INDIAN BUREAU OF MINES
MINERALS DEVELOPMEMT AND REGULATION DIVISION

MCDR inspection REPORT

Jabalpur regional office

Mine file No : MP/STN/LST-332 **Mine code : 38MPR35038**

(i) Name of the Inspecting Officer and ID No. : **GQ05) SANJAY M. GIRHE**

(ii) Designation : Regional Mining Geologist

(iii) Accompaning mine Official with Designation :

(iv) Date of Inspection : 20-NOV-19

(v) Prev.inspection date : 09-AUG-17

PART-I : GENERAL INFORMATION

1. (a) **Mine Name** : **ISPAT I & II**

(b) Registration NO. :

(c) Category : A Fully Mechanised

(d) Type of Working : Opencast

(e) Postal address

State : MADHYA PRADESH
District : SATNA
Village : PATONDHA ETC.
Taluka : RAGHURAJ NAGAR
Post office : BABUPUR
Pin Code : 485112
FAX No. : N. A.
E-mail : N. A.
Phone : N. A.

(f) Police Station :

(g) First opening date :

(h) Weekly day of rest : SUN

2. Address for correspondance : STEEL AUTHORITY OF INDIA LTD.
P.O. BABUPUR, DIST. SATNA (M.P.)

3. (a) Lease Number : MPR0468
(b) Lease area : 590.52
(c) Period of lease : 20
(d) Date of Expiry : 31-DEC-01

4. Mineral worked : LIMESTONE Main

5. Name and Address of the

Lessee : Steel authority of India Ltd.
G. OJHA, DIR(PER & I/C RMD)
LODHI RD, ISPAT BHAWAN
NEWDELHI-110003 KATNI
MADHYA PRADESH
Phone:07626-273211
FAX :07626-273201

Owner : STEEL AUTHORITY OF INDIA LTD.
Raw Meterial Div. Bokaro
Zone, Bokaro Steel City
BOKARO JHARKHAND
Phone: N. A.
FAX : N. A.

6. Date of approval of Mining Plan/Scheme of Mining	:	Mining Scheme rule 12 MCDR1988	18-NOV-03
		Modif.of approved Mining Plan	25-MAR-09
		Mining Scheme rule 12 MCDR1988	29-JUN-11
		Mining Scheme rule 12 MCDR1988	04-DEC-14

PART – II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	In the approved Review of Mining Plan any exploration was not proposed during 2016-17, 2017-18 and 2018-19.	No exploration done during the year 2018-19.	As per the approved Review of Mining for period 2016-17 to 2020-21, exploration were proposed in only 2019-20 & 2020-21 years by means of 83 boreholes amouting total meterage of 2490mts, Grid pattern- 200mx200m for G1 level
1b	Exploration over lease area for geological axis 1 or 2	During the year 2018-19 no exploration was proposed	None, but during the year 2019-20 & 2020-21, exploration was by means of core drilling at 200m x200m grid patter with avg. depth of 30m depth of each boreholes, Grid interval 200mx200m for G1 level.	Exploration was proposed over the lease area for establshing geological axis G1 in current approved Review of Mining Plan. Previousely also exploration carried out in phase wise manner. Total 57 boreholes were drilled with toatl 1520mts drilling.
1c	Exploration Agencies and Expenditure in lakh rupees during the year	No proposal of exploration during the year 2018-19	Prospecting was carried out by Prospecting Division of ore, Mines & Quarries Rourkela Steel Plant. After joint venture with SAIL, Bhilai Jaypee Cement Ltd also carried out exploration.	Bhilai Jaypee Cement Ltd had carried out exploration in approved Scheme of Mining period from 2011-12 to 2015-16.

1d	Balance area to be explored to bring Geological axis in 1 or 2	During the year 2018-19 no exploration were proposed. But, as per approved ROMP exploration were proposed in 2019-20 & 2020-21 by 811 boreholes at 200x200m grid patter covering total cummulative meterage of 2490mts	During the year 2018-19 no exploration were proposed. The details of area covered under G1 exploration, G2 exploration & G3 exploration is not furnished in approved ROMP.	In past extensive exploration exploration have been carried out by SAIL in order to bring geological axis G1 & G2
1e	Balance reserve as on 01/04/20	Opening Reserves & Resources as approved ROMP as 01.04.2016 (In Million Tonnes) Proved (111) -: 18.927 Probable (121 & 122) -: 7.68 Prefeasibility (221 & 222) : 14.40 Inferred (333) : 10.83	Opening Reserves & Resources as approved ROMP as 01.04.2016 (In Million Tonnes) Proved (111) -: 18.0 Probable (121 & 122) -: 7.68 Prefeasibility (221 & 222) : 14.40 Inferred (333) : 10.83	Actual Reserves position given as above as per the Annual Return submitted by the lessee for the year 2018-19.

1f	General remarks of inspecting officers on geology, exploration etc	As per the approved ROMP details, lessee had carried out extensive exploration in the past in phase wise manner to convert G2 & G3 reserves/resources into G1 level of exploration. Hence, during the inspection, lessee was instructed to mark entire explored areas on relevant plans/sections & also furnish the G1 area in text report in hecatres.

Development :

Sl.No.	Item	Propasals	Actual work	Remarks
2a	Location of development w.r.t.lease area	During the year 2018-19, development/excavation was proposed in between grid co-ordinates from S900 toS1875 & E2100 to E3100. Working was proposed in 3 benches	Working carried out at proposed locations with some deviations.	During the year 2018-19, total 23,20,000M.T. of limestone production was proposed against to this only 470983 M.T. production of limestone was acheived due to this above deviation occured.

2b	Separate benches in topsoil, overburden and minerals (Rule 15)	Separate benches in Top soil of 1.0mts heinght, Separate bench for overburden of height 3.0mts & mineral bench of 5 to 6 mts height was proposed	Yes, maintained as per the proposals	Due to uniform comapct zone of limestone in the lease area, heights of benches as proposed are being maintained properly as observed.
2c	Stripping ratio or ore to OB ratio	1: 0.49 during the year 2018-19	1:0.20 acheived during the year 2018-19	
2d	Quantity of topsoil generation in m3	Top soil generation was proposed during the year 2018-19	Nil	Working were proposed in already working pits, hence no proposals of top soil was given.
2e	Quantity of overburden generation in m3	During the year 210000 CuM of top rock overburden generation was proposed during the year 2018-19	Total 39083 CuM of rock overburden generated during the year. Less generation of OB due to less development during the year.	Overburden is in the form of siliceous capping of rock formation which require drilling & blasting for its dislodgement.
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc			There is only one single working pit having approx dimension of 800m (Length) x 380m (Width) x 20-22m(height/depth at 290mRL). Working pit is not developed as proposed in approved plan due to less demand of ROM from captive cement plant.

Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks

3a	Number of pit proposed for production	During the year production was proposed by advancing the exisitng pit towards southern side. Proposed working was between grid co-ordinates E2100 to E3100 & S900 to S1875.	As per the proposals excavation was carried out in exisitng pit. Some deviations have been observed w.r.t. approved proposals due to less ROM excavation & less demand from cemenent plant as reported.	
3b	Quantity of ROM mineral production proposed	23,20,000 Tonnes	470983.320 Tonnes	As reported less production due low requirement of limestone in cement manufacturing plant.
3c	Recovery of sailable/usable mineral from ROM production	Total 85% recovery of saleable/usable mineral from ROM production was proposed	Almost 85% recovery acheived after 15% recovery loss	
3d	Quantity of mineral reject generation	Not Proposed	None	No mineral rejection during course of ROM production.
3e	Grade of mineral rejects generation and threshold value declared.	Not Proposed	None	No mineral rejection during course of ROM propoduction.
3f	Quantity of sub grade mineral generation.	No Proposals	None	No subgrade generation is occured during course of ROM propoduction.
3g	Grade of sub grade mineral generation	Not Proposed	None	No subgrade generation is occured during course of ROM production.

3h	Manual / Mechanised method adopted for segregating from ROM	Not Proposed	Entire ROM being mined out is proposed for dispatch to the cement plant with some marginal handling loss.	
3i	Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects.	Not Proposed	Nil	Entire ROM being mined out is proposed for dispatch to the cement plant with some marginal handling loss. No benification study proposed or carried out.
3j	Provision of drilling and blasting in mineral benches	Deep hole drilling & multi row blasting,use ofmilli-second/relay detonation was proposed	Deep hole drilling & multi row blasting,use ofmilli-second/relay detonation was carried out as proposed.	Limestone in the lease area is hard & compact in nature which required deep hole drilling & blasting for defragmentation.
3k	Provision of mining machineries in mineral benches	Excavators-3.8 to 4.2 CuM capacity, Drilling machine-4" to 6" (100-153mm Dia), DTH Drills Dozer, Hywa-.20 to 32 tonnes capacity, Explosive van-10 Tonnes, water tanker-10KL	Mining operations were carried out by deploying Excavators-3.8 to 4.2 CuM capacity, Drilling machine-4" to 6" (100-153mm Dia), DTH Drills Dozer, Hywa-.20 to 32 tonnes capacity.	In addition to the above mining machineries, Hydraulic breaker, Explosive van, water tanker, etc were proposed for anicillary mining activities.
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	For OB bench, height of 3.0mts & in rock, height of bench was proposed as 6.0mts	For OB bench, height of 3.0mts & in rock, height of bench was proposed as 6.0mts	

3m	Total area covered under excavation/pits	Total cummulative area of 139.567Ha area was proposed to be excavated for working pits as per approved ROMP for period 2016-17 to 2020-21	Total area covered under excavation/pits at the end of year was 134.65 Ha	Deviation in area proposed Vs actual excavated area due to less acheivment of production in proposed plan period.
3n	Ore to OB ratio for the pit/mine during the year.	1:0.49 CuM/Tonne	1:0.20 CuM/Tonne	Deviation in ratio due to less ROM excavation & less OB generation during the year 2018-19.
3o	Total area put in use under different heads at the end of year	Pit-139.567 Ha. OB dumps-25.72Ha Mine Road - 6.90Ha Infrastructure -1.0Ha	Pit-134.65 Ha. OB dumps-25.72Ha Mine Road - 6.90Ha Infrastructure-4.90Ha Reclaimed & Rehabilitated-1.05Ha	
3p	Production of ROM mineral during the last five year period as applicable	2014-15 : 6,00,050 Tonne 2015-16 : 6,00,050 Tonne 2016-17 : 5,00,000 Tonne 2017-18 : 23,20,000 Tonne 2018-19 : 23,20,000 Tonne	2014-15 : 505958.64 Tonne 2015-16 : 316097.17 Tonne 2016-17 : 134982.290 Tonne 2017-18 : 501837.34 Tonne 2018-19 : 470983.32 Tonne	
3q	General remarks of inspecting officers on method of mining etc.			Method of mining was proposed by opencast working with formation of benches of regular height & width by deploying excavator & dumper combination.

Solid Waste Management – Dumping:

Sl.No.	Item	Propasals	Actual work	Remarks
4a	Separate dumping of topsoil, OB and mineral rejects (Rule 32,33)	Overburden generated during course of mining proposed for concurrent backfilling in mined out area	Overburden generated during course of mining used for concurrent backfilling in mined out area	Concurrent use of overburden for backfilling is proposed hence details of OB disposal locations have not addressed in approved ROMP
4b	Location of topsoil, OB and mineral reject dumps	Concurrent use OB for backfilling is proposed	OB disposal/backfilling is carried out as per the proposals with some deviation due to less generation of overburden during the review year.	
4c	Number of dumps within lease area and outside of lease area	Dumping was proposed within the mining lease area.	Presently, there is only twol dump of OB is existing in the lease area towards Central part of the lease area between the grid S1600 to S2000 & E2700 to E2200.	No OB dumps out side the mining lease area observed during the mine's inspection.
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	Exisiting & proposed dumping given inside mining lease area only.	Overburden dumps are exisiting within ultimate pit limit. Existing OB dumps are lying towards Central part of the lease area between the grid S1600 to S2000 & E2700 to E2200.	Locations of existing dumps were suitably marked on Surface Plan & other relavant plans.
4e	Number of active and alive dumps.	Not Proposed	No active dumps have been observed within mining lease area.	
4f	Number of dead dumps.	Within mining lease area two old/dead dumps have been observed	Within mining lease area two old/dead dumps have been observed	
4g	Number of dumps established.	Not Proposed	Nil	
4h	Whether Retaining wall or garland drain all along dumps are there.	No Proposals	Nil	

4i	Length of Retaining wall or garland drain all along dumps	Not Proposed	Nil, no retaining wall or garland drain found all along the dumps.	
4j	Number of settling ponds	Not Proposed	Nil	
4k	Specific comments of inspecting officer on waste dump management	Not Proposed	---	Overburden is mostly consist of siliceous limestone. Concurrent use of this overburden material is proposed for backfilling purpose.

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.	During the year 2018-19 backfilling was proposed. Some of the area towards esatern side in pit-1 where mineral is partly extracted.	Part extraction of mined out area & back filling accordingly	
5b	Area under backfilling of mined out area	6.173 hect area was proposed for backfilling	0.5 hectares acheived as backfilled.	Lagging behind in backfilling due less generation of overburden during the year.
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	Not Proposed	During the year 2018-19, no top soil generation is proposed.	
5d	Total area fully reclaimed and rehabilitated	6.173 hect area proposed for backfilling during the year 2018-19	0.5hect area only reclaimed & rehabilitated so far	Due less generation of overburden during the year, complete backfilling couldnot be acheived.

5e	General remarks of inspecting officers on backfilling and reclamation etc.	---	---	Limited mining lease area has been fully exhausted and limestone still exisitng in the working pit. Area proposed for reclaimation & rehabilitation could not be acheived fully due to low limestone production & subsequent low generation of OB during reporting year.

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).	To be submitted before 1st July of every year	Report was not submitted within time limit in prescribed format, hence violation of Rule 26(2) of MCDR,2017 pointed out & issued to the lessee.	
6b	Area available for rehabilitation (ha) .	6.173 hect area proposed for reclaimation & rehabilitation	0.5hect was available for reclaimation & rehabilitation at the end of review year 2018-19	
6c	afforestation done (ha).	11300 sapling covering total area of 5.6Ha were proposed to be planted at different locations	700 No of saplings have been planted at different locations within the mining lease over 0.5Ha area.	
6d	No. of saplings planted during the year	11300 sapling proposed to be planted at different locations	700 No of saplings planted at different locations	
6e	Cumulative no .of plants	Not Proposed	NA	

6f	Any other method of rehabilitation	Not Proposed	Nil
6g	Cost incurred on watch and care during the year	Not Proposed	Nil
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (Lx B x D	6.173 Ha was proposed	0.5 Ha reclaimed & rehabilitated
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	6.173 Ha was proposed for reclaimation & rehabilitation by OB waste	0.5 Ha reclaimed & rehabilitated
6j	Compliance on reclamation and rehabilitation by backfilling (iii)Afforestation on backfilled area	Afforestation over backfilled area was proposed.	700 nos saplings were plantated
6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	Not Proposed	Nil
6l	Compliance on reclamation and rehabilitation by backfilling (v)any other specific means.	Not Proposed	Nil
6m	Compliance of rehabilitation of waste land within lease (i)afforestation	Not Proposed	Nil

6n	Compliance of rehabilitation of waste land within lease (ii)Area rehabilitation (ha)	Not Proposed	Nil	
6o	Compliance of rehabilitation of waste land within lease (iii)Method of rehabilitation	Not Proposed	Nil	
6p	Compliance of environmental monitoring (core zone and buffer zone)	Regular Monitoring was proposed in core & buffer zone	Environment parameter Monitoring carried out as proposed	
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.	--	--	Mining operations are not being carried out up to its full strength due to some reasons. PMCP works as proposed were carried out up to some extents. Good plantation done near mine office.

Mineral Conservation:

Sl.No.	Item	Propasals	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	23,20,000 MT ROM proposed to be produced. No grade wise sorting was proposed	4,70,983 MT ROM/limestone of cement grade quality produced during the year. No grade wise sorting is carried out as entire ROM is being fed to cement plant.	
7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	Mechanical sorting	Mechanical sorting	

7c	Different grade of mineral sorted out at mines.	Not Proposed	Nil
7d	Any beneficiation process at mines .	Not Proposed	Nil
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues	In approved document systematic mineral conservation was proposed.	Mineral conservation is being carried out systematically as the entire ROM is being fed to the cement plant without leaving behind any mineral rejects.

Environment:

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	Top soil generation not proposed during the year 2018-19	Not Applicable	
8b	Concurrent use or storage of topsoil	Top soil generation not proposed during the year 2018-19	Nil	
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	Concurrent use of overburden proposed.	Concurrent use of overburden proposed. Hence, no separate dumps for overburden.	
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	Use of overburden is proposed for backfilling, reclaimation during the year 2018-19	Overburden is being used for backfilling, reclaimation purpose.	

8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	Phase wise reclaimation, rehabilitation was proposed by backfilling method	Phase wise reclaimation, rehabilitation by backfilling method carried out.	
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	Total 11300 nos of saplings covering 5.650 hect was proposed.	Total 700 nos of saplings were planted by covering 0.50 hect area.	
8g	Survival rate	Survival rate of 85% was proposed	About 75-80% survival rate achieved	
8h	Water sprinkling on roads to control airborne dust	Water spraying on mines haul road, loading, unloading points was proposed.	Water spraying on mines haul road, loading, unloading points carried out as proposed. Dedicated water sprinkiling tank of 12KL is being deployed.	
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area	--	--	Aesthetic beauty in and around mine area is not that much excellent as very scanty plantation have been carried out by the lessee in & around mining lease area. More thrust to be given for maximum nos of plantation.

Compliance of Rule 45:

Sl.No.	Item	Propasals	Actual work	Remarks

9a	Status of submission of Monthly and Annual returns	Montly return to be submitted before the tenth day of every month in respect of the preceding month Annual return to be submitted before the 1st day of July each year for the preceding financial year	Montly return for the month of October-2019 submitted within time Annual return for the year 2018-19 was submitted within stipulated time
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Shri Sanjay Singh Bhagel, Mining Engineer & Shri Rajesh Tripathi, Geologist were appointed	Shri Sanjay Singh Bhagel, Mining Engineer was present during the inspection & Shri Rajesh Tripathi, Geologist was on leave.
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	Area cover under O/C working-134.65Ha Reclaimed& Reha-1.050Ha Waste disposal - 25.72Ha Infrastructure -4.90Ha	Huge area covered under overburden disposal. Top siliceous limestone of 3.0mts depth is considered under overburden.
9d	Scrutiny of Annual return on afforestation	Total 700 saplings planted within lease area & 2400 saplings planted outside lease area.	Good plantation observed near mines office.
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	No mineral reject generation is marked in return	No mineral reject generation is proposed during approved plan period

9f	Scrutiny of Annual return on ROM stock and/or graded ore	ROM:Production :470983.32MT Despatched:470 983.32MT Closing Stock:NilMT	Nil
9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	Ex-Mine Price- 243.57/Tonne Sale Value - 243.57/Tonne Cost of Production- 243.57/Tonne	As the mine is captive, ex-mine price & sale value will be the same as cost of production which is given as Rs 243.57/Tonne. Ex-mine price is on lower side compare to the ASP published by IBM.
9h	Scrutiny of Annual return on fixed assets	Fixed Assets given as 26200000	Nil
9k	Scrutiny of Annual return on mining machineries	Back Hoe- 3.10CuM, 1.4 CuM, Dumper-25 & 35 Tonnes, Rock Drill- 110mm, Dozer- 280HP, etc	Nil

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

Violation observed			Show couse position		
Rule NO.	Issued on	Compliance on	Rule NO.	Issued on	Compliance on
MCDR17 Rule 31(4)	19-DEC-19		MCDR17 Rule 31(4	19-DEC-19	
MCDR17 Rule 26(2)	19-DEC-19		MCDR17 Rule 26(2	19-DEC-19	
MCDR17 Rule 45(1)	19-DEC-19		MCDR17 Rule 45(1	19-DEC-19	
MCDR17 Rule 54(a)	19-DEC-19		MCDR17 Rule 54(a	19-DEC-19	

Date :

(**SANJAY M. GIRHE**)

Indian Bureau of Mines