

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

MCDR inspection REPORT

Hyderabad regional office

Mine file No : AP/KNL/LST-190/HYD

Mine code : 38APR11130

- (i) Name of the Inspecting : 160) kalmata.M.K
Officer and ID No.
- (ii) Designation : Regional Mining Geologist
- (iii) Accompanying mine : Shri S.K.Shukla, Mining Engineer.
Official with
Designation
- (iv) Date of Inspection : 07-OCT-22
- (v) Prev.inspection date : 30-JUL-21

PART-I : GENERAL INFORMATION

- 1. (a) **Mine Name** : JSW LIMESTONE MINE
- (b) **Registration NO.** : IBM/106/2011
- (c) **Category** : A Mechanised
- (d) **Type of Working** : Opencast
- (e) **Postal address**
 - State : ANDHRA PRADESH
 - District : KURNOOL
 - Village : BILAKALAGUDUR
 - Taluka : GADIVEMULA
 - Post office : GADIVEMULA
 - Pin Code : 518508
 - FAX No. : 02226502001
 - E-mail : jswcement.mines@jsw.in
 - Phone : 08514253514, 8886601442
- (f) **Police Station** : Gadivemula
- (g) **First opening date** : 01-APR-08
- (h) **Weekly day of rest** : SUN
- 2. **Address for correspondance** : Bilakalgudur village,
Gadivemula Mandal
Kurnool district.
- 3. (a) **Lease Number** : APR2820
- (b) **Lease area** : 617.57
- (c) **Period of lease** : 20
- (d) **Date of Expiry** : 24-APR-28
- 4. **Mineral worked** : LIMESTONE Main

5. Name and Address of the

Lessee : JSW CEMENTS
 403, SAI RAM ENCLAVE
 SRINIVAS NAGAR NANDYAL
 KURNOOL ANDHRA PRADESH
 Phone:
 FAX :

Owner : NILESH NARWEKAR
 MUMBAI (SUBURBAN)
 MAHARASHTRA
 Phone:
 FAX :

Agent : ARPAN PAREKH
 KURNOOL ANDHRA PRADESH
 Phone:
 FAX :

Mining Engineer
 Name : Sharwan Kumar Shukla, Full Time
 Qualification : BE. Mining
 Appointment/ : 01-SEP-16
 Termination date

Geologist
 Name : Ritesh Chattaraj, Full Time
 Qualification : MSC, Applied Geology
 Appointment/ : 01-JAN-15
 Termination date

6. Date of approval of Mining Plan/Scheme of Mining	:	Fresh under rule 22 MCR1960	16-OCT-07
		Modif.of approved Mining Plan	02-DEC-08
		Modif.of approved Mining Plan	21-AUG-12
		Mining Scheme rule 12 MCDR1988	07-OCT-13
		MP review under 17(1) MCR 2016	27-NOV-17

PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	No exploration proposal is given in the present plan period.	Drilled 22 non core boreholes to know the quality of the ore and convert G-3 and G-2 level to G-1.	
1b	Exploration over lease area for geological axis 1 or 2	None.	About 107 ha is converted from G-3, G-2 level to G-1 level.	
1c	Exploration Agencies and Expenditure in lakh rupees during the year	None.	Exploration was carried out by lessee.	
1d	Balance area to be explored to bring Geological axis in 1 or 2	None	None	Entire mineralized area is explored under G-1 level.
1e	Balance reserve as on 01/04/20	Reserves/ resources as per the approved document dated 27.11.2017 (in Million tonnes) Reserves - 63.29 Remaining Resources - 107.14 Total: - 170.43	Reserves/resources as on 01.04.2022. (in million tonnes) Reserves - 53.62 Remaining Resources - 107.14 Total: - 160.76	In the approved document, dated 27.11.2017, reserves/resources were estimated by taking cut off grade only. So, lessee has advised to update the reserves/resources in the Review of Mining Plan due for the period 2023-24 to 2027-28, by considering the threshold value 34% Cao and incorporationg exploration data of 22 non core holes drilled during the year 202-22.

1f	General remarks of inspecting officers on geology, exploration etc	The formation is belongs to Vempalle stage of Papagani series of lower cuddapah. The deposit is bedded stratiform and tabular deposit if regular habit. Strike of the formation is northwest to south east and dip varies from 1 to 7 degree towards west. The entire area is explored under G-1 level of exploration.
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Development :

Sl.No.	Item	Propasals	Actual work	Remarks
2a	Location of development w.r.t.lease area	In the year 2021-22, production and development was proposed between the co-ordinates- N 1734471 to N1735720 and E 225949 to E E226932.	Working has been carried out between the co-ordinates Pit No-1, N 1734946 to 1735650 and E 226500 to E 226799 . Pit No-2, N1734465 to N 1734685 Nd E 225960 to E 226390.	Working hasbeen carriedout within the proposed co-ordinates. There was a proposal to merge two pits into a single pit. However, due to lack of demand for cement. Production is achieved only 52% in the year 2021-22 and two pits are not merged in the present plan period.
2b	Separate benches in topsoil, overburden and minerals (Rule 15)	Benchese were proposed in ore only.	Benches were formed in the ore only.	
2c	Stripping ratio or ore to OB ratio	None.	None.	
2d	Quantity of topsoil generation in m3	None.	None.	

2e	Quantity of overburden generation in m3	None.	None.	About 577580T Mineral reject (Having more Sio2) removed during the year 2021-22 is shown as dumped in the external waste dump. During inspection it was noticed that the material was mixed with recoverable limestone. So lessee has advised to carry out propoer study of the dump (chemical analysis and utilisation by blending or by beneficiation) and rehandling of the material based on the study report.
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc		Benches were made....	

Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
3a	Number of pit proposed for production	Two pits.	Two pits. in the year 2021-22, working has been carried out in Pit No-1 and 2 as per the proposal.	Total six pits are existing within the lease area and dimension of each pit is as follows. Pit No-1, 1080m x 543m x 23m, Pit No-2, 795m x 254m x 26m, Pit No-3, 220m x 77m x 6m, Pit No-4, 190m x 159m x 4m, Pit No-5, 380m x 140m x 6m, Pit No-6, 304m x 58m x 3m.
3b	Quantity of ROM mineral production proposed	3954360 Tonnes.	2629631 Tonnes.	Production is achieved only 66% in the year 2021-22.

3c	Recovery of sailable/usable mineral from ROM production	100%	100%	Additionally lessee was shown generation of about 1033440T of mineral reject. However, about 577580 tonnes of material having more Sio2 is produced and same was dumped on the external waste dump. The external waste dump was appears mixed with limestone, so lessee has advised to re-assess the dump w.r.t to quality and recoverable quantity for complete utilization of ore.
3d	Quantity of mineral reject generation	1033440 T in the year 2021- 22.	Nil	However, about 577580 tonnes of material having more Sio2 is produced and same was dumped on the external waste dump. The external waste dump was appears mixed with limestone, so lessee has advised to re-assess the dump w.r.t to quality and recoverable quantity for complete utilization of ore.
3e	Grade of mineral rejects generation and threshold value declared.	Threshold value declaed is Cao minimum 34%.	None.	
3f	Quantity of sub grade mineral generation.	None.	None.	
3g	Grade of sub grade mineral generation	Not applicable.	Not applicable.	

3h	Manual / Mechanised method adopted for segregating from ROM	None.	None.	Lessee is doing only crushing and screening for size reduction.
3i	Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects.	None.	Carried out beneficiation study by RODL, IBM.Bengaluru. for utilization of ore mixed waste dump	
3j	Provision of drilling and blasting in mineral benches	Yes proposed.	Drilling and blasting has been carried out as per the proposal.	Using 115mm dia rock drilling machine for drilling and slurry explosive for blasting.
3k	Provision of mining machineries in mineral benches	Yes proposed, proposed combination of Shovel and tipper.	Lessee is using Shovel of 1.1, 3.1, 3.3 and 3.5 cum capacity and tippers of 18.00 cum capacity, for production and development.	Additionally lessee is using drilling machine of 115mm dia and air compressor for drilling.
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Proposed 8.00 mtr bench height.	Yes proposed bench height is suitable for the proposed method of mining.	Maintained actual bench height within 8.00 mtrs.
3m	Total area covered under excavation/pits	103.20Ha in the present plan period (2018-19 to 2022-23).	90.75Ha. up to october- 2022.	
3n	Ore to OB ratio for the pit/mine during the year.	None.	None.	
3o	Total area put in use under different heads at the end of year	Area under mining- 103.20Ha, Waste dump- 4.07Ha, Mineral reject dump-8.94, ROM stock- 4.70Ha, Infrastructure - 4.00Ha, Roads- 9.40Ha.	Area under mining- 90.75Ha, area covered under dumps- 16.78Ha, Infrastructure- 4.00Ha, Roads- 9.00Ha.	

3p	Production of ROM mineral during the last five year period as applicable	2021-22 3954360T 2020-21 3725520T 2019-20 3406920T 2018-19 2817240T 2017-18 4410775T	2021-22 2629631T 2020-21 2320806T 2019-20 2262434T 2018-19 2054984T 2017-18 982770T
3q	General remarks of inspecting officers on method of mining etc.	The working has been carried out within the proposed area. proposal was made to merge two pits (Pit no-1 and Pit no-2) into a single pit. However, due to lack of demand production is wachieved less than the proposal. So, two pits were not merged as proposed. Bench height is maintained within the proposed limit.	

Solid Waste Management - Dumping:

Sl.No.	Item	Propasals	Actual work	Remarks
4a	Separate dumping of topsoil, OB and mineral rejects (Rule 32,33)	Proposed only Mineral reject dumps in the present plan period.	OB and mineral reject is dumped separately.	However, it was observed that OB dump is mixed with recoverable ore also. As per the suggestion of IBM, lessee has conducted detailed study for utilization of mineral available in the waste dump, accordingly lessee is planing to utilize mineral available in the dump by blending or by beneficiation in future.

4b	Location of topsoil, OB and mineral reject dumps	Mineral reject dump was proposed N 1735600 to N 17365960 and E 226000 to E 226200 in the year 2021-22.	Dumping was made between the co-ordinates N 1735570 to N 1735665 and E 226080 to E 226160.	In the year 2021-22 dumping is made within the proposed area. However, it appears old dump is existing in the non-leased area the non-leased area is existing within the lease area only. So, lessee has advised to remove the old dump from non leased area at the earliest. Since it was already show on the surface plan of earlier approved document no violation is pointed out.
4c	Number of dumps within lease area and outside of lease area	One in the year 2021-22.	One in the year 2021-22.	Total nine dumps are existing within the lease area. (03 mineral reject dumps and 06 waste dumps)
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	Outside the UPL	Outside the UPL.	
4e	Number of active and alive dumps.	One in the year 2021-22.	One in the year 2021-22.	Total seven active dumps are existing within the lease area.
4f	Number of dead dumps.	None in the year 2021-22.	None in the year 2021-22.	Three old dead dumps are existing within the lease area.
4g	Number of dumps established.	None.	None.	
4h	Whether Retaining wall or garland drain all along dumps are there.	Yes proposed.	Retaining walls are constructed around the toe of the dumps.	
4i	Length of Retaining wall or garland drain all along dumps	Two retaining walls were proposed in the plan period 2018-19 to 2022-23, 1000m & 350m	Retaining walls measuring 550m is constructed along the toe of mineral reject/ waste dump up to 2021-22.	Additionally garland drains measuring 550 m and 285 mtrs are done along the dumps.

4j	Number of settling ponds	None.	None.	
4k	Specific comments of inspecting officer on waste dump management		Dumping was made as per the proposal in the year 2021-22. Retaining walls and garland drains were provided all along the active dump. Total 9.0 dumps are existing within the lease area, out of which 07 are active and two are inactive. Earlier dumping was extended in the non leased area which is existing within the lease area, lessee has advised to shift the same within the lease area.	Further, lessee has advised to use siliceous limestone available in the dump by upgrading the quality by floatation method, as advised by the RODL, IBM, Bengaluru.

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 in the present plan period.	No backfilling is made in the present plan period.	Mineral is not extracted up to the proved depth, so, no backfilling was proposed and made in the present plan period.
5b	Area under backfilling of mined out area	None.	None.	
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	None.	None.	
5d	Total area fully reclaimed and rehabilitated	None.	None.	
5e	General remarks of inspecting officers on backfilling and reclamation etc.		Mineral is not extracted upto the proved depth and no area is matured for backfilling, so no backfilling was proposed and made 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 submitted PMCP report for the year 2021-22.	
6b	Area available for rehabilitation (ha) .	None.	None.	
6c	afforestation done (ha).	5.65Ha (green belt and vacant areas) in the year 2021-22.	9.00Ha (green belt and vacant areas) in the year 2021-22.	Afforestation is made more than the proposal.
6d	No. of saplings planted during the year	5000 saplings in the year 2021-22	22575 saplings in the year 2021-22.	
6e	Cumulative no .of plants	25000 saplings in the present plan period (2018-19 to 2022-23)	65198 saplings in the present plan period up to 2021-22.	Plantation is made morethan the proposal.
6f	Any other method of rehabilitation	None.	None.	
6g	Cost incurred on watch and care during the year	None.	2.5 to 3.00lakhs per annum.	For maintenance of plantation.
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (Lx B x D	None.	None.	
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	None.	None.	
6j	Compliance on reclamation and rehabilitation by backfilling (iii)Afforestati on on backfilled area	None.	None.	

6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	None.	None.
6l	Compliance on reclamation and rehabilitation by backfilling (v) any other specific means.	None.	None.
6m	Compliance of rehabilitation of waste land within lease (i) afforestation	Proposed plantaion in the vacant area was proposed.	Plantation was made in the vacant areas.
6n	Compliance of rehabilitation of waste land within lease (ii) Area rehabilitation (ha)	5.00 ha of vacant area proposed for plantation in the year 2021-22.	Plantation was made in 7.5ha vacant areas in the year 2021-22.
6o	Compliance of rehabilitation of waste land within lease (iii) Method of rehabilitation	None.	None.
6p	Compliance of environmental monitoring (core zone and buffer zone)	Proposed regular monitoring of Air, water and noise in the core and buffer zone.	Quarterly ambient, water and noise monitoring is being carried out in the core and buffer zones and results are well with in the permissible limits.
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.		Retaining walls and garland drains were proposed and made in the present plan period. Plantaion was made morethan the proposal. Lessee is regularly monitoring Air , water and noise and results are witin permissible limit. Submitted yearly report on PMCP for the year 2021-22.

Mineral Conservation:

Sl.No.	Item	Propasals	Actual work	Remarks
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7a	ROM Mineral dispatch or grade-wise sorting within lease area	Proposed Cement grade dispatch.	Cement grade ore dispatched.	
7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	No such proposal was given.	Entire ROM removed is moved to the crushing and screening plant within the lease area.	Lessee is doing only size reduction by crushing and screening before feed to plant.
7c	Different grade of mineral sorted out at mines.	Cement grade.	Cement Grade.	
7d	Any beneficiation process at mines .	None.	None.	The entire ROM removed is sending to the crushing plant existing in the plant area (Plant is existing within the lease area) for size reduction. RODL, IBM, Bengalure is carried out bench scale beneficiation study for utilization of siliceous limestone which is shown as waste. and suggested that by adopting flotation process siliceous ore can be upgraded and utilized for production of cement.

7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues	Lessee is using entire ROM by blending lowgrade with the high grade as per the requirement of the plant. Lessee is doing only size reduction by dry crushing and screening plant. RODL, IBM, Bengaluru is carried out bench scale beneficiation study for utilization of siliceous limestone which is shown as waste. and suggested that by adopting flotation process siliceous ore can be upgraded and utilized for production of cement.	So, lessee has advised to remove the siliceous ore available in the waste dump and stack separately for future use as per the advise of RODL, IBM, Bengaluru.
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Environment:

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	None iin the present plan period.	None.	The topsoil removed earlier is utilized for plantation work.
8b	Concurrent use or storage of topsoil	None.	None.	
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	Yes proposed.	Dumping of waste and mineral reject is done separately.	However, it was observed that waste dump is mixed with the ore. So lessee has suggested to separate the lowgrade siliceous ore from the waste dump for future use as per the suggestion of RODL, Bengaluru.
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	None.	None.	

8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	None.	None.	
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)		Yes, information was given in the approved mining plan. Additionally lessee has planted 65198 saplings, within the lease area in the present plan period.	
8g	Survival rate	None.	70 to 75%	
8h	Water sprinkling on roads to control airborne dust	Yes, proposed.	Regularly spraying water on the working benches, Haul road etc.	Two water tankers of 8,000 ltr capacity is in use for dust suppression.
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area		Benches and haulage roads were maintained systematically. Two water tankers are deployed for sprinkling water in the working area and on the haulage roads. Plantation was made in the safety zone and vacant areas and engaged manpower for monitoring plantation.	

Compliance of Rule 45:

Sl.No.	Item	Propasals	Actual work	Remarks
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9a	Status of submission of Monthly and Annual returns	A monthly returns shall be submitted before 10 th day of every month in respect of preceding month and an annual returns shall be submitted before 1st day of july of each year for the preceding financial year.	Lessee is regularly submitting monthy and annual returns within the time limit.	Submitted Monthly returns up to sep 2022 and annual returns 2021-22.
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	As per the annual returns submitted for the year 2021-22 details of mining engineer and Geologist is as follows, Mining Engineer- S.K.Shukla and Geologist- Ritesh Chattaraj.	The details of Mining Engineer and Geologist mentioned in the Anuual returns is found correct.	
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	Area under mining- 69.750, Dumps- 16.78Ha, Infrastructure -120.30Ha.	The land use details furnished in the annual returns is found correct.	
9d	Scrutiny of Annual return on afforestation	22575 saplings with survival rate 76%.	The details are found correct.	
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	None.	Lessee has dumped high silica limestone inthe external waste dump.	Lessee has advised to separate the recoverable siliceous limestone from the waste dump as per the advise of RODL, Bengaluru, to use siliceous limestone for cement plant by upgrading through floatation process.

9f	Scrutiny of Annual return on ROM stock and/or graded ore	ROM: opening stock- 66544T, Production- 2629631T, Closing stock- 61175T. Grade wise:- Cement grade: opening and closing stock: Nil, Production- 2635000T.	The stock positions were almost matching with the data furnished in the AR.	
9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	Exmine price was shown as 205.87 and cost of production:- 205.49 and sale value- Nil.	The mine is captive mine and sale value is nil only. and cost of production will be the exmine price for captive mine.	By oversight lesee has mentioned exmine price as Rs 205.87/T and cost of production as Rs- 205.49/T. Lessee has advised to rectify the same.
9h	Scrutiny of Annual return on fixed assets	Value of fixed assets is shown as Rs- 104339263	The information is found correct.	
9k	Scrutiny of Annual return on mining machineries	Shovels-03, Tippers-28, Drilling machine-02, Dozer-01, Air compressor-02, Water tanker-02.	The information furnished in the returns is found correct.	

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 :

(kalmata.M.K)

Indian Bureau of Mines