

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

Mining Plan Modification REPORT

Bangalore regional office

Mine file No : KNT/CTD/FE/4/BNG

Mine code : 30KAR07013

- (i) Name of the Inspecting : **A101**) **ARUN KUMAR**
Officer and ID No.
- (ii) Designation : Deputy Controller Mines
- (iii) Accompanying mine : Padmaraja T. - Mining Engineer
Official with
Designation
- (iv) Date of Inspection : 05/07/2019
- (v) Prev.inspection date : 30/05/2018

PART-I : GENERAL INFORMATION

1. (a) **Mine Name** : **A. NARRAIN**
- (b) **Registration NO.** : **IBM/327/2011**
- (c) **Category** : **A Fully Mechanised**
- (d) **Type of Working** : **Opencast**
- (e) **Postal address**
- State : **KARNATAKA**
- District : **CHITRADURGA**
- Village : **MEDEKERIPURA**
- Taluka : **CHITRADURGA**
- Post office : **BHEEMASAMUDRA**
- Pin Code : **577501**
- FAX No. : **0832-6713721 (F), Jayavel.G**
- E-mail : **MK.Reddy@vedanta.co.in**
- Phone : **0832-6713600 (O),**
- (f) **Police Station** : **Baramasagara**
- (g) **First opening date** : **03/10/1955**
- (h) **Weekly day of rest** : **SUN**
2. **Address for correspondance** : **Vedanta Limited(formerly Sesa sterlite/Sesa Goa**
Sesa Ghor, 20 EDC Complex,
Patto, Panaji, Goa- 403001
3. (a) **Lease Number** : **KAR1020**
- (b) **Lease area** : **163.5**
- (c) **Period of lease** : **20**
- (d) **Date of Expiry** : **13/05/2013**
4. **Mineral worked** : **IRON ORE** **Main**

5. Name and Address of the

Lessee : VEDANTA LIMITED
 Sesa Ghor, EDC Complex,
 Patto- Panaji, Tiswadi,
 North Goa, Goa. NORTH GOA
 GOA
 Phone:08194238101, 9483211966
 FAX :08194238170

Owner : SAUVICK MAZUMDAR
 M/S VEDANTA LTD., SESA
 GHOR, EDC CO PATTO, PANAJI,
 TISWADI, NORTH GOA, 403001
 NORTH GOA GOA
 Phone: 08194238101
 FAX : 08194238170

Agent : M. Krishna Reddy
 Megalahalli Office Complex
 Bheemasamudra ,
 Chitradurga, Karnataka
 CHITRADURGA KARNATAKA
 Phone: 08194-238101
 FAX : 0832-2460612

Mining Engineer

Name : Y.M.MAHESH, Full Time
 Qualification : B.E. MINING
 Appointment/ : 20/01/2007
 Termination date

Geologist

Name : Somshekhar Dhodkunde, Full Time
 Qualification : M.Sc, Applied Geology
 Appointment/ : 11/01/2016
 Termination date

Manager

Name : G.JAYAVELU
 Qualification : B.E MINING, FCC
 Appointment/ : 01/01/2013
 Termination date

6. Date of approval of Mining Plan/Scheme of Mining	:	Renewal under rule 22 MCR1960	03/04/1992
		Renewal under rule 22 MCR1960	04/03/1998
		Modif.of approved Mining Plan	02/07/2001
		Mining Scheme rule 12 MCDR1988	06/03/2003
		Modif.approved Mining Scheme	18/08/2005
		Mining Scheme rule 12 MCDR1988	26/04/2007
		Mining Scheme rule 12 MCDR1988	19/08/2008
		Modif.approved Mining Scheme	25/02/2010
		Mining Scheme rule 12 MCDR1988	29/02/2012
		Mining Scheme rule 12 MCDR1988	03/09/2012
		Renewal under rule 24 MCR1960	19/11/2012
		Modif.of approved Mining Plan	10/05/2016
		MP review under 17(1) MCR 2016	15/12/2016
		MP modif under 17(3) MCR 2016	23/03/2018
		MP modif under 17(3) MCR 2016	19/06/2018

PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	No Proposal	17 Core bores to a depth of 3950.20mts	No backlogs. New bore holes drilled for infill drilling
1b	Exploration over lease area for geological axis 1 or 2	No Proposal	Total mineralized area in lease is 90.25Ha and entire area is Explored at G1 level.	In 2019-20, 7 core bore holes have been proposed at 50mts grids to a total depth of 730 mts to ascertain the mineral reserves which was covered with stacks & mobile crushing plant
1c	Exploration Agencies and Expenditure in lakh rupees during the year	No Proposal	M/s Kartikay Exploration & Mining Pvt. Ltd. Cost of exploration is 2.63 Cr	Exploration drilling was given on contract.
1d	Balance area to be explored to bring Geological axis in 1 or 2	No Proposal	90.25 Ha of leasehold area is mineralized; entire mineralized zone is explored up to G-1 Level.	Entire mineralized area is explored to G-1 level
1e	Balance reserve as on 01/04/20		100.381 Million Tons	As per annual Returns 2018-19
1f	General remarks of inspecting officers on geology, exploration etc			Detailed exploration was carried out for infill drilling. The entire mineralized area of 90.25 Ha is explored under G-1 level.

Development :

Sl.No.	Item	Proposals	Actual work	Remarks
2a	Location of development w.r.t. lease area	SB - N1572000-1572800,E630100-630800 NB- N1572600-1574200,E629400-629700	SB - N1572000-1572700,E630100-630750 NB- N1573650-1574100,E629480-629650	Development work was not carried out in between section 7A-7A' to 9A-9A'. Violation pointed out

2b	Separate benches in topsoil, overburden and minerals (Rule 15)	Separate benches proposed in Overburden & Mineral benches	Separate benches maintained in OB & Mineral bench	Ore-6 Benches ,Overburden-7 Benches
2c	Stripping ratio or ore to OB ratio	1:0.76	1:0.59	Violation pointed out for lower stripping ratio
2d	Quantity of topsoil generation in m3	No proposal	Nil	Mine is being in the operation since 1954. Entire area is already broke open. Hence no top soil available.
2e	Quantity of overburden generation in m3	3255500 Tons	2647836 Tons	BD-1.70 tons/CuM
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc			Required quantity of development work was not carried out in between section 7A-7A' to 9A-9A', thus lowering the stripping ratio.Violation pointed out

Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
3a	Number of pit proposed for production	Two pits proposed	Actual work carried out in two pits.	Production & development plan was deviated from the proposal towards Southern side in between Section Line 3A-3A' to 5A-5A'.
3b	Quantity of ROM mineral production proposed	4508766 Tonnes	4508260 Tonnes	No change
3c	Recovery of sailable/usable mineral from ROM production	100% recovery proposed	100%	Dry screening & crushing plant with 100% product recovery

3d	Quantity of mineral reject generation	151875 Tonnes	Nil	Development had not been carried out in the siliceous ore benches in between section 7A-7A' to 9A-9A', Hence no mineral reject generated. Violation pointed out.
3e	Grade of mineral rejects generation and threshold value declared.	+35% Fe (Hematitic Siliceous ore)	Nil	-
3f	Quantity of sub grade mineral generation.	No Proposal	Not Applicable	No Proposal as per App. Mining Plan
3g	Grade of sub grade mineral generation	No Proposal	Not Applicable	-
3h	Manual / Mechanised method adopted for segregating from ROM	Mechanized method proposed	Mechanized method adopted for segregating from ROM	Dry screening & crushing plant
3i	Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects.	No Proposal	Beneficiation studies done on siliceous ore.	The study was done through IBM lab. in the past
3j	Provision of drilling and blasting in mineral benches	Drilling & Blasting proposed in hard strata when encountered	Top hard lumpy ore benches are blasted using controlled blasting method with the help of Wagon drill & diesel driven compressor.	Only 20% of the total material needs handling. Spacing-4 Mts, Burden-3 mts & Ht-7-8 Mts
3k	Provision of mining machineries in mineral benches	Proposal is given for use of mining machinery in mineral benches.	Hyd. Excavators and 35 Tonner Dumpers are used for excavation of ore and waste in mining pit along with ancillary equipment's like wheel loader, Dozer and motor grader.	Company owned machinery is used for excavation.
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	7 m height of bench is proposed for mining.	Average height of 7 to 7.5 meters is maintained in entire pit.	It was observed that at places the Bench height was 1 to 0.5 m more in hard strata.

3m	Total area covered under excavation/pits	70.50 Ha	69.04 Ha is covered under mining purpose	-
3n	Ore to OB ratio for the pit/mine during the year.	1:0.76	1:0.59	Violation pointed out for lower stripping ratio
3o	Total area put in use under different heads at the end of year	O/c working-70.50 Ha, Waste dump-45.15 Ha, Mineral storage-4.59 Ha, Infrastructure & Roads-12.08Ha, Greenbelt/Afforestation-28.27 Ha	O/c working-69.04 Ha, Waste dump-44.91 Ha, Mineral storage-10.12 Ha, Infrastructure & Roads-13.28 Ha, Reclaimed/Rehabilitated-23.24 Ha	As per the approved mod. RMP, no area is considered as fully reclaimed & rehabilitated, but shown in AR. Violation pointed out.
3p	Production of ROM mineral during the last five year period as applicable	2014-15: 2.29 MMT 2015-16: 2.29 MMT 2016-17: 2.289 MMT 2017-18: 2.438 MMT 2018-19: 4.509 MMT	2014-15: 1.03 MMT 2015-16: 2.28 MMT 2016-17: 2.28 MMT 2017-18: 2.28 MMT 2018-19: 4.508 MMT	Actual production is within proposed limit.
3q	General remarks of inspecting officers on method of mining etc.			The mining was carried out with excavator dumper combination, covering 69.04 Ha in mining pits. Development had not been carried out in the siliceous ore benches affecting the stripping ratio for which violation pointed out

Solid Waste Management - Dumping:

Sl.No.	Item	Propasals	Actual work	Remarks
4a	Separate dumping of topsoil, OB and mineral rejects (Rule 32,33)	Separate dumping of OB proposed	Separate dumping of OB is done	No top soil & mineral rejects in proposal for FY 2018-19

4b	Location of topsoil, OB and mineral reject dumps	OB proposed to be dumped in D3 dump	OB dumped in between N1572500-1573100,E-630400-630800	OB is dumped in D3 dump in SE corner of South Block
4c	Number of dumps within lease area and outside of lease area	Inside Lease : 04Nos. Outside Lease- NIL	04 Nos. dumps observed inside the lease area	02 Nos. dumps are inactive and 02 Nos. dumps are active
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	Dumps proposed outside the Ultimate pit Limit	Dumps are located Outside the Ultimate pit Limit	All the OB is disposed within leasehold area.
4e	Number of active and alive dumps.	02Nos. (D3 & D4 dumps) in the plan period	01 No. (D3 dump) active dump	OB will be accommodated in D3 from 2018-20 and from 2020-22 in D4 dump.
4f	Number of dead dumps.	02Nos. (D1 & D2 dumps)	02 No.(D1 & D2 dumps)	Both the dumps are stabilized.
4g	Number of dumps established.	02 Nos.(D1 & D2 dumps)	02 Nos.(D1 & D2 dumps)	Stabilized by means of geo textile and vegetation
4h	Whether Retaining wall or garland drain all along dumps are there.	Retaining wall & garland drain proposed.	Retaining wall & garland drain is constructed except nera the area of the new proposed office	Retaining wall and garland drain of hard rock is provided.Violation pointed out
4i	Length of Retaining wall or garland drain all along dumps	D3 Dump: Retaining Wall-409 Mts & Garland drains-415 Mts	D3 Dump: Retaining Wall- Nil Mts & Garland drains-415 Mts	Violation pointed out for not constructing the retaining wall in the new proposed office area
4j	Number of settling ponds	No proposal	Not applicable	9Nos. settling ponds constructed outside lease area in the past
4k	Specific comments of inspecting officer on waste dump management			The OB is dumped at the earmarked place. One dump (D3) is presently used and dump (D4) is proposed in coming years. Inactive dumps have been stabilized by geotextile & vegetation

Solid Waste Management - Backfilling:

Sl.No.	Item	Propasals	Actual work	Remarks
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5a	Status of part or full extraction of mineral from mined out area before starting backfilling.	No Proposal	Not Applicable	Mineral is not exhausted for backfilling
5b	Area under backfilling of mined out area	No proposal	Not applicable	No backfilling proposed for mining plan period 2017-22.
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	NO proposal	No top soil generated.	-
5d	Total area fully reclaimed and rehabilitated	No proposal	Not applicable	No restoration of mined out are for mining plan 2017-22
5e	General remarks of inspecting officers on backfilling and reclamation etc.			No proposal of backfilling in the plan period. Pits are not matured for backfilling as mineral from these pits are not exhausted so far.

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 before 1st July every year	PMCP report not submitted	Violation pointed out
6b	Area available for rehabilitation (ha) .	No proposal	Not applicable	No restoration of mined out are for mining plan 2017-22
6c	afforestation done (ha).	0.40 Ha	4.17 Ha	Plantation on dump and greenbelt.
6d	No. of saplings planted during the year	400@75% survival rate	28320 nos. of saplings planted within and outside the ML area	It includes dump, greenbelt & outside lease area
6e	Cumulative no .of plants	Not Specified	454362 nos. of saplings	-
6f	Any other method of rehabilitation	No proposal	Nil	-

6g	Cost incurred on watch and care during the year	Not specified	Sapling Procurement cost - Rs. 6057460/-, Sapling watch and care cost - Rs. 1528017/-	Procurement of saplings, watering & manure.
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (L x B x D	No proposal	Nil	No proposal in the plan period.
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	No proposal	Nil	-
6j	Compliance on reclamation and rehabilitation by backfilling (iii) Afforestation on on backfilled area	No proposal	Not applicable	-
6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	No proposal	Nil	No restoration of mined out are for mining plan 2017-22
6l	Compliance on reclamation and rehabilitation by backfilling (v) any other specific means.	No proposal	Nil	-
6m	Compliance of rehabilitation of waste land within lease (i) afforestation	No proposal	Nil	-
6n	Compliance of rehabilitation of waste land within lease (ii) Area rehabilitation (ha)	No proposal	Nil	-

6o	Compliance of rehabilitation of waste land within lease (iii)Method of rehabilitation	No proposal	Nil	No restoration of mined out are for mining plan 2017-22
6p	Compliance of environmental monitoring (core zone and buffer zone)	Environmental monitoring for air, water & noise proposed in core zone & buffer zone	Environmental monitoring carried out by Chennai Mettex Lab Pvt. Ltd.	Environmental parameters within the permissible limits
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.			The PMCP activities as proposed were carried out by means of plantation and stabilization of old dumps by geotextiles.

Mineral Conservation:

Sl.No.	Item	Propasals	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	Grade wise sorting proposed within the lease area	grade wise sorting of Fines & lumps is done within lease area	Grade wise Fines and lumps are dispatched separately from lease area
7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	Mechanical method proposed	Mechanical method adopted for mineral sorting.	Dry crushing & Screening plant
7c	Different grade of mineral sorted out at mines.	Lumps & Fines Below 55% 55% to below 58% 58% to below 60% 60% to below 62%	Lumps & Fines Below 55% 55% to below 58% 58% to below 60% 60% to below 62%	Sorting of fines and lumps is done using dry crushing and screening plants and this product is dispatched separately as per the market requiremnt
7d	Any beneficiation process at mines .	No proposal	Dry Crushing & Screening method adopted	Only facility of dry processing of ROM is available in lease area.

7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues	No deviation was observed with respect to mineral conservation during the course of inspection.
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Environment:

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	No proposal	Not applicable	No top soil generated
8b	Concurrent use or storage of topsoil	No proposal	Nil	No top soil is generated
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	Separate dumping of OB and stacking of fines & lumps proposed	OB is disposed in dump (D3). Fines & lumps stacked separately	Ore produced is stacked separately for dispatch.
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	No proposal	Nil	No restoration of mined out area for the mining plan.
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	No Proposal	Plantation is done on old & dead dumps.	-
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	Baseline information on existence of plantation available	With in ML-22820 nos. of saplings @89% survival, Outside ML-5500 nos. of saplings @85% survival	Plantation on: Dumps-23500 nos., Green belt- 2168 nos.
8g	Survival rate	Not specified	85- 87%	-

8h	Water sprinkling on roads to control airborne dust	Sprinkling of water all along haul roads.	Sprinkling of water is carried out on haul roads and mist spray at plant area.	Special chemical used in water sprinkling on haul roads for increasing roads moisture holding capacity.
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area			Aesthetic beauty in and around the mine is maintained by virtue of plantation & environment management is in place

Compliance of Rule 45:

Sl.No.	Item	Propasals	Actual work	Remarks
9a	Status of submission of Monthly and Annual returns	M.R. Submitted up to May 2019. A.R. Submitted up to 2018-2019	Annual returns submitted on 29.06.2019	
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager) Manager - Vijayanand Chakrasali 2) Mining Engineer - Padmaraja Tumati 3)Geologist - Somshekar S Dhodakunde	Mining Engineer & Geologist were present on the date of inspection.	
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	O/c working- 69.04 Ha, Waste dump- 44.91 Ha, Mineral storage-10.12 Ha, Infrastructure & Roads-13.28 Ha, Reclaimed/Rehabilitated- 23.24 Ha	As per the approved mod. RMP no area is considered as fully reclaimed & rehabilitated	Violation pointed out
9d	Scrutiny of Annual return on afforestation	WML-22820 Nos, OML-5500 Nos @ 87% survival rate	Appears to be correct	

9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	Nil	Violation of Rule 11(1) pointed out
9f	Scrutiny of Annual return on ROM stock and/or graded ore	ROM: OS-25515 T, Production- 4508260 T, CS- 151507 T	Appears to be correct
9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	Production Cost-509 Rs/ton Ex Mine price =Sale value - 1874.83 Rs/ton	Royalty, DMF & NMET is not included in the cost of production calculation. Violation pointed out.
9h	Scrutiny of Annual return on fixed assets	Total Fixed asset value is Rs. 1166994375 (It includes Land, Plant & machinery and capitalized expenditure)	Appears to be correct
9k	Scrutiny of Annual return on mining machineries	Dumpers-37 Nos., Excavators-13 Nos., WL-15 Nos., Dozer-4 & WT-6 Nos	Appears to be 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
MCDR17 Rule 11(1)	29/07/2019				
Rule 45(7)	29/07/2019				
MCDR17 Rule 26(2)	29/07/2019				

Date :

(ARUN KUMAR)

Indian Bureau of Mines