as no mineral rejects generated
3f	Quantity of sub grade mineral generation.	No proposals	Not applicable as no sub-grade generated
3g	Grade of sub grade mineral generation	No proposals	Not applicable
3h	Manual / Mechanised method adopted for segregating from ROM	No proposals	Manual/ Mechanized both. Mechanized screening for size (+5-100 mm) alongwith manual sorting.

3i	Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects.	No proposals	Nil. No sub-grade of mineral rejects above threshold value are being generated at the mine. Overburden also contains fair Alumina content above threshold and it is also being blended with ROM after mechanical screening (+5 mm size being blended and utilized) which is around 90% of the overburden generated.	Earlier in 2010, a test for occurrence of Vanadium was done by the lessee through M/s TCRC (Therapeutics Chemical Research Corporation), Mumbai that proved no Vanadium occurrence.
3j	Provision of drilling and blasting in mineral benches	No proposals	No drilling blasting as the strata is soft. Rock breaker in combination with excavator is being used.	
3k	Provision of mining machineries in mineral benches	No proposals	Yes. mining is being done by deployment of machineries as per 'A' category. excavator and Dumpers are being used alongwith Rock Breakers.	
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	No proposals	Height of benches is 3 m approximately in mineral after removal of overburden by dozing.	
3m	Total area covered under excavation/pits	No proposals	1.628736 ha area is covered under existing pits.	
3n	Ore to OB ratio for the pit/mine during the year.	No proposals	Nil	
3o	Total area put in use under different heads at the end of year		Area under Excavation/Pits: 1.6287 ha Waste Dump: 0.6013 ha Roads: 0.2450 ha Plantation: 0.03 ha Total: 2.505 ha	
3p	Production of ROM mineral during the last five year period as applicable	2013-14: 150000 T 2012-13: 150000 T Apart from the above, rest of the years were under lapse period and no proposals are available.	2017-18: 18720 T 2016-17: 94796 T 2015-16: 50838 T 2014-15: 123872 T 2013-14: 49751 T 2012-13: 0	

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

Method of Mining is Category A mechanized and extent of mechanization supports the method of mining. Bench parameters are as per the occurrence of the mineral in the area.

Solid Waste Management - Dumping:

Sl.No.	Item	Propasals	Actual work	Remarks
4a	Separate dumping of topsoil, OB and mineral rejects (Rule 32,33)	The operations shall be done in a single bench mostly where Laterite capping over the Bauxite bed is Dozed and then benches in Buaxite ore is made. Thus, dumping of overburden was proposed besides the working pit. No mineral reject generation as mineral rejects generated shall be blended.	Soil is either nil or minimal (0.03 m), then a coverage of Laterite for around 1.2-1.5 m. This material is dozed and stacked near the pit. After the pit is exhausted, the material is proposed for backfilling which shall be done upon reaching the ultimate pit depth.	Top layer of around 1 m is also mechanically screened at the site and 90% of this material is also readily saleable. Only 10% of the material which is size rejects (-5 mm) is being left for backfilling in future. ROM is 100% saleable.
4b	Location of topsoil, OB and mineral reject dumps	No proposals.	No top soil dump. No mineral rejects dump. 5 Overburden / Waste dumps are located besides the pits as per the location mentioned under item 2a of the report. Area-wise details are as below: WD-1- 0.025256 ha WD-2: 0.39623 ha WD-3: 0.04734 ha WD-4: 0.059591 ha WD-5: 0.072924 ha Total: 0.0601341 ha	

4c	Number of dumps within lease area and outside of lease area	No proposals	5 Overburden/ Waste dumps, all within lease area.	
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	No proposals	All dumps are within pit limits as per the orebody formation and method of working (simultaneous backfilling)	
4e	Number of active and alive dumps.	No proposals	5	
4f	Number of dead dumps.	No proposals	Nil	
4g	Number of dumps established.	No proposals	Nil	
4h	Whether Retaining wall or garland drain all along dumps are there.	No proposals	No	All the dumps being temporary in nature and being within pit limits besides working pits, there is no requirement of garland drains and retaining wall.
4i	Length of Retaining wall or garland drain all along dumps	No proposals	Nil	
4j	Number of settling ponds	No proposals	Nil	
4k	Specific comments of inspecting officer on waste dump management			Waste dump management aspect for the mine is linked with mineral conservation as well as restoration of the area at the conceptual stage. Waste/overburden generated is being screened to get the mineral content for its utilization and further, residual waste material is being kept besides the working area for backfilling in future which is common practice for blanket type of deposits.

Solid Waste Management - Backfilling:

Sl.No.	Item	Proposals	Actual work	Remarks
5a	Status of part or full extraction of mineral from mined out area before starting backfilling.	No proposals	The area is proposed for backfilling after complete exhaustion of mineral.	As the waste is also being screened and 90% of the generated waste is being utilized for blending, only 10% of the waste is left at the site which will not be sufficient for restoring the area. Thus, it is proposed to convert the mined out area into water reservoir.
5b	Area under backfilling of mined out area	No proposals	Nil	Working has started from 2013-14 onwards and no area is matured for backfilling.
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	No proposals	Nil	No top soil available in the area.
5d	Total area fully reclaimed and rehabilitated	No proposals	Nil	
5e	General remarks of inspecting officers on backfilling and reclamation etc.			In the earlier approved Mining Plan, reclamation by backfilling waste was proposed but as the Bauxite is occurring below 6.0 m proved depth, no backfilling has been done yet.

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).		No	Violation of Rule 26(2) of MCDR'2017 was observed and communicated.

6b	Area available for rehabilitation (ha) .	No proposals	Nil	
6c	afforestation done (ha).	No proposals	0.03 ha	
6d	No. of saplings planted during the year	No proposals	For 2016-17, 1800 trees planted with 20% survival For 2017-18, 200 trees planted with 40% survival	In the last approved Mining Plan period, 500 saplings were proposed to be planted in 5 years. Lessee informed that due to non availability of top soil and heavy rains, survival is low and that is why high number of saplings are being planted.
6e	Cumulative no .of plants	No proposals	Approximately 700 saplings.	
6f	Any other method of rehabilitation	No proposals	No	
6g	Cost incurred on watch and care during the year	No proposals	Nil	Prior to 2017-18 (December onwards) the area was under Manual working which has now been changed to mechanized. It was advised to carry out environment monitoring as per the EC granted. It was informed that due to less number of working days (150 during 2017-18), the same could not be done. No production has been reported since June'2017.
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (Lx B x D	No proposals	Nil	

6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	No proposals	Nil	
6j	Compliance on reclamation and rehabilitation by backfilling (iii) Afforestation on backfilled area	No proposals	Nil	
6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	No proposals	Nil	It is proposed to convert mined out pits into water reservoir at conceptual stage as waste available is very less for backfilling and restoring the area.
6l	Compliance on reclamation and rehabilitation by backfilling (v) any other specific means.	No proposals	Nil	
6m	Compliance of rehabilitation of waste land within lease (i) afforestation	No proposals	Plantation has been done in the non-mining zone of 7.5 m	
6n	Compliance of rehabilitation of waste land within lease (ii) Area rehabilitation (ha)	No proposals	0.03 ha	
6o	Compliance of rehabilitation of waste land within lease (iii) Method of rehabilitation	No proposals	Nil	
6p	Compliance of environmental monitoring (core zone and buffer zone)	No proposals	May be commented upon compliance of Rule 26(2) of MCDR'2017 as mentioned under item 6a of the report.	It was informed that due to less number of working days (150 during 2017-18), the same could not be done. No production has been reported since June'2017.

6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.	Being blanket deposit, the area was fit for simultaneous backfilling. But as the deposit is still continuing below the existing proved limits and no pit has reached optimum depth, the same could not be practised. Also, mineral above threshold is being sorted from this waste. Therefore, at the conceptual stage, instead of restoring land by backfilling, conversion of area into water reservoir is proposed. Waste land is being reclaimed through plantation.
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Mineral Conservation:

Sl.No.	Item	Proposals	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	No proposals	Grade-wise sorting.	
7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	No proposals	Manual/ Mechanized both. Mechanized screening for size (+5-100 mm) alongwith manual sorting.	
7c	Different grade of mineral sorted out at mines.	No proposals	Cement Grade Bauxite having Al ₂ O ₃ 35%-38%	
7d	Any beneficiation process at mines .	No proposals	Mechanical screening for sizing of ROM and extraction of mineral contents for desired size from Overburden	

7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues	Mineral conservation is truly being practiced as except 10% of the total excavation, that is having Al ₂ O ₃ ~ 21% (chemical analysis from a Govt. accredited lab done), complete material is being blended and sold as mineral. Low grade is being blended with available high grade to make it a saleable grade of 35-38% Al ₂ O ₃ .
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Environment :

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	No proposals	Not applicable as no top soil.	
8b	Concurrent use or storage of topsoil	No proposals	Not applicable.	
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	No proposals	Only overburden is present in the area except mineral.	
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	No proposals	Proposed at conceptual stage.	

8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	No proposals	Not applicable as pits and waste dumps are yet to reach maturity.	
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	No proposals	Given in the Mining Plan.	
8g	Survival rate	No proposals	Survival rate is around 20%.	In the last approved Mining Plan period, 500 saplings were proposed to be planted in 5 years. Lessee informed that due to non availability of top soil and heavy rains, survival is low and that is why high number of saplings are being planted.
8h	Water sprinkling on roads to control airborne dust	No proposals	Yes. being done through contractual machineries.	
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area			Aesthetic beauty in and around the mines area apart from the usual degradation due to mining is satisfactory.

Compliance of Rule 45:

Sl.No.	Item	Propasals	Actual work	Remarks
9a	Status of submission of Monthly and Annual returns		Annual Return submitted online upto 2017-18 Monthly returns submitted upto June'2018	No production has been reported since June'2017.

9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Mining Engineer: Shri kishor Singbal Geologist Incharge: Shri Ashok Patil Manager: Nil	Correct information furnished. Manager shall be appointed as soon as mine starts working. Its non-operatioanal since June'2017.	As per the offline return submitted earlier, violation of Rule 55(1) (3) of MCDR'2017 was issued.
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.		Correct information furnished	
9d	Scrutiny of Annual return on afforestation	400 saplings in 2017-18 with 40% survival	Number of saplings can not be commented upon. Surviving plantation is around 100-150.	
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	Nil	Correct information furnished.	
9f	Scrutiny of Annual return on ROM stock and/or graded ore	ROM: Opening and closing stocks -Nil, Production-18720 T Graded Ore: Opening Stock-154078.422 T, Production-18720 T, Dispatch-26656.133 T, Closing Stock-146142.289 T	Correct information furnished	
9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	Ex-mine price: 543.43 Rs/T Sale Value: 14485770.98 Rs Cost of Mining: 245 Rs/T	Correct information furnished.	
9h	Scrutiny of Annual return on fixed assets	Nil	As the land is Govt. waste land, no details for land has been given. further, machinery deployment is contractual, hence, no details given for that also.	

9k	Scrutiny of Annual return on mining machineries	One wheel loader is mentioned.	Capacity has been mentioned incorrect and further, machinery is on contractual basis. Hence it was advised and spot guidance given for furnishing correct information in the returns.
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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 11(2)	06/07/2018		MCDR17 Rule 11(2)	06/07/2018	
MCDR17 Rule 26(2)	06/07/2018		MCDR17 Rule 26(2)	06/07/2018	
MCDR17 Rule 55(1)(3)	06/07/2018		MCDR17 Rule 55(1)	06/07/2018	
MCDR17 Rule 55(1)(3)	06/07/2018		MCDR17 Rule 55(1)	06/07/2018	

Date :

(ASHISH MISHRA)

Indian Bureau of Mines