

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 : 11ORII19017

- (i) Name of the Inspecting : S010) SHRI G.C. SETHI
Officer and ID No.
- (ii) Designation : Deputy Controller Mines
- (iii) Accompanying mine : Shri S. Patni, Agent
Official with
Designation
- (iv) Date of Inspection : 03/05/2019
- (v) Prev.inspection date : 28/02/2019

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 73' 777 ha
- (c) Period of lease : 30
- (d) Date of Expiry : 03/09/2029 19-09-2035
- The lease awarded on 29-09-2005
for 30 years.*
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

PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	There is no back log in exploration	During the year 2018-19, there are 16 boreholes drilled.	Nil
1b	Exploration over lease area for geological axis 1 or 2	The balance area shall be explored by geophysical and geochemical prospecting during 2018-19.	Lease area explored as on 01.01.2017 under G1 was 27.73 Ha and remaining 46.047 Ha area was unexplored. Geophysical exploration has been done over unexplored area and 16 nos. of holes have been drilled on anamalous zone.	Nil
1c	Exploration Agencies and Expenditure in lakh rupees during the year		Agencies: M/s Maheswari Mining (P) Ltd for U/G Core drilling, M/s Drill King India Pvt Ltd for Surface Core drilling, M/s Coronation India Pvt Ltd for Surface non-core drilling and ISM Dhanbad for Geophysical prospecting. Expenditure: Rs. 4882463.00	Nil
1d	Balance area to be explored to bring Geological axis in 1 or 2	It has been proposed to drill 2 nos of boreholes in 2018-19 to convert G2 category to G1 category.	16 nos of boreholes have been drilled.	Nil

1e	Balance reserve as on 01/04/20	Reserves as on 01.04.2017 under 111 category of UNFC is 2699000 tonnes and under 122 category is 5609000 tonnes. Resources under 221 category is 2463000 tonnes and under 222 category is 1339000 tonnes.	Reserves as on 01.04.2018 under 111 category of UNFC is 2499500 tonnes and under 122 category is 5609000 tonnes. Resources under 221 category is 2463000 tonnes and under 222 category is 1339000 tonnes.	Nil
1f	General remarks of inspecting officers on geology, exploration etc		There is no backlog in the exploration as proposed in the approved modification to the mining plan. 16 nos of boreholes have been drilled as per proposal for 2017-18.	Nil

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 by decline, vertical shafts, slot raise, vent raise and x-cuts etc.	Nil

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 x-cuts etc. No top soil is there anywhere.	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.	Nil
2c	Stripping ratio or ore to OB ratio	1:0.15t/cum for the year 2018-19	1:0.23 t/t for the year 2018-19	Nil
2d	Quantity of topsoil generation in m ³	The Development carried out by underground mining by decline, vertical shafts, slot raise, vent raise and x-cuts etc. No top soil exists.	No top soil generated during 2018-19.	Nil
2e	Quantity of overburden generation in m ³	33283 cum for the year 2018-19	48032 tonnes during the year 2018-19.	Nil
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc		There was no generation of top soil. Only 48032 tonnes of waste was generated during the year 2018-19 from underground workings.	Nil

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 in practice.	Nil

3b	Quantity of ROM mineral production proposed	In 2018-19, ROM production proposed only from underground mining for 210000 tonnes.	In 2018-19, ROM production only from underground working was reported for 201383.795 tonnes.	Nil
3c	Recovery of sailable/usable mineral from ROM production	210000 tonnes of ROM production of +10% Cr2O3	201383.795 tonnes of ROM production of +10% Cr2O3	Nil
3d	Quantity of mineral reject generation	No sub-grade/mineral reject in 2018-19.	Nil	Nil
3e	Grade of mineral rejects generation and threshold value declared.	Not applicable.	Nil	Nil
3f	Quantity of sub grade mineral generation.	No sub-grade generation in 2018-19.	Nil	Nil
3g	Grade of sub grade mineral generation	Not applicable.	Nil	Nil
3h	Manual / Mechanised method adopted for segregating from ROM	Manual	Manual	Nil
3i	Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects.	The ore produced from the mine is hard lumpy variety and the grade is as per the need of the company's facilities and needs no beneficiation.	Nil	Nil

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| 3j Provision of drilling and blasting in mineral benches | <p>In opencast deep hole drilling. Blasting is rarely required. In 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 holes shall be drilled in ring pattern. Blasting shall be carried out by the explosive in cartridge form with electric delay detonators/Non el.</p> | <p>In development faces Burn cut drilling pattern has been followed. In development faces slurry explosive of 25mm & 40mm size of cartridge is used for effective blasting. In Stope drilling, 57mm dia. long hole and 115mm dia. DTH combination is used. The holes has been drilled in ring pattern. Blasting has been carried out by the explosive in cartridge form with electric delay detonators/ Nonel.</p> | Nil |
| 3k Provision of mining machineries in mineral benches | | | |
| 3l Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM | Under ground method of mining proposed. | Underground method practised. | Nil |

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. The opencast mining shall ceased.	9.60 ha covered till 2018-19	Nil
3n	Ore to OB ratio for the pit/mine during the year.	1:0.15 t/cum	1:0.23 t/t	Nil
3o	Total area put in use under different heads at the end of year	Total area at the end of 2019-20 will 47.874 ha; area under mining :9.6 Ha, storage for top soil: 0.25Ha, overburden dump: 5.09 Ha, mineral & subgrade ore storage, processing plant :17.166ha, infrastructure : 9.837 ha, roads: 2.851ha, safety zone: 3.08ha	Land Use Area in Hect. 1. Area under Mining- 9.60ha 2. Reclaimed/Rehabilitated - 6.31ha 3. Used for waste disposal -5.09ha 4. Occupied by plant, building residential, welfare buildings, roads- 12.688ha 5. Other purpose - 20.496ha 6. Work done under progressive mine closure plan during the year. - 0.12ha	Nil
3p	Production of ROM mineral during the last five year period as applicable	2014-15=377866 MT 2015-16=170656 MT 2016-17=232000 MT 2017-18=300000 MT 2018-19= 210000 MT	2014-15= 83581MT 2015-16= 74441 MT 2016-17=207695.64 MT 2017-18 = 186613.46 MT 2018-19=201383.795MT	MT= Metric tonnes.

3q	General remarks of inspecting officers on method of mining etc.	In 2018-19, ROM production was restricted from underground workings only and only 201383.795 tonnes of cromite ore was produced.	Nil
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Solid Waste Management - Dumping:

Sl.No.	Item	Proposals	Actual work	Remarks
4a	Separate dumping of topsoil, OB and mineral rejects (Rule 32,33)	In 2018-19, ROM production only from underground workings restricted to 210000 tonnes. The underground mining by blasthole stoping method was proposed. 33283 cum of waste was proposed to be generated and no top soil.	There was no generation of top soil and mineral rejects. Waste generated has been utilised for backfilling.	Nil
4b	Location of topsoil, OB and mineral reject dumps	Top soil- No generation. Overburden generated will be backfilled in the mined out part of the opencast quarr and no generation of Mineral Reject.	Top soil- Nil, Overburden generated is backfilled in the mined out part of the opencast quarry ,Mineral Reject - Nil	Nil
4c	Number of dumps within lease area and outside of lease area	Lone dump within the ML which is located beyond the UPL.	Lone dump within the ML which is located beyond the UPL.	Nil

4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	Outside UPL	Outside UPL	Nil
4e	Number of active and alive dumps.	One	One	Nil
4f	Number of dead dumps.	Nil	Nil	Nil
4g	Number of dumps established.	One waste dump	One waste dump	Nil
4h	Whether Retaining wall or garland drain all along dumps are there.	Exists.	Exists.	Nil
4i	Length of Retaining wall or garland drain all along dumps			
4j	Number of settling ponds	Nil	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. There is one number of dump within the lease area. The waste generated during the year 2018-19 has been utilised for backfilling	Nil

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.	The ultimate opencast pit limit is at 185 mRL. Concurrent backfilling is done in the mined out areas where the UPL has reached 185 mRL. Leaving a parting of 50 mtrs below 185 mRL (opencast limit), underground mining has started.	Backfilling done as per proposal.	Nil
5b	Area under backfilling of mined out area	0.10 ha area for the year 2018-19	0.10 ha area for the year 2018-19	Nil
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	No top soil exists.	No top soil generated during 2018-19.	Nil
5d	Total area fully reclaimed and rehabilitated	Reclaimed: 0.10Ha and Rehabilitated: 0.10 Ha	Reclaimed: 0.10Ha and Rehabilitated: 0.10 Ha	Nil
5e	General remarks of inspecting officers on backfilling and reclamation etc.		Backfilling/reclamation has been carried out in the mined out area as per the proposal.	Nil

Progressive Mine Clousre Plan:

Sl.No.	Item	Propasals	Actual work	Remarks
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6a	Whether Annual report on PMCP submitted on time and correctly. Rule 23 E(2).	The holder of mining lease shall submit to the competent authority a 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	The Annual report on PMCP for the F.Y. 2018-19 has been submitted.	Nil
6b	Area available for rehabilitation (ha) .	Rehabilitation of 0.10ha proposed in 2018-19.	Rehabilitated 0.10ha in 2018-19.	Nil
6c	afforestation done (ha).	0.10 Ha	0.12 Ha	Nil
6d	No. of saplings planted during the year	250 number of plants during the year 2018-19	320 numbers of plants during the year 2018-19	Nil
6e	Cumulative no .of plants	No specific proposal	26274 number of plants	Nil
6f	Any other method of rehabilitation	Not applicable.	Nil	Nil
6g	Cost incurred on watch and care during the year			

6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (Lx B x D	1.7 lakh Cum in (O/C) & 1.17 lakh Cum in (U/G) of waste.	0.51 lakh Cum in (O/C) & 1.10 lakh Cum in (U/G)	The opencast mine is about to cease.
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	0.19 lakh Cum in (O/C) & 0.54 lakh Cum in (U/G) waste	0.18 lakh Cum in (O/C) & 0.49 lakh Cum in (U/G) waste	Nil
6j	Compliance on reclamation and rehabilitation by backfilling (iii) Afforestation on backfilled area	250 nos.	320 nos.	More number of saplings were planted against the proposal during 2018-19.
6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	Not applicable.	Nil	Nil
6l	Compliance on reclamation and rehabilitation by backfilling (v) any other specific means.	Not applicable.	Nil	Nil
6m	Compliance of rehabilitation of waste land within lease (i) afforestation	Not applicable.	Nil	Nil
6n	Compliance of rehabilitation of waste land within lease (ii) Area rehabilitation (ha)	Not applicable.	Nil	Nil

6o	Compliance of rehabilitation of waste land within lease (iii)Method of rehabilitation	Nil	Nil	Nil
6p	Compliance of environmental monitoring (core zone and buffer zone)	Quaterly monitoring of air, water and noise levels are proposed	Quaterly monitoring of air, water and noise levels are being monitored.	Nil
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.		The holder of mining lease shall submit to the competent authority a 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. The party has complied the same.	Nil

Mineral Conservation:

Sl.No.	Item	Propasals	Actual work	Remarks
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7a	ROM Mineral dispatch or grade-wise sorting within lease area	The ROM is crushed/screened to different size specification before being dispatched to captive ferro chrome plants. The cut off grade of ore stipulated by captive ferrochrome plant is 30% Cr2O3. However, in case of generation of chrome ore between 10% to below 30% Cr2O3, the same shall be stored and suitably beneficiated before being dispatched to plants.	Grade wise production and dispatch of lump and fines at (a) below 40% Cr2O3 and (b) 40% to below 52% Cr2O3	Nil
7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	Manual	Manual	Nil
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 at (a) below 40% Cr2O3 and (b) 40% to below 52% Cr2O3	Nil

7d	Any beneficiation process at mines	The ore produced from the mine is hard lumpy variety and the grade is as per the need of the company's facilities and needs no beneficiation.	Only crushing and screening carried out.	Nil
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues	The ore produced from the mine is hard lumpy variety and the grade is as per the need of the company's facilities and needs no beneficiation.	The ROM is crushed and screened. Grade wise production and dispatch of lump and fines at (a) below 40% Cr2O3 and (b) 40% to below 52% Cr2O3. No beneficiation is carried out. Only crushing and screening carried out.	Nil

Environment:

Sl.No.	Item	Proposals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	In the opencast mining area where work is in progress ultramafic along with big quartz boulder are encountered those are termed as waste. No top soil is existing.	Nil	Nil

8b	Concurrent use or storage of topsoil	In the opencast mining area where work is in progress ultramafic along with big quartz boulder are encountered those are termed as waste. No top soil is existing.	Nil	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. No dumps proposed	Generated waste is backfilled in the mined out area.	Nil
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. No dumps proposed.	Generated waste is backfilled in the mined out area only.	Nil
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	Reclamation- 0.23 ha. and Rehabilitation - 0.14	Reclamation- 0.31ha and Rehabilitation - 0.45ha.	Nil
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)		During the year 2018-19, 320 nos of saplings planted.	Data as furnished in annual return for the year 2018-19
8g	Survival rate		90.31%	Data as furnished in annual return for the year 2018-19

8h	Water sprinkling on roads to control airborne dust	Water sprinkling on haul roads	Water sprinkling on haul roads practised.	Nil
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area		Aesthetic beauty is maintained in and around mined.	Nil

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 2018-19 has been submitted.	Annual and monthly returns for the year 2018-19 has been submitted.	Nil
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Graduate Mining Engineer: 17 Diploma Mining Engineer: 13 Geologist: 6	Graduate Mining Engineer: 17 Diploma Mining Engineer: 13 Geologist: 6	Mining Engineer and Geologist are appointed.

9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	Utilization of Information as submitted surface area (in ha.) in annual return for 2018-19. A) O/C working -9.60ha B) Reclaimed /Rehabilitated -6.310ha C) Used for waste disposal- 5.09ha D) Occupied by plant, buildings, residential, welfare buildings and roads - 12.688ha E) Mineral storage, top soil 7 safety zone-20.496ha F) Work done under Progressive closure- 0.120ha E) Other purpose - 5.46 F) Work done under progressive mine closure plan during the year -0.45	Nil
9d	Scrutiny of Annual return on afforestation	320 nos of saplings planted during 2018-19.	Nil
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	Nil	No mineral reject generated during 2018-19.

9f	Scrutiny of Annual return on ROM stock and/or graded ore	<p>1. Closing stock of ROM as per annual return 2018-19 is 21320.041 tonnes.</p> <p>2. Closing stock of lumps at mine head (in tonnes):</p> <p>a. Below 40% Cr2O3: 6527.320 tonnes</p> <p>b. 40% to below 52%Cr2O3: 8718.650 tonnes</p> <p>3. Closing stock of fines at mine head (in tonnes):</p> <p>a. Below 40% Cr2O3: 17027.670 tonnes</p> <p>b. 40% to below 52%Cr2O3: 2901.994 tonnes</p>	<p>1. Closing stock of ROM as per annual return 2018-19 is 21320.041 tonnes.</p> <p>2. Closing stock of lumps at mine head (in tonnes):</p> <p>a. Below 40% Cr2O3: 6527.320 tonnes</p> <p>b. 40% to below 52%Cr2O3: 8718.650 tonnes</p> <p>3. Closing stock of fines at mine head (in tonnes):</p> <p>a. Below 40% Cr2O3: 17027.670 tonnes</p> <p>b. 40% to below 52%Cr2O3: 2901.994 tonnest: 6</p>	Nil
9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	<p>1. Ex-mine price of lumps (in Rs per tonne):</p> <p>a. Below 40% Cr2O3: 4252.83</p> <p>b. 40% to below 52% Cr2O3: 4252.83</p> <p>2. Ex-mine price of fines (in Rs per tonne):</p> <p>a. Below 40% Cr2O3: Rs. 6315.95</p> <p>b. 40% to below 52% Cr2O3: Rs.6315.95</p>	Found to be in order.	Nil


9h	Scrutiny of Annual return on fixed assets	Value of fixed assets: Rs 84217499.00 (in respect of mine, beneficiation plant, mine work shop, power and water installation)	Data as furnished in annual return for 2018- 19	Nil
9k	Scrutiny of Annual return on mining machineries	Front end loader : 10nos. Tippers: 8nos Load Haul Dumper : 7nos. Pumps (electric) : 5 nos. Air compressors: 2 nos. Mine cars: 2 nos.	Front end loader : 10nos. Tippers: 8nos Load Haul Dumper : 7nos. Pumps (electric) : 5 nos. Air compressors: 2 nos. Mine cars: 2 nos.	Nil

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 : 13-08-2019

NO violation.


(SHRI G.C. SETHI)

Indian Bureau of Mines