INDIAN BUREAU OF MINES MINERALS DEVELOPMENT AND REGULATION DIVISION

MCDR INSPECTION REPORT

Bhubaneshwar regional office

Mine file No : ORI/IRON/SNG/MCDR-3/BBS Mine code : 300RI13010

(i) Name of the Inspecting: SRM) SHRI SUDIP RANJAN MAZUMDAR

Officer and ID No.

(ii) Designation : Senior Mining Geologist

(iii) Accompaning mine :

Official with Designation

(iv) Date of Inspection : 11/01/2018
(v) Prev.inspection date : 26/07/2016

PART-I : GENERAL INFORMATION

1. (a) Mine Name : KOIRA

(b) Registration NO. : IBM/1289/2011

(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 : ORIO148
(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	Number of boreholes proposed in 2016-17 was 3 nos.	Nil.	The shortfall in exploration has been intimated to lessee by violation letter dated 12.01.2018.
1b	Exploration over lease area for geological axis 1 or 2	No Specific Proposal	G1:83.533Ha, G2: Nil	G1:83.533Ha, G2: Nil
1c	Exploration Agencies and Expenditure in lakh rupees during the year	In-house	Nil.	The exploration proposal for 2016-17 has not been carried out.
1d	Balance area to be explored to bring Geological axis in 1 or 2	No Specific Proposal	6.61 Ha area to be explored under G1 & G2 level of UNFC	6.61 Ha area to be explored under G1 & G2 level of UNFC
1e	Balance reserve as on 01/04/20	Balance reserves as on 01.04.2016 : 47.13 MT with Remaining Resources at 18.60 MT	Production in 2016-17: 3.99MT. Balance reserves as on 01.04.2017 is 43.14 MT with Remaining Resources: 18.60 MT	Production in 2016-17: 3.99MT. Balance reserves as on 01.04.2017 is 43.14 MT with Remaining Resources: 18.60 MT
1f	General remarks of inspecting officers on geology, exploration etc	No Comments	An area covering 83.533 Ha have been explored in G1 level. The remaining 6.61 Ha have to be explored under G1&G2 level of UNFC. The proposal for exploration for 2016-17 has not been carried out. The shortfall in exploration has been intimated to lessee by violation letter dated 12.01.2018.	been explored in G1 level. The remaining 6.61 Ha have to be explored under G1&G2 level of UNFC. The proposal for exploration for 2016-17 has not been carried

Development :

Sl.No.	Item	Propasals	Actual work	Remarks
2a	Location of development w.r.t.lease area		2.N 21°54'02.68", E 85°13'35.45" 3.N 21°53'55.66", E 85°13'38.78" 4.N 21°54'07.40", E	The quarry has been developed as per proposal in the Scheme of Mining
2b	Separate benches in topsoil, overburden and minerals (Rule 15)	For Mineral-07 Benches,	For Mineral-07 Benches,	No top soil / overburden bench. The top lateritic horizon also bears mineral
2c	Stripping ratio or ore to OB ratio	1:0.11	1:0.05	
2d	Quantity of topsoil generation in m3	Not Proposed	Nil	No top soil encountered in the mines
2e	Quantity of overburden generation in m3	139000 m³	108762 m3 (239277 Ton)	108762 m3 (239277 Ton)
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc	No Comments	The quarry has been developed as per proposal in the scheme of mining	The quarry has been developed as per proposal in the scheme of mining

Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
3a	Number of pit proposed for production	01	01	Production confined to Quarry no-6 only
3b	Quantity of ROM mineral production proposed	4000000 Tonne	3995684 Tonne	EC approved quantity :4.0 MTPA

3c	Recovery of sailable/usable mineral from ROM production	88%	95%	Blending of low grade ROM with high Grade ROM.
3d	Quantity of mineral reject generation	180000 m3	34550 ton (12796 m3)	34550 ton (12796 m3)
3e	Grade of mineral rejects generation and threshold value declared.	45% Fe to <55 % Fe, Threshold value for Iron is 45% Fe	45% Fe to <55 % Fe	Threshold value for Iron is 45% Fe
3f	Quantity of sub grade mineral generation.	180000 m3	34550 ton (12796 m3)	34550 ton (12796 m3)
3g	Grade of sub grade mineral generation	45% Fe to <55 % Fe	45% Fe to <55 % Fe	45% Fe to <55 % Fe
3h	Manual / Mechanised method adopted for segregating from ROM	Mechanized	Mechanized	Mechanized
3i	Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects.	Not Proposed	Nil	Nil
3j	Provision of drilling and blasting in mineral benches	drilling		Yes, Staggered drilling pattern, burden- 3.0 to 4.5 m, Spacing 4.0 to 5.0 m
3k	Provision of mining machineries in mineral benches	Yes	Yes	
31	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Yes	Yes	

3m	Total area covered under excavation/pits	Total area under mining at the end of scheme period is 40.901 Ha	Area under current (O/C) workings is 34.391 Ha	As per annual return submitted for the year 2016-17.
3n	Ore to OB ratio for the pit/mine during the year.	1:0.11	1:0.05	
3р	Production of ROM mineral during the last five year period as applicable	2012-13 : 1503928 MT 2013-14 : 2501936 MT 2014-15 : 3002424 MT 2015-16 : 4000000 MT 2016-17 : 4000000 MT	2012-13 : 251182.4 MT 2013-14 : 600258.2 MT 2014-15 :1499159.6 MT 2015-16 : 2959272.1 MT 2016-17 : 3995684 MT	2012-13 : 251182.4 MT 2013-14 : 600258.2 MT 2014-15 :1499159.6 MT 2015-16 : 2959272.1 MT 2016-17 : 3995684 MT
3q	General remarks of inspecting officers on method of mining etc.	No Comments	The ROM Production is within the approved EC quantity. The exploitation of mineral has been done as per the proposal.	The ROM Production is within the approved EC quantity. The exploitation of mineral has been done as per the proposal.

Solid Waste Management - Dumping:

Sl.No.	Item	Propasals	Actual work	Remarks
4a	Separate dumping of topsoil, OB and mineral rejects (Rule 32,33)	Nil	Nil	No top soil/surficial dumping of OB proposed during the year.

4b	Location of topsoil, OB and mineral reject dumps	There is no proposal for top soil generation and its stacking. OB generated from the pit during the scheme period will be disposed for the reclamation of the worked out portion of the Pit #6.		There is no top soil generation and OB has been disposed for the reclamation of the worked out portion of the Pit #6 as per the proposal in scheme of mining
4c	Number of dumps within lease area and outside of lease area	Within lease area: 02 Outside: Nil	Within lease area: 02 Outside: Nil	Within lease area: 02 Outside: Nil
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	Located outside the UPL	Located outside the UPL	Located outside the UPL
4e	Number of active and alive dumps.	Nil	Nil	Nil
4f	Number of dead dumps.	2	2	2
4g	Number of dumps established.	2	2	2
4h	Whether Retaining wall or garland drain all along dumps are there.	Yes	Yes	Yes
4 i	Length of Retaining wall or garland drain all along dumps	200 Mtr	Garland Drain: 50Mtr Retaining Wall: 325Mtr	Garland Drain: 50Mtr Retaining Wall: 325Mtr
4j	Number of settling ponds	Nil	2	2

4k Specific No Comments There is no separate The solid waste management is as comments of stacking of top soil, inspecting The and OB generated has per the proposal officer on waste been disposed for the in scheme of dump management reclamation of the mining. worked out portion of the Pit #6 as per the proposal in scheme of mining

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.	After winning the ore, the mined out quarries will be backfilled with waste material	As per proposal in the scheme of mining	As per proposal in the scheme of mining
5b	Area under backfilling of mined out area	1.48 На	0.774 На	Backfilling could not be achieved because of less incidence of interburden/waste rock.
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	Not proposed	Not Applicable	Not Applicable
5d	Total area fully reclaimed and rehabilitated	Not proposed	2.196 На	2.196 На
5e	General remarks of inspecting officers on backfilling and reclamation etc.	No Comments	The mined out portion of the quarry#6 is backfilled with waste generated from mining, Backfilling could not be achieved because of less incidence of interburden/waste rock.	The mined out portion of the quarry#6 is backfilled with waste generated from mining, Backfilling could not be achieved because of less incidence of interburden/waste rock.

Progressive Mine Clousre Plan:

Sl.No.	Item	Propasals	Actual work	Remarks
ба	Whether Annual report on PMCP submitted on time and correctly. Rule 23 E(2).	Not Specified	Annual Return on PMCP for the year 2016-17 has been submitted timely.	Annual Return on PMCP for the year 2016-17 has been submitted timely.
6b	Area available for rehabilitation (ha) .	Not Proposed	Not Applicable	Not Applicable
6c	afforestation done (ha).	Gap filling and in OB Dump	Gap filling in green belt (5.34 Ha), OB Dump (1.17 Ha), Safety zone (1.62 Ha) and ANR area(4.7 Ha).	Gap filling in green belt (5.34 Ha), OB Dump (1.17 Ha), Safety zone (1.62 Ha) and ANR area(4.7 Ha).
6d	No. of saplings planted during the year	2500 Nos.	Plantation over Dumps- 3723, Green Belt-4380, Safety zone-500, ANR-460	Plantation over Dumps-3723, Green Belt-4380, Safety zone-500, ANR-460
бе	Cumulative no .of plants	Not in proposal	107393 Nos.	107393 Nos.
6f	Any other method of rehabilitation	Not in proposal	Nil	Nil
ốg	Cost incurred on watch and care during the year	2.0 lakhs	0.93 lakhs	
бh	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (Lx B x D	1.48 На	0.774 На	0.774 На
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	1.48 На	0.774 На	0.774 На

6j	Compliance on reclamation and rehabilitation by backfilling (iii)Afforestati on on backfilled area	Not in proposal	Nil	Nil
6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	Not in proposal	0.706 Ha	0.706 Ha
61	Compliance on reclamation and rehabilitation by backfilling (v)any other specific means.	Not in proposal	Nil	Nil
6m	Compliance of rehabilitation of waste land within lease (i)afforestation	Not in proposal	Nil	Nil
6n	Compliance of rehabilitation of waste land within lease (ii)Area rehabilitation (ha)	Not in proposal	Nil	Nil
60	Compliance of rehabilitation of waste land within lease (iii)Method of rehabilitation	Not in proposal	Nil	Nil
6p	Compliance of environmental monitoring (core zone and buffer zone)	Samples, SWQ-72 Samples, GWQ-32	AAQ: (C:1152+B:768)=1920 samples GWL- 32 samples, SWQ-96 samples GWQ-32 samples, DWQ-40 samples, Water Qty & Flow-72 samples	AAQ: (C:1152+B:768)=192 0 samples GWL- 32 samples, SWQ-96 samples GWQ-32 samples, DWQ-40 samples, Water Qty & Flow- 72 samples

6q General remarks No Comments The work done in PMCP is The work done in of inspecting as per the proposal PMCP is as per the officers on PMCP submitted for the year proposal submitted compliance and 2016-17 in scheme of for the year 2016progressive mining. 17 in scheme of closure mining. operations etc.

Mineral Conservation:

Sl.No.	Item	Propasals	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	Not Specified	Lumps- (in Tonnes) Below 55% Fe - 34550.000 60 - 62% Fe - 636439.816 62 - 65% Fe - 647552.390 Fines (in Tonnes) 55-58 % Fe - 313997.112 58-60 % Fe - 71665.200	Lumps- (in Tonnes) Below 55% Fe - 34550.000 60 - 62% Fe - 636439.816 62 - 65% Fe - 647552.390
			60-62 % Fe - 433050.490 62-65 % Fe - 1692203.410	Fines (in Tonnes) 55-58 % Fe - 313997.112 58-60 % Fe - 71665.200 60-62 % Fe - 433050.490 62-65 % Fe - 1692203.410
b	Method of grade- wise mineral sorting i.e. manual or mechanical.	Mechanical	Mechanical	Mechanical
c'	Different grade of mineral sorted out at mines.	Not Specified	Lumps Below 55% Fe 60 - 62% Fe 62 - 65% Fe	Lumps Below 55% Fe 60 - 62% Fe 62 - 65% Fe
			Fines 55-58 % Fe 58-60 % Fe 60-62 % Fe 62-65 % Fe	Fines 55-58 % Fe 58-60 % Fe 60-62 % Fe 62-65 % Fe

7d	Any beneficiation process at mines .	Dry Beneficiation through crushing & screening	Dry Beneficiation through crushing & screening	Dry Beneficiation through crushing & screening
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues	No Comments	Dry Beneficiation through crushing & screening is practiced. The sub-grade ores are suitably blended with higher grade ore as a part of mineral conservation.	Dry Beneficiation through crushing & screening is practiced. The sub-grade ores are suitably blended with higher grade ore as a part of mineral conservation.

Environment:

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)		Nil	Nil
8b	Concurrent use or storage of topsoil	Not in proposal	Nil	Nil
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	overburden/was te rock	No surficial overburden/waste rock dumping practiced	No surficial overburden/waste rock dumping practiced
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	for back filling of the	Back filling of the voids using overburden/waste rocks/rejects are undertaken	Back filling of the voids using overburden/waste rocks/rejects are undertaken

8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	Proposal made for pit reclamation over 1.48 Ha.	Pit reclamation achieved over 0.774 Ha	Pit reclamation achieved over 0.774 Ha
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	formation on 14.402 Ha covering stence of vacant land, green belt, on tation and OB dumps, reclaimed area, ANR plantation, orchard development etc.		Plantation done over 14.402 Ha covering vacant land, green belt, OB dumps, reclaimed area, ANR plantation, Orchard development etc.
8g	Survival rate	Not Specified	Survival rate within lease area is 92%.	Survival rate within lease area is 92%.
8h	Water sprinkling on roads to control airborne dust	Not specified	2 nos. of 28 KL capacity mobile water sprinkler are engaged for haul road dust suppression.	2 nos. of 28 KL capacity mobile water sprinkler are engaged for haul road dust suppression.
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area	No Comments	The aesthetic beauty in and around mines is maintained.	The aesthetic beauty in and around mines is maintained.

Compliance of Rule 45:

Sl.No.	Item	Propasals	Actual work	Remarks
9a	Status of submission of Monthly and Annual returns	Annual Return to be submitted before 1st July of subsequent year and monthly return by 10th of succeeding month	Annual return for 2016- 17 has been submitted. Monthly return till Jan'18 has been submitted	Annual return for 2016-17 has been submitted. Monthly return till Jan'18 has been submitted

9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Graduate Mining Engineer: 7 Diploma Mining Engineer: 8 Geologist: 1	Graduate Mining Engineer: 7 Diploma Mining Engineer: 8 Geologist: 1	Graduate Mining Engineer: 7 Diploma Mining Engineer: 8 Geologist: 1
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	(O/C) workings: 34.391 Ha,	Area covered under current (O/C) workings: 34.391 Ha, Occupied by plants, buildings, residential, welfare building and roads: 6.586 Ha etc.	Area covered under current (O/C) workings: 34.391 Ha, Occupied by plants, buildings, residential, welfare building and roads: 6.586 Ha etc.
9d	Scrutiny of Annual return on afforestation		Number of saplings planted within the lease area is 8603 nos.	As per annual return submitted for the period 2016-17
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)		34550 tones of lump below 55% Fe generated during 2016-17	34550 tones of lump below 55% Fe generated during 2016-17

9f

Scrutiny of Annual return on stock of ROM graded ore

A. Closing tones B. Closing 1. Below 55% tones 36563.726 tones 15240. 308 tones C. Closing stock of fines at mine head: 1. Below 55% Fe: 81553.650 tones 2. 55% Fe to below 58% Fe: 50770.909 tones 3. 58% Fe to below 60% Fe: 22.105 tones 4. 60% Fe to below 62% Fe: 40933.309 tones 5. 62% Fe to below 65% Fe: 108541.471 tones

A. Closing stock of ROM is 350150.292 tones ROM stock and/or is 350150.292 B. Closing Stock of Lump at mine head: 1. Below 55% Fe: Stock of Lump 33065.479 tones at mine head: 2. 55% Fe to below 58% Fe: 31.080 tones Fe: 33065.479 3. 60% Fe to below 62% Fe: 36563.726 tones 2. 55% Fe to 4. 62% Fe to below 65% below 58% Fe: Fe: 15240. 308 tones 31.080 tones C. Closing stock of 3. 60% Fe to fines at mine head: below 62% Fe: 1. Below 55% Fe: 81553.650 tones 2. 55% Fe to below 58% 4. 62% Fe to Fe: 50770.909 tones below 65% Fe: 3. 58% Fe to below 60% Fe: 22.105 tones 4. 60% Fe to below 62%

A. Closing stock of ROM is 350150.292 tones B. Closing Stock of Lump at mine head: 1. Below 55% Fe: 33065.479 tones 2. 55% Fe to below 58% Fe: 31.080 tones 3. 60% Fe to below 62% Fe: 36563.726 tones 4. 62% Fe to below 65% Fe: 15240. 308 tones C. Closing stock of fines at mine head: 1. Below 55% Fe: 81553.650 tones 2. 55% Fe to below 58% Fe: 50770.909 tones 3. 58% Fe to below 60% Fe: 22.105 tones 4. 60% Fe to below 62%

9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	price in Rs	3. 62% Fe to below 65% Fe: 2565.41 B. Ex-mine price in Rs per tonne for Fines: 1. 55% Fe to below 58% Fe: 1330.24 2. 58% Fe to below 60% Fe: 503.98 3. 60% Fe to below 62% Fe: 829.13 4. 62% Fe to below 65%	A. Ex-mine price in Rs per tonne for Lump: 1. Below 55% Fe: 341.28 2. 60% Fe to below 62% Fe: 1616.45 3. 62% Fe to below 65% Fe: 2565.41 B. Ex-mine price in Rs per tonne for Fines: 1. 55% Fe to below 58% Fe: 1330.24 2. 58% Fe to below 60% Fe: 503.98 3. 60% Fe to below 62% Fe: 829.13 4. 62% Fe to below 65% Fe: 1032.53
9h	Scrutiny of Annual return on fixed assets		Value of Fixed assets: Rs 378178	Information as submitted in annual return for the year 2016-17.
9k	Scrutiny of Annual return on mining machineries	Front end	Blasthole drill: 1 No Front end loader: 20 Nos Backhoe: 20 Nos Dumper: 32 Nos Dozer: 2 Nos Grader: 1 No etc.	Blasthole drill: 1 No Front end loader: 20 Nos Backhoe: 20 Nos Dumper: 32 Nos Dozer: 2 Nos Grader: 1 No etc.

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

Violatio	n observed	S	Show couse position				
Rule NO.	Issued on Compliance of	on Rule 1	NO. Issued	on Compliance on			
MCDR17 Rule 11(1)	12/01/2018						

Date:

(SHRI SUDIP RANJAN MAZUMDAR)

Indian Bureau of Mines