

**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, Mine Manager  
Official with  
Designation
- (iv) Date of Inspection : 29/11/2017
- (v) Prev.inspection date : 21/07/2017

**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

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

## Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	No such specific proposal, however 4 nos of boreholes planned for the year 2016-17.	5 nos boreholes were drilled for the year 2016-17.	Nil
1b	Exploration over lease area for geological axis 1 or 2	4 nos of boreholes were planned for the year 2016-17.	5 nos of boreholes were drilled during the year 2016-17.	Nil
1c	Exploration Agencies and Expenditure in lakh rupees during the year	M/s Maheswari Mining Pvt Ltd is the exploration agency.	However Rs 687410 spent towards exploration during 2016-17 and exploration worked carried out by M/s Maheswari Mining Pvt Ltd.	Nil
1d	Balance area to be explored to bring Geological axis in 1 or 2	Total 10 nos of boreholes have been proposed during scheme period for converting the G2 to G1 level. 46.047 is explored by geo physical and geo chemical prospecting and based on the results further boreholes will be proposed.	5 nos of boreholes were drilled during the year 2016-17 for converting the G2 level to G1 level in depth wise.	Nil.

1e	Balance reserve as on 01/04/20	As per the approved mining plan document on dated 10/03/2017, 8.375 million tonnes of reserves and resources of 3.802 million tonnes of chrome ore as on 01.01.2017.	after addition and depletion of reserves and resources over the period as on 01.04.2017, 8.308 million tonnes of chromite ore reserves and resources of 3.802 million tonnes. the quantity of 0.067 mil.tonnes depleted during the period from 01.01.2017 to 31.03.2017.	Nil.
1f	General remarks of inspecting officers on geology, exploration etc	No comments to offer.	5 nos of bore holes were drilled during the year 2016-17.	Nil.

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Development :

Sl.No.	Item	Propasals	Actual work	Remarks
2a	Location of development w.r.t.lease area	Development is proposed in both opencast mining with 1 quarry (advancement in the direction of East to West) and underground mining.	carried out by one quarry in opencast with 1 quarry (advancement in the direction of East to West) and underground mining by delcine, shaft, raises, x-cuts etc.	Nil
2b	Separate benches in topsoil, overburden and minerals (Rule 15)	seperate benches in over burden and mineral benches proposed. 6 m bench height with 10 m width are proposed in OB and mineral.	seperate benches in over burden and mineral benches maintained. 6 m bench height with 10 m width are maintained in OB and mineral.	No top soil is generated.

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2c	Stripping ratio or ore to OB ratio	1:2 t/cu.m. for the year 2016-17.	1:2 t/cu.m	Nil
2d	Quantity of topsoil generation in m3	No proposal.	Nil	Nil
2e	Quantity of overburden generation in m3	65000 cu.m. for the year 2016-17.	56994 cu.m.	variation is due to less development and irregular nature of ore deposit.
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc	No comments to offer.	Development is in opencast quarry which is one only and under ground mining is by blast hole stoping method carried out with access of decline and shafts.	Nil

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#### Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
3a	Number of pit proposed for production	1, opencast mining: quarry-1 and underground mining is by blast hole stoping method.	1, opencast mining: quarry-1 and underground mining is by blast hole stoping method.	Nil.
3b	Quantity of ROM mineral production proposed	232000 tonnes of ROM chromite ore for FY 2016-17 from both opencast and underground mining. 32000 tonnes from opencast mine and 200000 tonnes from underground mining.	207695.64 tonnes of ROM chromite ore for FY 2016-17 from both opencast and underground mining. 28475 tonnes from opencast mining and 179220 tonnes from underground mining.	Variation is due to less demand from captive chrome plant.
3c	Recovery of sailable/usable mineral from ROM production	100%	100%	No minreal rejects are generated.

3d	Quantity of mineral reject generation	No proposal.	Nil	Nil
3e	Grade of mineral rejects generation and threshold value declared.	No proposal.	Nil	Nil
3f	Quantity of sub grade mineral generation.	No proposal.	Nil	Nil
3g	Grade of sub grade mineral generation	+10%Cr2O3 - 30%Cr2O3	+10%Cr2O3 - 30%Cr2O3	Nil.
3h	Manual / Mechanised method adopted for segregating from ROM	Mechanised	Mechanised	Nil
3i	Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects.	No proposal.	Nil	entire ROM produced is utilised at captive chrome plant.
3j	Provision of drilling and blasting in mineral benches	drilling and blasting is rarely required in opencast mineral benches. excavation is done by excavators. 110 mm dia dth holes will be drilled with intitation of NONEL.	drilling and blasting is rarely required in opencast mineral benches. excavation is done by excavators. 10 mm dia dth holes will be drilled with intitation of NONEL.	Nil
3k	Provision of mining machineries in mineral benches	back hoe: 2.5 cu.m dumpers: 32 tonnes, dozer: 360 hp	back hoe: 2.5 cu.m dumpers: 32 tonnes, dozer: 360 hp	Nil

3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	proposed with 6 m height benches.	maintained 6 m height benches.	Nil
3m	Total area covered under excavation/pits	total area covered under excvation/pit is 9.6 ha till the end of the scheme period 2019-20.	9.34 ha covered till 2016-17.	quarry workings are exhausted by 2017-18. no more opencast mining will be carried out further.
3n	Ore to OB ratio for the pit/mine during the year.	1:2 t/cu.m. for the year 2016-17.	1:2 t/cu.m.	Nil
3o	Total area put in use under different heads at the end of year	total area 44.544 ha, excavation: 9.6 ha, mineral storage:17.166 ha waste disposal: 5.09 ha, plant buildings roads: 12.688 ha, end of the scheme period 2019-20.	total area 26.23 ha, excavation: 9.34 ha, mineral storage:5.46 ha waste disposal: 4.7 ha, plant buildings roads: 6.73 ha, till 2016-17.	quarry workings are exhausted by 2017-18. no more opencast mining will be carried out further.

3p	Production of ROM mineral during the last five year period as applicable	2012-13: 106445 tonnes of chromite ore 2013-14: 192518 tonnes of chromite ore 2014-15: 377866 tonnes of chromite ore 2015-16: 170656 tonnes of chromite ore 2016-17: 232000 tonnes of chromite ore	2012-13: 72983.32 tonnes of chromite ore 2013-14: 73795.35 tonnes of chromite ore 2014-15: 83581 tonnes of chromite ore 2015-16: 74441 tonnes of chromite ore 2016-17: 207695.64 tonnes of chromite ore	Nil
3q	General remarks of inspecting officers on method of mining etc.	No comments to offer.	overall developmnet of opencast quarry and underground development is as per proposal.	Nil

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#### Solid Waste Management - Dumping:

Sl.No.	Item	Propasals	Actual work	Remarks
4a	Separate dumping of topsoil, OB and mineral rejects (Rule 32,33)	seperate dumping of OB proposed.	seperate dumping of OB carried out.	Nil
4b	Location of topsoil, OB and mineral reject dumps	northwest of the lease area	northwest of the lease area	Nil
4c	Number of dumps within lease area and outside of lease area	1 waste dump within lease area	1 waste dump within lease area	Nil

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4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	Out side UPL	Out side UPL	As there is no proposal of active dump during the year 2016-17 and the stabilised old dump was already proposed and maintained outside UPL.
4e	Number of active and alive dumps.	No proposal.	Nil	Nil
4f	Number of dead dumps.	1 waste dump.	1 waste dump.	Nil
4g	Number of dumps established.	1 waste dump	1 waste dump	Nil
4h	Whether Retaining wall or garland drain all along dumps are there.	provided.	provided.	there is no proposal to construct retaining wall and gralnad drain as there is no active dump. Garland drain: 3597 mtrs Settling Pond: 6 nos of settling ponds Retaining wall: 1110 mtrs have ben already provided around the old dumps.
4i	Length of Retaining wall or garland drain all along dumps	No proposal.	Nil	there is no proposal to construct retaining wall and gralnad drain as there is no active dump. Garland drain: 3597 mtrs Settling Pond: 6 nos of settling ponds Retaining wall: 1110 mtrs have ben already provided around the old dumps.

4j	Number of settling ponds	No proposal.	Nil	there is no proposal to construct retaining wall and ground drain as there is no active dump. Ground drain: 3597 mtrs Settling Pond: 6 nos of settling ponds Retaining wall: 1110 mtrs have been already provided around the old dumps.
4k	Specific comments of inspecting officer on waste dump management	No comments to offer.	No active dump is there presently and one waste dump is already stabilised	Nil.

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Solid Waste Management - Backfilling:

Sl.No.	Item	Proposals	Actual work	Remarks
5a	Status of part or full extraction of mineral from mined out area before starting backfilling.	full extraction of mineral from mined out area before backfilling is proposed.	carried out.	Nil
5b	Area under backfilling of mined out area	0.08 ha for the year 2016-17.	0.58 ha.	the backfilling is proposed from east to west of the quarry. however due to slide in the hangwall side of the quarry that area was also taken into consideration .
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	No proposal.	Nil	No generation of top soil.

5d	Total area fully reclaimed and rehabilitated	0.08 & 0.1 Ha	0.58 & 0.49 ha	Total area reclaimed is 0.58 ha due to slide in the hangwall side of the quarry the backfilled area is more than the proposed area and rehabilitated is 0.49 ha is also more than than the proposed area is because plntation was carried out in the previous backfilled area also from east to west of the quarry.
5e	General remarks of inspecting officers on backfilling and reclamation etc.	No comments to offer.	backfilling and reclamation is carried out in the mined out area i.e. opencast quarry.	Total area reclaimed is 0.58 ha due to slide in the hangwall side of the quarry the backfilled area is more than the proposed area and rehabilitated is 0.49 ha is also more than than the proposed area is because plntation was carried out in the previous backfilled area also from east to west of the quarry.

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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).	submitted	submitted with in stipulated time period.	Nil

6b	Area available for rehabilitation (ha) .	0.1 ha for the year 2016-17.	0.49 ha from east to west of the quarry in the backfilled area.	afforestation 0.49 ha is more than than the proposed area is because plntation was carried out in the previous backfilled area also from east to west of the quarry.
6c	afforestation done (ha).	0.1 ha	0.49 ha	afforestation 0.49 ha is more than than the proposed area is because plntation was carried out in the previous backfilled area also from east to west of the quarry.
6d	No. of saplings planted during the year	250 nos for the year 2016-17.	1750 nos for the year 2016-17.	In the backfiled area of the quarry from east to west.
6e	Cumulative no .of plants	No such specific proposal.	5209 nos cumulatively for dump managment.	as per the PMCP returns.
6f	Any other method of rehabilitation	No proposal.	Nil	Nil
6g	Cost incurred on watch and care during the year	No such specific proposal.	Nil	Nil

6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling ( Lx B x D	0.08 ha & 0.1 ha	0.58 ha & 0.49 ha	Total area reclaimed is 0.58 ha due to slide in the hangwall side of the quarry the backfilled area is more than the proposed area and rehabilitated is 0.49 ha is also more than than the proposed area is because plntation was carried out in the previous backfilled area also from east to west of the quarry.
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	0.08 ha & 0.1 ha	0.08 ha & 0.1 ha	Total area reclaimed is 0.58 ha due to slide in the hangwall side of the quarry the backfilled area is more than the proposed area and rehabilitated is 0.49 ha is also more than than the proposed area is because plntation was carried out in the previous backfilled area also from east to west of the quarry.
6j	Compliance on reclamation and rehabilitation by backfilling (iii)Afforestati on on backfilled area	250 nos	1750 nos	Nil

6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	No proposal.	Nil	Nil
6l	Compliance on reclamation and rehabilitation by backfilling (v)any other specific means.	No proposal.	Nil	Nil
6m	Compliance of rehabilitation of waste land within lease (i)afforestation	No proposal.	Nil	Nil
6n	Compliance of rehabilitation of waste land within lease (ii)Area rehabilitation (ha)	No proposal.	Nil	Nil
6o	Compliance of rehabilitation of waste land within lease (iii)Method of rehabilitation	No proposal.	Nil	Nil
6p	Compliance of environmental monitoring (core zone and buffer zone)	quarterly monitoring of air, water and noise levels are proposed.	carried out.	Nil
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.	No comments to offer.	works under PMCP are carried out more or less as per plan.	Nil.

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Mineral Conservation:

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Sl.No.	Item	Propasals	Actual work	Remarks
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7a	ROM Mineral dispatch or grade-wise sorting within lease area	proposed. the following grade-wise sorting is proposed. +40%Cr2O3 - 52%Cr2O3, below 40%Cr2O3	carried out grade-wise sorting as proposed +40%Cr2O3 - 52%Cr2O3, below 40%Cr2O3.	Nil
7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	mechanised. ROM excavated is transported to crushing & screening plant which is situated within the leasehold area and those are subjected to crushing and then screening.	mechanised. ROM excavated is transported to crushing & screening plant which is situated within the leasehold area and those are subjected to crushing and then screening.	Nil
7c	Different grade of mineral sorted out at mines.	+40%Cr2O3 - 52%Cr2O3, below 40%Cr2O3	+40%Cr2O3 - 52%Cr2O3, below 40%Cr2O3	Nil
7d	Any beneficiation process at mines .	No proposal. only crushing and screening are proposed.	Nil. only crushing and screening carried out.	Nil
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues	No comments to offer.	No beneficiation is carried out. Entire ROM is utilised at captive plant.	Nil

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**Environment:**

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	No proposal.	Nil	No generation of top soil.
8b	Concurrent use or storage of topsoil	No proposal.	Nil	No generation of top soil.

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8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	generated waste is backfilled in the mined out area in the quarry from east to west. No dumps proposed.	generated waste is backfilled in the mined out area in the quarry from east to west. No active waste dump maintained.	Nil
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	backfilling by waste is proposed in the mined out quarry from east to west..	backfilling by waste is carried out in the mined out quarry from east to west..	Nil
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	reclamation: 0.08 ha, Rehabilitation: 0.1 ha	reclamation: 0.58 ha, Rehabilitation: 0.49 ha	from PMCP returns.
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	No such specific proposal.	24404 nos of plants planted till 2016-17	Nil
8g	Survival rate	No such specific proposal.	91% as informed by lessee.	Nil
8h	Water sprinkling on roads to control airborne dust	mobile water tanker sprinlers are proposed for water sprinkling on haul roads for dust suppression.	mobile water tanker sprinlers are used for water sprinkling on haul roads for dust suppression.	Nil



8i	General remarks of inspecting officer on aesthetic beauty in and around mines area	No comments to offer.	aesthetic beauty is maintained	Nil
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Compliance of Rule 45:

Sl.No.	Item	Propasals	Actual work	Remarks
9a	Status of submission of Monthly and Annual returns	submitted.	monthly and annual returns for FY 2016-17 submitted	submitted in stipulated time.
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Graduate Mining Engineer: 7, Diploma Mining Engineer: 13, Geologist: 5, Surveyor: 3	Graduate Mining Engineer: 6, Diploma Mining Engineer: 13, Geologist: 5, Surveyor: 3	Mining Engineer and geologist are apponited.
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	OC workings: 9.34 ha, reclaimed: 5.9 ha, waste disposal: 4.7 ha, buidlings,, roads etc: 6.73 ha, other: 5.46 ha	found to be in order.	the land status furnished is found to be in order.
9d	Scrutiny of Annual return on afforestation	1750 nos	found to be in order.	Nil
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	Nil	No mineral rejects generated.	Nil
9f	Scrutiny of Annual return on ROM stock and/or graded ore	ROM production of chromite ore 207695.64 tonnes.closing stock: 21535.106 tonnes	found to be in order.	Nil

9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	production cost: Rs 2710.91	found to be in order.	Nil
9h	Scrutiny of Annual return on fixed assets	fixed assest Rs. 26926723	fixed assest Rs. 26926723	Nil
9k	Scrutiny of Annual return on mining machineries	dumpers- 12, LHDs-6, crusher-1 excavators-5 front end loaders-3	All mining machineries furnished in the AR are in order.	all the machinery are required since it is a fully mechanised mine.

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**Details of violations observed during current inspection and compliance position of violation pointed out**

Violation observed		Show couse position	
Rule NO.	Issued on Compliance on	Rule NO.	Issued on Compliance on

**Date :**

**(RAMKISHAN R)**

Indian Bureau of Mines