

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

MCDR INSPECTION REPORT

Bhubaneshwar regional office

Mine file No : ORI/CR/JJP/MCDR-14/BBS

Mine code : 11ORI19015

- (i) Name of the Inspecting : **U11**) **DAYANAND UPADHYAY**
Officer and ID No.
- (ii) Designation : Assistant Controller Mine
- (iii) Accompanying mine : Shri A.K. Ghosh, Agent & S.K. Sahoo, Mines Manager
Official with
Designation
- (iv) Date of Inspection : 30/09/2016
- (v) Prev.inspection date : 22/07/2015

PART-I : GENERAL INFORMATION

1. (a) **Mine Name** : **JINDAL KALIAPANI**
- (b) **Registration NO.** :
- (c) Category : A Mechanised
- (d) Type of Working : Opencast
- (e) Postal address
- State : ORISSA
- District : JAJPUR
- Village : KALIAPANI
- Taluka : JAJPUR ROAD
- Post office : KALIAPANI
- Pin Code :
- FAX No. : 06726-268315
- E-mail : jindal_mines@yahoo.com
- Phone : 06726 -268315,268449
- (f) Police Station : Kaliapani
- (g) First opening date : 28/01/2002
- (h) Weekly day of rest : SUN
2. Address for : POST&VIL: KALIAPANI
correspondance DIST:JAJPUR
P.S:TOMKA,ORISSA,PIN:755 047
3. (a) Lease Number : ORI0760
- (b) Lease area : 89
- (c) Period of lease : 20
- (d) Date of Expiry : 03/01/2022
4. Mineral worked : CHROMITE Main

5. Name and Address of the

Lessee : M/S JINDAL STAINLESS LTD.
KALINGA NAGAR JAJPUR
JAJPUR ORISSA
Phone:
FAX :

Owner : S S Virdi
Kalinganagar, Dangadi,
Jajpur JAJPUR ORISSA
Phone: 09777450572
FAX :

Agent : Kiran Goswami
M/S Jindal Stainless
Limited IDCO Tower, 6th
Floor, Bhubaneswar JAJPUR
ORISSA
Phone: 09938250089
FAX :

Mining Engineer

Name : S.MOHAPATRA, Full Time
Qualification : AMIE (MINING)
Appointment/ : 01/12/2002
Termination date

Geologist

Name : S.K.VAIDYA, Full Time
Qualification : MSC APPLIED GEOLOGY
Appointment/ : 12/05/2008
Termination date

Geologist

Name : P.S ACHARYA, Full Time
Qualification : M, SC (APPLIED GEOLOGY)
Appointment/ : 01/04/1995 11/05/2008
Termination date

Manager

Name : S.K. SAHOO
Qualification : Diploma IN MINING ENGINEERING, FCC
Appointment/ : 12/05/2008
Termination date

Manager

Name : V.N.DWIVEDI
Qualification : DIPLOMA IN MINING, FIRST CLASS MINES MAN
Appointment/ : 15/03/1994 12/05/2008
Termination date

6. Date of approval of Mining	:	Modif.of approved Mining Plan	29/01/2005
Plan/Scheme of Mining	:	Mining Scheme rule 12 MCDR1988	14/06/2007
	:	Modif.approved Mining Scheme	24/06/2010
	:	Mining Scheme rule 12 MCDR1988	02/05/2012
	:	Modif.approved Mining Scheme	13/06/2016

PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	2013-14: 02 nos of bore hole, total meterage 400m. 2014-15: 02 nos of bore hole, total meterage 400m.	In 2014-15 total 07 nos. of bore holes of total 481 meterage depth have been drilled by lessee. Further the lessee has modified the exploration proposal through mining which was approved by this office vide letter no. MSM/FM/24-ORI/BHU/2015-16, dated 13.06.2016.	The lessee has modified the exploration proposal through modified scheme of mining which was approved by this office vide letter no. MSM/FM/24-ORI/BHU/2015-16, dated 13.06.2016 and further exploration program has been incorporated from 2016-17 onward.
1b	Exploration over lease area for geological axis 1 or 2	About total 21 ha area has been taken into account.	Total area covered under G1, G2 & G3 level of exploration is about 20.95 ha.	Area explored are as follow: G1 level : 10.820 ha G2 level: 7.41 ha.
1c	Exploration Agencies and Expenditure in lakh rupees during the year	Not specified.	M/s Maheshwari Mining (P) Ltd have drilled 07 nos of bore holes. Cost incurred in exploration was about Rs 26.77 Lakh.	
1d	Balance area to be explored to bring Geological axis in 1 or 2	68.050 ha area .	Total unexplored area is about 68.050 ha which has been proposed for exploration from the financial year 2016-17 and onward.	
1e	Balance reserve as on 01/04/20	Balance reserve as on 1.04.2016 is 1.1517 MT.	Balance reserve as on 1.04.2016 is 1.1517 MT under 111 & 122.	

1f	General remarks of inspecting officers on geology, exploration etc	The lessee has modified the exploration proposal through modified scheme of mining which was approved by this office vide letter no. MSM/FM/24-ORI/BHU/2015-16, dated 13.06.2016 and further exploration program has been incorporated from 2016-17 onward.
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Development :

Sl.No.	Item	Propasals	Actual work	Remarks
2a	Location of development w.r.t.lease area	In 2015-16: Band-VI, Quarry-2	Development is concentrated in Band-VI, Quarry-2.	In quarry-1, Band-1 there is no mining since 2012-13 as the quarry has reached UPL due to constraint of lease boundary. Now lessee has sign MOU with M/s BAL to excavate the common boundary by joint mining in order to produce the blocked ore. The scheme of mining has been modified accordingly and approved by this office vide letter no. MSM/FM/24-ORI/BHU/2015-16, dated 13.06.2016. As per modified SOM both the quarry i.e quarry-1 & quarry-2 have been proposed for ROM production from 2016-17.

2b	Separate benches in topsoil, overburden and minerals (Rule 15)	Separate benches in OB and ore with 8m height.	Separate benches have been made in OB and ore with 8m height. There are 16 benches of OB & 02 benches of ore.	Separate benches have been made in OB and ore with 8m height. Benches in ore and waste has not been kept sufficient advance.
2c	Stripping ratio or ore to OB ratio	1:8.33	1:7.74	
2d	Quantity of topsoil generation in m3	Not proposed.	Not applicable.	There is no top soil.
2e	Quantity of overburden generation in m3	821100cu.m	In 2015-16, 683145 cu.m OB has been generated.	In quarry-1, Band-1 there is no mining since 2012-13 as the quarry has reached UPL due to constraint of lease boundary. Now lessee has sign MOU with M/s BAL to excavate the common boundary by joint mining in order to produce the blocked ore.

2f General remarks
of inspecting
officers on
development of
pit w.r.t. type
of deposit etc

In quarry-1, Band-1 there is no mining since 2012-13 as the quarry has reached UPL due to constraint of lease boundary. Now lessee has sign MOU with M/s BAL to excavate the common boundary by joint mining in order to produce the blocked ore. The scheme of mining has been modified accordingly and approved by this office vide letter no. MSM/FM/24-ORI/BHU/2015-16, dated 13.06.2016. As per modified SOM both the quarry i.e quarry-1 & quarry-2 have been proposed for ROM production from 2016-17.

Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
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3a	Number of pit proposed for production	02 pit.	02 pit.	Lessee has sign MOU with M/s BAL to excavate the common boundary by joint mining in order to produce the blocked ore. The scheme of mining has been modified accordingly and approved by this office vide letter no. MSM/FM/24-ORI/BHU/2015-16, dated 13.06.2016. As per modified SOM both the quarry i.e quarry-1 & quarry-2 have been proposed for ROM production from 2016-17.
3b	Quantity of ROM mineral production proposed	98700T in 2015-16.	ROM produced in 2015-16 is 88246T	
3c	Recovery of sailable/usable mineral from ROM production	100%	99%	
3d	Quantity of mineral reject generation	Not proposed.	Not applicable.	Mineral reject, - 40% to 10% cr2o3 has been taken in the account of ROM and will be be used by processing and blending.
3e	Grade of mineral rejects generation and threshold value declared.	Not proposed.	Not applicable.	Mineral reject, - 40% to 10% cr2o3 has been taken in the account of ROM and will be be used by processing and blending.

3f	Quantity of sub grade mineral generation.	Not proposed.	Not applicable.	Mineral reject, - 40% to 10% cr ₂ o ₃ has been taken in the account of ROM and it is utilised in its own captive plant after blending and processing .
3g	Grade of sub grade mineral generation	Not proposed.	Not applicable.	Mineral reject, - 40% to 10% cr ₂ o ₃ has been taken in the account of ROM and it is utilised in its own captive plant after blending and processing .
3h	Manual / Mechanised method adopted for segregating from ROM	Not specified.	Mechanised.	
3i	Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects.	Not proposed.	Not applicable	Mineral reject, - 40% to 10% cr ₂ o ₃ has been taken in the account of ROM and it is utilised in its own captive plant after blending and processing .
3j	Provision of drilling and blasting in mineral benches	Drilling & blasing with mechanised means.	DTH drilling of 150mm dia. Blast hole with non-cap sensitive slurry exlposive of 83mm dia alongwith delay detonator is being practiced for drilling and blasting.	A scientific study of ground vibration has been carried out by ISM, Dhanbad and sugested the maximum per delay is 563.7 kg.
3k	Provision of mining machineries in mineral benches	Drilling machine, Excavator, Dumper etc.	DTH of 150mm dia. is used for drilling blast hole. Ore & OB are handled by excavator of 2.1cu.m capacity with dumper of 25T capacity.	Dozer is also used for road grading and three water sprinkler of 12KL & 20KL capacity are used for water spraying.

3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Bench height 8m.	Excavator of 2.1 cu.m capacity are used of loading the tripper of 25T capacity.	Bench height is suitably matched with the loading excavator.
3m	Total area covered under excavation/pits	28.962 ha during schemem period.	At present about 28.90 ha area has been covered under pit.	
3n	Ore to OB ratio for the pit/mine during the year.	1:8.31	1:7.74	
3o	Total area put in use under different heads at the end of year	79.818 ha during scheme period.	Total area covered is about 79.80 ha.	Total area covered includes mining, dump, road, infrastructure, beneficiation plant, tailing ponds etc.
3p	Production of ROM mineral during the last five year period as applicable	2012-13: 97719 Tonnes 2013-14: 98070 Tonnes 2014-15: 98175 Tonnes 2015-16: 98700 Tonnes	2012-13: 96022.62 Tonnes 2013-14: 64086.842Tonnes 2014-15: 69298 Tonnes 2015-16: 88246Tonnes	

3q General remarks of inspecting officers on method of mining etc.

In quarry-1, Band-1 there is no mining since 2012-13 as the quarry has reached UPL due to constraint of lease boundary. Now lessee has sign MOU with M/s BAL to excavate the common boundary by joint mining in order to produce the blocked ore. The scheme of mining has been modified accordingly and approved by this office vide letter no. MSM/FM/24-ORI/BHU/2015-16, dated 13.06.2016. As per modified SOM both the quarry i.e quarry-1 & quarry-2 have been proposed for ROM production from 2016-17.

Solid Waste Management - Dumping:

Sl.No.	Item	Propasals	Actual work	Remarks
4a	Separate dumping of topsoil, OB and mineral rejects (Rule 32,33)	Separate dump for OB & mineral reject.	Separate dump for OB & mineral reject.	There is no top soil dump.
4b	Location of topsoil, OB and mineral reject dumps	One waste dump between quarry-1 and quarry-2.	There is one waste dump between quarry-1 and quarry-2.	There is three low grade dump exist in the lease area as follow: LG dump-1, near to pillar J-7 LG dump-1, near to pillar J-3-b LG dump-3, near to pillar J-6-c

4c	Number of dumps within lease area and outside of lease area	Single waste dump.	Single waste dump.	There is no dump outside lease area. There is three low grade dump exist in the lease area as follow: LG dump-1, near to pillar J-7 LG dump-1, near to pillar J-3-b LG dump-3, near to pillar J-6-c
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	One waste dump between quarry-1 and quarry-2.	One waste dump between quarry-1 and quarry-2.	Dump is not fall within ultimate pit limit.
4e	Number of active and alive dumps.	One waste dump.	One active waste dump.	
4f	Number of dead dumps.	Not proposed.	There is one dead dump which has been partially stabilised by plantation.	
4g	Number of dumps established.	Not proposed.	There is one dead dump which has been partially stabilised by plantation.	
4h	Whether Retaining wall or garland drain all along dumps are there.	Not proposed.	Not applicable.	
4i	Length of Retaining wall or garland drain all along dumps	Not proposed.	Not applicable.	
4j	Number of settling ponds	Not proposed.	There 02 settling tank exist in the lease area.	
4k	Specific comments of inspecting officer on waste dump management		Retaining wall and garland drain has been constructed around the waste dump. In some part, slope of waste dump has been stabilised by plantation.	

Sl.No.	Item	Propasals	Actual work	Remarks
5a	Status of part or full extraction of mineral from mined out area before starting backfilling.	Backfilling of part of quarry-1.	In quarry-1, Band-1 there is no mining since 2012-13 as the quarry has reached UPL due to constraint of lease boundary. Mineralisation has blocked between common lease boundary with M/s BAL.	In quarry-1, Band-1 there is no mining since 2012-13 as the quarry has reached UPL due to constraint of lease boundary. Now lessee has sign MOU with M/s BAL to excavate the common boundary by joint mining in order to produce the blocked ore. The scheme of mining has been modified accordingly and approved by this office vide letter no. MSM/FM/24-ORI/BHU/2015-16, dated 13.06.2016. As per modified SOM both the quarry i.e quarry-1 & quarry-2 have been proposed for ROM production from 2016-17.
5b	Area under backfilling of mined out area	2.8 ha. in 2015-16.	Total 8.24 ha area has been backfilled as on date of inspection.	
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	Not proposed.	Not applicable.	There is no top soil.
5d	Total area fully reclaimed and rehabilitated	2.8 ha. in 2015-16.	Total 8.24 ha area has been backfilled as on date of inspection.	
5e	General remarks of inspecting officers on backfilling and reclamation etc.		Total 8.24 ha area has been backfilled as on date of inspection.	Total 8.24 ha area has been backfilled as on date of inspection and tree has been planted over backfilled area.

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).	Not specified.	Anuual report on PMCP has been submitted by lessee to this office vide their letter no. JSL/KLPN/2016/126, dated 29.04.2016.	Anuual report on PMCP has been submitted timely.
6b	Area available for rehabilitation (ha) .	Not proposed.	Not applicable.	
6c	afforestation done (ha).	01 ha. in 2015-16.	Total area covered under afforestation is about 11 ha.	
6d	No. of saplings planted during the year	1080 nos of tree.	As proposed plantation has not been done.	
6e	Cumulative no .of plants	Not specified.	Total no. cumulative plantation in lease area is about 112000 nos.	
6f	Any other method of rehabilitation	Not proposed.	Not applicable.	
6g	Cost incurred on watch and care during the year	Not specified.	As reported by lesse cost incurred on watch & care is Rs 400000/-	
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (Lx B x D	Backfilling 2.5 ha in 2015-16.	Part of the void quarry-1 has been backfilled upto 130 mrL.	
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	Backfilling 2.5 ha in 2015-16.	Part of the void quarry-1 has been backfilled upto 130 mrL by OB.	
6j	Compliance on reclamation and rehabilitation by backfilling (iii)Afforestati on on backfilled area	Rehabilitation of backfilled aera has not proposed.	Keepin in view of settling time of 02 years of backfilled matterial rehabilitation of backfilled aera has not proposed.	

6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	Not proposed.	Not applicable.	
6l	Compliance on reclamation and rehabilitation by backfilling (v)any other specific means.	Backfilling by OB.	Backfilling by OB.	
6m	Compliance of rehabilitation of waste land within lease (i)afforestation	Not proposed.	Not applicable.	
6n	Compliance of rehabilitation of waste land within lease (ii)Area rehabilitation (ha)	Not proposed.	Not applicable.	
6o	Compliance of rehabilitation of waste land within lease (iii)Method of rehabilitation	Not proposed.	Not applicable.	
6p	Compliance of environmental monitoring (core zone and buffer zone)	Quarterly monitoring.	Quarterly monitoring of air, water and noise level are being carried out.	Regularly data of quarterly monitoring of air, water and noise level has been submitted to this office and data found in permissible limit.
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.		Quarterly monitoring of air, water and noise data has been submitted to this office.	Regularly data of quarterly monitoring of air, water and noise level has been submitted to this office and data found in permissible limit.

Mineral Conservation:

Sl.No.	Item	Propasals	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	ROM produced utilised in its own captive plant.	The ROM produced from the mine is processed thorough its COBP located in the lease area.	
7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	Not secified.	Manual and mechanical means.	
7c	Different grade of mineral sorted out at mines.	40%cr2o3 to +10% cr2o3.	40%cr2o3 to +10% cr2o3.	The ROM produced from the mine is processed thorough its COBP located in the lease area.
7d	Any beneficiation process at mines .		To process the ROM a chrome ore beneficiation plant has been installed in the lease area	
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues		The ROM of the mine is processed in the COBP plant located in the lease area and utilised to its own captive plant.	

Environment:

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	Not proposed.	Not applicable.	There is no top soil.
8b	Concurrent use or storage of topsoil	Not proposed.	Not applicable.	There is no top soil.
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	Separate dump for OB & reject.	There is a separate dump for OB & mineral reject.	

8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	Partially backfilling of quarry-1.	Total 8.24 ha area has been backfilled as on date of inspection and tree has been planted over backfilled area.	
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	Partially backfilling of quarry-1.	Total 8.24 ha area has been backfilled as on date of inspection and tree has been planted over backfilled area.	
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	Plantation proposed along the slope of waste dump and safety zone..	Trees has been planted along the slope & toe of waste dump and safety zone.	As reported cumulative no. of trees planted by lessee is about 112000 nos. Total area cover under plantation is about 18.50 ha.
8g	Survival rate	Not specified.	As reported survival rate is 90%.	
8h	Water sprinkling on roads to control airborne dust	03 water sprinkler.	Three water sprinkler of 12KL & 20KL capacity are used for water spraying.	
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area		As reported cumulative no. of trees planted by lessee is about 112000 nos. Total area cover under plantation is about 18.50 ha.	Aesthetic beauty in and around mined area is maintained. Cumulative no. of trees planted by lessee is about 112000 nos. Total area cover under plantation is about 18.50 ha.

Compliance of Rule 45:

Sl.No.	Item	Propasals	Actual work	Remarks
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9a	Status of submission of Monthly and Annual returns	Monthly & Annual returns are being regularly submitted by lessee.	Monthly & Annual returns are being regularly submitted by lessee.
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Graduate Mining Engineer-1, Diploma mining Engineer-5, Geologist-1	Graduate Mining Engineer-1, Diploma mining Engineer-5, Geologist-1.
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	Pit-29ha, waste dump- 25.9ha, Plant, building, road-13.98 ,Tailings& other- 2.27ha	Pit-29ha, waste dump- 25.9ha, Plant, building, road-13.98 ,Tailings& other- 2.27ha
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	Mineral reject-0.00	Mineral reject- 0.00
9f	Scrutiny of Annual return on ROM stock and/or graded ore	ROM produced- 88246T	ROM produced- 88246T
9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	Ex mine price below 40% cr2o3 - Rs 2671.0 per tonne.	Ex mine price below 40% cr2o3 - Rs 2671.0 per tonne.
9k	Scrutiny of Annual return on mining machineries	DTH of 150mm dia., excavator of 2.1cu.m capacity with dumper of 25T capacity.	DTH of 150mm dia., excavator of 2.1cu.m capacity with dumper of 25T capacity.

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)	02/11/2016		
Rule 13(1)	02/11/2016		

Date :

(DAYANAND UPADHYAY)

Indian Bureau of Mines