

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

**MCDR INSPECTION REPORT**

**Nagpur regional office**

**Mine file No :** MAH/BHD/KYA-10/NGP

**Mine code :** 33MSH05020

- (i) Name of the Inspecting : **K02** ) **Kalmata.M.K.**  
Officer and ID No.
- (ii) Designation : Regional Mining Geologist
- (iii) Accompanying mine : Shri U.R.Kharabe, Mines Manager  
Official with  
Designation
- (iv) Date of Inspection : 17/01/2020
- (v) Prev.inspection date : 18/03/2019

**PART-I : GENERAL INFORMATION**

1. (a) **Mine Name** : **NAVARGAON CHOWA**
- (b) **Registration NO.** : **IBM/5319/2011**
- (c) Category : B Manual
- (d) Type of Working : Opencast
- (e) Postal address :  
State : MAHARASHTRA  
District : BHANDARA  
Village : NAVARGAON  
Taluka : BHANDARA  
Post office : PAHELA  
Pin Code :  
FAX No. :  
E-mail :  
Phone : 522875(M.D.), 526419, 53310
- (f) Police Station :
- (g) First opening date : 15/04/1977
- (h) Weekly day of rest : SUN
2. Address for : 5, ABHYANKAR NAGAR,  
correspondance P. B. NO. 351,  
DISST. NAGPUR-440010 (M. S.)
3. (a) Lease Number : MSH0146  
(b) Lease area : 40.61  
(c) Period of lease : 40  
(d) Date of Expiry : 28/06/2027
4. Mineral worked : KYANITE Main

## 5. Name and Address of the

Lessee : M/s Maharashtra State Mining Corporation  
5, Abhyankar Nagar Nagpur -  
10 NAGPUR MAHARASHTRA  
Phone:  
FAX :

## Mining Engineer

Name : M.B. TUPEKAR, Full Time  
Qualification : DIPLOMA IN MINING & MINE SURVEYING + 2ND  
Appointment/ : 20/01/2005  
Termination date

6. Date of approval of Mining	:	Existing rule 11 MCDR1988	18/11/2005
Plan/Scheme of Mining	:	Renewal under rule 24 MCR1960	18/01/2013
	:	MP review under 17(1) MCR 2016	13/10/2017

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

## Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	No drilling proposal, was made in the present plan period, upto 2020-21.	No exploration has been carried out, in the present plan period up to 2018-19.	Total 21 boreholes, were drilled in the lease area. Out of 21, 14 boreholes were drilled by State DMG, b/w 1968-69 and 1977-78 and 7 boreholes were drilled by, M/s. MSMC in the year 2003.
1b	Exploration over lease area for geological axis 1 or 2	Exploration is not proposed up to 2020-21.	No exploration has been carried out in the present plan period up to 2018-19.	As per the approved document, 2.85 Ha is explored under G-1 level.
1c	Exploration Agencies and Expenditure in lakh rupees during the year	Not proposed.	Nil	No exploration has been carried out in the present plan period up to 2018-19.
1d	Balance area to be explored to bring Geological axis in 1 or 2	0.35 Ha in the year 2021-22.	No exploration has been carried out in the present plan period up to 2018-19.	Two exploratory boreholes are proposed, in the year 2021-22 and drilling yet to be done.
1e	Balance reserve as on 01/04/20	Reserves as on 1.04.2017. Reserves - 66562 tonnes, Remaining Resources- 34261 tonnes (as per the approved document)	Reserves/resources position as on 01.04.2020. Reserves- 61584 tonnes Remaining Resources- 34261 tonnes. Total- 95845 tonnes.	Two years production (2017-18 & 2018-19) is depleted from the reserves, given in the approved document.

1f	General remarks of inspecting officers on geology, exploration etc	Part of the lease area is occupied by agricultural field, village and reservior. Total lease area is 40.61 ha, out of which 3.2 ha is mineralised zone and remaining is non mineralised zone. Further, 2.85 ha is explored under G-1, level by drilling 21 exploratory boreholes, and additional two boreholes were proposed in the year 2021-22 to explore entire mineralised area under G-1 level.
----	--	--

---

Development :

Sl.No.	Item	Propasals	Actual work	Remarks
2a	Location of development w.r.t.lease area	Development is proposed in the existing pit only. The proposed co-ordinates are N-2326620 to N-2326680 & E-360340 to E-360430.	The working has been carried out as per the proposal only. The development is carried out ,b/w the co-ordinates N-2326640 to N-2326690 and E-360370 to E-360420.	The working has been carried out within the existing pit only.
2b	Separate benches in topsoil, overburden and minerals (Rule 15)	No topsoil generation was proposed in the year 2018-19. and separate benches were proposed in ore and OB.	Separate benches were made in ore and OB.	Two benches are in OB, and two benches in Ore. Height of the bench is maintained at 1.5 to 2.00 mtr.
2c	Stripping ratio or ore to OB ratio	1:0.06	1:1.38	The OB is handled more than the proposal, so stripping ratio is increased. Since, the ore body is pinching, more OB is removed to win the Ore.

2d	Quantity of topsoil generation in m3	Not proposed.	Nil	
2e	Quantity of overburden generation in m3	83 m3, in the year 2018-19.	1954 m3	The OB is handled more than the proposal, so stripping ratio is increased. Since, the ore body is pinching, more OB is removed to win the Ore. However violation is issued under Rule 11(1) of MCDR-17, for handling OB more than the proposal.
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc		Entire Mineralized area should be explored at closer interval to know the behaviour of the ore body. Once ore body is marked, proper development can be planned. In the year 2018-19 OB is handled more than the proposal due to pinching of ore body.	

---

#### Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
3a	Number of pit proposed for production	One	One	
3b	Quantity of ROM mineral production proposed	4995 tonnes of ROM is proposed in the year 2018-19.	2540 tonnes of ROM is produced in the year 2018-19.	The less production is due to market fluctuation.
3c	Recovery of sailable/usable mineral from ROM production	Recovery is shown 80% for saleable ore and remaining 20% is mineral reject.	Recovery achieved is 95%.	Total ROM production in the year 2018-19 is 2540 tonnes. Out of 2540 tonnes of ROM production, 2404 tonnes is shown under gradewise production.

3d	Quantity of mineral reject generation	999 tonnes	136 tonnes	ROM production is less than the proposal and recover is more. So generation of mineral reject is less.
3e	Grade of mineral rejects generation and threshold value declared.	Al2O3 %, less than 30.	Al2O3 %, less than 30.	
3f	Quantity of sub grade mineral generation.	Not proposed.	Nil	
3g	Grade of sub grade mineral generation	Not applicable	Not applicable	
3h	Manual / Mechanised method adopted for segregating from ROM	Manual	Manual	
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	Drilling is proposed using 32 mm dia Jackhammer drills. Blasting through Ammonium nitrate in small dia cartridged form.	Drilling and blasting is carried out as per the proposal.	
3k	Provision of mining machineries in mineral benches	Mining is proposed by manual method.	Working has been carried out manually.	
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Height of overburden bench shall be kept at 1.5 m and height of mineral bench shall be kept at 3 m.	For manual mining in the mine, bench height as proposed for overburden and ore are found suitable.	Height of the bench, maintained at 1.5 to 2.00mtr.

3m	Total area covered under excavation/pits	In the year 2018-19, 0.35Ha is proposed for excavation.	Working has been carried out in 2.8 Ha in the year 2018-19.	Total area covered under excavation is 0.44Ha.
3n	Ore to OB ratio for the pit/mine during the year.	1:0.06 in the year, 2018-19.	1:1.38 in the year, 2018-19.	The OB is handled more than the proposal, so stripping ratio is increased. Since, the ore body is pinching, more OB is removed to win the Ore.
3o	Total area put in use under different heads at the end of year	Area proposed for different activities in the present plan period up to 2021-22 is as follows. For mining-0.78Ha, For waste disposal-0.85Ha, For Mineral storage-0.19Ha and for Infrasture-0.08Ha.	Area utilized under different heads up to 2018-19 is as follows. Area under mining-0.44Ha, Area for waste dump-0.85Ha, for mineral stock-0.18Ha, Infrasture and plantation-0.28Ha.	
3p	Production of ROM mineral during the last five year period as applicable	2018-19- 4995 tonnes. 2017-18-4992 tonnes. 2016-17-8164.8 tonnes. 2015-16- 9979.2 tonnes. 2014-15- 8769.6 tonnes.	2018-19- 2540 tonnes. 2017-18- 2574.562 - tonne. 2016-17- 1140.536tonnes. 2015-16- 281.506tonnes. 2014-15-174.39 tonnes.	
3q	General remarks of inspecting officers on method of mining etc.		The production is less than the proposal due to lack of demand. The mine is working by manual method. The bench parameters are maintained suitable to manual method of mining.	

Sl.No.	Item	Propasals	Actual work	Remarks
4a	Separate dumping of topsoil, OB and mineral rejects (Rule 32,33)	Yes, Separate dumping is proposed for OB and Mineral reject.	Separate dumping was made for OB and mineral reject.	No topsoil is proposed & removed in the year 2018-19.
4b	Location of topsoil, OB and mineral reject dumps	Waste Dump: Proposed at N2326500 to N2326600 & E360300 to E360400 (One dump proposed for which area already covered in the old dumps D-1 and D-4), apart from several small old dumps Mineral rejects Dump: Proposed at N2326750 to N2326850 & E360400 to E360500.	Dumping was made as per the proposal only. However, dumping was extended upto the lease boundary with out leaveing 7.5mtr safety zone.	Violation is pointed out for the same under Rule 11(1) of MCDR-2017.
4c	Number of dumps within lease area and outside of lease area	Two dumps were proposed in the year 2018-19. One is for OB and other for mineral reject.	Dumping was made as per the proposal only.	Total 16 dumps are exist within the lease area. Out of 16 two are in Nawargaon block and remaining in Chowa block.
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	UPL not marked on plans and sections.	Not applicable	It appears some old dumps are exist within UPL. Lessee is planing to shift those dumps for extension of pit.
4e	Number of active and alive dumps.	Two dumps were proposed in the year 2018-19. One is for OB and other for mineral reject.	As per the proposal two dumps are active.	Two dumps, Dump No D-2 and D-7 are in re-handling stage.
4f	Number of dead dumps.	12 dumps are dead.	Out of 16 dumps, two dumps are active and two are in re-handling stage.	



4g	Number of dumps established.	2 dumps located in Nawargaon block.	2 dumps are established.	Rest dumps are in Chowa block that may require shifting for excavation in deeper horizons and development of pit.
4h	Whether Retaining wall or garland drain all along dumps are there.	Retaining wall or garland drains, are not proposed, in the year 2018-19.	Nil.	Lessee is maintaining the garland drains, made in the southern part of D-1 and D-4 (old) dumps.
4i	Length of Retaining wall or garland drain all along dumps	Not proposed.	Nil	Length of garland drain ,(old) made at the toe of D-1 and D-4 dump, is approximately 100 mtr.
4j	Number of settling ponds	Not proposed.	Nil	
4k	Specific comments of inspecting officer on waste dump management			Earlier waste dumping was made, near the working pit. Now for systematic working, lessee has to re-handle the old dumps, which are near to the working pit. In the present plan period, lessee has extended the dump up to the lease boundary, without leaving 7.5mtr safety zone. Violation is pointed out for the same under Rule 11(1) of MCDR-2017.

---

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.	Not proposed.	Nil.	No backfilling is proposed in the present plan period.

---

5b	Area under backfilling of mined out area	Not proposed.	Nil.
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	Not proposed.	Nil.
5d	Total area fully reclaimed and rehabilitated	Not proposed.	Nil.
5e	General remarks of inspecting officers on backfilling and reclamation etc.		Present working is not reached upto the proved depth, and no proposals were made for reclamation and rehabilitation, in the present plan period.

---

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).	Before 1st july of every year.	Lessee has not submitted yearly report on PMCP, for the year 2018-19.	Violation is pointed out for the same under Rule 26(2) of MCDR-2017.
6b	Area available for rehabilitation (ha) .	Nil	Nil	
6c	afforestation done (ha).	0.0276Ha	0.085Ha	Plantation is made more than the proposal.
6d	No. of saplings planted during the year	25	100	Plantation is made on the old dumps & in the 7.5mtr safety zone.
6e	Cumulative no .of plants	50, in the present plan period upto 2018-19. (25 in the year 2017-18 and 25 in the year 2018-19)	275	Yearwise plantation details are as follows. 2016-17-50, 2017-18-75, 2018-19-100 & 50 in the year 2019-20(upto 01.01.2020)

6f	Any other method of rehabilitation	Nil.	Nil.
6g	Cost incurred on watch and care during the year	Rs-25000	Actual expenditure made was Rs-50000.
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling ( L x B x D	Nil.	Nil.
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	Nil.	Nil.
6j	Compliance on reclamation and rehabilitation by backfilling (iii) Afforestation on on backfilled area	Nil.	Nil.
6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	Nil.	Nil.
6l	Compliance on reclamation and rehabilitation by backfilling (v) any other specific means.	Nil.	Nil.
6m	Compliance of rehabilitation of waste land within lease (i) afforestation	Plantation was proposed in non-mining area.	Plantation was made in 7.5mtr safety zone.
6n	Compliance of rehabilitation of waste land within lease (ii) Area rehabilitation (ha)	0.0276Ha	0.085Ha

6o	Compliance of rehabilitation of waste land within lease (iii)Method of rehabilitation	By afforestation.	Plantation is made in 7.5mtr safety zone.	
6p	Compliance of environmental monitoring (core zone and buffer zone)	yes,	Environment monitoring was carried out in the year 2017-18.	The mine is working manually and impact of mining on environment is negligible.
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.		Lessee has planted 275 saplings in the present plan period up to 01,01,2020, Survival rate is 40 to 50% only. Lessee has advised to do more plantation in the waste land and on the old inactive dumps.	

---

#### Mineral Conservation:

Sl.No.	Item	Propasals	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	Grade-wise sorting within lease area.	As per the proposal .	Lessee is doing grade-wise sorting at mines manually.
7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	Manual.	Manual.	
7c	Different grade of mineral sorted out at mines.	Grade-wise sorting into 6 grades.	Total 6 grades are there: Above 40% Al2O3: Kyanite-Grade-III-A, III-B, Low Grade, Unsorted chilly (-50mm +20mm), Below 40% Al2O3: Kyanite Rejects and Pyrophyllite and as per Annual returns, grades are: a) 40% Al2O3 and above b) Below 40% Al2O3 and Pyrophyllite.	Kyanite, Grade IIIA is scarcely available. Rest grades are being mined/sorted and dispatched. Kyanite Grade-III B: +45-50% Al2O3 Kyanite Medium Grade: Lumps +50 mm, free from Tourmaline and Mica, +48% Al2O3 Content Kyanite Low Grade: Lumps +50 mm, 4048% Al2O3.

7d	Any beneficiation process at mines	Nil.	Nil.
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues		As per the Annual Returns, it is observed that various grades are available in the mine with change in the percentage of Al <sub>2</sub> O <sub>3</sub> . Kyanite rejects, Low grade and chilly (-50mm + 20mm) are also saleable and can be sold after blending/without blending as per user demand. Apart from Kyanite, Pyrophyllite is also associated which is also saleable. Thus mineral conservation part is being followed and beneficiation is not required.

---

Environment:

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	Not proposed.	Nil.	
8b	Concurrent use or storage of topsoil	Not proposed.	Nil	
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	Yes. No top soil is present in the proposed working area. OB/Waste and Mineral Rejects are proposed to be kept separately.	As per the proposal waste and mineral rejects are put separately.	

8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	Not proposed.	Nil.	
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	Not proposed.	Nil	
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	Baseline information was furnished in the mining plan. Additional plantation proposals are being given in the Mining Plan documents.	Baseline information has not changed a lot as lessee is having only 3.02 ha area under possession. rest of the area is under active cultivation, habitation etc. Additionally 275 plantation is made in the lease area b/w 2016-17 to 2019-20.	
8g	Survival rate	Not mentioned	40% in the year 2018-19.	The survival rate is less due to scarcity of water. Lessee was suggested to take proper measures to ensure sustainability and survival of plantation in the area by adoption of fencing etc.
8h	Water sprinkling on roads to control airborne dust		Yes, being carried out through small hired tankers.	

8i General remarks of inspecting officer on aesthetic beauty in and around mines area

Lessee is having only 3.02 ha area under possession out of total 40.61 ha area. Method of working is Manual. Hence, there is not much disturbance to the ecological system and aesthetic beauty of the area due to mining activities. Plantation activity needs more care.

---

Compliance of Rule 45:

Sl.No.	Item	Proposals	Actual work	Remarks
9a	Status of submission of Monthly and Annual returns	A monthly return shall be submitted before the tenth day of every month in respect of the preceding month and an annual return shall be submitted before the 1st day of July each year for the preceding financial year.	Lessee is regularly submitting monthly and annual returns. Lessee has submitted annual returns for the year 2018-19 on 27.11.2019.	Submitted monthly returns upto December-2019 and submitted annual returns for the year 2018-19. The annual returns was submitted late and lessee has directed to submit the monthly and annual returns within time as per Rule 45(5)(b)(c) of MCDR-2017.
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Name of the geologist is shown as Mr. P. S. Sonpipare, Manager-Mr.U. R. Kharabe	The details of Geologist and manager are found correct. Lessee has not appointed Mining Engineer,	Violation is pointed out under Rule 55(1)(C) (ii) of MCDR 2017.
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	Area covered under Mining- 0.439Ha, waste dump-0.846Ha, Infrastructure -0.285Ha and others- 0.180ha.	Area utilized under different heads up to 2018-19 is as follows. Area under mining- 0.44Ha, Area for waste dump-0.85Ha, for mineral stock-0.18Ha, Infrastructure and plantation-0.28Ha.	The information given in the annual returns found correct.

9d	Scrutiny of Annual return on afforestation	Number of trees planted during the year: 100 (Within Lease Area) Survival rate in percentage: 40	Information provided in the annual returns is found correct.	
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	Total 135 tonnes of Mineral reject generation, was shown in the annual returns, submitted for the year, 2018-19. 130 tonnes for kyanite and five tonnes for pyrophyllite. Grade 30% Al2O3.	The details given in the annual returns are found correct.	Since the recovery percentage was more than the proposal, generation of mineral reject is less.
9f	Scrutiny of Annual return on ROM stock and/or graded ore	ROM- Production of kyanite is shown as 1978 tonnes. Opening and closing stock is shown as Nil. Graded ore for Al2O3%, above 40, opening stock-897.976 T, Production-1640.266T, Dispatch-2324.565T and Closing stock-213.677T. For Al2O3% below 40, opening stock-27.25T, Production-207.570T, Dispatch-27.890T and Closing stock-206.93T.	ROM production is shown as 1978 T and opening and closing stock for ROM is shown as Nil. However under gradewise production only 1848 tonnes is shown, remaining 130 tonnes is shown as mineral reject.	



9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	For Shree Sai Metals Minerals Tra, kyanite, having grade Al2O3% above 40, is sold at following rates, Quantity in tonnes Rate in Rs. 25.015T	Kyanite having Al2O3% above 40, is sold at three different rates for the same company. For Shree Sai Metals Minerals Tra, 25 tonne is sold @ Rs-2000/tonne, 1201.5 tonnes@ Rs-1900/tonne and 1098.4 tonnes @ Rate of Rs-1450/tonnee.	Violation is pointed out for the same under Rule 45(7) of MCDR-2017 and lessee has requested to give detailed justification along with copies of sale invoices.
		Rs- 50030.00, 1201.510 T		
		Rs- 2282869.00 1098.040 T		
		Rs- 1592158.00 Exmine price is shown as Rs-1688.50 for above 40%Al2O3 ore , and Rs-1200.00 for below 40% Al2O3 ore. and cost of production is shown as Rs-1334.70/tonnee		
9h	Scrutiny of Annual return on fixed assets	Value of fixed asset is shown Rs-349 for Plant and Machinery including transport equipment.	Value of fixed asset is shown as zero. Whereas net closing balance is shown as Rs-349. Value of Plant and machinery is mentioned as Rs-349 only. Further the land value is shown as zero.	Violation is pointed out for the same under Rule 45(7) of MCDR-2017.
9k	Scrutiny of Annual return on mining machineries	Nil	The mine is working manually and no machineries were used for excavation and loading.	

**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(1)	15/05/2020			
MCDR17	Rule 26(2)	15/05/2020			
MCDR17	Rule 31(1)	15/05/2020			
	Rule 45(7)	15/05/2020			

**Date :**

**(Kalmata.M.K.)**

Indian Bureau of Mines