

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

MCDR INSPECTION REPORT

Bhubaneshwar regional office

Mine file No : ORI/IRON/SNG/MCDR-3/BBS

Mine code : 30ORI13010

- (i) Name of the Inspecting : **S010**) **SHRI G.C. SETHI**
Officer and ID No.
- (ii) Designation : Deputy Controller Mines
- (iii) Accompanying mine : Dr.K.Mahanta, Qualified Person
Official with
Designation
- (iv) Date of Inspection : 18/07/2018
- (v) Prev.inspection date : 11/01/2018

PART-I : GENERAL INFORMATION

1. (a) **Mine Name** : **KOIRA**
- (b) **Registration NO.** : **IBM/1289/2011**
- (c) Category : A Manual
- (d) Type of Working : Opencast
- (e) Postal address
- State : ORISSA
- District : SUNDARGARH
- Village : KOIRA
- Taluka : BONAI
- Post office : KOIRA
- Pin Code : 770048
- FAX No. : 06767-279218,275367
- E-mail : emilbbl@adityabirla.com
- Phone : 06767-279209,275489
- (f) Police Station : Koira
- (g) First opening date : 27/08/1971
- (h) Weekly day of rest : SUN
2. Address for : VILLAGE. KOIRA, PO: KOIRA
correspondance TALUK. BONAI
DIST. SUNDERGARH, ORISSA, PIN- 770048
3. (a) Lease Number : ORI0148
- (b) Lease area : 90.14
- (c) Period of lease : 50
- (d) Date of Expiry : 26/08/2021
4. Mineral worked : IRON ORE Main

5. Name and Address of the

Lessee : ESSEL MINING& INDUSTRIES LTD.
 AT/PO: BARBIL KEONJHAR
 ORISSA
 Phone:06767-30437
 FAX :06767-75367

Owner : ASWANI KOTHARI(NOMINATED OWNER)
 GOLD CORNET,FLOT NO 4 11,
 NAWRAJEE GAMADIA ROAD
 MUMBAI MUMBAI (SUBURBAN)
 MAHARASHTRA
 Phone:
 FAX :

Agent : SHRI V SRIKANTH
 BARBIL KEONJHAR ODISHA
 KEONJHAR ORISSA
 Phone: 06767-275367
 FAX : 06767-275367

Mining Engineer

Name : Rajesh Kumar Patel,Full Time
 Qualification : B.Tech (Mining)
 Appointment/ : 15/11/2016
 Termination date

Geologist

Name : JAYHARI MOHANTA,Full Time
 Qualification : MSC GEOLOGY
 Appointment/ : 10/12/2011
 Termination date

Manager

Name : Ajit Kumar Patra
 Qualification : B.Tech (Mining)
 Appointment/ : 15/11/2016
 Termination date

6. Date of approval of Mining	:	Mining Scheme rule 12 MCDR1988	28/05/2005
Plan/Scheme of Mining	:	Renewal under rule 24 MCR1960	27/02/2007
	:	Mining Scheme rule 12 MCDR1988	18/06/2007
	:	Modif.approved Mining Scheme	17/04/2015
	:	Mining Scheme rule 12 MCDR1988	18/03/2016
	:	Modif.approved Mining Scheme	03/11/2016

PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	6 nos. of bore holes during 2017-18.	During 2017-18 total 9 nos. of bore holes have been drilled by lessee.	There is no backlog.
1b	Exploration over lease area for geological axis 1 or 2	G1/G2 Level of exploration.	An extent of 64.525 ha of area has been explored under G1 scale.	Nil
1c	Exploration Agencies and Expenditure in lakh rupees during the year			
1d	Balance area to be explored to bring Geological axis in 1 or 2	The entire leased out area has been explored upto G1 level and out of which an extent of 25.618ha was found to be non-mineralised.	The entire leased out area has been explored upto G1 level and out of which an extent of 25.618ha was found to be non-mineralised.	Nil

1e	Balance reserve as on 01/04/20	As per modification of mining plan approved, dated 16.08.2018, the reserves/resources estimated as on 01.04.2018 was 39.22 million tonnes under proved (111) category, total remaining mineral resources of 18.60 million tonnes, feasibility mineral resources (211) of 8.44 million tonnes and pre-feasibility mineral resources (221) of 10.16 million tonnes.	The reserves/resources estimated as on 01.04.2018 was 39.22 million tonnes under proved (111) category, total remaining mineral resources of 18.60 million tonnes, feasibility mineral resources (211) of 8.44 million tonnes and pre-feasibility mineral resources (221) of 10.16 million tonnes.	Nil
1f	General remarks of inspecting officers on geology, exploration etc	The iron ore group of rocks of Jamda-Koira valley exhibit a synclinorium structure which can be generalised as NNE-SSW trending low plunging synclinorium with an overturned western cross fold. During the year 2017-18, there are 9 boreholes were drilled in the lease area against the proposal of 6 nos. of boreholes.	9 nos. of boreholes were drilled against the proposal of 6 boreholes during 2017-18.	

Development :

Sl.No.	Item	Propasals	Actual work	Remarks
2a	Location of development w.r.t.lease area	Quarries 1 to 6	Quarries 1 to 6	Nil
2b	Separate benches in topsoil, overburden and minerals (Rule 15)	Separate benches in OB and ore with 9m height.	Separate benches in OB and ore with 9m height made.	Nil
2c	Stripping ratio or ore to OB ratio	1:0.08	1:0.07	Average stripping ratio varries due to irregular nature of ore deposit .
2d	Quantity of topsoil generation in m3	Not applicable.	Not applicable.	Nil
2e	Quantity of overburden generation in m3	213000 cu.m in 2017-18	166046 cu.m generated during 2017-18.	Nil
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc		The party has got approved modification of mining plan for systematic and scientific mining.	Nil

Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
3a	Number of pit proposed for production	Quarries 1 to 6 as single quarry	Quarries 1 to 6 as single quarry	Nil
3b	Quantity of ROM mineral production proposed	4.0 million tonnes Iron ore in 2017-18.	In 2017-18, 0.16 million tonnes Iron ore was produced during 2017-18.	Less production of iron ore during 2017-18 due to interminant stopage of mining operations.
3c	Recovery of sailable/usable mineral from ROM production	90%	90%	Nil

3d	Quantity of mineral reject generation	725000 tonnes in 2017-18.	No sub grade/mineral reject generation has been reported for the peroid 2017-18. About 10% sub grade/mineral reject of ROM production as proposed in modified mining plan has been blended with high garde.	Sub grade/mineral reject generated during mining has been blended with high garde ROM.
3e	Grade of mineral rejects generation and threshold value declared.	-55% to +45% Fe.	No sub grade/mineral reject generation has been reported for the peroid 2017-18.	No sub grade/mineral reject generation has been reported for the peroid 2017-18.
3f	Quantity of sub grade mineral generation.	725000 tonnes in 2017-18.	No sub grade/mineral reject generation has been reported for the peroid 2017-18. About 10% sub grade/mineral reject of ROM production as proposed in modified mining plan has been blended with high garde.	Sub grade/mineral reject generated during mining has been blended with high garde ROM.
3g	Grade of sub grade mineral generation	-55% to +45% Fe.	No sub grade/mineral reject generation has been reported for the peroid 2017-18.	No sub grade/mineral reject generation has been reported for the peroid 2017-18.
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.	Not applicable.	Not applicable.	Nil

3j	Provision of drilling and blasting in mineral benches	DTH drilling of 110mm dia. Blast hole with emulsion/slurr charge and booster as y exlposive as coloumn charge and booster alongwith delay detonator.	DTH drilling of 110mm dia. Blast hole with emulsion/slurry exlposive as coloumn charge and booster as base charge alongwith delay detonator is being practiced for drilling and blasting.	Depth of blasting- 9.5m Burden- 3.2m spacing- 4.2m.
3k	Provision of mining machineries in mineral benches	Drilling machine- 110 mm dia.-1, Excavator- 1.16/2.3 cu.m-18, Dumper 30T-40, Dozer- 2 etc.	DTH of 110mm dia. is used for drilling blast hole. Ore & OB are handled by excavator of 2.3 cu.m capacity with dumper of 30 T capacity. The machinaries available on the site were Drilling machine- 110 mm dia.-1, Excavator- 1.16/2.3 cu.m-18, Dumper 30T-40, Dozer-2 etc.	Dozer is also used for road grading and two water sprinkler of 20 KL and 12 KL 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 9m.	Same as proposed.	Nil
3m	Total area covered under excavation/pits		About 42.90 ha. has been covered under excavation pits.	Nil
3n	Ore to OB ratio for the pit/mine during the year.	1:0.08	1:0.07	Average stripping ratio varries due to irregular nature of ore deposit.
3o	Total area put in use under different heads at the end of year	Total 107.61 ha. area put in use under different heads during approved plan period.	Area covered under different heads are Pit-42.90 ha, waste dump-20.45 ha, Plant, residential & building, roads-12.301ha & Mineral storage, plantation & others -14.961 ha.	Nil

3p	Production of ROM mineral during the last five year period as applicable		
3q	General remarks of inspecting officers on method of mining etc.	The ROM production has been carried out by drilling of 110mm dia. Blast hole with emulsion/ slurry explosive alongwith delay detonator is being practiced for drilling and blasting. No production has been reported for manganese ore.	Nil

Solid Waste Management - Dumping:

Sl.No.	Item	Propasals	Actual work	Remarks
4a	Separate dumping of topsoil, OB and mineral rejects (Rule 32,33)	Separate dumping for overburden/waste has been proposed and no topsoil generation proposal in the mining plan.	Overburden material is being dumped on active dump and no top soil generated during 2017-18.	There is no top soil generation.
4b	Location of topsoil, OB and mineral reject dumps	North and western part of the lease area.	Overburden is dumped on active dump and the same is located in between grid S290-S360 to W300-W650.	Nil
4c	Number of dumps within lease area and outside of lease area	Two dumps.	Two dumps.	There is no dump in outside lease area.
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	Beyond UPL	Two dumps.	Nil
4e	Number of active and alive dumps.	Two	Two	Nil
4f	Number of dead dumps.	Not applicable.	Not applicable.	Nil

4g	Number of dumps established.	Nil	Nil	Nil
4h	Whether Retaining wall or garland drain all along dumps are there.	Retaining wall and garland drain around dump as proposed earlier has been made.	Retaining wall and garland drain around dump as proposed earlier has been made.	Nil
4i	Length of Retaining wall or garland drain all along dumps	Not applicable.	About 450mX1.5mX1.0m Retaining wall and garland drain has been made.	Nil
4j	Number of settling ponds	Not applicable.	Not applicable.	Nil
4k	Specific comments of inspecting officer on waste dump management		To avoid the erosion and rain slides application of natural geotextiles such as coir matting has been undertaken. Slope of the dead dump has been stabilised by plantation.	Nil

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.	Not proposed.	Pit is not matured for reclamation.	Mineralisation is continue and pit is not matured for reclamation.
5b	Area under backfilling of mined out area	Not proposed.	Not applicable.	Nil
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	Not proposed.	Not applicable.	Nil
5d	Total area fully reclaimed and rehabilitated	Not proposed.	Not applicable.	Nil

5e	General remarks of inspecting officers on backfilling and reclamation etc.	No comments.	Mineralisation is continue and pit is not matured for reclamation.	Mineralisation is continue and pit is not matured for reclamation.
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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).	The Annual return on PMCP has to be submitted under Rule 23E(2).	Annual return on PMCP has been submitted.	Nil
6b	Area available for rehabilitation (ha) .	Not applicable as no area has been matured for rehabilitation	Not applicable.	Nil
6c	afforestation done (ha).	1.5 ha.	In 2017-18, total 1.5 ha area has been covered under afforestation.	In 2017-18, total 1.5 ha area has been covered under afforestation.
6d	No. of saplings planted during the year	8000 saplings in 2017-18.	In 2017-18, over an extent of 1.5 ha area has been covered under afforestation.	In 2017-18, total 18100nos. of saplings have been planted by lessee.
6e	Cumulative no .of plants		Cumulative nos. of saplings planted in the lease area is about 193148 nos.	Nil
6f	Any other method of rehabilitation	Not applicable.	Dump plantation, coir mating and spreading of grass seeds is being practiced.	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	No area is matured for reclamation, thereby not applicable.	Not applicable.	Nil

6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	Not applicable.	Not applicable.	Nil
6j	Compliance on reclamation and rehabilitation by backfilling (iii) Afforestation on backfilled area	No area is matured for reclamation 7 rehabilitation by way of backfilling.	Not applicable.	Nil
6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	Not applicable.	Not applicable.	Nil
6l	Compliance on reclamation and rehabilitation by backfilling (v) any other specific means.	No area is matured for reclamation.	Not applicable.	Nil
6m	Compliance of rehabilitation of waste land within lease (i) afforestation	No waste land, thereby not applicable.	Not applicable.	Nil
6n	Compliance of rehabilitation of waste land within lease (ii) Area rehabilitation (ha)	Not applicable.	Not applicable.	Nil
6o	Compliance of rehabilitation of waste land within lease (iii) Method of rehabilitation		In 2017-18, afforestation in about 1.5 ha has been carried out.	Nil

6p	Compliance of environmental monitoring (core zone and buffer zone)	Quarterly monitoring of air, water and noise level are envisaged.	Quarterly monitoring of air, water and noise level are being carried out.	Nil
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.		Area has not been matured for reclamation & rehabilitation and afforestation has been carried out along slope of waste dump & safety zone. Regular data of quarterly monitoring of air, water and noise level has been submitted to this office.	Nil

Mineral Conservation:

Sl.No.	Item	Propasals	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	Gradewise sorting.	Gradewise sorting.	Nil
7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	Mechanised	Mechanised	Nil
7c	Different grade of mineral sorted out at mines.	45% to 55% Fe and +55% Fe.	Different grades of minerals sorted out at mines are 45% to 55% Fe and +55% Fe.	Nil
7d	Any beneficiation process at mines .	Not applicable.	Not applicable.	Nil
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues		Cut off grade of iron ore for the mine is +55%. Different grades of minerals sorted out at mines are -65% Fe, 62 to 58% Fe and 58 to 55% Fe.	Nil

Environment:

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	Not applicable as the location proposed under excavation planning during 2017-18 is devoid of topsoil.	No topsoil generated during 2017-18.	Nil
8b	Concurrent use or storage of topsoil	Not applicable.	Not applicable.	Nil
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	Separate dump for overburden/waste rock has been proposed & there is no top soil generation.	Separate dumps for overburden and mineral rejects are made in the mine.	Nil
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	Proposal for dumping of overburden and rejects are envisaged and no reclamation in the form of restoration is applicable.	Not applicable.	Nil
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	Phased restoration/reclamation is not applicable as the waste generated has been proposed for dumping in the designated site.	Not applicable.	Nil
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	Plantation proposed along the slope of waste dump & safety zone.	Plantation done along the slope of waste dump & safety zone during 2017-18.	Nil
8g	Survival rate	90%	90%	Nil

8h	Water sprinkling on roads to control airborne dust	Water sprinkling is on the haul road is proposed.	Water sprinkling is done on the haul road on day to day basis.	Nil
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area		Aesthetic beauty in and around mined area is maintained. In 2017-18, total 18100 nos of saplings have been planted by lessee. As reported cumulative no. of trees planted by lessee is about 193148 nos.	Nil

Compliance of Rule 45:

Sl.No.	Item	Propasals	Actual work	Remarks
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.	Nil
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Graduate Mining Engineer-3, Diploma mining Engineer-10 & Geologist-5	Graduate Mining Engineer-3, Diploma mining Engineer-10 & Geologist-5	Nil
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	Area covered under different heads are Pit-42.90 ha, waste dump-20.45 ha, Plant, residential & building, roads-12.301ha & Mineral storage, plantation & others -14.961 ha.	Area covered under different heads such as opencast workingst-32.095 ha, waste dump- Nil, Plant, buildings, residential & welfare building-14.246ha, reclaimed & rehabilitated- 3.599ha, work done under progressive closure during the year-3.100ha and other unspecified purposes an extent of 31.575ha was degraded as indicated in the annual return submitted for the year 2017-18.	Nil

9d	Scrutiny of Annual return on afforestation	18100 nos. saplings in 2017-18.	Total 4541 nos. saplings have been planted in 2017-18.	Total 4541 nos. saplings have been planted in 2017-18.
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	Mineral reject- Nil	Mineral reject- Nil	Nil
9f	Scrutiny of Annual return on ROM stock and/or graded ore	Gradewise stocks both for lumps & fines of grades below 55% Fe: 55% to 58% Fe: 58% Fe: 60% to 62% Fe: 62% to 65% Fe: 65% & above have been furnished.	Gradewise stocks both for lumps & fines of grades below 55% Fe: 55% to 58% Fe: 60% to 62% Fe: 62% to 65% Fe: 65% & above have been furnished.	Nil
9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	Lump: Below 55% Fe: Ex mine price Rs 822.93, 60% to 62% Fe: Ex mine price Rs 2502.03 62% to 65% Fe: Ex mine price Rs 3662.82 Fines: 55% to 58% Fe: Ex mine price Rs 730.94, 58% to 60% Fe: Ex mine price Rs 623.66, 60% to 62% Fe: Ex mine price Rs 830.40 and 62% to 65% Fe: Ex mine price Rs 1272.01	Lump: Below 55% Fe: Ex mine price Rs 822.93, 60% to 62% Fe: Ex mine price Rs 2502.03 62% to 65% Fe: Ex mine price Rs 3662.82 Fines: 55% to 58% Fe: Ex mine price Rs 730.94, 58% to 60% Fe: Ex mine price Rs 623.66, 60% to 62% Fe: Ex mine price Rs 830.40 and 62% to 65% Fe: Ex mine price Rs 1272.01	Nil
9h	Scrutiny of Annual return on fixed assets	Fixed asset(Rs in thousand) : 341396	Fixed asset(Rs in thousand) : 341396	Nil

9k	Scrutiny of Annual return on mining machineries	Blast hole drills 2 nos. Dozer- 3 nos., Dumper- 40 nos., water tanker-2 nos., Back Hoe- 22 nos., Wheel loader- 24 nos., other non-electric machineries-7 nos., and crusher 300 tp/d 1 no.	Blast hole drills 2 nos. Dozer- 3 nos., Dumper- 40 nos., water tanker-2 nos., Back Hoe- 22 nos., Wheel loader- 24 nos., other non-electric machineries-7 nos., and crusher 300 tp/d 1 no.	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	
MCDR17	Rule 34(1)	24/08/2018	30/10/2018				

Date :

(SHRI G.C. SETHI)

Indian Bureau of Mines