

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

Inspection under SDF for star rating of mines REPORT

Kolkata regional office

Mine file No : KOL/JHK/SB(W)/FE(G-1)

Mine code : 30BHR27010

- (i) Name of the Inspecting : **K03**) **G. S. KANNAN**
Officer and ID No.
- (ii) Designation : Senior Mining Geologist
- (iii) Accompanying mine : Shri.S.P Das, GM-Mines, Dr.T.C.Ananda,AGM-Geo
Official with
Designation
- (iv) Date of Inspection : 24/09/2021
- (v) Prev.inspection date : 13/02/2021

PART-I : GENERAL INFORMATION

1. (a) **Mine Name** : **GUA**
- (b) **Registration NO.** :
- (c) Category : A Fully Mechanised
- (d) Type of Working : Opencast
- (e) Postal address
State : JHARKHAND
District : SINGHBHUM (WEST)
Village : GUA
Taluka : CHAIBASA
Post office : GUA
Pin Code : 833213
FAX No. : 06596 263714
E-mail : rmdsail@gmail.com
Phone : 06596 263713
- (f) Police Station : GUA
- (g) First opening date : 12/09/1919
- (h) Weekly day of rest : SUN
2. Address for : 50 CHOWRINGHEE ROAD .
correspondance KOLKATA .
WEST BENGAL.
3. (a) Lease Number : BHR0057
- (b) Lease area : 1443.76
- (c) Period of lease : 30
- (d) Date of Expiry : 21/02/2029
4. Mineral worked : IRON ORE Main
MANGANESE ORE Associated

5. Name and Address of the

Lessee : STEEL AUTHORITY OF INDIA LTD.
 INDUSTRY HOUSE 5TH & 6TH
 FLOOR 10, CAMAC STREET
 KOLKATA WEST BENGAL
 Phone:033-22822316/0462/3385
 FAX :033-22822316/0462

Owner : Amarendu Prakash
 Steel Authority Of India
 Limited Bokaro Steel Plant
 Bokaro-827001 SINGHBHUM
 (WEST) JHARKHAND
 Phone: 05642240300,024
 FAX : (06542)240/82

Agent : MANASH BISWAS
 GUA IRON ORE MINE AT&P.O
 GUA, DIST. SINGHBHUM WEST
 JHARKHAND SINGHBHUM (WEST)
 JHARKHAND
 Phone: 8986881501
 FAX :

Mining Engineer

Name : B. N. SINGH,Full Time
 Qualification : AMIE(MINING)
 Appointment/ : 01/05/2008
 Termination date

Geologist

Name : Dr. T.C. Ananda,Full Time
 Qualification : M.Sc.(Geo)
 Appointment/ : 01/03/2008
 Termination date

Manager

Name : A. K. MISHRA
 Qualification : B.Tech. (MINING)
 Appointment/ : 08/08/2017
 Termination date

6. Date of approval of Mining	:	Existing rule 11 MCDR1988	20/06/2000
Plan/Scheme of Mining	:	Mining Scheme rule 12 MCDR1988	05/05/2006
	:	Renewal under rule 24 MCR1960	16/10/2009
	:	Modif.of approved Mining Plan	18/08/2010
	:	MP review under 17(1) MCR 2016	01/02/2019
	:	MP modif under 17(3) MCR 2016	20/12/2019

PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	No Boreholes has Proposed during 2019-2020	No Boreholes has drilled.	
1b	Exploration over lease area for geological axis 1 or 2	33 - Additional exploration was proposed during 2020-2021 in the lease area both forest diverted and nondiverted area for Geological axis - 1	Additional exploration was not carried out in the lease area for Geological axis - 1	No Exploration has been carrying out. Violation has been issued under Rule 11(1)
1c	Exploration Agencies and Expenditure in lakh rupees during the year	Own drilling and/ or Contract drilling machines were proposed for Exploration.	No Boreholes has drilled	Violation has been issued under Rule 11(1)
1d	Balance area to be explored to bring Geological axis in 1 or 2	Exploration was proposed out at 100m X 100m grid interval. 33 Additional exploration was proposed in plan period (2020-2021)	Exploration was not carried out at 100m X 100m grid interval. Entire outside the broken area has to be explored for availability of ore from G-2/3 to G-1.	296 boreholes have been drilled so far with 16659 meterage. 407 hectares has been proved under G-1.
1e	Balance reserve as on 01/04/20	Reserves & Resources as on 01.04.2021 Proved Mineral Reserves (111) = 71.550 million tons Feasibility Mineral Resources (211) = 104.92 million tons	Reserves & Resources as on 01.04.2021 Proved Mineral Reserves (111) = 76.761 million tons Feasibility Mineral Resources (211) = 104.92 million tons	Out of Feasibility Mineral Resources (211) = 104.92 million Tons, 17.76 million tons is inside diverted forest boundary, 67.15 million tons is outside diverted forest boundary and 20.01 million tons is outside diverted forest boundary and blocked.

1f	General remarks of inspecting officers on geology, exploration etc	It is part of Singhbhum, Bonai and Keonjhar group of Iron Ore deposit.	The terrain forms a part of the oldest metasedimentary formational of chottanagapur plateau.	Entire Lease is having Same Geology and Mineralogy is changes from place to place. Hence borehole has to be drilled at closer interval to get quantity and quality
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Development :

Sl.No.	Item	Propasals	Actual work	Remarks
2a	Location of development w.r.t.lease area	Proposed to work in 5 Blocks during 2020-2021. (OT Hill, IInd Level, HD Buru, Ranichua & Bai Hill)	Working has been not carried out as per the proposal	Violation has been issued under Rule 11(1)
2b	Separate benches in topsoil, overburden and minerals (Rule 15)	It is proposed to form Separate Bench's as Topsoil - 1 Overburden - 3 to 10 benches Mineral - 3 to 10 benches	As per proposal benches has been formed. No of benches are differs in 5 Blocks.	Violation has been issued under Rule 11(1)
2c	Stripping ratio or ore to OB ratio	1 : 3.71	1 : 2.00	
2d	Quantity of topsoil generation in m3	It is proposed to remove 9908 cu.m of topsoil during 2020-2021	No topsoil has been generated as per proposal.	Violation has been issued under Rule 11(1)
2e	Quantity of overburden generation in m3	During 2020-2021 it is proposed OB as 655294 Cu.m	562982 tons of OB has been removed.	

2f General remarks of inspecting officers on development of pit w.r.t. type of deposit etc Proposed to work in 5 Blocks during 2020-2021. (OT Hill, IInd Level, HD Buru, Ranichua & Bai Hill) to generate 655294 cu.m of OB 562982 cu.m of OB has been removed.

Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
3a	Number of pit proposed for production	Development and production was proposed in 5 different Blocks. (OT Hill, IInd Level, HD Buru, Ranichua & Bai Hill)	Development and production are not carried out as per proposal during 2020-2021	Violation has been issued under Rule 11(1)
3b	Quantity of ROM mineral production proposed	The total target of ROM Production was 6.03 million tons during 2020-2021.	3.11 million tons has been achieved during 2020-2021	
3c	Recovery of sailable/usable mineral from ROM production	ROM Recovery 95%	100%	Violation has been issued under Rule 45(7) for achieving 100% recovery
3d	Quantity of mineral reject generation	It is proposed to produced 159303 cu.m of mineral rejects during 2020-2021	No mineral rejects has been achieved against proposal.	Violation has been issued under Rule 45(7) for achieving 100% recovery
3e	Grade of mineral rejects generation and threshold value declared.	Less than 45% Fe	Less than 45% Fe	
3f	Quantity of sub grade mineral generation.	No Sub Grade Generation	No Sub Grade Generation	
3g	Grade of sub grade mineral generation	There is No Generation of Subgrade Mineral	There is No Generation of Subgrade Mineral	

3h	Manual / Mechanised method adopted for segregating from ROM	Mechanised	Mechanised	
3i	Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects.	Proposed Beneficiation plant for 12.5 million tons.	Beneficiation plant is not installed as per proposal.	Crushing & Screening is done
3j	Provision of drilling and blasting in mineral benches	Spacing - 6m Burden - 4m Depth - 11m It is Proposed to drill by 110mm dia, crawler mounted down hole drill. Blasting is done by using Slurry explosives and nonnel fuses.	Drilling & Blasting are done as per proposal.	
3k	Provision of mining machineries in mineral benches	Electric Shovels Hydraulic Excavators Dozer Drill Grader Dumper Water Sprinkler Tippers	As per proposal machineries are available in field.	
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Bench height of 10m was proposed in Mineral.	Benches are formed 9-10m height.	
3m	Total area covered under excavation/pits	180.648 hect area is under Pit and additional 1.0 hect is required during 2020- 2021	179.648 hect area is under Pit	Due to working of existing Mines, additional area is not in use during 2020-2021.
3n	Ore to OB ratio for the pit/mine during the year.	1 : 3.71	1 : 2.00	

3o	Total area put in use under different heads at the end of year	Land use Pattern as on 01.04.2021. Mines = 180.648 hect Dump = 25.00 hect Mineral Stock = 22.00 hect Infra = 2.96 hect Roads = 7.00 hect Township = 4.79 hect	Land use Pattern as on 01.04.2021. Mines = 179.648 hect Dump = 25.00 hect Mineral Stock = 18.608 hect Infra = 2.96 hect Roads = 5.00. hect Township = 4.79 hect	There are no Changes in land use Pattern during 2021 because of Working in existing pit.
3p	Production of ROM mineral during the last five year period as applicable	2020-2021 = 6.03 mill tons 2019-2020 = 5.97 mill tons 2018-2019 = 10 mill tons 2017-2018 = 6.1 mill tons 2016-2017 = 6.0 mill tons	2020-2021 = 3.11 mill tons 2019-2020 = 3.69 mill tons 2018-2019 = 3.7 mill tons 2017-2018 = 4.0 mill tons 2016-2017 = 4.0 mill tons	
3q	General remarks of inspecting officers on method of mining etc.	Mechanised Method is Proposed	3.11 mill tons have been achieved during 2020-2021 against 6.03 mill tons of proposal	

Solid Waste Management - Dumping:

Sl.No.	Item	Propasals	Actual work	Remarks
4a	Separate dumping of topsoil, OB and mineral rejects (Rule 32,33)	Generated OB/ Intercalated waste will be dumping in Dump no-2 (Ranichua Block) & Dump No-5 (OT Hill Block).	As per proposal the dumping is not carried out in Dump no-2 (Ranichua Block) & Dump No-5 (OT Hill Block).	Dumping has not formed as per terrace proposal and sloping benches has not maintained. Violation has been issued under Rule 11(1).
4b	Location of topsoil, OB and mineral reject dumps	Dump no-2 (Ranichua Block) & Dump No-5 (OT Hill Block).	Dump no-2 (Ranichua Block) & Dump No-5 (OT Hill Block).	

4c	Number of dumps within lease area and outside of lease area	Lease area =5 Non Lease area= Nil	Lease area =5 Non Lease area= Nil	Out of 5, only 2 dumps are active. Dump no-2 (Ranichua Block) & Dump No-5 (OT Hill Block).
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	Outside the UPL, Dump no-2 (Ranichua Block) & Dump No-5 (OT Hill Block).	As per proposal dumps are formed.	Ranichua dump has been extended to HD buru block same has shown in updated plan. Violation has been issued under Rule 31(4).
4e	Number of active and alive dumps.	Active Dump =2 Alive Dump =3	There are 2 active dumps for waste dumping. Dump no-2 (Ranichua Block) & Dump No-5 (OT Hill Block).	
4f	Number of dead dumps.	Dead Dumps = 3	Dead Dumps = 3	
4g	Number of dumps established.	3 dumps have been established.	3 dumps have been established.	
4h	Whether Retaining wall or garland drain all along dumps are there.	Yes, Proposed around the dumps	As per proposal retaining wall has been formed around dumps	
4i	Length of Retaining wall or garland drain all along dumps	Retaining wall = 45m for Bai Hill dump. Garland Drainage = 1000 for Ranichua dump, 800m for OT Hill Dump, 800m for Bai Hill dump, 250m for II Level dump, 450m for HD buru dump during 2020-2021	As per proposal retaining wall & Garland drainage has been formed around dumps.	
4j	Number of settling ponds	5 Settling tanks have proposed	5 Settling tanks have proposed As per proposal settling tanks has been maintain	

4k	Specific comments of inspecting officer on waste dump management	Generated OB/ Intercalated waste will be dumping in Dump no-2 (Ranichua Block) & Dump No-5 (OT Hill Block).	As per proposal retaining wall & Garland drainage has been formed around dumps	Out of 5, only 2 dumps are active. Dump no-2 (Ranichua Block) & Dump No-5 (OT Hill Block).
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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.	No Backfilling has proposed	No Backfilling has done	Ore is not extracted upto the proved depth and no backfilling are proposed in the present plan period.
5b	Area under backfilling of mined out area	No Backfilling has proposed	No Backfilling has done	
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	No Proposal	Nil	
5d	Total area fully reclaimed and rehabilitated	No Proposal	Nil	
5e	General remarks of inspecting officers on backfilling and reclamation etc.	No Backfilling has proposed	Ore is not extracted upto the proved depth and no backfilling are proposed in the present plan period.	

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).	It should be on or before 1st July every year.	Submitted for the year 2020-2021.	
6b	Area available for rehabilitation (ha) .	No Proposal	Nil	

6c	afforestation done (ha).	Proposed 5.50 hect in 2020-2021 (5.0 hectares for Gap plantation and 0.5 hectares in barren land)	6.00 hect achieved for 2020-2021 (6.00 hectares for Gap plantation in dump area)	Violation has been issued under Rule 11(1).
6d	No. of saplings planted during the year	2500 saplings proposed in OB dump area and 500 saplings in barren area for 2020-2021	3100 saplings have been achieved with lease area.	
6e	Cumulative no .of plants	6000 nos of saplings proposed from during plan period 2019-2021.	7050 saplings have been planted during 2019-2021 plan period both inside and outside the lease area.	Cumulatively 21050 saplings have been planted in 12.50 hect during previous plan period both inside and outside the lease area.
6f	Any other method of rehabilitation	No Proposal	Nil	
6g	Cost incurred on watch and care during the year	No Proposal	Nil	
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (Lx B x D	No Proposal	Nil	
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	No Proposal	Nil	
6j	Compliance on reclamation and rehabilitation by backfilling (iii)Afforestation on backfilled area	No Proposal	Nil	

6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	No Proposal	Nil	
6l	Compliance on reclamation and rehabilitation by backfilling (v) any other specific means.	No Proposal	Nil	
6m	Compliance of rehabilitation of waste land within lease (i) afforestation	3000 saplings proposed in safety barrier area for 2020-2021	3100 saplings achieved during 2020-2021 inside the lease area and 1450 outside the lease area.	
6n	Compliance of rehabilitation of waste land within lease (ii) Area rehabilitation (ha)	Proposed 0.50 hect in 2020-2021	As per proposal barren land is not Afforested	Violation has been issued under Rule 11(1).
6o	Compliance of rehabilitation of waste land within lease (iii) Method of rehabilitation	Nil	Nil	
6p	Compliance of environmental monitoring (core zone and buffer zone)	Bi-Annually Survey	Environment monitoring is carried out through own as well as private agency.	
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.	Environment monitoring is carried out through own as well as private agency.	3100 saplings achieved during 2020-2021 inside the lease area and 1450 outside the lease area.	Cumulatively 21050 saplings have been planted in 12.50 hect during previous plan period both inside and outside the lease area.

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 total target of ROM Production was 6.03 million tons during 2020-2021.	3.11 million tons has been achieved during 2020- 2021.	
7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	Mechanical Process	Mechanical Process	
7c	Different grade of mineral sorted out at mines.	Fe = +61% Sio2 = 1.7% Al2O3 = 2.0% Proposed during 2020-2021	Fe = +61% Sio2 = 1.7% Al2O3 = 2.0%	Low grade are Blended with High grade ores to get the desired plant feed materials.
7d	Any beneficiation process at mines	Crushing & Screening process	sorting and sizing is being done	
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues	The total target of ROM Production was 6.03 million tons during 2020-2021.	3.11 million tons has been achieved during 2020- 2021.	Low grade are Blended with High grade ores to get the desired plant feed materials.

Environment:

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	No Proposal	Nil	
8b	Concurrent use or storage of topsoil	No Proposal	Nil	
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	Separate dump has been proposed for waste in Dump no-2 (Ranichua Block) & Dump No-5 (OT Hill Block).	As per proposal the dumping is not carried out in Dump no-2 (Ranichua Block) & Dump No-5 (OT Hill Block).	Dumping has not formed as per terrace proposal and sloping benches has not maintained. Violation has been issued under Rule 11(1).

8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	No Proposal	Nil	
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	No Proposal	Nil	
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	3000 saplings/ year have proposed.	3100 saplings achieved during 2020-2021 inside the lease area and 1450 outside the lease area.	7050 saplings have been planted during 2019-2021 plan period both inside and outside the lease area.
8g	Survival rate	No such proposal in the approved document	60%	
8h	Water sprinkling on roads to control airborne dust	Yes, it is proposed for water sprinkling on haul roads.	Water sprinkling on road is observed during the inspection.	
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area	Scanty vegetation, agriculture are observed in lease area	Surrounding area beyond lease area is greenery. The area is hilly terrain.	Area is in forest and there is no agricultural land within the lease.

Compliance of Rule 45:

Sl.No.	Item	Propasals	Actual work	Remarks
9a	Status of submission of Monthly and Annual returns	MR Submitted up to = August 2021 AR Submitted up to = 2020-2021	Both Annual & Monthly returns are submitting in online system.	

9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Full time Mining Engineer and Geologist has shown	As per record Mining Engineer and Geologist are present during Inspection	
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	Land use Pattern as on 01.04.2021. Mines = 179.64 hect Reclaimed/ Rehabilitated = 35.170 hect Dump = 25.00 hect Mineral Stock = 18.60 hect	Landuse Pattern is filled as per approved Mining Plan	
9d	Scrutiny of Annual return on afforestation	3100 saplings achieved during 2020-2021 inside the lease area and 1450 outside the lease area.	As per proposal barren land is not Afforested	Violation has been issued under Rule 11(1).
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	There is no Mineral Rejects Generation	There is no Mineral Rejects Generation	Violation has been issued under Rule 45(7)
9f	Scrutiny of Annual return on ROM stock and/or graded ore	Iron Ore Stock as on 01.04.2021 ROM Opening stock = 30590 tons ROM Closing stock = 41066 tons	Mine has produced 3112671 tons of Production during 2020-2021	
9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	Cost of Production & Ex. Mine Price has shown	It is captive mine of SAIL	
9h	Scrutiny of Annual return on fixed assets	Fixed Assets is given	Fixed Assets is filled	
9k	Scrutiny of Annual return on mining machineries	Machineries details given	As available in field	

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 :**(G. S. KANNAN)**

Indian Bureau of Mines