

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

**Mining Plan Modification REPORT**

**Jabalpur regional office**

**Mine file No :** MP/KTN/LST-50

**Mine code :** 38MPR18049

- (i) Name of the Inspecting : **G005** ) **SANJAY M. GIRHE**  
Officer and ID No.
- (ii) Designation : Regional Mining Geologist
- (iii) Accompanying mine :  
Official with  
Designation
- (iv) Date of Inspection : 05-NOV-20
- (v) Prev.inspection date : 01-OCT-18

**PART-I : GENERAL INFORMATION**

1. (a) **Mine Name** : **KUTESHWAR**
- (b) **Registration NO.** : **IBM/5662/2011**
- (c) Category : A Fully Mechanised
- (d) Type of Working : Opencast
- (e) Postal address :  
State : MADHYA PRADESH  
District : KATNI  
Village : MARWA, JARARODA  
Taluka : VIJAYRAGHAVGARH  
Post office : BARHI  
Pin Code : 483770  
FAX No. : 07626-273251  
E-mail : sailktr@yahoo.co.in  
Phone : 07626-273251
- (f) Police Station :
- (g) First opening date : 30-JAN-76
- (h) Weekly day of rest : THU
2. Address for : STEEL AUTHORITY OF INDIA LTD.  
correspondance : P.O. BARHI, DIST. KATNI (M.P.)  
483770
3. (a) Lease Number : MPR0523
- (b) Lease area : 91.14
- (c) Period of lease : 10
- (d) Date of Expiry : 14-MAY-02
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.  
 AT & P.O. BARHI, DIST.KATNI  
 M.P KATNI MADHYA PRADESH  
 Phone: 07626-273211/25  
 FAX : 07626-273201

Agent : H.S.PRASAD, GM(FLUX), KTR  
 At & P.O.katni, Kuteshwar,  
 Barhi Dist.Katni MP> KATNI  
 MADHYA PRADESH  
 Phone: 07626-273211  
 FAX : 07626-273201

|                               |   |                                |           |
|-------------------------------|---|--------------------------------|-----------|
| 6. Date of approval of Mining | : | Renewal under rule 22 MCR1960  | 12-JUN-03 |
| Plan/Scheme of Mining         | : | PMCP under 23B(2) for Existing | 29-DEC-05 |
|                               | : | Mining Scheme rule 12 MCDR1988 | 14-JUN-07 |
|                               | : | Modif.approved Mining Scheme   | 24-SEP-09 |
|                               | : | Mining Scheme rule 12 MCDR1988 | 09-SEP-11 |
|                               | : | MP modif under MCR 1960        | 04-APR-16 |

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

## Exploration :

| Sl.No. | Item  | Proposals   | Actual work   | Remarks   |
|--------|---|---|---|---|
| 1a     | Backlog of previous year  | 23 Core drilling boreholes were proposed during the year 2019-20                                      | No exploration done during the year 2019-20 as total 56 BHs were proposed during modified mining approved on 5th Nov-2018 for period 2018-19 to 2020-21.  | It is reported that SAIL had signed MOU with MECL for carrying out all drilling activities. MOU expired on Feb-19 hence exploration couldn't be carried out. It was said that MOU is under renewal. |
| 1b     | Exploration over lease area for geological axis 1 or 2              | During the 2019-20 total 23 core drill boreholes were proposed  | Total area explored under G1 level-189.46Ha. In first phase total 244 BHs drilled with cumulative 9618mts drilling, During 1996-97 total 57 BHs were drilled with cumulative 3199mts drilling.                                  | In past Marwa Block area was explored extensively for G1 level by 57 boreholes drilled in 1996-97 with avg. depth of 58m borehole depth with cumulative meterage of 3199m.                          |
| 1c     | Exploration Agencies and Expenditure in lakh rupees during the year | NMDC & lessee SAIL himself had carried out the exploration in the past.                               | In past exploration had carried out very long back before in 1995, hence relevant details are not available at this stage.  |   |
| 1d     | Balance area to be explored to bring Geological axis in 1 or 2      | Total 56 BHs were proposed in modified mining approved on 5th Nov-2018 for period 2018-19 to 2020-21. | Out of these 56 BHs total 23 boreholes proposed in 2019-20 couldnot be achieved due initiation period of modified mining plan approved 05.11.2018. Balance area is to be explored in G1 & G2 level during approved plan period. |   |

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| 1e | Balance reserve as on 01/04/20                                     | Reserves (In Mill Tonne) as 01.04.2018 (As per approved Modified MP) Proved (111) : 88.88 (SMS & BF Grade) Probable(121&122) : 183.71 (SMS & BF Grade) Resources(In Mill Tonne) Pre-Feasibility 221 & 222 : 13.610 Above reserves & resources falling under Gairtalai, Marwa & Jaroda blocks in ML area. | Reserves (In Mill Tonne) as 01.04.2020 (As per annual Return 2019-20) Proved (111) : 89.00 (SMS & BF Grade) Probable(121&122) : 183.71 (SMS & BF Grade) Resources(In Mill Tonne) Pre-Feasibility 221 & 222 : 13.610 Above reserves & resources falling under Gairtalai, Marwa & Jaroda blocks in ML area. | Limestone occurring on both the side of river (left & right banks) with the lease holds & belongs to Kajrahat limestone of semri group. The general strike is ENE-WSW with gentle dip towards NNW. |
| 1f | General remarks of inspecting officers on geology, exploration etc | Not Proposed   | In the lease area limestone occurred in three different horizons upper (Agal Limestone), Middle (High Manganesia Limestone) & lower (Banded limestone).   |  |

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Development :

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| Sl.No. | Item | Proposals | Actual work | Remarks |
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|----|--|---|--|---|
| 2a | Location of development w.r.t.lease area                       | OB generation was proposed from two benches at 343-337mRL and Limestone production was proposed in Marwa Block within UTM limits towards E 3438800 to 3439600 & N708800 to 709600 upto 301mRL       | Development and production of limestone were carried out as per the proposed locations.  |   |
| 2b | Separate benches in topsoil, overburden and minerals (Rule 15) | During the year 2019-20, Top soil- No proposals, Overburden-2 benches of 6mts heights each proposed from 349-337mRL & Limestone production -6 benches of 6mts height each from 337-301mRL proposed. | limestone production carried out by fromation of 6 benches of 6mts height each. OB generation not acheived as per the proposals. | Violation of Rule 11(1) of MCDR,17 issued for aforesaid deviation.                      |
| 2c | Stripping ratio or ore to OB ratio                             | Proposed stripping ratio for the year 1:0.18 M3/Tonne   | Acheived 1:0.00 M3/Tonne as no OB generated during the year 2019-20  | Previously, violation of Rule 11(1) of MCDR,17 was issued for aforesaid deviation.      |
| 2d | Quantity of topsoil generation in m3                           | During the year 2019-20, no top soil generation proposed  | Nil  | Development & production during the review year was proposed in already broken up area. |

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| 2e | Quantity of overburden generation in m3   | During the year 2019-20 total 260004 CuM overburden generation was proposed | During the year 2019-20 no overburden generated | Violation of Rule 11(1) of MCDR,17 was issued for aforesaid deviation.  |
| 2f | General remarks of inspecting officers on development of pit w.r.t. type of deposit etc | NA  | NA  | Lease area is divided into 3 blocks namely Gaitalai, Marwa & Jaroda blok. Dimension of Marwa block-702876M2 x 48m depth, Gairtalai block-48735M2 x 17m depth & Jarado block - 126276M2 x 25m depth. |

#### Exploitation:

| Sl.No. | Item  | Propasals   | Actual work                                    | Remarks                    |
|--------|---|---|--|----------------------------|
| 3a     | Number of pit proposed for production                             | During the year Pit-1 of Marwa block was proposed production                      | Production carried out in Pit-1 of Marwa block | Same location as proposed. |
| 3b     | Quantity of ROM mineral production proposed                       | 1469480 MT proposed in 2019-20  | 1239918.730 MT production carried out          |                            |
| 3c     | Recovery of sailable/usable mineral from ROM production           | Proposed as 80.50%  | Acheived as proposed                           |                            |
| 3d     | Quantity of mineral reject generation                             | 355963 MT proposed  | 410265 MT acheived                             |                            |
| 3e     | Grade of mineral rejects generation and threshold value declared. | Mineral reject of quantity of 100mm of cement grade above thrshold value proposed | Cement grade of 47.18% of CaO acheived         |                            |
| 3f     | Quantity of sub grade mineral generation.                         | Not Proposed  | Nil  |                            |

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| 3g | Grade of sub grade mineral generation  | Not Proposed   | Nil  |   |
| 3h | Manual / Mechanised method adopted for segregating from ROM  | Mechanical method was proposed   | By way of screening plant  |   |
| 3i | Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects.      | Not Proposed   | Screening of ROM practised   |   |
| 3j | Provision of drilling and blasting in mineral benches  | Drilling 100mm dia by wagon drill & 32mm by jack hammer  | Deilling blasting carried out as per the proposals   |   |
| 3k | Provision of mining machineries in mineral benches   | IR Drill - 100mm, Rock Breaker-32mm, Excavator-2.7 CuM, Dozer-420HP, Dumpers-18/22 Tonner, etc | Mining operation being carried out by deploying IR Drill - 100mm, Rock Breaker-32mm, Excavator-2.7 CuM, Dozer-420HP, Dumpers-18/22 Tonner, etc machineries | Machineries both contractual as well as in-house. |
| 3l | Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM | Height of 6 m in overburden & 6m in limestone were proposed                                    | Proposed height of 6m in OB & 6m in limestone are being maintained.  |   |
| 3m | Total area covered under excavation/pits   | 101.34 Ha  | 87.78 Ha as per modified mining plan approved on 05.11.2018  |   |
| 3n | Ore to OB ratio for the pit/mine during the year.  | 1: 0.55 M3/Tonnes  | 1:00 M3/Tonnes   | OB not generated during the year 2019-20          |

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| 3o | Total area put in use under different heads at the end of year           | Area proposed as per modified scheme of mining approved 05.11.2018<br>Area under mining-87.78Ha<br>OB, IB, Fines dumps-22.63Ha<br>Mineral Stacks-8.33Ha<br>Infrastructure -36.70Ha<br>Road-15.26Ha | As per AR as on 01.04.2020<br>Area under mining-86.11Ha<br>OB, IB, Fines dumps-35.060Ha<br>Mineral Stacks-8.33Ha<br>Infrastructure-121.96 Ha |  |
| 3p | Production of ROM mineral during the last five year period as applicable | 2015-16-: 2314474<br>2016-17-: 1865100<br>2017-18-: 1978200<br>2018-19-: 20,57,376<br>2019-20-: 1825450  | 2015-16-: 2314474<br>2016-17-: 1596158<br>2017-18-: 1460717<br>2018-19-: 1252545<br>2019-20-: 1650183  |  |
| 3q | General remarks of inspecting officers on method of mining etc.          | NA   | NA   | Mining operation being carried out by opencast fully mechanised method by deploying HEMM for excvation, drilling, blasting & transportation of material. |

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Solid Waste Management - Dumping:

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| Sl.No. | Item | Propasals | Actual work | Remarks |
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| 4a | Separate dumping of topsoil, OB and mineral rejects (Rule 32,33) | OB & mineral rejects dumping was proposed towards Southern barrier zone and fines generated proposed to be dumped at central part | Dumping carried the proposals.   | Year wise dumping was depicted in Plate No-VI of modified Review of mining plan.   |
| 4b | Location of topsoil, OB and mineral reject dumps                 | E3437830 to 3437200 & N709100 to 708890, IB dumping- E3438080 to E3438520 with avg height of 7 to 8mts                            | Dumping of OB & IB carried out as per the proposals  |  |
| 4c | Number of dumps within lease area and outside of lease area      | Marwa Block-04 overburden & IB dumps Jarorada Block- 03 overburden & IB dumps Gairtalai Block-01 overburden dump                  | Marwa Block-04 overburden & IB dumps Jarorada Block- 03 overburden & IB dumps Gairtalai Block-01 overburden dump | No dumping out side mining lease.  |
| 4d | Location of dumps w.r.t. ultimate pit limit (Rule 16)            | As per the approved document proposed beyond ultimate pit limit   | Minor portions of dumps in Marwas, Gairtalai & Jarorada bloks falling under ultimate pits limits.                | As reported, dumps area which is falling under UPL is of temporary dumping nature. |
| 4e | Number of active and alive dumps.                                | Marwa Block-04 overburden & IB dumps are active   | Marwa Block-04 overburden & IB dumps are active  |  |

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| 4f | Number of dead dumps.  | Jarorada Block- 03 overburden & IB dumps & in Gairtalai Block-01 overburden dump are dead dumps | Jarorada Block- 03 overburden & IB dumps & in Gairtalai Block-01 overburden dump are dead dumps       |  |
| 4g | Number of dumps established.                                       | Proposal for construction of garland drain along the periphery of waste dump has been given.    | carried out as per proposals  |  |
| 4h | Whether Retaining wall or garland drain all along dumps are there. | Proposals of retaining wall & garland drains given during the year 2019-20                      | Garland drain has been constructed along the waste & IB dumps.  |  |
| 4i | Length of Retaining wall or garland drain all along dumps          | Not proposed in approved document   | Proposals of retaining wall & garland drains given but length are not specified in approved document. |  |
| 4j | Number of settling ponds   | Not Proposed  | Nil   |  |
| 4k | Specific comments of inspecting officer on waste dump management   | NA  | NA  | Huge quantity of overburden & Interburden are being generated during mining operations, hence more emphasis need to be given on systematic dumps management & this aspect was discussed during inspection accordingly. |

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Solid Waste Management - Backfilling:

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| Sl.No. | Item | Propasals | Actual work | Remarks |
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| 5a | Status of part or full extraction of mineral from mined out area before starting backfilling. | Full extraction of mineral is not occurred in any pits & no such proposals given | Not Applicable                                      |   |
| 5b | Area under backfilling of mined out area  | Not Proposed   | None of the pits area has been backfilled as of now |   |
| 5c | Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)     | No Proposals of top soil during the year 2019-20                                 | Not Applicable                                      |   |
| 5d | Total area fully reclaimed and rehabilitated  | Not Proposed   | Nil   |   |
| 5e | General remarks of inspecting officers on backfilling and reclamation etc.                    | NA   | NA  | Limestone is not exhausted in any pits so far, hence scope of backfilling and reclamation do not exist. Fines material below threshold value generated during crushing/screening can be very well utilized for backfilling in future. |

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Progressive Mine Closure Plan:

| Sl.No. | Item   | Proposals                                     | 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 | Annual PMCP report submitted well within time limit |         |

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|----|--|---|--|---|
| 6b | Area available for rehabilitation (ha) .   | No area is proposed for rehabilitation  | Within the lease, no such area is available for rehabilitation as of now.                    |   |
| 6c | afforestation done (ha).   | Total 12000 saplings proposed to be planted over 4.5Ha with 80% survival rate | During the year 2020, total 9624 saplings were planted with cummuative survival rate of 85%. |   |
| 6d | No. of saplings planted during the year  | Total 12000 saplings proposed to be planted over 4.5Ha with 80% survival rate | During the year 2020, total 9624 saplings were planted with cummuative survival rate of 85%. |   |
| 6e | Cumulative no .of plants   | NA  | NA   | Details not provided in approved document |
| 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 | Not Proposed  | Nil  |   |
| 6i | Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings          | Not Proposed  | Nil  |   |
| 6j | Compliance on reclamation and rehabilitation by backfilling (iii)Afforestation on on backfilled area       | Not Proposed  | Nil  |   |

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| 6k | Compliance on reclamation and rehabilitation by backfilling (iv)<br>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)   | Environmental parameters monitoring proposed at regular interval in core zone and in buffer zone | Environmental parameters monitoring being carried out at regular interval in core zone as well as in buffer zone. |

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|----|---|----|----|--|
| 6q | General remarks of inspecting officers on PMCP compliance and progressive closure operations etc. | NA | NA | PMCP report in prescribed form submitted and PMCP works carried out as per the proposals. Significant plantation have been carried out by the lessee in & around the mine. |
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Mineral Conservation:

| Sl.No. | Item  | Propasals   | Actual work  | Remarks |
|--------|---|---|--|---------|
| 7a     | ROM Mineral dispatch or grade-wise sorting within lease area    | Before despatch ROM subjected to mechanical screening/crushing. No grade wise sorting is proposed | ROM dispatched after mechanical screening/crushing. No grade wise sorting is done. |         |
| 7b     | Method of grade-wise mineral sorting i.e. manual or mechanical. | Grade wise sorting is not proposed.   | Grade wise sorting not done.   |         |
| 7c     | Different grade of mineral sorted out at mines.                 | No grade wise sorting is not proposed.  | NA   |         |
| 7d     | Any beneficiation process at mines .                            | No benification is proposed. Limestone crushing/screeing proposed                                 | Benificiation not done only limestone crushing/screening is done                   |         |

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| 7e | General remarks of inspecting officer on Mineral conservation and beneficiation issues | NA | NA | The mineral reject existing inside the lease are above the threshold limit. The limestone has been classified under mineral reject by virtue of its size i.e below 10 mm as it cannot be used in the steel furnance. The CaO content of the Mineral reject is about 48% to 49%. |
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**Environment:**


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| Sl.No. | Item  | Propasals  | Actual work  | Remarks |
|--------|---|--|--|---------|
| 8a     | Separate removal and utilization of topsoil (Rule 32)   | RemovalOB is proposed and the form top OB. Spreding of this top OB for plantation purpose is proposed. | Top overburden generated utilized as per the proposals.  |         |
| 8b     | Concurrent use or storage of topsoil  | Not Proposed   | Nil  |         |
| 8c     | Separate dumps for overburden, waste rock, rejects and fines (Rule 33)                            | Separate dumps proposed as per approved documents  | Dumping carried out as per the proposals   |         |
| 8d     | Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use | Not Proposed   | No mined out area matured for backfilling, hence OB, mineral rejects & fines are being stacked separately on earmarked locations |         |

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| 8e | Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc) | Not Proposed   | Not done  |   |
| 8f | Baseline information on existence of plantation and additional plantation done (Rule 41)                    | Total 12000 nos of saplings proposed to be planted with 85% survival | Total 9624 nos of saplings planted with 85% survival during 2019-20 |   |
| 8g | Survival rate   | Proposed 85% during 2019-20  | Achieved 85% during 2019-20   |   |
| 8h | Water sprinkling on roads to control airborne dust  | Water sprinkling proposed  | Water sprinkling done   | Two water tankers of 16KL are dedicately provided for water sprinkling purpose on mine haul road to arrest airborne dust.   |
| 8i | General remarks of inspecting officer on aesthetic beauty in and around mines area                          | NA   | NA  | The general aesthetic beauty of the area is good, the lease area is surrounded by the the catchment area of Bansagar dam. Significant plantation are also done in an around mines area. |

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Compliance of Rule 45:

| Sl.No. | Item | Propasals | Actual work | Remarks |
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| 9a | Status of submission of Monthly and Annual returns  | M.R. submitted upto- October- 2020<br>A.R. submitted upto- 2019-20 | Annual Return for the year 2019-20 submitted within time limit.  |
| 9b | Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager           | Given  | Shri Hemant Kumar Sahu, appointed as Mining Eng. & Shri Satish Kumar Tiwari, as Geologist  |
| 9c | Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc. | Given  | Opencast working/Pits- 86.115Ha<br>Waste dumps-35.060Ha<br>Infrastructure-121.96Ha   |
| 9d | Scrutiny of Annual return on afforestation  | Given  | Total 9624 saplings planted with 80% survival rate   |
| 9e | Scrutiny of Annual return on mineral reject generation (Grade and quantity)                   | Given  | Total 410265 tonnes mineral rejects generated during the year  |
| 9f | Scrutiny of Annual return on ROM stock and/or graded ore                                      | Give   | BF Grade limestone:<br><br>O/S-10164 MT<br>Despatch-12,39,928 MT<br>C/S-10154 MT<br>Cement Grade Limestone<br>O/S-22,48,740 MT<br>Despatch-Nil<br>C/S-26,59,005 MT |
| 9g | Scrutiny of Annual return on sale value, Ex. Mine price and production cost                   | Given  | Nil  |
| 9h | Scrutiny of Annual return on fixed assets   | Given  | Nil  |
| 9k | Scrutiny of Annual return on mining machineries   | Gieven   | 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 :**

**(SANJAY M. GIRHE)**

Indian Bureau of Mines