

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

MCDR INSPECTION REPORT

Bhubaneshwar regional office

Mine file No : ORI/IRON-MN/SNG/MCDR-13/BBS

Mine code : 30ORI13036

- (i) Name of the Inspecting : **U11**) **DAYANAND UPADHYAY**
Officer and ID No.
- (ii) Designation : Sr. Asst. Contrl. Mines
- (iii) Accompanying mine : Shri Satish Mohanty, Geologist
Official with
Designation
- (iv) Date of Inspection : 09/02/2020
- (v) Prev.inspection date : 31/08/2019

PART-I : GENERAL INFORMATION

1. (a) **Mine Name** : **NARAYANPOSHI**
- (b) **Registration NO.** : **IBM/5865/2011**
- (c) Category : A Other than Fully Mech.
- (d) Type of Working : Opencast
- (e) Postal address
- State : ORISSA
- District : SUNDARGARH
- Village : NARAYANPOSHI
- Taluka : BARBIL
- Post office : KOIRA
- Pin Code :
- FAX No. : 03322364602
- E-mail : contact@aryannmining.in
- Phone : 03322364601
- (f) Police Station : KOIRA
- (g) First opening date : 03/02/1945
- (h) Weekly day of rest : SAT
2. Address for : NARAYANPOSI IRON MINE OF A.M.TC.
correspondance AT/PO-KOIRA
DIST-SUNDERGARH
3. (a) Lease Number : ORI0124
- (b) Lease area : 349.25
- (c) Period of lease :
- (d) Date of Expiry : 31/03/2020
4. Mineral worked : MANGANESE ORE Associated
IRON ORE Main

5. Name and Address of the

Lessee : M/S A.M.T.C.(P) Ltd.
 61,Strand Road KOLKATA
 WEST BENGAL
 Phone:
 FAX :

Owner : PRADEEP KUMAR SARAF
 M/S AMTC LTD KOLKATA, WEST
 BENGAL SUNDARGARH ORISSA
 Phone: 033 - 2395661
 FAX :

Mining Engineer

Name : D.PATEL,Full Time
 Qualification : DEGREE IN MINING
 Appointment/ : 16/08/2013
 Termination date

Geologist

Name : S. C. MOHANTY,Full Time
 Qualification : MSC GEOLOGY
 Appointment/ : 16/03/2009
 Termination date

Manager

Name : D.PATEL
 Qualification : DEGREE IN MINING
 Appointment/ : 10/10/2007
 Termination date

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| 6. Date of approval of Mining | : | Modif.approved Mining Scheme | 06/01/2004 |
| Plan/Scheme of Mining | | Renewal under rule 22 MCR1960 | 20/05/2004 |
| | | Modif.of approved Mining Plan | 23/09/2008 |
| | | Modif.of approved Mining Plan | 10/07/2009 |
| | | Mining Scheme rule 12 MCDR1988 | 29/04/2010 |
| | | Modif.approved Mining Scheme | 25/10/2011 |
| | | Mining Scheme rule 12 MCDR1988 | 27/03/2015 |
| | | Modif.approved Mining Scheme | 02/06/2016 |
| | | FMCP under 23C(1) | 03/10/2018 |

PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

Exploration :

| Sl.No. | Item | Proposals | Actual work | Remarks |
|--------|---------------------------------------------------------------------|-----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| 1a | Backlog of previous year | No proposal for exploration in 2018-19. | In 2018-19, 4 nos. of boreholes have been drilled. | There is no backlog. Entire lease area explored under G1/G2 category. |
| 1b | Exploration over lease area for geological axis 1 or 2 | No proposal for exploration in 2018-19. | Entire lease area explored under G1/ G2 category. | G1-99.387Ha, G2-249.867Ha. Entire lease area has been explored in G1/G2 level of exploration. |
| 1c | Exploration Agencies and Expenditure in lakh rupees during the year | No proposal for exploration in 2018-19. | In 2018-19, 4 nos. of boreholes have been drilled. Exploration Agency: Gemco Kati Exploration Pvt. Ltd. Exploration Cost: Rs : 9.29 Lakhs | Entire lease area explored under G1/G2 category. |
| 1d | Balance area to be explored to bring Geological axis in 1 or 2 | No proposal for exploration in 2018-19. | Entire lease area explored under G1/ G2 category. | Entire lease area has been explored under G1/G2 level of exploration. Area explored under G1-99.387Ha and G2-249.867Ha. |

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| 1e | Balance reserve as on 01/04/20 | Reserve and resource as per modified scheme of mining approved on 02.06.2016 are: Iron Ore: Reserve under 111 category: 24206253.91 tonnes and 122 category: 160797984 tonnes; Total Reserve: 185004237.9 tonnes, Resource under 211 category: 2158944 tonnes and 222 category: 10681200 tonnes; Total Resource: 12840144 T Manganese Ore Reserve (122) 534818 tonnes, remaining resources (222) at 7880 tones | Reserve and resource as on 01.04.2019 are: Iron Ore: Reserve under 111 category: 15216907 tonnes and 122 category: 160797984 tonnes; Resource under 211 category: 2158944 tonnes and 222 category: 10681200 tonnes; Total Resource: 12840144 T Manganese Ore Reserve (122) is 524930 tonnes, remaining resources (222) is 7880 tones | Reserve and resource as on 01.04.2019 are: Iron Ore: Reserve under 111 category: 15216907 tonnes and 122 category: 160797984 tonnes; Resource under 211 category: 2158944 tonnes and 222 category: 10681200 tonnes; Total Resource: 12840144 T Manganese Ore Reserve (122) is 524930 tonnes, remaining resources (222) is 7880 tones |
| 1f | General remarks of inspecting officers on geology, exploration etc | No proposal for exploration in 2018-19. | Entire lease area explored under G1/ G2 category. | G1-99.387Ha, G2-249.867Ha. Entire lease area has been explored in G1/G2 level of exploration. |

Development :

| Sl.No. | Item | Propasals | Actual work | Remarks |
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| 2a | Location of development w.r.t.lease area | Q-3: N-2425986 - 2426463, E-318400-318806; Q-4: N2425643-2426068, E-318028-318453; Q-RF: N-2424865-2425362, E-317837-318267; Q-5 Mn: N2424544 - 2424828, E-317202-317433 | Quarry-3: N-2426085 to 2426450, E-318511 to 318852 Quarry-4: N-2425657 to 2426019, E-318094 to 318532 R.F.Block: N-2424879 to 2425365, E-317853 to 318256 Quarry-5 Mn: N-2424580 to 2424825, E-317205 to 317425 | The development is concentrated in within the approved proposal. |
| 2b | Separate benches in topsoil, overburden and minerals (Rule 15) | Separate benches in OB and ore, top soil bench-nil. | Separate benches in OB and ore have been maintained. Some the top benches are mixed ore and intercalated waste | There is no top soil benches. |
| 2c | Stripping ratio or ore to OB ratio | 1:0.263 in iron ore and 1:7.32 in Mn ore. | 1:0.244 in iron ore and 1:8.21 in Mn ore. | Average stripping ratio varies due to irregular nature of ore deposit. |
| 2d | Quantity of topsoil generation in m3 | Not proposed. | Nil. | There is no top soil generation |
| 2e | Quantity of overburden generation in m3 | 526124 m ³ from Iron ore Zone & 114535 m ³ from Mn ore | 288062 m ³ from Iron ore Zone & 15177 m ³ from Mn ore | Iron Ore Production as per EC limit is 3MTPA as against approved proposal of 6MTPA. Due to less production of both Iron & Mn Ore, generation of OB is less. |
| 2f | General remarks of inspecting officers on development of pit w.r.t. type of deposit etc | The development is proposed in 04 quarry i.e Q-3,Q-4, Q-RF, Q-5 Mn | Development is carried out within the proposal as the production of iron ore was within the EC limit of 3.0 MTPA as against approved proposal of 6 MTPA. | Development is carried out within the proposal as the production of iron ore was within the EC limit of 3.0 MTPA as against approved proposal of 6 MTPA. |

Exploitation:

| Sl.No. | Item | Propasals | Actual work | Remarks |
|--------|-------------------------------------------------------------------|------------------------------------------------|----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| 3a | Number of pit proposed for production | 04 quarries, namely Q-3, Q-4, Q-RF, Q-5 Mn | Working is concentrated in 04 quarries as proposed. | Working is concentrated in 04 quarries as proposed. |
| 3b | Quantity of ROM mineral production proposed | Iron ore-6000150T, Mn ore-36012.02T | ROM production reported in 2018-19, Iron ore-2996966.95T, Mn ore-1985.459T | Production restricted within 3 Million Ton for Iron Ore in accordance with EC limit against approved proposal of 6 MTPA. |
| 3c | Recovery of sailable/usable mineral from ROM production | Iron ore-4534998T, Mn ore-32410.818T | Iron ore-2542428.95T, Mn ore-1985.459T | Production restricted within 3 Million Ton for Iron Ore in accordance with EC limit against approved proposal of 6 MTPA. |
| 3d | Quantity of mineral reject generation | Iron ore - 1465152 T, Mn ore -3601.202 T | Iron ore -454538 T, Mn ore -Nil | Mineral reject generation is low due to less ROM production as proposed. |
| 3e | Grade of mineral rejects generation and threshold value declared. | >45% Fe & < 58%Fe , >10% Mn & < 20%Mn | >45% Fe & < 58%Fe , >10% Mn & < 20%Mn | Grade of Mineral Reject generated from Iron Ore :+45-58% Fe, Thresold value declared for iron ore 45% Fe. |
| 3f | Quantity of sub grade mineral generation. | Iron ore - 1465152 T, Mn ore -3601.202 T | Iron ore -454538 T, Mn ore -Nil | Mineral reject generation is low due to less ROM production as proposed. |
| 3g | Grade of sub grade mineral generation | >45% Fe & < 58%Fe , >10% Mn & < 20%Mn | >45% Fe & < 58%Fe , >10% Mn & < 20%Mn | Grade of Mineral Reject generated from Iron Ore :+45-58% Fe, Thresold value declared for iron ore 45% Fe. |
| 3h | Manual / Mechanised method adopted for segregating from ROM | Mechanised for iron ore and manual for Mn ore. | Mechanised for iron ore and manual for Mn ore. | Mechanised for iron ore and manual for Mn ore. |

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| 3i | Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects. | Beneficiation plant of 2.0 MTPA capacity within the lease area to upgrade the iron ore and make it saleable. | Beneficiation plant could not be established due to want of EC during 2018-19. However the lessee has established the plant after receipt of Environment clearance and Consent to establish from SPCB, Odisha during 2019-20. | Beneficiation plant could not be established due to want of EC during 2018-19. However the lessee has established the plant after receipt of Environment clearance and Consent to establish from SPCB, Odisha during 2019-20. |
| 3j | Provision of drilling and blasting in mineral benches | DTH drilling of 115mm dia. Blast hole with emulsion/slurry explosive as column charge and booster alongwith delay detonator. | Drilling and blasting is carried out with DTH drilling of 115mm dia. Blast hole with emulsion/slurry explosive as column charge and booster alongwith delay detonator. | Drilling and blasting have been carried out with DTH drilling of 115 mm diameter as per proposal. |
| 3k | Provision of mining machineries in mineral benches | Excavation is proposed through shovel and dumper combination. | Excavation is practiced through shovel and dumper combination. | Excavator, Loader and Dumper are equipped to winning out the mineral. |
| 3l | Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM | Bench height- 9m for iron ore and 6m for Mn ore. | Bench height is suitably matched with the excavator. | Bench height is suitably matched with the excavator. |
| 3m | Total area covered under excavation/pits | 65.012Ha proposed during approved plan period. | About 55.085 ha area has been covered under excavation pits. | About 55.085 ha area has been covered under excavation pits |
| 3n | Ore to OB ratio for the pit/mine during the year. | 1:0.263 in iron ore and 1:7.32 in Mn ore. | 1:0.244 in iron ore and 1:8.21 in Mn ore. | Average stripping ratio varies due to irregular nature of ore deposit. |

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| 3o | Total area put in use under different heads at the end of year | Total area proposed under different heads are Pit-65.012 ha, waste dump-6.711 ha, Plant-11.88 ha, residential & building-7.50 ha, roads-16.12 ha & Mineral storage-31.66 ha, others - 51.60 ha. | Total area proposed under different heads are Pit-55.058 ha, waste dump-7.405 ha, Plant-7.50 ha, residential & building-7.50 ha, roads-16.12 ha & Mineral storage-28.751 ha, others -44.452 ha. | Total area proposed under different heads are Pit-55.058 ha, waste dump-7.405 ha, Plant-7.50 ha, residential & building-7.50 ha, roads-16.12 ha & Mineral storage-28.751 ha, others -44.452 ha. |
| 3p | Production of ROM mineral during the last five year period as applicable | Iron ore: FY-2018-19-6000150MT FY-2017-18-6001080MT FY-2016-17-6000564MT FY-2015-16-5035696MT FY-2014-15-3969330MT Mn ore- FY2018-19-36012.02MT FY2017-18-36006.96MT FY2016-17-35986.72MT FY 2015-16-10373MT FY-2014-15-39621MT | Iron ore- FY-2018-19-2996966.95MT FY-2017-18- 2997053.14MT FY-2016-17- 2997053.14MT FY-2015-16- 2997270.46MT FY-2014-15-833472.667MT Mn ore- FY-2018-19-1985.459MT FY2017-18- 4046.343MT FY2016-17- 4046.343MT FY 2015-16- Nil FY-2014-15- Nil FY2013-14: 1831.92MT | ROM Production is within the approved limit. |
| 3q | General remarks of inspecting officers on method of mining etc. | Excavation of ROM has been proposed in 04 quarries, namely Q-3,Q-4, Q-RF, Q-5 Mn | The ROM production has been carried out in 04 quarries, namely Q-3,Q-4, Q-RF, Q-5 Mn. DTH drilling of 115mm dia. Blast hole with emulsion/ slurry explosive alongwith delay detonator is being practiced for drilling and blasting. | The ROM production has been carried out in 04 quarries, namely Q-3,Q-4, Q-RF, Q-5 Mn. |

Solid Waste Management - Dumping:

| Sl.No. | Item | Propasals | Actual work | Remarks |
|--------|------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| 4a | Separate dumping of topsoil, OB and mineral rejects (Rule 32,33) | Separate dumping for overburden and mineral reject. | Separate dumping for overburden and mineral reject. | There is no top soil generation. |
| 4b | Location of topsoil, OB and mineral reject dumps | Dump-1, N-2426378 to 2426526 & E-318226 to 318370605 Dump-2, E/W-317141-317207 & N/S-2424817-2424905570 One new Dump-3 proposed E/W-317357-317474 N/S-2424326-2424408565 | Dump-1, N-2426378 to 2426526 & E-318370605 Dump-2, E/W-317141-317207 & N/S-2424817-2424905570 New Dump-3 not created as proposed. | Proposed dump-3 have not been created due to less production of Mn ore. |
| 4c | Number of dumps within lease area and outside of lease area | 03 dumps within the lease area | There are two active dumps within the lease area. | Proposed dump-3 have not been created due to less production of Mn ore. |
| 4d | Location of dumps w.r.t. ultimate pit limit (Rule 16) | Dump-1, N-2426378 to 2426526 & E-318226 to 318370605 Dump-2, E/W-317141-317207 & N/S-2424817-2424905570 One new Dump-3 proposed E/W-317357-317474 N/S-2424326-2424408565 | Dumps are developed are outside the UPL in accordance with the approved plan. | Dumps are developed are outside the UPL in accordance with the approved plan. |
| 4e | Number of active and alive dumps. | 03 dumps | There are two active dumps lies within the lease area. | There are two active dumps lies within the lease area. |
| 4f | Number of dead dumps. | Nil | There is no dead dump. | There is no dead dump. |
| 4g | Number of dumps established. | Not proposed. | There is no dead dump. | There is no dead dump. |

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| 4h | Whether Retaining wall or garland drain all along dumps are there. | Retaining wall of 360m around backfilling area in quarry-3, 100m around Dump-land 270m around beneficiation area. | Retaining wall of 360m around backfilling area in quarry-3, 100m around Dump-land 270m around beneficiation area have been constructed by lessee. | Proposed retaining wall has been constructed by lessee. |
| 4i | Length of Retaining wall or garland drain all along dumps | Retaining wall of 360m around backfilling area in quarry-3, 100m around Dump-land 270m around beneficiation area. | Retaining wall of 360m around backfilling area in quarry-3, 100m around Dump-land 270m around beneficiation area have been constructed by lessee. | Proposed retaining wall has been constructed by lessee. |
| 4j | Number of settling ponds | 2 nos. of settlind ponds around dump-3 | New Dump-3 not created therefore proposed settlind ponds not made. | New Dump-3 not created therefore proposed settlind ponds not made. |
| 4k | Specific comments of inspecting officer on waste dump management | Dump-1, N-2426378 to 2426526 & E-318226 to 318370605 Dump-2, E/W-317141-317207 & N/S-2424817-2424905570 One new Dump-3 proposed E/W-317357-317474 N/S-2424326-2424408565 | New Dump-3 not created as proposed. There are two active dumps lies within the lease area. Slope of OB dump-1 & 2 is stabilized by coir matting, grass pitching & plantation. | Slope of OB dump-1 & 2 is stabilized by coir matting, grass pitching & plantation. |

Solid Waste Management - Backfilling:

| 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. | Backfilling in exhausted part of Q-3 | Backfilling has been done in the exhausted part of Q-3. | Backfilling has been made at exhausted part of Q-3 |
| 5b | Area under backfilling of mined out area | 2.21 Ha area as part of Quarry-3. | 2.21 Ha area of part of Quarry-3 has been backfilled. | 2.21 Ha area of part of Quarry-3 has been backfilled. |
| 5c | Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32) | Not proposed. | Nil. | There is no top soil generation proposed in 2018-19. |
| 5d | Total area fully reclaimed and rehabilitated | Backfilling of 2.21 Ha area of part of Quarry-3. | 2.21 Ha area of part of Quarry-3 has been backfilled. | 2.21 Ha area of part of Quarry-3 has been backfilled. |
| 5e | General remarks of inspecting officers on backfilling and reclamation etc. | Backfilling of 2.21 Ha area of part of Quarry-3. | 2.21 Ha area of part of Quarry-3 has been backfilled. | 2.21 Ha area of part of Quarry-3 has been backfilled. |

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). | Not specified. | Annual return on PMCP has been submitted. | Annual return on PMCP has been submitted. |
| 6b | Area available for rehabilitation (ha) . | Backfilling of 2.21 Ha area as part of Quarry-3 | About 2.21 Ha area of part of Quarry-3 backfilled . | About 2.21 Ha area of part of Quarry-3 backfilled . |
| 6c | afforestation done (ha). | 1.56 ha. | In 2018-19, total area cover under afforestation is about 1.56 ha. | In 2018-19, total area cover under afforestation is about 1.56 ha. |

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| 6d | No. of saplings planted during the year | 3125 saplings. | In 2018-19, total 5000 nos. of saplings have been planted within lease by lessee. | In 2018-19, total 5000 nos. of saplings have been planted within lease by lessee. |
| 6e | Cumulative no .of plants | Not specified. | Cumulative nos. of saplings planted in the lease area is about 15880. | Cumulative nos. of saplings planted in the lease area is about 15880. |
| 6f | Any other method of rehabilitation | Backfilling of 2.21 Ha area as part of Quarry-3 | About 2.21 Ha area of part of Quarry-3 backfilled . | About 2.21 Ha area of part of Quarry-3 backfilled . |
| 6g | Cost incurred on watch and care during the year | Not specified. | Around Rs 4.26 lakh cost incurred on watch and care in 2018-19. | Around Rs 4.26 lakh cost incurred on watch and care in 2018-19. |
| 6h | Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (Lx B x D | Backfilling of 2.21 Ha area as part of Quarry-3 | About 2.21 Ha area of part of Quarry-3 backfilled . | About 2.21 Ha area of part of Quarry-3 backfilled . |
| 6i | Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings | Backfilling of 2.21 Ha area as part of Quarry-3 | About 2.21 Ha area of part of Quarry-3 backfilled . | About 2.21 Ha area of part of Quarry-3 backfilled . |
| 6j | Compliance on reclamation and rehabilitation by backfilling (iii)Afforestation on backfilled area | Backfilling of 2.21 Ha area as part of Quarry-3 | About 2.21 Ha area of part of Quarry-3 backfilled . | About 2.21 Ha area of part of Quarry-3 backfilled . |
| 6k | Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir | Backfilling of 2.21 Ha area as part of Quarry-3 | About 2.21 Ha area of part of Quarry-3 backfilled . | About 2.21 Ha area of part of Quarry-3 backfilled . |

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| 6l | Compliance on reclamation and rehabilitation by backfilling (v)any other specific means. | Backfilling of 2.21 Ha area as part of Quarry-3 | About 2.21 Ha area of part of Quarry-3 backfilled . | About 2.21 Ha area of part of Quarry-3 backfilled . |
| 6m | Compliance of rehabilitation of waste land within lease (i)afforestation | Not proposed. | There is no proposal of rehbilitation of waste land. | There is no proposal of rehabilitation of waste land. |
| 6n | Compliance of rehabilitation of waste land within lease (ii)Area rehabilitation (ha) | Not proposed. | There is no proposal of rehbilitation of waste land. | There is no proposal of rehabilitation of waste land. |
| 6o | Compliance of rehabilitation of waste land within lease (iii)Method of rehabilitation | Not proposed. | There is no proposal of rehbilitation of waste land. | There is no proposal of rehabilitation of waste land. |
| 6p | Compliance of environmental monitoring (core zone and buffer zone) | Quarterly monitoring | Quarterly monitoring of air, water and noise level are being carried out. | Quarterly monitoring of air, water and noise level are being carried out. |
| 6q | General remarks of inspecting officers on PMCP compliance and progressive closure operations etc. | Backfilling of 2.21 Ha area as part of Quarry-3 | About 2.21 Ha area of part of Quarry-3 backfilled . Afforestation has been carried out along slope of waste dump & safety zone. | About 2.21 Ha area of part of Quarry-3 backfilled . Afforestation has been carried out along slope of waste dump & safety zone. |

Mineral Conservation:

| Sl.No. | Item | Propasals | Actual work | Remarks |
|--------|--------------------------------------------------------------|-------------------|---------------------------------------|---------------------------------------|
| 7a | ROM Mineral dispatch or grade-wise sorting within lease area | Gradewise sorting | Gradewise sorting is being practiced. | Gradewise sorting is being practiced. |

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| 7b | Method of grade-wise mineral sorting i.e. manual or mechanical. | Manual for Mn ore mechanised for Iron ore. | Manual for Mn ore mechanised for Iron ore. | Manual for Mn ore mechanised for Iron ore. |
| 7c | Different grade of mineral sorted out at mines. | >45% Fe & < 58%Fe , >10% Mn & < 20%Mn. | Different grades of minerals sorted out at mines are >45% Fe & < 58%Fe , >10% Mn & < 20%Mn | Different grades of minerals sorted out at mines are >45% Fe & < 58%Fe , >10% Mn & < 20%Mn |
| 7d | Any beneficiation process at mines . | Wet beneficiation Plant of 2 MTPA capacity | Beneficiation plant could not be established due to want of EC during 2018-19. However the lessee has established the plant after receipt of Environment clearance and Consent to establish from SPCB, Odisha during 2019-20. But the beneficiation plant is not operated due to want of Consent to Operate from SPCB. | Beneficiation plant could not be established due to want of EC during 2018-19. However the lessee has established the plant after receipt of Environment clearance and Consent to establish from SPCB, Odisha during 2019-20. |
| 7e | General remarks of inspecting officer on Mineral conservation and beneficiation issues | Gradewise sorting, >45% Fe & < 58%Fe , >10% Mn & < 20%Mn. Beneficiation plant of 2.0 MTPA capacity | Cut off grade of Mn ore for the mine is +20Mn%. Cut off grade of iron ore for the mine is +58Fe%. Gradewise sorting of ore is proposed Manual for Mn ore mechanised for Iron ore. | Beneficiation plant could not be established due to want of EC during 2018-19. However the lessee has established the plant after receipt of Environment clearance and Consent to establish from SPCB, Odisha during 2019-20. But the beneficiation plant is not operated due to want of Consent to Operate from SPCB. |

| Sl.No. | Item | Propasals | Actual work | Remarks |
|--------|-------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| 8a | Separate removal and utilization of topsoil (Rule 32) | Not proposed. | Nil. | No top top soil generation is proposed. |
| 8b | Concurrent use or storage of topsoil | Not proposed. | No top top soil generation is proposed. | No top top soil generation is proposed. |
| 8c | Separate dumps for overburden, waste rock, rejects and fines (Rule 33) | Separate dumping for overburden and mineral reject. | Separate dumping for overburden and mineral reject. | Separate dumping for overburden and mineral reject. |
| 8d | Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use | Bckfilling of quarry-3. | About 2.21 Ha area of part of Quarry-3 backfilled . | About 2.21 Ha area of part of Quarry-3 backfilled . |
| 8e | Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc) | Bckfilling of quarry-3. | About 2.21 Ha area of part of Quarry-3 backfilled . | About 2.21 Ha area of part of Quarry-3 backfilled . |
| 8f | Baseline information on existence of plantation and additional plantation done (Rule 41) | 3125 nos. of plantation. | Total 5000 nos. saplings have been planted within lease in 2018-19. Cumulative 15880 nos. have been planted by lessee . | Total 5000 nos. saplings have been planted within lease in 2018-19. Cumulative 15880 nos. have been planted by lessee . |
| 8g | Survival rate | Not specified. | As reported survival rate is 80%. | As reported survival rate is 80%. |
| 8h | Water sprinkling on roads to control airborne dust | Water sprinkler. | Water sprinkler are used to control air borne dust. | Water sprinkler are used to control air borne dust. |

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| 8i | General remarks of inspecting officer on aesthetic beauty in and around mines area | 3125 nos. of plantation. | Aesthetic beauty in and around mined area is maintained plantation. Total 5000 nos. saplings have been planted within lease in 2018-19. Cumulative 15880 nos. have been planted by lessee . | Aesthetic beauty in and around mined area is maintained plantation. |
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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 2018-19 have been submitted. | Monthly Returns and Annual return for 2018-19 have been submitted. | Monthly Returns and Annual return for 2018-19 have been submitted. |
| 9b | Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager | The employment status of mining engineer, geologist & mine manager have been furnished in the annual return submitted for the year 2018-19. | Mining engineer, geologist & mine managers were employed in the mine. | Mining engineer, geologist & mine managers were employed in the mine. |

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| 9c | Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc. | Covered under current (O/C) Workings : 140.368 Ha, Used for waste disposal: 6.711 Ha, Occupied by plant, buildings, residential, welfare buildings & roads : 16.120 Ha, Other Purpose (Used for Road, Nala Etc): 35.957 Ha | Area under excavation : 55.058 Ha, Storage for Topsoil: 0.16 Ha, Overburden dump: 6.711 Ha, Mineral Storage: 28.198 Ha, Infrastructure (rest shelter, weigh bridge, hutting etc.): 5.0 Ha, Road (NH, village road & Mine road): 16.12 Ha, Mineral Separation Plant: 7.5 Ha, Others (Green belt): 44.452 Ha | Area under excavation : 55.058 Ha, Storage for Topsoil: 0.16 Ha, Overburden dump: 6.711 Ha, Mineral Storage: 28.198 Ha, Infrastructure (rest shelter, weigh bridge, hutting etc.): 5.0 Ha, Road (NH, village road & Mine road): 16.12 Ha, Mineral Separation Plant: 7.5 Ha, Others (Green belt): 44.452 Ha |
| 9d | Scrutiny of Annual return on afforestation | Total 5000 nos. saplings have been planted in 2018-19. | Total 5000 nos. saplings have been planted in 2018-19. | Total 5000 nos. saplings have been planted in 2018-19. |
| 9e | Scrutiny of Annual return on mineral reject generation (Grade and quantity) | Mineral reject 454537.870MT, Grade: +55- 58 % Fe | Mineral reject 454537.870MT, Grade: +55- 58 % Fe | Mineral reject 454537.870MT, Grade: +55- 58 % Fe |
| 9f | Scrutiny of Annual return on ROM stock and/or graded ore | Closing stock maintained, Below 55%, 55% to below 58%, 58% to below 60%, 60% to below 62%, 62% to below 65%, 65%Fe and above. | Closing stock maintained, Below 55%, 55% to below 58%, 58% to below 60%, 60% to below 62%, 62% to below 65%, 65%Fe and above. | Closing stock maintained, Below 55%, 55% to below 58%, 58% to below 60%, 60% to below 62%, 62% to below 65%, 65%Fe and above. |

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| 9g | Scrutiny of Annual return on sale value, Ex. Mine price and production cost | Ex-mine prices of Processed ore(IRON ORE (Hematite) (in Rs Per Tonne) Lumps Grades (% of Fe content) : a. 60% to below 62%: Rs 3367.00 Fines Grades (% of Fe content) : (a). Below 55%: Rs 767.00 (b) 55% to below 58% : Rs 988.00 (c) 60% to below 62% : Rs 1993.00 (d) 62% to below 65% : Rs 1850.00 Production cost- Rs 1514.49 per tonne | Ex-mine prices of Processed ore(IRON ORE (Hematite) (in Rs Per Tonne) Lumps Grades (% of Fe content) : a. 60% to below 62%: Rs 3367.00 Fines Grades (% of Fe content) : (a). Below 55%: Rs 767.00 (b) 55% to below 58% : Rs 988.00 (c) 60% to below 62% : Rs 1993.00 (d) 62% to below 65% : Rs 1850.00 Production cost- Rs 1514.49 per tonne | Ex-mine prices of Processed ore(IRON ORE (Hematite) (in Rs Per Tonne) Lumps Grades (% of Fe content) : a. 60% to below 62%: Rs 3367.00 Fines Grades (% of Fe content) : (a). Below 55%: Rs 767.00 (b) 55% to below 58% : Rs 988.00 (c) 60% to below 62% : Rs 1993.00 (d) 62% to below 65% : Rs 1850.00 Production cost- Rs 1514.49 per tonne |
| 9h | Scrutiny of Annual return on fixed assets | Fixed asset as furnished in AR is Rs 66366173/- | Fixed asset as furnished in AR is Rs 66366173/- | Fixed asset as furnished in AR is Rs 66366173/- |

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| 9k | Scrutiny of Annual return on mining machineries | Back Hoe 0.900 CUM: 12Nos, Back Hoe 4.100 CUM: 3Nos, Air Compressor 12.740CUM/MN : 2 Nos,Front end loader 1.800CUM: 8 Nos,Dozer 300.0 HP: 3 Nos,Blast hole drill 100.0MM: 2 Nos, Dumper 10.00 TONNE: 10Nos,Dumper 30.00 TONNE: 38Nos etc | Back Hoe 0.900 CUM: 12Nos, Back Hoe 4.100 CUM: 3Nos, Air Compressor 12.740CUM/MN : 2 Nos,Front end loader 1.800CUM: 8 Nos,Dozer 300.0 HP: 3 Nos,Blast hole drill 100.0MM: 2 Nos, Dumper 10.00 TONNE: 10Nos,Dumper 30.00 TONNE: 38Nos etc | Back Hoe 0.900 CUM: 12Nos, Back Hoe 4.100 CUM: 3Nos, Air Compressor 12.740CUM/MN : 2 Nos,Front end loader 1.800CUM: 8 Nos,Dozer 300.0 HP: 3 Nos,Blast hole drill 100.0MM: 2 Nos, Dumper 10.00 TONNE: 10Nos,Dumper 30.00 TONNE: 38Nos etc |
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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 |

Date :

(DAYANAND UPADHYAY)

Indian Bureau of Mines