

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

**MCDR INSPECTION REPORT**

**Bhubaneshwar regional office**

**Mine file No :** ORI/CR/JJP/MCDR-15/BBS

**Mine code :** 11ORI19017

- (i) Name of the Inspecting : **RAM** ) **RAMKISHAN R**  
Officer and ID No.
- (ii) Designation : Sr. Asst. Contrl. Mines
- (iii) Accompanying mine : Shri S Patni, Agent, Shri L Mohapatra, Manager  
Official with  
Designation
- (iv) Date of Inspection : 05/10/2020
- (v) Prev.inspection date : 24/09/2019

**PART-I : GENERAL INFORMATION**

1. (a) **Mine Name** : **MAHAGIRI**
- (b) **Registration NO.** : **IBM/4200/2011**
- (c) Category : A Fully Mechanised
- (d) Type of Working : Opencast
- (e) Postal address
- State : ORISSA
- District : JAJPUR
- Village : KALIAPANI
- Taluka : SUKINDA
- Post office : KALIPANI
- Pin Code : 755047
- FAX No. : 06742580020
- E-mail : mineplanningcell@imfa.in
- Phone : 06742580100
- (f) Police Station : TOMKA
- (g) First opening date : 16/01/2006
- (h) Weekly day of rest : SUN
2. Address for : AT/ PO: KALIAPANI,  
correspondance DIST: JAJPUR  
ORISSA
3. (a) Lease Number : ORI0693
- (b) Lease area : 116.76
- (c) Period of lease : 30
- (d) Date of Expiry : 03/09/2029
4. Mineral worked : CHROMITE Main

## 5. Name and Address of the

Lessee : INDIAN CHARGE CHROME LIMITED.  
BOMIKAL PO RASULGARH  
BHUBNESHWAR ORISSA  
Phone:580100,580125  
FAX :580145/580020

Owner : C R RAY  
IMFA BUILDIND, BOMIKHAL  
RASULGARH, BHUBANESWAR  
ODISHA JAJPUR ORISSA  
Phone: 06742580100  
FAX :

Agent : SUDHANSHU PATNI  
M/S IMFA LIMITED, KALIAPANI  
JAJPUR ODISHA JAJPUR ORISSA  
Phone: 9937299495  
FAX :

## Mining Engineer

Name : SHRI JALANDHAR PATRA,Full Time  
Qualification : M TECH MINING  
Appointment/ : 26/10/2017  
Termination date

## Geologist

Name : KHIROD KUMAR MOHAPATRA,Full Time  
Qualification : MSC (GEOLOGY)  
Appointment/ : 02/03/2015  
Termination date

## Manager

Name : SHRI LALATENDU MAHAPATRA  
Qualification : AMIE MINING  
Appointment/ : 25/10/2017  
Termination date

6. Date of approval of Mining Plan/Scheme of Mining	:	Modif.of approved Mining Plan	29/11/2007
		Mining Scheme rule 12 MCDR1988	22/03/2010
		Modif.approved Mining Scheme	11/11/2011
		Mining Scheme rule 12 MCDR1988	06/04/2015
		Modif.of approved Mining Plan	10/03/2017
		Modif.approved Mining Scheme	29/03/2019
		MP review under 17(1) MCR 2016	14/11/2019

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

## Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	No such specific proposal.	During the year 2019-20, there are 11 boreholes drilled.	
1b	Exploration over lease area for geological axis 1 or 2	5 nos boreholes during 2019-20	11 nos of boreholes were drilled during the year.	
1c	Exploration Agencies and Expenditure in lakh rupees during the year		M/s Maheswari Mining (P) Ltd for U/G Core drilling, Rs. 5628354	
1d	Balance area to be explored to bring Geological axis in 1 or 2		It has been proposed to drill 5 nos of boreholes in 2019-20 to convert G2 category to G1 category.	11 nos of boreholes have been drilled.
1e	Balance reserve as on 01/04/20	As per the approved mining plan on dated 14.11.2019 the chromite ore reserves are 10.967 mil.tonnes and resources are 7.125 mil.t.	due to addition/depletion of period of time the reserves as on 01.04.2020 are 10.793 miltonnes and resources are 7.125 mil.t.	
1f	General remarks of inspecting officers on geology, exploration etc		exploration has been carried out by 11 nos of boreholes against the proposal of 5 nos. during the year 2019-20.	

## Development :

Sl.No.	Item	Proposals	Actual work	Remarks
2a	Location of development w.r.t.lease area	Development is proposed in underground mining method.	Development carried out by underground mining method.	

2b	Separate benches in topsoil, overburden and minerals (Rule 15)	Development carried out by underground mining by decline, vertical shafts, slot raise, vent raise and xcuts etc. No top soil generation is proposed.	No top soil generated during 2018-19. Development carried out by underground mining by decline, vertical shafts, slot raise, vent raise and x-cuts etc.	
2c	Stripping ratio or ore to OB ratio	it is proposed to generate waste of 27000 cu.m. from underground mine workings during the year 2019-20.	15285 cu.m. was produced from undergorund mine workings.	due less prodcution
2d	Quantity of topsoil generation in m3	Not proposed.	There was no generation of top soil during the year 2019-20.	
2e	Quantity of overburden generation in m3	it is proposed to generate waste of 27000 cu.m. from underground mine workings during the year 2019-20.	15285 cu.m. was produced from undergorund mine workings.	
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc		Development is carried out by Underground mining method as proposed.	

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### Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
3a	Number of pit proposed for production	Under ground mining is by blasthole stoping method.	Under ground mining is by blasthole stoping method is being practiced.	

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3b	Quantity of ROM mineral production proposed	262000 tonnes from underground mining during the year 2019-20.	199178.598 tonnes	
3c	Recovery of sailable/usable mineral from ROM production	240000 tonnes of ROM production of +10% Cr2O3.	1991579.56 tonnes of ROM production of +10% Cr2O3.	
3d	Quantity of mineral reject generation	No subgrade/mineral reject production is proposed in 2019-20.	Not applicable.	
3e	Grade of mineral rejects generation and threshold value declared.	+10%Cr2O3-30%Cr2O3	+10%Cr2O3-30%Cr2O3	
3f	Quantity of sub grade mineral generation.	Not applicable	Nil	
3g	Grade of sub grade mineral generation	Not applicable	Nil	
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.	No such proposal.	Not applicable	Nil

- 3j Provision of drilling and blasting in mineral benches In Underground carried out as proposed. Nil mining for development faces Burn cut drilling pattern shall be followed. In development faces slurry explosive of 25mm & 40mm size of cartridge shall be used for effective blasting. In Stope drilling, 57mm dia. long hole and 115mm dia.DTH combination shall be used.The holeshall be drilled in ring pattern. Blasting shall be carried out by the explosive in cartridge form with electric delay detonators/Non el.
- 3k Provision of mining machineries in mineral benches Not applicable Nil
- 3l Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM Under ground underground mining method of method is practised. mining proposed.

3m	Total area covered under excavation/pits	Total area covered under mining is 9.6ha till the end of modification to the mining plan 2019-2020.	9.6 ha
3n	Ore to OB ratio for the pit/mine during the year.	it is proposed to generate waste of 27000 cu.m. from underground mine workings during the year 2019-20.	15285 cu.m. was produced from undergorund mine workings.
3o	Total area put in use under different heads at the end of year	Total area at the end of 2019-20 will be 47.874 ha	47.874 ha
3p	Production of ROM mineral during the last five year period as applicable	2015-16: 170656 MT 2016-17: 232000 MT 2017-18: 300000 MT 2018-19: 210000 MT 2019-20: 262000 MT	2015-16: 74441 MT 2016-17: 207695.64 MT 2017-18 : 186613.46 MT 2018-19: 201383.795MT 2019-20: 199178.598 MT
3q	General remarks of inspecting officers on method of mining etc.		production is carried out by underground minng method.

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Solid Waste Management - Dumping:

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Sl.No.	Item	Propasals	Actual work	Remarks
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4a	Separate dumping of topsoil, OB and mineral rejects (Rule 32,33)	no generation of top soil and mineral rejects are proposed during the year 2019-20. waste generated from underground workings is going to be backfilled in opencast workings.	mineral rejects and top soil are not produced. waste generated from underground workings is backfilled in opencast workings.
4b	Location of topsoil, OB and mineral reject dumps	no generation of top soil and mineral rejects are proposed during the year 2019-20. waste generated from underground workings is going to be backfilled in opencast workings.	mineral rejects and top soil are not produced. waste generated from underground workings is backfilled in opencast workings.
4c	Number of dumps within lease area and outside of lease area	No waste dumping is proposed during the year 2019-20.	Not applicable.
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	Not applicable.	Nil
4e	Number of active and alive dumps.	No waste dumping is proposed.	Nil
4f	Number of dead dumps.	Nil	Nil
4g	Number of dumps established.	No such proposal.	Nil



4h	Whether Retaining wall or garland drain all along dumps are there.	Yes provided.	provided.	
4i	Length of Retaining wall or garland drain all along dumps	provided.	provided.	Nil
4j	Number of settling ponds	Nil	Nil	
4k	Specific comments of inspecting officer on waste dump management		There was no generation of top soil and mineral rejects. Waste generated has been utilised for backfilling.	

#### 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.	backfilling is proposed in the exhaust portion of the opencast workings where UPL has reached.	backfilling is being carried out.	
5b	Area under backfilling of mined out area	0.1 ha during the year 2019-20.	0.06 ha	due to less generation of waste from underground workings.
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	Not applicable.	Nil	
5d	Total area fully reclaimed and rehabilitated	0.1 ha	0.1 ha	
5e	General remarks of inspecting officers on backfilling and reclamation etc.		Backfilling/reclamation has been carried out in the mined out area.	

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 Progressive Mine Clousre Plan:
 

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Sl.No.	Item	Propasals	Actual work	Remarks
6a	Whether Annual report on PMCP submitted on time and correctly. Rule 23 E(2).	Yearly report as per the format specified by the Indian Bureau of Mines, before 1st day of July every year setting forth the extent of protective and rehabilitative works carried out as envisaged in the approved mine closure plan.	Submitted for the year 2019-20.	
6b	Area available for rehabilitation (ha) .	0.1 ha	0.1 ha	
6c	afforestation done (ha).	0.1 ha during the year 2019-20.	0.1 ha	
6d	No. of saplings planted during the year	250 nos	262 nos	
6e	Cumulative no .of plants		6869 nos	
6f	Any other method of rehabilitation	Not applicable	Nil	
6g	Cost incurred on watch and care during the year		Rs. 3.31 lakh	

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6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling ( Lx B x D	1.49 lakh cu.m.	1.49 lakh cu.m.
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	27000 cu.m.	15285 cu.m.
6j	Compliance on reclamation and rehabilitation by backfilling (iii)Afforestation on on backfilled area	0.1 ha	0.1 ha
6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	Not proposed.	Nil
6l	Compliance on reclamation and rehabilitation by backfilling (v)any other specific means.	Not proposed.	Nil
6m	Compliance of rehabilitation of waste land within lease (i)afforestation	Not proposed.	Nil
6n	Compliance of rehabilitation of waste land within lease (ii)Area rehabilitation (ha)	Not applicable	Nil

6o	Compliance of rehabilitation of waste land within lease (iii)Method of rehabilitation	Not applicable Nil	
6p	Compliance of environmental monitoring (core zone and buffer zone)	Quarterly monitoring of air, water and noise levels are proposed.	Quarterly monitoring of air, water and noise levels are being monitored.
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.		PMCP measures were implemented as proposed

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#### Mineral Conservation:

Sl.No.	Item	Proposals	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	The ROM is crushed/screened to different size specification and grades before being dispatched to captive ferro chrome plants is proposed..	carried out.	
7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	Mechanical	Mechanical	
7c	Different grade of mineral sorted out at mines.	ROM Grade +10% Cr2O3 and cut off grade of ore stipulated by captive ferro chrome plants is 30% Cr2O3%.	Grade wise production and dispatch of lump and fines carried out.	

7d	Any beneficiation process at mines	Only crushing and screening proposed.	carried out.
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues		No beneficiation is carried out. Only crushing and screening carried out. grade wise sorting of mineral is carried out. Entire ROM is utilised in captive chrome plant.

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Environment:

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	Not applicable	Nil	
8b	Concurrent use or storage of topsoil	Not applicable	Nil	
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	Generated waste is proposed to be backfilled in the mined out area of opencast workings. No dumps proposed	Generated waste is backfilled in the mined out area of opencast workings.	
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	Generated waste is proposed to be backfilled in the mined out area of opencast workings.	Generated waste is backfilled in the mined out area of opencast workings.	

8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	propsoed.	carried out.
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)		262 nos of saplings were planted 2019-20.
8g	Survival rate		95%
8h	Water sprinkling on roads to control airborne dust	Water sprinkling on haul roads for dust supression.	carried out.
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area		Aestheic beauty is maintained in and around mine.

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Compliance of Rule 45:

Sl.No.	Item	Propasals	Actual work	Remarks
9a	Status of submission of Monthly and Annual returns	Annual and monthly returns for the year 2019-20 has been submitted.	submitted.	
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Graduat Mining Engineer: 14 Diploma Mining Engineer: 15 Geologist: 5	Graduat Mining Engineer: 14 Diploma Mining Engineer: 15 Geologist: 5	

9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	Utilization of surface area (in ha.) i) O/C working - 9.60ha ii) Used for waste disposal- 5.09ha iii) Occupied by plant, buildings, residential, welfare buildings and roads - 12.688ha iv) Mineral storage, and others- 20.496ha closure- 0.120ha E) Other purpose - 5.46 F) Work done	found to be in order.
9d	Scrutiny of Annual return on afforestation	262 nos	262 nos
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	Nil	Nil
9f	Scrutiny of Annual return on ROM stock and/or graded ore	Closing stock of ROM as per annual return 2019-20 is 28919.079 tonnes.	found to be in order.
9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	prodcution cost Rs. 6880/-	prodcution cost Rs. 6880/-
9h	Scrutiny of Annual return on fixed assets	Rs. 336040748	RS.336040748

9k	Scrutiny of Annual return on mining machineries	Front end loader : 10nos. Tippers: 9 nos Load Haul Dumper : 5 nos. etc.,	Front end loader : 10nos. Tippers: 9 nos Load Haul Dumper : 5 nos. etc.,	Nil
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**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 :**

(RAMKISHAN R)

Indian Bureau of Mines