

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

MCDR INSPECTION REPORT

Goa regional office

Mine file No : Goa/Fe/7

Mine code : 30GOA01025

- (i) Name of the Inspecting : **K03**) **G. S. KANNAN**
Officer and ID No.
- (ii) Designation : Junior Mining Geologist
- (iii) Accompanying mine : S/Shri.Ramesh Mines Manager & S.N.Hedge Geologist
Official with
Designation
- (iv) Date of Inspection : 12/12/2016
- (v) Prev.inspection date : 29/06/2010

PART-I : GENERAL INFORMATION

1. (a) **Mine Name** : **CUPLEGAICHEM GUER DONGER**
- (b) **Registration NO.** : **IBM/197/2011**
- (c) **Category** : **A Mechanised**
- (d) **Type of Working** : **Opencast**
- (e) **Postal address**
- State : **GOA**
- District : **NORTH GOA**
- Village : **SIRIGAO/MAYEM**
- Taluka : **BICHOLIM**
- Post office : **ASSONORA**
- Pin Code : **403503**
- FAX No. : **0832-2521011 (hq)**
- E-mail : **ccl@chowgule.co.in**
- Phone : **0832-5632016/5632017**
- (f) **Police Station** : **Bicholim**
- (g) **First opening date** : **08/07/1949**
- (h) **Weekly day of rest** : **SUN**
2. **Address for correspondance** : **Sirigao Mine of M/s Chowgule**
At- Sirigao, Po-Assonora
Tq- Bicholim, Goa
3. (a) **Lease Number** : **GOA0028**
- (b) **Lease area** : **96.85**
- (c) **Period of lease** :
- (d) **Date of Expiry** :
4. **Mineral worked** : **IRON ORE** **Main**

5. Name and Address of the

Lessee : CHOWGULE & CO. LTD.
Marmugao Harbour Chowgule
House Vasco-da-gama SOUTH
GOA GOA
Phone:0832-343228,343223
FAX :

Owner : V.V.Chowgule
Chowgule House Mormugao
Harbour, Vasco-da-gama
SOUTH GOA GOA
Phone: 521010 (0)
FAX : 0832-521013

Agent : R.P. Alvenkar
M/s Chowgule & Co. Ltd.
Mines Central Office Post-
Pale NORTH GOA GOA
Phone: 372230
FAX : 0832-372228

Mining Engineer

Name : RAVINDRA NIPANE,Full Time
Qualification : B.E
Appointment/ : 20/02/2010
Termination date

Mining Engineer

Name : MUKESH KUMAR THAWAIT,Full Time
Qualification : B.E (MINING)
Appointment/ : 08/10/2007 03/07/2008
Termination date

Mining Engineer

Name : NABINKUMAR SINGH,Full Time
Qualification : B.E (MINING)
Appointment/ : 20/09/2005 08/10/2007
Termination date

Mining Engineer

Name : SRISH PAL,Full Time
Qualification : B.Tech.(Mining) & Holder of FCMMC
Appointment/ : 01/06/2004
Termination date

Mining Engineer

Name : Praveen Kumar,Full Time
Qualification : B. Tech. (Mining)
Appointment/ : 01/03/1996
Termination date

Mining Engineer

Name : Sanjay Chakraborty,Full Time
Qualification : BE Mining , FCMM
Appointment/ : 20/09/2005
Termination date

Mining Engineer

Name : HITESH Y. KULARKAR, Full Time
 Qualification : B.E
 Appointment/ :
 Termination date

Geologist

Name : M.G. Perira, Full Time
 Qualification : M.Sc. (Geology)
 Appointment/ : 22/12/1993
 Termination date

Manager

Name : PARTHA GHOSH
 Qualification : B.TECH (MINING), FCC
 Appointment/ : 25/05/2002 31/05/2004
 Termination date

Manager

Name : RAMESH GOVIND CHODANKAR
 Qualification : FIRST CLASS MINE MGR. CERT. OF COMP.
 Appointment/ : 21/09/2009
 Termination date

Manager

Name : G.B. Palav
 Qualification : Dip. in Mining, FCMM
 Appointment/ : 30/11/1999 25/01/2002
 Termination date

6. Date of approval of Mining Plan/Scheme of Mining	:	Renewal under rule 22 MCR1960	08/07/1998
		Renewal under rule 22 MCR1960	08/07/1998
		Mining Scheme rule 12 MCDR1988	24/01/2003
		Modif. approved Mining Scheme	13/04/2004
		Renewal under rule 24 MCR1960	09/05/2007
		Modif. of approved Mining Plan	13/08/2012
		MP modif under MCR 1960	06/10/2015

PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	Nil	Nil	
1b	Exploration over lease area for geological axis 1 or 2	Additional exploration was not proposed in modified mining plan.	Additional exploration is not carried out after re-commencement of mining operations in September 2015. Area explored under G-1 category is 55 Hect. Total 230 boreholes were drilled with 7954m drilling.	
1c	Exploration Agencies and Expenditure in lakh rupees during the year	Own drilling and/or contract drilling machines were used for exploration in the past.	Total 230 boreholes were drilled. Total Rs. 108.05 lacs was spent on exploration.	
1d	Balance area to be explored to bring Geological axis in 1 or 2	Exploration was carried out at 50m X 50m grid interval. Additional exploration was not proposed	Exploration was carried out at 50m X 50m grid interval. Balance area of 20 hect area has to be explored for availability of ore from G-2 to G-1.	
1e	Balance reserve as on 01/04/20	As on 01.04.2016 Proved Mineral Reserves (111) = 9.29 Million Tons Feasibility Mineral Reserves (211) = 3.86 Million Tons Indicated Mineral Resources (332) = 1.19 Million Tons	As on 01.04.2016 Proved Mineral Reserves (111) = 9.345 Million Tons Feasibility Mineral Reserves (211) = 3.86 Million Tons Indicated Mineral Resources (332) = 1.19 Million Tons	

1f	General remarks of inspecting officers on geology, exploration etc	The deposit is of Plunging anticline type and is part of Bicholim Sirigao Deposit	The Plunging anticline type deposit is explored and operating	For the presently, no exploration proposals drawn.
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Development :

Sl.No.	Item	Propasals	Actual work	Remarks
2a	Location of development w.r.t.lease area	W-138 to -485/ S +57 to +119	W-138 to -485/ S +57 to +119	
2b	Separate benches in topsoil, overburden and minerals (Rule 15)	Topsoil is not present in area. Proposed 2 benches in waste and 6 benches in ore.	Topsoil is not present in area. 1 benches in waste and 1 benches in ore are developed.	
2c	Stripping ratio or ore to OB ratio	1 : 1.14	1 : 1.13	
2d	Quantity of topsoil generation in m3	Nil	Nil	No Top Soil is Existing
2e	Quantity of overburden generation in m3	29,950 Cu.m/ 69,785 Tons	2,347 Cu.m/ 5,400 Tons	
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc	Proposed for 69785 Tons from 2 benches	Achieved only 2347 tons from 1 benches	

Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
3a	Number of pit proposed for production	Development and production was proposed in Pit-1.	Development and production is carried out as per in proposed area.	

3b	Quantity of ROM mineral production proposed	The total target of ROM production was 61000 tonnes during 2015-2016 as per distribution from lessee on capping on EC limit.	Total 4800 tonnes of ROM production was reported during the year 2015-2016.
3c	Recovery of sailable/usable mineral from ROM production	100 %	100 %
3d	Quantity of mineral reject generation	No Proposal	Nil
3e	Grade of mineral rejects generation and threshold value declared.	No Proposal	Nil
3f	Quantity of sub grade mineral generation.	No Proposal	Nil
3g	Grade of sub grade mineral generation	No Proposal	Nil
3h	Manual / Mechanised method adopted for segregating from ROM	Dry screening was proposed for grade-wise production.	Electric operated mechanical screen plants are in use for grade wise production of iron ore in lumps and fines in adjacent Lease area.
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 and blasting was not proposed.	Drilling and blasting is not carried out and ripper dozer is used for excavation.

3k	Provision of mining machineries in mineral benches	Excavator- 1 No Ripper Dozer - 1 No Tipper - 11 Nos W/ Loader - 1 No Dozer - 1 nNo Water tanker - 1 No Motor Grader - 1 No	Excavator- 1 No Ripper Dozer - 1 No Tipper - 11 Nos W/ Loader - 1 No Dozer - 1 nNo Water tanker - 1 No Motor Grader - 1 No	All these machineries are common for Sirigao Mine.
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Bench height of 6m was proposed in waste and Ore.	As per the Proposal all bench height is maintained	
3m	Total area covered under excavation/pits	1.89 hect proposed	0.25 hect achieved	
3n	Ore to OB ratio for the pit/mine during the year.	1 : 1.14	1 : 1.13	
3o	Total area put in use under different heads at the end of year	Land use Pattern as on 01.04.2016 Mines/ Pit = 39.66 Hect Backfilled & Rehabiltated = 10.50 Hect DUmp = 1.20 Hect Road/ Infrastructure = 18.125 Hect Under Railway = 5.70 hect	Land use Pattern as on 01.04.2016 Mines/ Pit = 39.66 Hect Backfilled & Rehabiltated = 10.50 Hect DUmp = 1.20 Hect Road/ Infrastructure = 18.125 Hect Under Railway = 5.70 hect	2015-2016 proposed working area is within existing pit.
3p	Production of ROM mineral during the last five year period as applicable	2015-2016 = 61,000 tons 2014-2015 = Nil 2013-2014 = Nil 2012-2013 = 2,00,000 tons 2011-2012 = 1,00,000 tons	2015-2016 =4,800 tons 2014-2015 = Nil 2013-2014 = Nil 2012-2013 = Nil 2011-2012 = 2,227,804 tons	During the Period Sep 2012 to Oct 2015, the Mine was not working due to statutory order
3q	General remarks of inspecting officers on method of mining etc.	Nil	Nil	

Solid Waste Management - Dumping:

Sl.No.	Item	Propasals	Actual work	Remarks
4a	Separate dumping of topsoil, OB and mineral rejects (Rule 32,33)	There is no Topsoil and Mineral rejects, only OB is proposed as temporary backfilling inside the bottom of pit. Proposed area was 0.90 hect.	Entire developed quantity of 5400 tons has been backfilled in the proposed the area	
4b	Location of topsoil, OB and mineral reject dumps	There is no generation of Topsoil and Mineral rejects. Separate temporary backfilling of OB waste was proposed inside the Pit in Location of W -325 to W -460/ N +90 to N + 200	There is no generation of Topsoil and Mineral rejects. OB waste has separate temporary backfilled inside the Pit in Location of W -325 to W -460/ N +90 to N + 200	
4c	Number of dumps within lease area and outside of lease area	Within Lease = 1 Outside Lease = 1	Within Lease = 1 Outside Lease = 1	Outside Lease Dump is Common for Sirigao Mine
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	No external dumping was proposed; however temporary backfilling was proposed, Outside UPL	Backfilling has Carried out as per proposed area outside the UPL	
4e	Number of active and alive dumps.	Active Dump = Nil Alive Dump =Nil	There is no active dump within lease area for waste dumping.	
4f	Number of dead dumps.	Within Lease = 1 Outside Lease = 1	Within Lease = 1 Outside Lease = 1	
4g	Number of dumps established.	Nil	One	
4h	Whether Retaining wall or garland drain all along dumps are there.	Garland drain, Settling Pond was proposed on different terraces of backfilled area to avoid wash-off.	Trenchs, Settling Pond is maintenances and cleaning were done to avoid wash-off.	

4i	Length of Retaining wall or garland drain all along dumps	Trench & Settling Pond maintenances and cleaning	Trench & Settling Pond are maintained and cleaned
4j	Number of settling ponds	3 Nos Settling Ponds proposed for desilting	6 nos of Settling ponds has been cleaned
4k	Specific comments of inspecting officer on waste dump management	Nil	Old dump-3 is established. There is no generation of Topsoil and Mineral rejects. OB waste has temporary backfilled inside the Pit in Location of W - 325 to W -460/ N +90 to N + 200. Trenchs, Settling Pond are maintained and cleaning were done to avoid wash-off.

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.	Due to non availability of area, it is proposed for temporary backfilling within Pit.	Temporary backfilling has been carry out as per proposal	
5b	Area under backfilling of mined out area	W -325 to W - 460 N +90 to N +200 for 0.90 Hect area	W -325 to W -460 N +90 to N +200 for 0.10 Hect area	Due to less development, backfilling has done for only 0.10 hect
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	Nil	Nil	
5d	Total area fully reclaimed and rehabilitated	Nil	Nil	
5e	General remarks of inspecting officers on backfilling and reclamation etc.	Nil	Nil	

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).	It should be on or before 1st July every year.	Submitted within time	
6b	Area available for rehabilitation (ha) .	Mineral is persisting in pit bottom and temporary backfilling is proposed in it for Void available in this pit is 100m X 90m x 30m.	Temporary backfilling is carried out in and area covered is almost 0.10ha.	
6c	afforestation done (ha).	Nil	Nil	
6d	No. of saplings planted during the year	Nil	Nil	
6e	Cumulative no .of plants	Total 2,40,000 saplings were proposed during last approved document period from 2007-2008 to 2012-2013.	Total 2,96,430 saplings were planted during 2008-09 to 2012-13.	Afforestation work is common for Sirigao Mines
6f	Any other method of rehabilitation	Nil	Nil	
6g	Cost incurred on watch and care during the year	Nil	Nil	
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (Lx B x D	Void available for temporary backfilling is 100m X 90m x 30m.	5400 tons has backfilled in 30m X 10m X 10m	
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	Nil	Nil
6n	Compliance of rehabilitation of waste land within lease (ii)Area rehabilitation (ha)	Nil	Nil
6o	Compliance of rehabilitation of waste land within lease (iii)Method of rehabilitation	Nil	Nil
6p	Compliance of environmental monitoring (core zone and buffer zone)	Quarterly environment monitoring is required and report has to be sent to IBM Regional office.	Quarterly environment monitoring is carried out through own as well as private agency.
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.	Nil	Nil

Mineral Conservation:

Sl.No.	Item	Propasals	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	As per approved mining plan proposed ROM was classified as +60% Fe, +58-60% Fe, +55-58% Fe, +50-55% Fe, +45-50% Fe and below 54% Fe is considered as mineral reject due to low market price.	The ROM ore was dispatched to Sirigao Mine for dry screening and thereafter grade-wise production and despatch is reported	
7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	Mechanical processing i.e. dry screening was proposed for grade-wise production.	The ROM ore was dispatched to Goigonem lease of Sirigao mine for dry screening and grade-wise production reporting.	
7c	Different grade of mineral sorted out at mines.	The grade-wise production of Lumpy Ore +55% Fe, Friable Ore +55-59% Fe, Powdery Ore +60% Fe, Low-Grade Ore +45-54% Fe was proposed in modified mining plan.	Low Grade ore only has been produced during 2015-2016	
7d	Any beneficiation process at mines .	Mechanical processing i.e. dry screening was proposed for grade-wise production. It is located at Goigonem lease of Sirigao mine.	The ROM ore was dispatched to Goigonem lease of Sirigao mine for dry screening.	
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues	Nil	Nil	

 Environment:

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	No Proposal	Nil	
8b	Concurrent use or storage of topsoil	Nil	Nil	
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	Proposal was to temporary backfill the waste inside the pit due to nonavailability of other area for dumping and mineral is persisting in the pits.	Temporary backfilling is started during the year for 0.10 hect	
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	Nil	Nil	
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	Nil	Dump-3 is restored with plantation and temporary backfilling is started in pit. The mining lease will remain in operation upto 2027.	
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	Existence of plantation is there on slopes of the dump, along the road and other part of lease area. Additional plantation is not proposed during the year.	Additional plantation is not carried out during the year 2015-16.	
8g	Survival rate	No proposal.	Survival rate is around 60 to 70% for previous plantation	

8h	Water sprinkling on roads to control airborne dust	Yes, it is proposed for waster sprinkling on haul roads.	Water sprinkling on road is observed during the inspection.
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area	Nil	Surrounding area beyond lease area is greenery and lessee has carried out plantation on dump, along road etc.

Compliance of Rule 45:

Sl.No.	Item	Propasals	Actual work	Remarks
9a	Status of submission of Monthly and Annual returns	Both Annual & Monthly returns are submitting in online system.	Annual Returns has been referred back to the lessee.	
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Only Geologist & Surveyour only shown as technical persons.	During Inspection it was noticed that Mining Engineer & Mines Manager are Present in mines but not shown in Returns.	This Technical persons are common for Sirigao Mines
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	Area under pit 39.660 hect, Backfilled 10.50 hect, Dump 1.20 hect, Infrastructure 18.125 hect, other purpose 5.70 hect.	Land use pattern as per approved modified mining plan and AR are coinciding	Due to Production, development & backfilling are same existng pit, there is no changes in landuse pattern
9d	Scrutiny of Annual return on afforestation	Nil	Nil	
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	No Proposal	Nil	
9f	Scrutiny of Annual return on ROM stock and/or graded ore	ROM Stack = 4800 tons Grade -50 to 52%	Mines started working in low grade area	

9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	ROM has stocked and there is no Sales. Ex.Mine Price & Production cost is Zero	Cost of production is wrongly given. Its advice to rectifiy and give correct data and re-submit the A.R
9h	Scrutiny of Annual return on fixed assets	Fixed assets is not filled	Its advice to rectifiy and give correct data and re-submit the A.R
9k	Scrutiny of Annual return on mining machineries	Backhoe Excavator & Pump	Mining machineries are common fir Sirigao Mine

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
Rule 13(1)	16/12/2016				
Rule 27(4)	16/12/2016				
Rule 45(5)	16/12/2016				

Date :

(G. S. KANNAN)

Indian Bureau of Mines