

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

MCDR INSPECTION REPORT

Nagpur regional office

Mine file No : MAH/BHD/KYA-3/NGP

Mine code : 33MSH05011

- (i) Name of the Inspecting : **M017**) **ASHISH MISHRA**
Officer and ID No.
- (ii) Designation : Sr. Asst. Contrl. Mines
- (iii) Accompanying mine : Mr. Kannan, Agent
Official with
Designation
- (iv) Date of Inspection : 13/01/2020
- (v) Prev.inspection date : 05/10/2018

PART-I : GENERAL INFORMATION

1. (a) **Mine Name** : **PAVRI KYANITE MINE(JAMDI)**
- (b) **Registration NO.** : **IBM/863/2011**
- (c) **Category** : B Manual
- (d) **Type of Working** : Opencast
- (e) **Postal address**
- State : MAHARASHTRA
- District : BHANDARA
- Village : R.F.JAMADI (GIROLA)
- Taluka : SAKOLI
- Post office : SAKOLI
- Pin Code : 441802
- FAX No. :
- E-mail :
- Phone :
- (f) **Police Station** :
- (g) **First opening date** : 01/03/2001
- (h) **Weekly day of rest** : SUN
2. **Address for** : SALPELAR BUILDING,
correspondance RANI JHANSI SQUARE,
DIST. NAGPUR-440012 (M. S.)
3. (a) **Lease Number** : MSH0105
- (b) **Lease area** : 6.56
- (c) **Period of lease** : 50
- (d) **Date of Expiry** : 31/03/2020
4. **Mineral worked** : **KYANITE** Main

5. Name and Address of the

Lessee : SHRI H. M. PAVRI
 SALPEKAR BUILDING, RANI
 JHANSI SQUARE,
 SITABULDI, NAGPUR-440012
 NAGPUR MAHARASHTRA
 Phone:
 FAX :

Owner : SHRI H. M. PAVRI
 SALPELAR BUILDING, RANI
 JHANSI SQUARE, DIST.
 NAGPUR-440012 (M. S NAGPUR
 MAHARASHTRA
 Phone:
 FAX :

Agent : M. KANAN
 BHANDARA MAHARASHTRA
 Phone:
 FAX :

6. Date of approval of Mining	:	Renewal under rule 22 MCR1960	12/01/2001
Plan/Scheme of Mining	:	Mining Scheme rule 12 MCDR1988	03/11/2006
	:	Renewal under rule 24 MCR1960	23/05/2011

PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	Nil backlog. 4 core bore holes are proposed to be drilled in the year 2018-19	No backlog, however, as the lease is going to expire on 31.03.2020, 4 boreholes were drilled with a total meterage of 384 m in compliance to the provisions of Rule 12(4A) of MCDR'2017	In the last approved Mining Plan period ending 2014-15, 5 inclined boreholes were proposed and drilled in the area thus proving entire strike length of the orebody. 4 additional boreholes have been drilled in the year 2018-19, thus proving entire 100 m of strike length of the orebody upto 70 m depth (Deepest borehole drilled upto 115 m). recent exploration hasn't encountered any orezone for Kyanite in the area.
1b	Exploration over lease area for geological axis 1 or 2	G-1	G-1	
1c	Exploration Agencies and Expenditure in lakh rupees during the year	4 core boreholes proposed for the year 2018-19. This exploration was proposed to be carried out by lessee itself at an expenditure of around Rs 2000/- per m drilling.	The expenditure carried out during prospecting of year 2014-15 was about Rs 5,25,000/-. The expenditure carried out during prospecting of year 2018-19 was about Rs 7,37,000/-.	
1d	Balance area to be explored to bring Geological axis in 1 or 2	Nil as entire strike length has been proved upto G-1 level.	Nil	

1e Balance reserve as on 01/04/20 Balance reserves/resources as on 01.04.2019 are furnished in actual work details:

111-	4,93,618 T
121-	1,44,830 T
211-	55,132 T
Total:	6,93,580 T

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

The Ore body maintains the strike line of North- South with high angle of dips of 75 to 82 degrees towards East. The Ore body on hill side to the South of the Mining Lease area the surface exposures indicate the thickness of this formation is about 8m, however the deepest level of working is thickness is about 22 to 24 m. This indicates the bulging of the Ore body see in Pit.

The orezone has been proved upto 70 m from the surface through 9 core boreholes. This has covered entire 3 ha of mineralized area out of the total lease area and rest 3.558 ha is proved to be non-mineralized. There is no ore body (Kyanite) has been encountered in recent drilled boreholes however, the area is having other associated silicates such as Sillimanite, Pyrophyllite etc.

Development :

Sl.No.	Item	Proposals	Actual work	Remarks
2a	Location of development w.r.t.lease area	Location of the proposed development for 2018-19 is within the existing pit, at N900 to N1100 & E850 to E975 thereby extending the pit to open a new bench at ~248 mRL	As per the proposals, developments has been done and the location is as per the approved mining plan. Present working bottom is around 248 mRL as per the proposals with a a small sump upto 242 mRL.	

2b	Separate benches in topsoil, overburden and minerals (Rule 15)	Top soil is occurring in form of lateritic soil for which separate removal is proposed. Further, due to steeply dipping orebody, separate benches in OB and ore is not possible.	As per tthe proposals.
2c	Stripping ratio or ore to OB ratio	2018-19: 1:0.89 (ROM-20020 T, OB-17875 cum)	2018-19: 1:0.94 (ROM-7992 T, OB-7600 cum)
2d	Quantity of topsoil generation in m3	2018-19: 2717 cum	2018-19: Approximately 2000 cum lateritic soil was generated that was utilized in plantation work.
2e	Quantity of overburden generation in m3	2018-19: 17875 cum	2018-19: 7600 cum (around 19000 T @ 2.5 T per cum B.D. as reported in the AR for the year 2018-19)
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc		Developments are adequate in the area. In the southern part of the lease, the benches have reached to its final limits. Further extension of pit in the eastern and western side is required to be done for exploitation of orebosy at deeper levels. The same is being proposed and carried out, however due to low demand, the development and production are lagging from the proposals.

Exploitation:

Sl.No.	Item	Proposals	Actual work	Remarks
3a	Number of pit proposed for production	One Pit	One Pit	
3b	Quantity of ROM mineral production proposed	2018-19: ROM- 20020 T having approximately 70% Sillimanite & 30% Kyanite	2018-19: ROM- 7992 T (2700 T Kyanite & 5292 T Sillimanite)	
3c	Recovery of saleable/usable mineral from ROM production	100% recovery is proposed	Entire ROM is dispatched after manual breaking, sorting and gradation. Graded ore is being sent to the processing plant of the lessee located at ~20 km from the mine where it is pulverised and sold.	
3d	Quantity of mineral reject generation	Nil	Nil	
3e	Grade of mineral rejects generation and threshold value declared.	Not applicable as no mineral rejects are proposed to be generated	Nil	
3f	Quantity of sub grade mineral generation.	Not applicable as no sub-grade are proposed to be generated	Nil	
3g	Grade of sub grade mineral generation	Not applicable as no sub-grade are proposed to be generated	Nil	
3h	Manual / Mechanised method adopted for segregating from ROM	Manual breaking and sorting	Manual breaking and sorting	
3i	Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects.	No such proposals	Nil	

3j	Provision of drilling and blasting in mineral benches	Yes	Yes, drilling is being carried out by jack hammer drills, blasting is being carried out by small dia cartridges with electric detonation. Drilling and blasting is not always required, sometimes, rock breaker deployed in the mine is being utilized to avoid generation of fines.
3k	Provision of mining machineries in mineral benches	Yes	Ye, the mine is under category 'A' and is having excavator (0.70 cum & 0.90 cum)-Dumper (20 T) combination for excavation and transport. Further, Rock breakers, Water tankers etc are also deployed in the mine.
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Yes	Bench height proposed is 4 m which is suitable as per the selection of equipment and Category A semi-mechanized workings.

3m	Total area covered under excavation/pits	Total Area covered under excavation as on 01.04.2015 was 1.5104 ha and additional area required upto 2019-20 was proposed as 0.548 ha. Thus, as per the last approved mining plan document, net excavation area was proposed to be 2.0584 ha by 31.03.2020.	Actual area under pits as on 31.03.2019 is 2.531 ha.	Area under roads was reported as on 01.04.2015 was 0.4393 ha with additional requirement of 0.119 ha, thus resulting in area under roads as 0.5583 ha by 31.03.2020, however, most of this area under roads was falling under the presently extended pit. Thus, as per fresh survey, the area is clearly demarcated as 2.531 ha under pit and 0.18 ha under roads (outside pit) giving a total area of 2.711 ha which is approximately at par with the proposed net area under both heads (2.6167 ha).
3n	Ore to OB ratio for the pit/mine during the year.	2018-19: 1:0.89 (ROM-20020 T, OB-17875 cum)	2018-19: 1:0.94 (ROM-7992 T, OB-7600 cum)	
3o	Total area put in use under different heads at the end of year	Total area put to use under various heads as on 31.03.2019 is given in actual work details:	Area under excavation: 2.531 ha Waste dump: 1.734 Ha Mineral storage: 0.296 ha Infrastructure-workshop, administrative building etc.: 0.044 ha Roads: 0.18 ha Green Belt: 0.115 ha	
3p	Production of ROM mineral during the last five year period as applicable	2017-18: 19,320 T 2016-17: 30,948 T 2015-16: 20,048 T 2014-15: 12580 T 2013-14: 13258 T	2017-18: 7,983 T 2016-17: 7,973 T 2015-16: 7,992 T 2014-15: 7746 T 2013-14: 8082 T	

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

Method of mining
is category A
semi-mechanized
which is suitable
as per the
occurrence of
orebody, extent of
mechanization and
capital
investments in the
area. The ore body
is occurring in NS
direction and
southern part has
reached its pit
limits. Present
workings are going
on for extension
of pit in the
East-West
directions to
exploit the ore
occurring at 248
mRL and below.

Solid Waste Management - Dumping:

Sl.No.	Item	Propasals	Actual work	Remarks
4a	Separate dumping of topsoil, OB and mineral rejects (Rule 32,33)	Yes, separate dumping of top soil and OB is proposed.	Yes, separate dumping of top soil and OB is carried out, however, generated soil was utilized in plantation carried out during 2018- 19.	

4b	Location of topsoil, OB and mineral reject dumps	Top soil: In between N850 to N900 & E1050 to E1100 OB/Waste: 3 dumps at- D-1 (N950 to N1050 & E800 to E900), D-2 (N1000 to N1100 & E975 to E1025), & D-3 (N850 to N950 & E900 to E1000), for 2018-19, dumping proposed at N880 to N1026 & E700 to E825 Mineral Rejects: Nil	As per the proposals, however, top soil was utilized for plantation work	
4c	Number of dumps within lease area and outside of lease area	All dumps are located within the lease area (3 existing waste dumps and one additional proposed dump)	All dumps are located within the lease area	
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	Old dumps D-1, D-2 & D-3 are within the pit limits, new dump proposed is outside the pit limit	As per the information given in proposed section.	
4e	Number of active and alive dumps.	All dumps are active and alive	All dumps are active and alive	
4f	Number of dead dumps.	Nil	Nil	Dumps are proposed to be stabilized through plantation in the year 2019-20.
4g	Number of dumps established.	Nil	Nil	Dumps are proposed to be stabilized through plantation in the year 2019-20.

4h	Whether Retaining wall or garland drain all along dumps are there.	Yes	No, entire dump hasn't covered with protective measure for which proposals are given in the Final Mine Closure Plan as the lease is going to expire on 31.03.2020	
4i	Length of Retaining wall or garland drain all along dumps	1340 m all along the dumps	Nil	It is proposed to cover entire dumps through protective measures within the FMCP proposal period as the lease is going to expire on 31.03.2020. Proposals given in the FMCP for garland drains and retaining wall are as below: Dump, Length, Width, Height Dump-1 200 m, 30 cm, 2.5 m Dump-3 240 m, 30 cm, 2.5 m Proposed dump 334 m, 30 cm, 2.5 m Total 774 m, 30 cm, 2.5 m
4j	Number of settling ponds	No such proposals	Nil	
4k	Specific comments of inspecting officer on waste dump management			Waste dump management aspect need more attention as the dumps are to be properly secured prior to the expiry of the lease. proposals for the same have been incorporated in the FMCP which can be evaluated at the time of inspection to be carried out for verification of the implementation of FMCP proposals. Dumps are having 10-12 m height and are located within the pit limits (except new dump).

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.	No backfilling is proposed	Nil	
5b	Area under backfilling of mined out area	No backfilling is proposed	Nil	
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	No backfilling is proposed	Nil	
5d	Total area fully reclaimed and rehabilitated	No backfilling is proposed	Nil	
5e	General remarks of inspecting officers on backfilling and reclamation etc.			As the lease is going to expire on 31.03.2020 with underlying deposits and shall be available for future auctions, no backfilling is proposed or permitted in the area. Dumps are proposed to be stabilized through plantation in the year 2019-20.

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).	To be submitted on or before 30th June every year depicting work done under PMCP in the preceding year	Yes, the report was submitted on 03/07/2019	
6b	Area available for rehabilitation (ha) .	Nil	Nil, almost entire area is covered under active mining or allied activities.	

6c	afforestation done (ha).	For 2018-19: Nil	For 2018-19: 0.25 ha additional area with in-filling plantation in the area covered under existing plantation. Total area under plantation is around 1.0 ha
6d	No. of saplings planted during the year	2018-19: No such proposals	2018-19: 620 saplings
6e	Cumulative no .of plants	No specific proposals are available	Upto 2018-19: 3370 saplings/plants out of which around 2900 saplings are surviving
6f	Any other method of rehabilitation	No such proposals upto 2018-19	Nil
6g	Cost incurred on watch and care during the year	2018-19: Cost over environment monitoring only	2018-19: Approximately 30000/-
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (Lx B x D	No backfilling is proposed	Nil
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	No backfilling is proposed	Nil
6j	Compliance on reclamation and rehabilitation by backfilling (iii)Afforestation on on backfilled area	No backfilling is proposed	Nil
6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	No backfilling is proposed	Nil

6l	Compliance on reclamation and rehabilitation by backfilling (v)any other specific means.	No backfilling Nil is proposed	
6m	Compliance of rehabilitation of waste land within lease (i)afforestation	No proposals for 2018-19. Entire available area is proposed to be covered in the year 2019-20 under final closure activities	Around 0.25 ha area was covered near the office in eastern part of the lease area
6n	Compliance of rehabilitation of waste land within lease (ii)Area rehabilitation (ha)	No such proposals for 2018-19	Around 0.25 ha area near the office was covered under green belt with a total area upto 2018-19 as 1.0 ha
6o	Compliance of rehabilitation of waste land within lease (iii)Method of rehabilitation	No such proposals	Green belt plantation
6p	Compliance of environmental monitoring (core zone and buffer zone)	Yes, Environment monitoring is proposed to be carried out as per the guidelines of MOEFCC in this regard.	Environment monitoring was done for air, water, noise and ground vibrations in the core and buffer zone. Reports were seen during site inspection and all the parameters were within the permissible limits. Surface subsidence is also being monitored regularly.

6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.	There were no proposals for PMCP as the area is going to expire on 31.03.2020 and closure operations were proposed to be covered in the year 2019-20. However, plantation over around 0.25 ha area near the office and in-filling plantation over the existing planted area was carried out with around 620 saplings. Environment monitoring was carried out as per the guidelines.
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Mineral Conservation:

Sl.No.	Item	Proposals	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	Grade-wise sorting within the lease area and dispatch	Grade-wise sorting within the lease area and dispatch	
7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	Manual	Manual	
7c	Different grade of mineral sorted out at mines.	Kyanite: (a) 40% Al ₂ O ₃ and above (b) Below 40% Al ₂ O ₃ & Sillimanite	As per the proposals	
7d	Any beneficiation process at mines .	No such proposals	Nil	As reported in the returns, pulverisation unit is located 20 km away from the mine.

7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues	Entire ROM is crushed manually and sorted into different grades of Kyanite and Sillimanite. This stock is sent to the pulverisation unit of the lessee from where it is being sold. As 100% of ROM is being graded and sold, the conservation aspect can be considered as satisfactory at the mine level.
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Environment:

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	Top soil is occurring in form of lateritic soil for which separate removal & separate stacking is proposed.	Top soil was separately removed and stacked, however, generated lateritic soil was utilized for plantation work.	
8b	Concurrent use or storage of topsoil	Storage of top soil is proposed	Generated top soil was stacked separately and utilized for plantation in the year 2018-19.	
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	Yes, separate dumping of top soil and OB is proposed.	Yes, separate dumping of top soil and OB is carried out, however, generated soil was utilized in plantation carried out during 2018-19.	
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	No backfilling is proposed	Nil	

8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	No backfilling Nil is proposed	Nil	Dumps are proposed to be stabilized through plantation in the year 2019-20.
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	Baseline information given in the mining plan. No additional plantation is proposed in the year 2018-19.	Total area under plantation is around 1.0 ha	
8g	Survival rate	~80%	~86%	
8h	Water sprinkling on roads to control airborne dust	Yes	Yes	
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area			Aesthetic beauty in and around area is satisfactory. the area is forest land and is having dense trees all around the lease area. Additional plantation carried out nearby the office in the eastern part of the lease area is around 3370 Nos. out of which around 2900 plants are surviving.

Compliance of Rule 45:

Sl.No.	Item	Proposals	Actual work	Remarks
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9a	Status of submission of Monthly and Annual returns	Annual Returns are required to be submitted online before 1st July of every year for preceding year Monthly returns are required to be submitted online before 10th of every month for preceding month	AR submitted online upto 2018-19 MR submitted online upto Dec'19	
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Mining Engineer: Shri R. Y. Kutumbe Geologist: Shri P. M. Muthal Manager: Shri Rajnikant	Correct information furnished.	
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	Covered under current (O/C) Workings: 3.166 ha Used for waste disposal: 1.734 ha	Entire area was mentioned under O/C working except waste disposal area.	It was advised to correct the area details as per the available format.
9d	Scrutiny of Annual return on afforestation	Nuber of trees: 620 Survival rate: 80%	Complete information furnished	
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 & Graded Ore Stocks furnished for Kyanite and Sillimanite.	Complete information furnished. The stocks are matching with last years closing stocks.	

9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	Sale value: Kyanite- 40% Al2O3 and above-Rs 24357685/- (Domestic Sale: Rs 21201205/-, Export: Rs 3156480/-) Sillimanite- Rs 27879644/- EMP: Kyanite (40% Al2O3 & above)- Rs 4493/- per T Sillimanite- Rs 3887/- per T Production Cost: Rs 2589/- per T	Complete information furnished. EMP has been derived after deduction of cost of pulverisation at own factory and other allowable deductions (furnished in AR) from the average sale price per T for all sales/dispatches for the grade of ore.
9h	Scrutiny of Annual return on fixed assets	Value of Fixed Assets (in Rs): 16609479/-. Apart from this, value of Land, buildings, machineries etc. has been given alongwith applicable depreciation.	Complete information has been furnished.
9k	Scrutiny of Annual return on mining machineries	Details of machineries has been given in Part V section 5.	The details are in commensuration with the extent of mechanization furnished in the mining plan document.

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

Date :**(ASHISH MISHRA)**

Indian Bureau of Mines