

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

**MCDR INSPECTION REPORT**

**Bhubaneshwar regional office**

**Mine file No :** ORI/IRON/SNG/MCDR-1/BBS

**Mine code :** 30ORI13001

- (i) Name of the Inspecting : **S010** ) **SHRI G.C. SETHI**  
Officer and ID No.
- (ii) Designation : Deputy Controller Mines
- (iii) Accompanying mine : Shri P.K.Rath, CGM  
Official with  
Designation
- (iv) Date of Inspection : 26/01/2021
- (v) Prev.inspection date : 20/10/2019

**PART-I : GENERAL INFORMATION**

1. (a) **Mine Name** : **BARSUA**
- (b) **Registration NO.** : **IBM/5662/2011**
- (c) Category : A Fully Mechanised
- (d) Type of Working : Opencast
- (e) Postal address
- State : ORISSA
- District : SUNDARGARH
- Village : BARSUA
- Taluka : BONAI
- Post office : TENSA
- Pin Code : 770042
- FAX No. : 06625-236031
- E-mail : gmbimsail@yahoo.co.in
- Phone : 06625-236026
- (f) Police Station : Lahunipara
- (g) First opening date : 06/01/1960
- (h) Weekly day of rest : SUN
2. Address for : BARSUA IRON MINE OF SAIL  
correspondance AT/PO-BARSUA  
DIST-SUNDERGARH
3. (a) Lease Number : ORI0155
- (b) Lease area : 77.94
- (c) Period of lease :
- (d) Date of Expiry : 31/03/2020
4. Mineral worked : IRON ORE Main

## 5. Name and Address of the

Lessee : M/s Steel Authority of India Ltd (SAIL)  
 Ispat Bhwan, Lodhi Road New  
 Delhi DELHI DELHI  
 Phone:011-24367481-86  
 FAX :011-24367015/22467458

Owner : VIVEK GUPTA  
 M/s SAIL,Ispat Bhawan Lodi  
 Road, New Delhi SUNDARGARH  
 ORISSA  
 Phone: 011-24367481  
 FAX : 011-24367015

Agent : A K SINHA  
 M/s SAIL,At/Po-Tensa, PS-  
 Lahunipara Dist-Sundargarh  
 Odisha SUNDARGARH ORISSA  
 Phone: 06625-236026  
 FAX : 06625-236031

## Mining Engineer

Name : SHRI SANTOSH KUMAR,Full Time  
 Qualification : B E MINING  
 Appointment/ : 10/02/2019  
 Termination date

## Geologist

Name : SHRI R P MANDAL,Full Time  
 Qualification : MSC GEOLOGY  
 Appointment/ : 04/07/2016  
 Termination date

## Manager

Name : SHRI UMESH KUMAR BHASKAR  
 Qualification : B TECH MINING  
 Appointment/ : 05/02/2019  
 Termination date

6. Date of approval of Mining	:	Mining Scheme rule 12 MCDR1988	22/02/2002
Plan/Scheme of Mining	:	Mining Scheme rule 12 MCDR1988	04/10/2007
	:	Renewal under rule 24 MCR1960	28/07/2008
	:	Mining Scheme rule 12 MCDR1988	04/09/2015
	:	MP modif under 17(3) MCR 2016	30/04/2019
	:	MP review under 17(1) MCR 2016	08/11/2019

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

## Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	Nil	Nil	Nil
1b	Exploration over lease area for geological axis 1 or 2	In 2019-20, there was no proposal for drilling	Nil	Nil
1c	Exploration Agencies and Expenditure in lakh rupees during the year	Not Specified	There was no exploration done in 2019-20	There was no exploration done in 2019-20
1d	Balance area to be explored to bring Geological axis in 1 or 2	In 2018-19, there was no proposal for drilling	As per the modification of mining plan approved dated 30.04.2019, the Barsua iron mine explored as per UNFC as on 01.04.2019 under G1 is 334.187 Ha and unexplored area is 642.242 ha.	As per the modification of mining plan approved dated 30.04.2019, the Barsua iron mine explored as per UNFC as on 01.04.2019 under G1 is 334.187 Ha and unexplored area is 642.242 ha.
1e	Balance reserve as on 01/04/20	As per modification of mining plan approved dated 30.04.2019, reserve as on 01.04.2019 is 154.002 million tones and remaining resources at 85.690 million tones. Total reserve and resource is 239.692 million tones.	Total reserve and resource is 239.692 million tones.	Nil

1f	General remarks of inspecting officers on geology, exploration etc	In 2019-20, there was no proposal for drilling	There was no exploration done in 2018-19. As per modification of mining plan approved dated 30.04.2019, reserve as on 01.04.2020 is 154.002 million tones and remaining resources at 85.690 million tones. Total reserve and resource is 239.692 million tones.	As per the modification of mining plan approved dated 30.04.2019, the Barsua iron mine explored as per UNFC as on 01.04.2020 under G1 is 334.187 Ha and unexplored area is 642.242 ha.
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Development :

Sl.No.	Item	Propasals	Actual work	Remarks
2a	Location of development w.r.t.lease area	In 2019-20, development proposed in Area 3 and Area 5	In 2019-20 development carried out in Area 3 and Area 5	Nil
2b	Separate benches in topsoil, overburden and minerals (Rule 15)	There was no proposal for top soil and over burden generation.	There was no generation of top soil and overburden. Separate benches in OB and mineral maintaied.	Nil
2c	Stripping ratio or ore to OB ratio	1:0 t/m3	1:0 t/m3	Neither, there was no proposal for overburden generation nor any overburden generated during 2019-20
2d	Quantity of topsoil generation in m3	Not Proposed	Nil	No topsoil generated in 2018-19
2e	Quantity of overburden generation in m3	145320 tonnes	145231 tonnes	Nil
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc	In 2019-20 development carried out in Area 3 and Area 5	In 2019-20 development carried out in Area 3 and Area 5	Nil

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## Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
3a	Number of pit proposed for production	2 nos namely Area-3 and Area-5	2 nos namely Area-3 and Area-5	Nil
3b	Quantity of ROM mineral production proposed	35,98,920 tones	23,37,865 tones	Nil
3c	Recovery of sailable/usable mineral from ROM production	24,58,200 tones	18,61,969 tones	Nil
3d	Quantity of mineral reject generation	11,40,720 tones	3,85,985 tones	Less subgrade materials generated in actual excavation area as there was deviation in area excavated than proposed
3e	Grade of mineral rejects generation and threshold value declared.	Grade: Fe >45 to <57%, Threshold: Fe 45%	Grade: Fe >45 to <57%, Threshold: Fe 45%	Nil
3f	Quantity of sub grade mineral generation.	11,40,720 tones	3,85,985 tones	Less subgrade materials generated in actual excavation area as there was deviation in area excavated than proposed
3g	Grade of sub grade mineral generation	45-57% Fe	45-57% Fe	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.	Wet beneficiation envisaged	Undertaken during 2019-20.	Nil

3j	Provision of drilling and blasting in mineral benches	Blast hole diameter: 150mm. x Burden 3.0m, Spacing: 3.5m. Blasting will be done. Shock tube initiation system /NONEL system of blasting will be adopted.	Blast hole diameter: 150mm. Blasting is done by using ANFO and slurry explosives with NONEL. Burden 3.0m, spacing: 3.5m	Nil
3k	Provision of mining machineries in mineral benches	Excavator and dumper combination have been proposed for mining in mineral benches.	Excavator and dumper combination have been deployed for mining in mineral benches.	Nil
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Height of the benches proposed is 10 m	Height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Nil
3m	Total area covered under excavation/pits	Area under mining at the end of plan period will be 177.80 Ha	Area under mining at the end of 2019-20 is 169.28 Ha	Area under mining at the end of 2019-20 is 169.28 Ha
3n	Ore to OB ratio for the pit/mine during the year.	1:0 t/m <sup>3</sup>	1:0 t/m <sup>3</sup>	Neither, there was no proposal for overburden generation nor any overburden generated during 2019-20
3o	Total area put in use under different heads at the end of year	Total area put in use under different heads at the end of plan period will be 319.62 Ha	Total area put in use under different heads at the end of 2019-20 is 311.10 Ha.	Nil

3p	Production of ROM mineral during the last five year period as applicable	2015-16: 5996380 tones 2016-17: 4975800 tones 2017-18: 4756320 tones 2018-19: 3598920 tones 2019-20: tonnes	2015-16: Nil 2016-17: 812700 tones 2017-18: 86775 tones 2018-19: 2337865 tones 2019-20: tonnes	Nil
3q	General remarks of inspecting officers on method of mining etc.	Production proposed from 2 nos of pits namely Area-3 and Area-5	Production proposed from 2 nos of pits namely Area-3 and Area-5	Nil

#### Solid Waste Management - Dumping:

Sl.No.	Item	Propasals	Actual work	Remarks
4a	Separate dumping of topsoil, OB and mineral rejects (Rule 32,33)	In 2019-20, there was no proposal for top soil and overburden generation. Subgrade generated will be stacked separately	In 2019-20, there was no generation of top soil and overburden. Subgrade generated have been stacked separately	Nil
4b	Location of topsoil, OB and mineral reject dumps	In 2019-20, there was no proposal for top soil and overburden generation. Subgrade generated will be stacked in Area-2 & 4 and in 3E mined out pit	During the year 2019-20, there was no generation of top soil and overburden. mineral generated have been stacked as envisaged.	Nil
4c	Number of dumps within lease area and outside of lease area	One waste dump within Barsua Iron Mne	One waste dump within Barsua Iron Mne	Nil
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	Within ultimate pit limit.	Within ultimate pit limit.	Nil

4e	Number of active and alive dumps.	Waste Dump: 1 no. (BWD-8)	Waste Dump: 1 no. (BWD-8)	Nil
4f	Number of dead dumps.	Nil	Nil	Nil
4g	Number of dumps established.	Nil	Nil	Nil
4h	Whether Retaining wall or garland drain all along dumps are there.	Not Proposed	Nil	Neither, there was no proposal for overburden generation nor any overburden generated during 2019-20
4i	Length of Retaining wall or garland drain all along dumps	Not envisaged.	Nil	Neither, there was no proposal for overburden generation nor any overburden generated during 2019-20
4j	Number of settling ponds	Nil	Nil	Nil
4k	Specific comments of inspecting officer on waste dump management	In 2019-20, there was no proposal for top soil and overburden generation. Subgrade generated will be stacked separately	In 2019-20, there was no proposal for top soil and overburden generation. Subgrade generated will be stacked separately	Nil

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**Solid Waste Management - Backfilling:**

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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	Nil	Nil
5b	Area under backfilling of mined out area	Nil	No backfilling undertaken during 2019-20.	Nil

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5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	Not applicable.	Nil	Nil
5d	Total area fully reclaimed and rehabilitated	No reclamation proposal envisaged.	Nil	Nil
5e	General remarks of inspecting officers on backfilling and reclamation etc.		There was no reclamation through backfilling done during 2019-20	Nil

#### 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).	Annual report on PMCP to be submitted as per Rule 26 (2) of MCDR, 2017	Annual report on PMCP for the year 2019-20 have been submitted	Nil
6b	Area available for rehabilitation (ha) .	No area matured for rehabilitation .	Nil	Nil
6c	afforestation done (ha).	10.00 Ha	Nil	1.5 ha afforested outside lease area
6d	No. of saplings planted during the year	30000 nos of saplings to be planted.	Nil	2000 nos of saplings planted outside lease area. Lower rate of saplings have been planted due to non-availability of dead portion of dumps.
6e	Cumulative no .of plants	Not Specified	299242 nos. of saplings planted	Nil
6f	Any other method of rehabilitation	Not applicable.	Nil	Nil

6g	Cost incurred on watch and care during the year	20.00 lakh	19.34 lakh	Nil
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling ( L x B x D	Not applicable.	Nil	Nil
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	Nil	Nil	Nil
6j	Compliance on reclamation and rehabilitation by backfilling (iii)Afforestation on backfilled area	Not applicable.	Nil	Nil
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)	Nil	Nil	Nil
6o	Compliance of rehabilitation of waste land within lease (iii)Method of rehabilitation	Not applicable.	Nil	Nil
6p	Compliance of environmental monitoring (core zone and buffer zone)	Monitoring of environmental parameters are envisaged.	Monitoring of environmental parameters are being done.	Nil
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.	Annual report on PMCP to be submitted as per Rule 26 (2) of MCDR, 2017	Annual report on PMCP for the year 2019-20 have been submitted	Nil

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#### Mineral Conservation:

Sl.No.	Item	Propasals	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	Grade-wise sorting & sizing are envisaged.	Grade-wise sorting & sizing undertaken.	Nil
7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	Mechanical	Mechanical	Nil
7c	Different grade of mineral sorted out at mines.	45% Fe to -57% Fe and above 57% Fe	45% Fe to -57% Fe and above 57% Fe	Nil
7d	Any beneficiation process at mines	Wet beneficiation proposed.	Wet beneficiation undertaken.	Nil

7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues	Grade-wise sorting & sizing are envisaged and wet beneficiation proposed..	Grade-wise sorting & sizing undertaken. and wet beneficiation undertaken.	Nil
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**Environment:**

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	Not Proposed	Nil	Nil
8b	Concurrent use or storage of topsoil	Not applicable.	No top soil generated during 2019-20.	Nil
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	In 2019-20, there was no proposal for top soil and overburden generation. Subgrade generated will be stacked separately	During 2019-20, there was no generation of top soil and overburden. Subgrade generated have been stacke	Nil
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	Not Proposed	Nil	Nil
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	No area matured for reclamation.	Not applicable.	Nil

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8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	30000 nos of saplings proposed to be planted.	Nil within the lease area.	2000 nos of saplings planted outside lease area. Lower rate of saplings have been planted due to non-availability of dead portion of dumps
8g	Survival rate	Not Specified	Survival rate: 85% (outside lease area)	Nil
8h	Water sprinkling on roads to control airborne dust	Water sprinkling on roads to control airborne dust is envisaged.	Permanent sprinkling system is installed in haulage road and water tanker also routinely used.	Nil
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area		Aesthetic beauty in and around mines area 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	Monthly Returns and Annual Return for 2019-20 has been submitted	Monthly Returns and Annual Return for 2019-20 has been submitted	Nil
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Information on Manager, Mining Engineer and Geologist furnished in annual return for 2019-20	Manager, Mining Engineer and Geologist have been appointed in mines	Nil

9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	Lease area (surface area) utilization at the end of the year as furnished in annual return for 2019-20. Covered under current working: 169.28 ha, Occupied by plant buildings, residential, welfare buildings & roads: 23.67 Ha, other purposes: 68.71 Ha etc.	Lease area (surface area) utilization at the end of the year as furnished in annual return for 2019-20. Covered under current working: 169.28 ha, Occupied by plant buildings, residential, welfare buildings & roads: 23.67 Ha, other purposes: 68.71 Ha etc.	Nil
9d	Scrutiny of Annual return on afforestation	2000 nos. of saplings planted outside lease area	2000 nos. of saplings planted outside lease area	Data furnished in annual return 2019-20.
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	Quantity Generated: 385985 tones; Grade: 45% - 57% Fe	Quantity Generated: 385985 tones; Grade: 45% - 57% Fe	Nil
9f	Scrutiny of Annual return on ROM stock and/or graded ore	Closing stock of ROM furnished is Nil.	The mineral reject 385985 tones (Part of ROM) has been shown in section 4 of annual return but has not been shown in closing stock of ROM which has been stacked in mines.	Nil
9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	Production cost is Rs. 1761/- per tonne	Found to be in order.	Nil
9h	Scrutiny of Annual return on fixed assets	Value of fixed assets Rs. 4527567179	Value of fixed assets Rs. 4527567179	Nil

9k	Scrutiny of Annual return on mining machineries	Shovel (Hydraulic) 4.5/5.9/7.5 cum capacity: 3 nos /1 no /1no; Backhoe (1.62 cum capacity): 1 no; Dumper (50T/60T/100T) capacity: 7 nos / 2 nos / 2 nos; Dozer: 5 nos; Front end loader (3.4 / 2.9 cum capacity): 1no / 1 no etc.	Shovel (Hydraulic) 4.5/5.9/7.5 cum capacity: 3 nos /1 no /1no; Backhoe (1.62 cum capacity): 1 no; Dumper (50T/60T/100T) capacity: 7 nos / 2 nos / 2 nos; Dozer: 5 nos; Front end loader (3.4 / 2.9 cum capacity): 1no / 1 no etc.	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

**Date :**

**(SHRI G.C. SETHI)**

Indian Bureau of Mines