

## MCDR INSPECTION REPORT

1.0 GENERAL

| SN  | Particulars  | Details   |
|-----|--|---|
| 1   | Name of inspecting office & designation  | Mr.Rajesh Kumar Das, Sr. Asst Controller of Mines, Indian Bureau of Mines, Raipur   |
| 1a  | Accompany with Mine Official & Date of Inspection  | Shri Chintala Srikant,GM Mine & Shri Ram Kapre, Mining Engineer, 02.02.2021   |
| 1 B | Name of the Mine   | Dalli mechanised mine & Jharandalli Iron Ore Mine(Rajhara Hill Lease)   |
| 2   | Total Lease Area (Ha) with breakup of Non-forest and forest land                                     | Total Lease Area -719.60 Ha.<br>Non Forest - 436.00 Ha.<br>Forest-283.60 Ha.  |
| 3   | Minecode   | 30MPR13002  |
| 4   | IBM Registration Number under rule 45 of MCDR, 1988  | 5662/2011/IBM   |
| 5   | Name of the lessee, Address, phone, email and fax number   | Steel Authority of India Bhilai Steel Plant,  |
| 6   | Village  | Kondekasa   |
| 7   | Taluka/Mandal  | Taluka –Dalli-Rajhara   |
| 8   | District   | Balod   |
| 9   | Pincode  | 491228  |
| 10  | State  | Chhattisgarh  |
| 11  | Post office  | Dalli- Rajhara  |
| 12  | Nearest police station   | Dalli- Rajhara  |
| 13  | Nearest Railway station  | Dalli- Rajhara  |
| 14  | Date of Grant of Mining Lease  | 05.11.1962  |
| 15  | Date of Execution  |   |
| 16  | Date of opening of Mine  | 05.11.1962  |
| 17  | Date of first Renewal, if applicable and its period & expiry   |   |
| 18  | Date of second Renewal, if applicable and its period & expiry  | Second Renewal- 01.06.2003<br>Period & Expiry - 20Yrs. & 31.05.2023   |
| 19  | Date of submission of renewal application if Mining Operations are continuing under deemed extension | NA  |
| 20  | Name of the Nominated Owner with Address, phone, email, fax number and date of appointment           | Shri Anirban Das gupta<br>Director Incharge Bhilai Steel Plant, Ispat Bhawan Bhilai, Dist.-Durg, Chhattisgarh<br>Date of appointment : 30/09/2020   |
| 21  | Name of the Mine Agent with Address, phone, email, fax number and date of appointment                | Shri P M Sirpurkar GM i/c cum Agent(DMM & DMNL),<br>Off Address: Dalli Administrative Building, Dalli Rajhara, Dist-Balod, Pin 491228(C.G) Phone-9407983906<br>Email: <a href="mailto:pshirpurkar@sail.in">pshirpurkar@sail.in</a><br>Date of appointment- 04/08/2020.<br>Shri RC.Behra, ( Jharandalli Mech.Mine)<br>Add-Room no-50, Administrative Building, IOC, Rajhara Post- Dalli Rajhara, Dist- Balod, Pin- 491228(C.G) Ph-<br>Email- <a href="mailto:rcbehra@sail.in">rcbehra@sail.in</a><br>Date of appointment- 04/08/2020 |

|    |   |   |
|----|---|---|
| 22 | Name of the Mines Manager with Address, phone, email, fax number and date of appointment in mines                                       | Shri Birendra Kumar, Mine Manager, Dalli Mech. Mine<br>Off Address: Dalli Administrative Building,<br>Phone:-07882851804(Off), Mob. 9407982925<br>Email: <a href="mailto:birendrakumar@sail-bhilaisteel.com">birendrakumar@sail-bhilaisteel.com</a><br>Date of appointment- 03/07/2019<br>Shri Dhananjay Singh (JharandalliMech.Mine)<br>Add-Room no-49, Administrative Building, IOC,<br>Rajhara Post- Dalli Rajhara, Dist- Balod, Pin-<br>491228(C.G)<br>Ph- 9407982902<br>Email- <a href="mailto:dhananjaysingh2@sail-bhilaisteel.com">dhananjaysingh2@sail-bhilaisteel.com</a><br>Date of appointment- 18/10/2018   |
| 23 | Name of the Mining Engineer, Qualification and total experience with Address, phone, email, fax number and date of appointment in mine  | Shri Ramkapre, Dalli Mech. Mine<br>BE(Mining), 15 yrsexp in various mines.<br>Off Address: Dalli Administrative Building,<br>Mob. 09407982615,<br>Email- <a href="mailto:ramkapre@sail-bhilaisteel.com">ramkapre@sail-bhilaisteel.com</a><br>Date of appointment- 10.04.2013<br>Shri Vagish Tiwari (JharandalliMech.Mine)<br>Qualification-Degree In Mining Engineering,<br>Experience- 15yrs<br>Add-Room no-49, Administrative Building, IOC,<br>Rajhara Post- Dalli Rajhara, Dist- Balod, Pin-<br>491228(C.G)<br>Ph- 9407983629<br>Email- <a href="mailto:vagishtiwari@sail-bhilaisteel.com">vagishtiwari@sail-bhilaisteel.com</a><br>Date of appointment- 26/11/2012 |
| 24 | Whether Geologist and Mining Engineer appointed in mines satisfy the rule 42 & carrying out their duties as per rule 43 & 44.           | YES   |
| 25 | Date of Approval of Mining Plan/Modified Mining Plan with five-year period and specific condition in approval letter, if any.           | 1. Mining Plan – 08/06/2018   |
| 26 | Date of Approval of Scheme of Mining/Modified Scheme of Mining with five-year period and specific condition in approval letter, if any. | Review Of Mining Plan – 08/06/2018<br>(2018-19 to 2022-23)<br><br>MODIFIED PLAN PERIOD: 1.2.2020 TO 31.3.2023   |
| 27 | Mineral(s) granted in lease and proved for mining   | HEMATITE (IRON ORE)   |
| 28 | Method of Mining(Open cast, Underground)  | OPENCAST  |
| 29 | Category (Fully Mechanised, Others or Manual)   | FULLY MECHANISED  |
| 30 | Captive/Non Captive   | CAPTIVE   |

Scientific Mining: Compliance of proposals of approved mining plan/scheme of mining. –

### Exploration

| SN | Item  | Proposals                      | Actual work                     | Remarks |
|----|---|--------------------------------|---------------------------------|---------|
| 1a | Backlog of previous year                                | 25                             | 14                              |         |
| 1b | Exploration over lease area for Geological axis 1 or 2. | 2019-<br>20BH=25,<br>Mtrs=7500 | 2019-20<br>BH= 14<br>Mtrs = 721 |         |

|    |  |   |   |  |
|----|--|---|---|--|
| 1c | Exploration Agency & Expenditure in lakh Rupees during the year    | NA  | Mineral Exploration Company Ltd. Nagpur |  |
| 1d | Balance area to be explored to bring Geological axis in 1 or 2     | 25 bore holes proposed in 2019-20 & 35 bore holes proposed in 2020-21 | Only 14 bore holes drilled in 2019-20   |  |
| 1e | Balance reserves as on 01.04.20                                    |   | 29.72 (up to 45% Fe)                    |  |
| 1f | General remarks of inspecting officer on geology, exploration etc. |   |   |  |

**2.0 Development**

| SN | Item  | Proposals  | Actual work  | Remarks |
|----|---|--|--|---------|
| 2a | Location of development w.r.t. lease area   | Between 610 to 470 Bench level (DMM)<br>Between 530 to 445 Bench level (JMM)   | Actual work is being carried out   |         |
| 2b | Separate benches in topsoil, overburden and mineral (Rule 15)                           | Proposed   | Being maintained   |         |
| 2c | Stripping ratio or ore to OB ratio  | Cum/T<br>Dalli Mech Mine(pit1) 1:0.66<br>Jharandalli (Pit2) 1:0.43   | DMM-1:0.35   |         |
| 2d | Quantity of topsoil generation in m3  | NIL  | NIL  |         |
| 2e | Quantity of overburden generation in m3   | 1601262  | 1681445.9<br>Dalli Mech. Mine- 1140754.54Cub M<br>Jharandalli Mech. Mine 540691.31 Cub M |         |
| 2f | General remarks of inspecting officer on development of pit w.r.t. type of deposit etc. | The iron-ore deposits of Dalli-Rajhara range are associated with the BIF(Banded Iron formations).Ore deposit of leasehold comprises of 3 blocks-Dalli, Jharandalli and Kokan block mostly laminated and soft laminated ore. The area totally explored by 609 holes in which 410 core & 199 RC. |  |         |

|    | Item  | Proposals   | Actual work  | Remarks |
|----|---|---|--|---------|
| 3a | Number of pits proposed for production  | 1 (DMM)<br>1 (JMM)<br>Total - 2                           | 1 (DMM)<br>1 (JMM)<br>Total - 2  |         |
| 3b | Quantity of ROM mineral production proposed   | 5361820 T   | 5080892T<br>Dalli Mech. Mine-<br>3234734T<br>Jharandalli Mech. Mine<br>1846158.T |         |
| 3c | Recovery of salable/usable mineral from ROM production                                      | 4450310.6T<br>(18-20%Loss after Washing)                  | Total -4250636 T   |         |
| 3d | Quantity of mineral reject generation   | Total-911509.4T   | Total 830256 T   |         |
| 3e | Grade of mineral reject generation and threshold value declared                             |   |  |         |
| 3f | Quantity of sub-grade mineral generation  | 762500  | 762500   |         |
| 3g | Grade of sub-grade mineral generation   |   | 45-55%   |         |
| 3h | Manual / Mechanised method adopted for segregating from ROM                                 | Mechanised<br>(Dalli crushing, screening & washing Plant) | Mechanised<br>(Dalli crushing, screening & washing Plant)                        |         |
| 3i | Any analysis or beneficiation study proposed & carried out for sub-grade mineral and reject | Being carried out on regular basis                        | Being carried out on regular basis   |         |
| 3j | Provision of drilling & blasting in mineral benches   | Blast hole drilling using idm-30 drill machines.          | Blast hole drilling using idm-30 drill machines.                                 |         |
| 3k | Provision of mining machineries in mineral benches  | Hydraulic excavators,dumpers, dozers                      | Hydraulic excavators,dumpers, dozers   |         |

|         |  |  |            |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |     |
|---------|--|--|------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|-----|
| 3l      | 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   | Start of the plan-148.24   | 151.04 Ha. |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |     |
| 3n      | Ore to OB ratio for the pit/mine during the year   | Cum/T<br>Dalli Mech<br>Mine(pit1) 1:0.66<br>Jharandalli (Pit2)<br>1:0.43   | DMM-1:0.35 |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |     |
| 3o      | Total area put in use under different heads at the end of year                                       | Start of the plan-356.58   | 362.08Ha   |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |     |
| 3p      | Production of ROM mineral during last five-year period, as applicable (2014-15 to 2019-20)           | <table border="1"> <tr> <td>2015-16</td> <td>4666311</td> <td>2015-16</td> <td>4666311</td> </tr> <tr> <td>2016-17</td> <td>4575474</td> <td>2016-17</td> <td>4575474</td> </tr> <tr> <td>2017-18</td> <td>5750000</td> <td>2017-18</td> <td>5109944</td> </tr> <tr> <td>2018-19</td> <td>5494837</td> <td>2018-19</td> <td>5036137</td> </tr> <tr> <td>2019-20</td> <td>5361820</td> <td>2019-20</td> <td>5080892</td> </tr> </table> | 2015-16    | 4666311 | 2015-16 | 4666311 | 2016-17 | 4575474 | 2016-17 | 4575474 | 2017-18 | 5750000 | 2017-18 | 5109944 | 2018-19 | 5494837 | 2018-19 | 5036137 | 2019-20 | 5361820 | 2019-20 | 5080892 | RHL |
| 2015-16 | 4666311  | 2015-16  | 4666311    |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |     |
| 2016-17 | 4575474  | 2016-17  | 4575474    |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |     |
| 2017-18 | 5750000  | 2017-18  | 5109944    |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |     |
| 2018-19 | 5494837  | 2018-19  | 5036137    |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |     |
| 2019-20 | 5361820  | 2019-20  | 5080892    |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |     |
| 3q      | General remarks of inspecting officer on method of mining etc.                                       | The method of mining is by open cast method using HEMM and deep hole drilling blasting.  |            |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |     |

#### **4.0 Solid Waste Management-Dumping**

| SN | Item  | Proposals  | Actual work      | Remarks |
|----|---|--|------------------|---------|
| 4a | Separate dumping of topsoil, OB & mineral reject (Rule 32, 33)    |  | Being done       |         |
| b  | Location of topsoil, OB & mineral reject dumps                    | WD1  | WD1              |         |
| 4c | Number of dumps within lease area and outside lease area          | Within Lease – 01 Nos.   | waste dump no 16 |         |
| 4d | Location of dumps w.r.t. ultimate pit limit (Rule 16)             |  |                  |         |
| 4e | Number of active & alive dumps                                    | 01   | 01               |         |
| 4f | Number of dead dumps  | 08   | 8                |         |
| 4g | Number of dumps stabilised  | 03   | 3                |         |
| 4h | Whether Retaining wall or garland drain all along dumps are there | Yes  | Yes              |         |
| 4i | Length of Retaining wall or garland drain all along dump          | 500Mtrs  | 500 Mtrs         |         |
| 4j | Number of settling ponds  | 01   | 01               |         |
| 4k | Specific comments of inspecting officer of waste dump management  | The waste dump management was not proper therefore on that point violation issued. |                  |         |

#### **5.0 Solid Waste Management-Backfilling**

| SN | Item   | Proposals | Actual work | Remarks |
|----|--|-----------|-------------|---------|
| 5a | Status on part or full extraction of mineral from mined out area before starting backfilling | Nil       | Nil         |         |

|    |   |                          |     |  |
|----|---|--------------------------|-----|--|
| 5b | Area under backfilling of mined out area  | Nil.                     | Nil |  |
| 5c | Concurrent use of topsoil for restoration or rehabilitation of mined out area (Rule 32) | NA                       | NA  |  |
| 5d | Total area fully reclaimed & rehabilitated  | Nil                      | Nil |  |
| 5e | General remarks of inspecting officer on backfilling, reclamation etc                   | No backfilling proposed. |     |  |

### **6.0 Progressive Mine Closure Plan**

| SN | Item  | Proposals                            | Actual work                          | Remarks |
|----|---|--------------------------------------|--------------------------------------|---------|
| 6a | Whether Annual report on PMCP submitted on time and correctly - Rule 23E(2). Details should be given in the format as given in Annexure-20.   | Yes                                  | Yes                                  | .       |
|    | Dump management<br>1. Area Afforested<br>2. No. of sapling planted.<br>3. Cumulative No. of plants.   | 3Hact.<br>12000                      | 3.05 hact<br>6750                    |         |
| 6b | Management of worked/mined out benches<br>i) Area available for rehabilitation (ha)<br>ii) Afforestation done (ha)<br>iii) No. of saplings planted during the year<br>iv) Cumulative no. of plants<br>v) Any other specific method of rehabilitation<br>vi) Cost incurred on watch & care during the year | Not Proposed                         | 3hact<br>6500                        |         |
| 6c | Compliance on reclamation and rehabilitation by backfilling<br>i) Voids available for backfilling (L X B X D)<br>ii) Void filled by waste/tailings<br>iii) Afforestation on the backfilled area<br>iv) Rehabilitation by making water reservoir<br>v) Any other specific means                            | NIL<br><br>NIL<br><br>NIL<br><br>NIL | Nil<br><br>Nil<br><br>Nil<br><br>Nil |         |

|    |   |          |            |  |
|----|---|----------|------------|--|
| 6d | Compliance of Rehabilitation of waste land within lease<br>i) Afforestation<br>ii) Area rehabilitated (ha)<br>iii) Method of rehabilitation |          | 13250      |  |
| 6e | Compliance of Environmental monitoring (core zone & buffer zone)  | Proposed | Being done |  |
| 6f | General remarks of inspecting officer on PMCP compliance & progressive  | Nil      |            |  |

### **7.0 Mineral Conservation**

| SN | Item   | Proposals  | Actual work   | Remarks |
|----|--|--|---|---------|
| 7a | ROM Mineral dispatch or grade-wise sorting within lease area                         | Proposed   | Being Done  |         |
| 7b | Method of grade-wise mineral sorting i.e. manual or mechanical                       | Mechanical screening & washing                                     | Mechanical screening & washing                      |         |
| 7c | Different grade of mineral sorted out at mines                                       | Lumps, Fines & Slime   | Lumps, Fines & Slime                                |         |
| 7d | Any beneficiation process at mines   | Fluidised Bed Classifier,  | Fluidised Bed Classifier, Slime beneficiation plant |         |
| 7e | General remarks of inspecting officer on Mineral conservation & beneficiation issues | Mechanical screening & washing is done to segregate clay material. |   |         |

### **8.0 Environment**

| SN | Item  | Proposals      | Actual work                             | Remarks |
|----|---|----------------|---|---------|
| 8a | Separate removal and utilization of topsoil (Rule 32)   | Not applicable | At present top soil is not encountered. |         |
| 8b | Concurrent use or storage of topsoil  |                |   |         |
| 8c | Separate dumps for overburden, waste rock, rejects and fines (Rule 33)                                      | Proposed       | Being maintained.                       |         |
| 8d | Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use           | Nil            | Nil.                                    |         |
| 8e | Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc) | Nil            | Nil.                                    |         |
| 8f | Baseline information on existence of plantation &   |                | 0.2241 Hect<br>249 Plants               |         |

|    |   |          |                    |  |
|----|---|----------|--------------------|--|
|    | additional plantation done (Rule 41)  |          |                    |  |
| 8g | Survival rate   |          | Survival rate =90% |  |
| 8h | Water sprinkling on roads to control airborne dust                                | Proposed | Being done         |  |
| 8i | General remarks of inspecting officer on aesthetic beauty in and around mines are | Nil      |                    |  |

### 9.0 Compliance of Rule 45

| S. N. | Item   | COMMENTS                           | Remarks |
|-------|--|------------------------------------|---------|
|       | Status of submission of Monthly and Annual returns | AR upto 2019-20 & MR upto Dec'2020 |         |

| S. N. | Item  | Details GIVEN in A.R.   | Observation of I/Officer                          | Remarks |
|-------|---|---|---|---------|
| 9b    | Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager           | Mining Engineer Shri Ram Kapre, Manager Shri Birendra Kumar, Geologist Shri P Marathe   |   |         |
| 9c    | Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc. | Area covered under O/C working-148.24 ha., Reclaimed Rehabilitated-9.0 ha., used for waste disposal-59.35 ha., Infrastructure & Roads-61.23 ha. | Broadly as per field position                     |         |
| 9d    | Scrutiny of Annual return on afforestation  | 150 nos saplings within lease area  | Broadly done                                      |         |
| 9e    | Scrutiny of Annual return on mineral reject generation (Grade & quantity)                     | 830256 tons of Fe% 49.6 reported  |   |         |
| 9f    | Scrutiny of Annual return on ROM stock and/or graded ore                                      | Stock of lump and fine reported.  |   |         |
| 9g    | Scrutiny of Annual return on sale value, Ex. Mine price & production cost                     | Ex. Mine price & production cost Rs 1021.6 reported   | <b>Captive consumption</b>                        |         |
| 9i    | Scrutiny of Annual return on fixed assets   | Rs 485170139/-  |   |         |
| 9k    | Scrutiny of Annual return on mining machineries   | Hydraulic shovel of 4.3,4.6,1.2,0.9,2.3,1.57 cum bucket capacity,   | The used are broadly as per information furnished |         |



|  |  |   |  |  |
|--|--|---|--|--|
|  |  | Dumper 50 & 60 ton capacity, Truck of 10 & 18 tons, Dozer, Drill m/c 115mm & 165mm. |  |  |
|--|--|---|--|--|

10- Details of violations observed during current inspection and compliance position of earlier violation pointed out: - The earlier violation pointed out taken compliance and during present inspection the following violation pointed out:

| Rule  | Nature of Violation observed  |
|-------|---|
| 11(1) | <p>Mining operations should have been undertaken in accordance with the approved Mining Plan/Modification of Review of Mining Plan.</p> <p>The Modification of Review of Mining Plan was approved vide letter no. बलोद/ लौह /खयो-1229/2019-रायपुर dated 24.01.2020 and following deviation was observed during inspection</p> <ol style="list-style-type: none"> <li>1. There was a proposal of 25 boreholes in 2019-20 but only 14 bore holes drilled and 35 boreholes proposed in 2020-21 but till date the drilling not yet started neither any intimation regarding drilling/exploration given.</li> <li>2. The OB dumping is not done as per proposal and during mine visit it was observed that OB dumping in western boundary is extended outside lease area.</li> <li>3. The mine is not developed systematically as per proposals and some places benches area merged with top benches. Bench width is less than height.</li> <li>4. It was observed that faces are not developed as per the proposal and some places overhang and big boulders are hanging and stack near faces.</li> </ol> |
| 31(4) | The plans and sections required under these rules shall be maintained up to date within three months in case of category 'A' mines but the same is not maintained.  |
| 37(2) | The dumps shall be properly secured to prevent escape of material there from in harmful quantities which may cause degradation of environment and to prevent causation of floods. It was observed that there is no proper terracing and the OB/waste dump is near to lease boundary but still no proper retaining wall is constructed nor any control measures taken for dump stability.  |

Rajesh Kumar Das, Senior Assistant Controller of Mines