

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

MCDR INSPECTION REPORT

Nagpur regional office

Mine file No : MAH/YTL/LST- 43 /NGP

Mine code : 38MSH26013

- (i) Name of the Inspecting : **M017**) **ASHISH MISHRA**
Officer and ID No.
- (ii) Designation : Sr. Asst. Contrl. Mines
- (iii) Accompanying mine : Shri Anil Ganapurapurwar, Mining Engineer
Official with
Designation
- (iv) Date of Inspection : 18/02/2019
- (v) Prev.inspection date : 04/10/2018

PART-I : GENERAL INFORMATION

1. (a) **Mine Name** : **GOVARI**
- (b) **Registration NO.** : **IBM/256/2011**
- (c) **Category** : **A Mechanised**
- (d) **Type of Working** : **Opencast**
- (e) **Postal address**
- State : **MAHARASHTRA**
- District : **YEOTMAL**
- Village : **GOVARI**
- Taluka : **WANI**
- Post office : **SINDOLA MINES 445 307**
- Pin Code : **445307**
- FAX No. : **07239 - 236272**
- E-mail : **sindola_cd@accement.com**
- Phone : **07239 - 236272**
- (f) **Police Station** :
- (g) **First opening date** : **28/01/1988**
- (h) **Weekly day of rest** : **WED**
2. **Address for** : **P.O. CEMENT NAGAR**
correspondance **DISTT. - CHANDRAPUR**
442 502
3. (a) **Lease Number** : **MSH0017**
- (b) **Lease area** : **558.9**
- (c) **Period of lease** : **54**
- (d) **Date of Expiry** : **31/03/2030**
4. **Mineral worked** : **LIMESTONE** **Main**

5. Name and Address of the

Lessee : M/S CHANDA CEMENT WORKS (ACC)
 CEMENT NAGAR, DISTT.
 CHANDRAPUR (MS) - 442 502
 CHANDRAPUR MAHARASHTRA
 Phone:07172 - 75026
 FAX :07172 - 75165

Owner : Shri M.L.Narula, Director.
 M/s Associated Cement Co
 GREATER BOMBAY MAHARASHTRA
 Phone:
 FAX :

Agent : SHRI CHANDER SHEKHAR
 YEOTMAL MAHARASHTRA
 Phone:
 FAX :

Mining Engineer

Name : SHRI M.K. MEHTA, Full Time
 Qualification : B.E. MINING
 Appointment/ : 16/08/2002
 Termination date

Mining Engineer

Name : SHRI SANDEEP JAIN, Full Time
 Qualification : B.E. MINING
 Appointment/ : 22/11/2003
 Termination date

Geologist

Name : SHRI J. SUSEENDHIRAN, Full Time
 Qualification : MSc Geology
 Appointment/ : 15/10/2002
 Termination date

6. Date of approval of Mining	:	Mining Scheme rule 12 MCDR1988	03/10/2001
Plan/Scheme of Mining		Modif.approved Mining Scheme	02/12/2003
		Modif.approved Mining Scheme	21/10/2005
		Modif.of approved Mining Plan	21/10/2005
		FMCP under 23C(1)	29/10/2005
		Mining Scheme rule 12 MCDR1988	15/12/2005
		Modif.approved Mining Scheme	06/03/2009
		Mining Scheme rule 12 MCDR1988	11/11/2011
		MP modif under MCR 1960	19/08/2016

PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	No such proposals as the Mineralized Part of the lease area has already been explored under G-1 axis on 100 m X 100 m grid interval.	No exploration carried out.	Exploration has already been carried out in the area with 322 boreholes and total 10644.2 m meterage in various phases from 1971 to 2008. Complete mineralized area (approximately 167 ha out of total lease area of 558.90 ha) has already been explored in detail under G-axis i.e., upto G-1 level.
1b	Exploration over lease area for geological axis 1 or 2	G-1	Complete area has been proved under G-1 and mineralized part has been delineated.	
1c	Exploration Agencies and Expenditure in lakh rupees during the year	No such proposals.	Nil.	Exploration in various phases from 1971 to 2008 was carried out by Raw Materials and Mine Planning division of m/s ACC Limited and total expenditure over the exploration activities within the lease area till date is approximately Rs 2 Crores.
1d	Balance area to be explored to bring Geological axis in 1 or 2	Nil	Nil	
1e	Balance reserve as on 01/04/20		Balance Reserves/Resources as on 01.04.2018 are: 111- 28147201 T (28.14 MT approximately) 211-14960000 T (14.96 MT) Total- Approximately 43.10 MT	

1f	General remarks of inspecting officers on geology, exploration etc	Govari limestone band is in U shape. Strike of the bands change from NW-SE in the northern part to N-S in the middle to E-W in the southern part of the lease. The beds are dipping 80 to 120 with occasional values upto 150 towards west. 4 limestone bands are present in the area. From top to bottom these bands are named as Band I to Band IV. From top these limestone bands are separated by Dolomitic limestone, Calcareous shale and Magnesian limestone respectively.	Average width for the Limestone Bands occurring in the area is Limestone I- 12m; Limestone II- 8m; Limestone III- 12m; Limestone IV- 7m. Reserves are estimated upto the bottom of Limestone Band -IV i.e., upto 135 mRL in the lease area. Mainly, Limestone Band-III is being exploited at present. Average grade in the mine is 44.4 % Cao, 12.5% SiO ₂ and 2% MgO. Surface rights over 287.790 ha area are held by the lessee and some resources under E-2 axis may get converted to E-1 upon land acquisition.
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Development :

Sl.No.	Item	Propasals	Actual work	Remarks
2a	Location of development w.r.t.lease area	Within the zone of Sectional Line ML-13 to ML-18. In the Calcareous Shale from ML-13 to ML-18 at levels 196-208 mRL & 192-196 mRL and in High Magnesia Limestone from ML-14 to ML-15 at levels 180-214 mRL.	The ML has been divided into 26 sectional lines drawn from East to West direction at 100 m interval (from North to South into ML-1 to ML-26). Development has been made as per the proposals.	

2b	Separate benches in topsoil, overburden and minerals (Rule 15)	Yes, separate excavation of top soil, overburden, minerals and interburden is proposed.	Bench height is kept at 6-10 m in ore and overburden. Top soil is mainly scrapped with Dozers and afterwards, depending upon the thickness of orezone/overburden, bench height is kept at 6-10 m with suitable bench width. There are total 3 benched in overburden/interburden/waste and 4 benches in limestone after scrapping the top soil.
2c	Stripping ratio or ore to OB ratio	1:0.97	1:0.86 (approximately) ROM- 2688727 T Total OB/Waste- 2334840 T
2d	Quantity of topsoil generation in m3	2017-18 : 16096 cuM	2017-18 : 15200 cuM
2e	Quantity of overburden generation in m3	2017-18: 1066118 cuM	2017-18: 2334840 T (approx. 1167420 cuM)

2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc	Development in the lease area has been carried out as per the proposals. All the four bands of Limestone are proposed for exploitation in the plan period 2016-17 to 2020-21 for optimal quality utilization. Limestone Band-III is 12 m thick and is having 48.4% CaO, 1.4% MgO & 7.9% SiO ₂ . Quality-wise it is the most superior band and is exploited mainly to maintain the feed quality upon blending the excavated lower grade ore from Govari and inferior grade ore from Sindola Mine to the cement plant.
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Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
3a	Number of pit proposed for production	One large pit	As per the proposals, the lease is having one pit.	
3b	Quantity of ROM mineral production proposed	2017-18: 1114478 cuM (approx. 2.78 MT)	2017-18: 2.688 MT	
3c	Recovery of sailable/usable mineral from ROM production	100%	100%	Approximately 5% of fines are being generated which are blended with ROM and dispatched.
3d	Quantity of mineral reject generation	Nil	Nil	

3e	Grade of mineral rejects generation and threshold value declared.	Not Applicable.	Not applicable.	Threshold value is 34% CaO and 4% MgO. Average grade of the mineral in the lease area is 44.4% CaO, 12.5% SiO ₂ and 2% MgO.
3f	Quantity of sub grade mineral generation.	Nil	Nil	
3g	Grade of sub grade mineral generation	Not Applicable.	Not Applicable.	
3h	Manual / Mechanised method adopted for segregating from ROM	Mechanized crushing	Mechanized crushing.	Through "Mechanical Size Reduction", ROM limestone is crushed to a size of -75mm . All the fines generated in the crushing process is used along with the crushed stone. There is no system and requirement for the segregation of fines. Approximate quantity of fines generated and consumed in the process is 5% of the crushed quantity. The entire material is transported to the cement plant of the company.
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	There are 2 drill machines ROC-L8 with 115 mm diameter having 380 HP used for drilling and hole depth is around 8.5 m for 8 m bench height. Spacing X Burden is 5 m X 3 m. Explosive used for blasting is ANFO, Kelvex-600, Kelvex-extra and Powder gel boost (Class-2). Powder factor in Limestone is around 5.98. Secondary drilling is not being done and instead Rock breaker is being used.
3k	Provision of mining machineries in mineral benches	Yes	Mine is Category A Fully Mechanized mine and accordingly HEMM are being used for Drilling and Blasting, Loading, Transportation and Crushing.	
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Yes (Bench height 8-10 m). If required as per the thickness of the	Bench height is as per the proposals. Also bench height has been selected as per the mechanization and is suitable for method of working.	orebody/waste, bench height is being kept at 4-6 m also.
3m	Total area covered under excavation/pits	116.45 ha pit area is proposed at the end of plan period 2016-17 to 2020-21.	as on 31.03.2018, area covered under pits is 115.40 ha.	
3n	Ore to OB ratio for the pit/mine during the year.	1:0.97	1:0.86	

3o	Total area put in use under different heads at the end of year		As on 31.03.2018, Area under: Pits/Excavation- 115.40 ha Waste Disposal- 41.00 ha Infrastructure- 3.76 ha Top Soil- 1.73 ha Garland drain- 3.34 ha Green Belt/Dump Plantation- 11.0 ha	
3p	Production of ROM mineral during the last five year period as applicable	2016-17- 2777780 T 2015-16- 2514300 T 2014-15- 2514300 T 2013-14- 2514300 T 2012-13- 2514300 T	2016-17- 2054077 T 2015-16- 2438071 T 2014-15- 2239203 T 2013-14- 1890164 T 2012-13- 2131359 T	
3q	General remarks of inspecting officers on method of mining etc.			Mine is captive to the Chanda Cement Plant held by M/s ACC Ltd. which has capacity of 2.31 MT of Clinker and corresponding Limestone requirement is 3.41 MT which is being fed by Govari and Sindola Mines held by M/s ACC Ltd. hence to meet the plant requirement and to meet the capital expenditure, method of mining selected which is Category A mechanised is suitable for the mine.

Solid Waste Management - Dumping:

Sl.No.	Item	Propasals	Actual work	Remarks
4a	Separate dumping of topsoil, OB and mineral rejects (Rule 32,33)	Yes	Yes	

4b	Location of topsoil, OB and mineral reject dumps	Top Soil stack: ML-21 to ML-23 alongwith concurrent utilization. OB and Waste Dumps: 4 dumps at ML-8 to ML-17, ML-23 to ML-24 & ML-21 to ML-26, ML-21 to ML-25 Mineral rejects dumps: Nil	As per the proposals, dumping/stacking is being carried out.	
4c	Number of dumps within lease area and outside of lease area	All dumps within lease area. 1 top soil and 4 Waste Dumps.	All dumps are located within the lease area.	
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	All dumps are located outside pit limits	As per the proposals.	
4e	Number of active and alive dumps.	1 top Soil and 4 Waste Dumps total 5, all are active and alive dumps except 1 Waste dump at ML-21 to ML-25.	1 Waste dump has been reclaimed and rehabilitated by plantation (covering approxiately 17.0 ha). Rest all dumps are active.	
4f	Number of dead dumps.	One Waste dump located at ML-21 to ML-25 is dead.	As per the proposals.	
4g	Number of dumps established.	One Waste dump located at ML-21 to ML-25 is dead and stabilized through plantation.	As per the proposals.	
4h	Whether Retaining wall or garland drain all along dumps are there.	Proposals are made for construction and maintenance of Garland drains along the toe of the dumps.	No retaining wall was found along the toe of the dumps. Only Garland drain is available.	Violation of Rule 37(2) of MCDR'2017 was observed.

4i	Length of Retaining wall or garland drain all along dumps	Garland drain covering 3.34 ha of area.	As per the proposals.	The drain is regularly maintained mainly in pre-monsoon and post monsoon periods.
4j	Number of settling ponds	Nil	Nil	
4k	Specific comments of inspecting officer on waste dump management			Waste dump management aspect has been covered as per the proposals. The dumps are outside the pit limits and toe of the dumps are constructed with garland drains to avoid land degradation due to wash off. One dump has been stabilized through plantation. As no retaining wall was found to be present, violation is issued for the compliance and to arrest any siltation during the wash-off, if any.

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.	Upon full extraction, backfilling is proposed to be carried out to restore the land to the extent possible.	As per the proposals.	
5b	Area under backfilling of mined out area	2016-17: 2.03 ha between ML-16 to ML-17 2017-18: 2.1 ha between ML-15 to ML-17	2016-17: Nil 2017-18: 1.5 ha between ML-16 to ML-17 (in the western part of the lease area)	Backfilling was underway during the inspection for restoration of the mined out and exploited land as per the proposals for the plan period 2016-17 to 2020-21.

5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	Both concurrent use as well as storage of top soil is proposed. Backfilled area has been covered through the top soil.	As per the proposals.	
5d	Total area fully reclaimed and rehabilitated	1.5 ha backfilled area has been reclaimed and rehabilitated.	As per the proposals.	
5e	General remarks of inspecting officers on backfilling and reclamation etc.			Backfilling can be done only after full extraction of minerals and production has been lower than the proposals, therefore, the actual backfilling is lagging behind. Overall efforts are satisfactory in restoring the area.

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

6b	Area available for rehabilitation (ha) .	11.90 ha area is available for the 2016-17 to 2020-21 plan period for rehabilitation through backfilling and plantation. Further, non-mineralized waste land is available for green belt development. One waste dump has been reclaimed and rehabilitated and other waste dumps are active.	Out of the available area, 1.5 ha area has been reclaimed and rehabilitated through backfilling and plantation. Including this area, total 41.00 ha area has been reclaimed and rehabilitated that comprises of 17.0 ha Waste dump area and rest Green belt development.
6c	afforestation done (ha).	1.5 ha during 2017-18	1.5 ha
6d	No. of saplings planted during the year	2310 saplings for 2017-18	20000 Saplings during 2017-18 within lease area and 1000 saplings outside the lease area.
6e	Cumulative no .of plants	Not available	Approximately 125000 saplings till 2017-18.
6f	Any other method of rehabilitation	Backfilling, Green-belt plantation and dump reclamation was proposed to be carried out in the area.	As per the proposals, activities have been carried out to achieve reclamation and rehabilitation proposals.
6g	Cost incurred on watch and care during the year	Approximately Rs 10 Lakhs	As per the proposals, expenditure incurred in carrying out plantation work, environment monitoring and garland drain maintenance.
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (Lx B x D	11.90 ha for the plan period 2016-17 to 2020-21	In the year 2017-18, 1.5 ha area was reclaimed and rehabilitated by backfilling.

6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	2017-18: 1.5 ha of mined out area was proposed to be backfilled by waste	As per the proposals.	The proposals for backfilling of 1.5 ha area for 2016-17 could not be met as the mineral was not completely exhausted. Hence, the backfilling is lagging as per the proposals.
6j	Compliance on reclamation and rehabilitation by backfilling (iii) Afforestation on backfilled area	2017-18: 1.5 ha area	2017-18: 1.50 ha area was backfilled and afforestation over backfilled area has been carried out.	
6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	No such proposals	Nil	
6l	Compliance on reclamation and rehabilitation by backfilling (v) any other specific means.	No such proposals	Nil	
6m	Compliance of rehabilitation of waste land within lease (i) afforestation	Green belt development over the waste land available within the lease area is proposed	Green belt development over approximately 22.0 ha area has been completed by the year 2017-18.	
6n	Compliance of rehabilitation of waste land within lease (ii) Area rehabilitation (ha)	No specific proposals	22.0 ha of waste land has been rehabilitated through plantation.	
6o	Compliance of rehabilitation of waste land within lease (iii) Method of rehabilitation	Plantation and green belt development within the lease area.	As per the proposals.	

6p	Compliance of environmental monitoring (core zone and buffer zone)	Yes, monitoring of Air, Water, Noise and Ground Vibrations are being done regularly within the core zone and buffer zone at	Water-4 locations, Air-5 loactions, Ground Vibration-2 locations and Noise-7 locations. Apart from this, ground vibration and noise are being analysed during each blasting.	Real-time monitoring is being done and data is being sent to MoEFCC.
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.			PMCP operations are well managed, though the operations are a bit lagging from the proposals. Waste dump management and reclamation and rehabilitation of mined out area is being practised at satisfactory level. Compliance on environment monitoring in core and buffer zone as well as compliance on submission of annual report is being done.

Mineral Conservation:

Sl.No.	Item	Propasals	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	ROM mineral is crushed and dispatched to the cement plant after sizing.	As per the proposals.	
7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	Mechanical crushing	Mechanical crushing	
7c	Different grade of mineral sorted out at mines.	Cement grade Limestone	Cement grade Limestone	
7d	Any beneficiation process at mines .	No process for beneficiation	No process for beneficiation except mechanical size reduction.	

7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues	Mineral conservation aspect is fully covered as complete ROM excavated is being fed to the Cement Plant. 5% of fines are generated while crushing but it is blended with the ROM and utilized. Limestone bands II, III and IV are being simultaneously worked for on-site blending and higher grade mineral obtained from the mine is being utilized to consume inferior grade obtained from Sindola Mine.
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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	Yes	Yes, concuurrent usage of top soil is proposed for carrying out plantation work. remaining excavated top soil, if any, is proposed for stacking at top soil stack located within the lease area.	
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	Yes	Yes (no mineral rejects are present).	

8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	Yes, usage of waste/overburden for backfilling of mined out and exploited area in the western part is proposed.	As per the proposals, 1.50 ha area has been restored through backfilling.	
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	Phased restoration in form of backfilling and plantation of 1.50 ha of mined out pit was proposed for 2017-18.	As per the proposals, backfilling and plantation work has been carried out.	Apart from this, approximately 17.0 ha of waste dump has already been reclaimed and rehabilitated through plantation.
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	Yes. The information has been furnished in the mining plan document.	As per the proposals, the information on existence of plantation is furnished in the mining plan document. Further, additional plantation has been done in the tune of approximately 125000 saplings in the area till 2017-18.	
8g	Survival rate		80%	
8h	Water sprinkling on roads to control airborne dust	Yes	Yes	One TATA truck with tanker having capacity of 10000 Ltr is deployed in the mine for water sprinkling.
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area			Apart from normal degradation due to mining activities, overall aesthetic beauty of the area is good.

Compliance of Rule 45:

Sl.No.	Item	Propasals	Actual work	Remarks
9a	Status of submission of Monthly and Annual returns		Annual returns submitted online upto 2017-18 Monthly Returns submitted online upto Feb'2019	

9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Mining Engineer: Mr. Sandeep Kumar Singh Geologist: Mr. Naveen Kumar Pala Manager: Mr. Sandeep Kumar Singh	Correct information furnished for that year.
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	As on 31.03.2018, Area under: Pits/Excavation- 115.40 ha Waste Disposal- 41.00 ha Infrastructure - 3.76 ha Top Soil- 1.73 ha Garland drain- 3.34 ha Green Belt/Dump Plantation- 11.0 ha	Correct information furnished
9d	Scrutiny of Annual return on afforestation	20000 saplings within the lease area with 80% Survival and 1000 saplings outside the lease area with 60% survival	Correct information furnished for plantation within the lease area. Outside lease plantation couldn't be verified.
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	Nil	Correct information furnished as complete ROM is crushed and despatched.
9f	Scrutiny of Annual return on ROM stock and/or graded ore	ROM: Opening and Closing stocks- Zero, Production- 2688727 T Graded Ore: Opening and Closing stocks- Zero, Production and Dispatches- 2688727 T (Cement Grade)	Correct information furnished.

9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	Sale value: Nil (Captive Usage) Ex-Mine price and Production Cost- Rs 292.08/- per T	Sale Value: Correct information furnished Ex-Mine price and Production Cost: There were some observations that need suitable correction/justifications.	Violation of Rule 45 of MCDR was observed.
9h	Scrutiny of Annual return on fixed assets	Value of fixed Assets: Rs 8106000000/- Apart from this detailed value of fixed assets has been furnished for Land, Infrastructure , Plants and Machineries etc.	Depreciation on fixed assets is reported as Rs 20256000/- under Part-II A while it is reported as Rs 6225100000/- under Part-III.	Violation of Rule 45 of MCDR was observed.
9k	Scrutiny of Annual return on mining machineries	Detailed information on machineries deployed in the mine has been furnished.	The information is as per the extent of mechanization furnished in the approved mining plan.	

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)	11/03/2019			
MCDR17	Rule 33	11/03/2019			
MCDR17	Rule 37(2)	11/03/2019			
MCDR17	Rule 45(7)(a)	11/03/2019			
MCDR17	Rule 45(7)(a)	11/03/2019			
MCDR17	Rule 45(7)(a)	11/03/2019			

Date :

(ASHISH MISHRA)

Indian Bureau of Mines