



Ref. No. EMIL/GEOL/ 381 /2017-18

Date—07.09.2017

✓ To

The Member Secretary,
State Pollution Control Board, Odisha
Department of Forests & Environment,
Govt. of Odisha, Paribesh Bhawan,
A/118, Nilakantha Nagar, Unit-VIII
Bhubaneswar-751012

Sub: Submission of Environmental Statement in respect of Kasia Iron & Dolomite Mines
of Essel Mining & Industries Limited, Barbil for the year 2016-17.

Dear Sir,

Please find enclosed herewith the environmental statement report duly filled-in Form-V
as prescribed under the Environment (Protection) Rules, 1986 amendment thereof for the
financial year 2016-17 in respect of Kasia Iron & Dolomite Mines.

Thanking you,

Yours Faithfully,
For ESSEL MINING & INDUSTRIES LTD.

A handwritten signature in blue ink, appearing to read 'Dr. Khageswar Mahanta'.

Dr. Khageswar Mahanta
Vice President

Cc: The Regional Officer, State Pollution Control Board, College Road, Keonjhar
The Director, Govt. of India, Ministry of Env. & Forests, Eastern Regional Office, A/3,
Chandrasekharapur, Bhubaneswar-751023 (email-roez.bsr-mef@nic.in)

Encl: As above

Essel Mining & Industries Ltd.
P.O. Barbil, Dist. Keonjhar,
Odisha 758035, India

Telephone +91 6767 275224,275422,276553
Fax +91 6767 275367
CIN U51109WB1950PLC018728

Website www.adityabirla.com
E-mail emilbbl@adityabirla.com

FORM-V
(See rule 14)

Environmental Statement for the financial year ending with 31st March 2017

PART- A

- | | | |
|--|---|--|
| 1. Name and address of the owner/ occupier of the industry, operation or process | : | Kasia Iron & Dolomite Mines Essel Mining & Industries Limited At/PO: Kasia, Dist: Keonjhar Odisha -758035 |
| 2. Industry category Primary- (STC Code) Secondary- (STC Code) | : | Open Cast Iron Ore Mines (Large Scale) |
| 3. Production capacity | : | 7.5 Million Tonne Per Annum |
| 4. Year of establishment | : | 1955 |
| 5. Date of the last environmental statement submitted | : | 20.09.2016 |

PART- B

Water and Raw Material Consumption:

(i) Water consumption (m³/d)

- | | | |
|-------------|---|-------------------|
| 1. Process | : | 0 |
| 2. Cooling | : | Nil |
| 3. Domestic | : | 97 (drinking use) |

| Name of the product(s) | Process water consumption per unit of products | |
|---|--|---|
| | During the previous financial year (2015-16) | During the current financial year (2016-17) |
| This is an open cast iron ore mines producing sized ore and fines. Water is required for dust suppression at C&S plant by the dry fog system & water sprinkling within the mines. | | |

(ii) Raw material consumption

| Name of Raw Material | Name of Products | Consumption of raw material per unit of output | |
|---|------------------|--|---|
| | | During the previous financial year (2015-16) | During the current financial year (2016-17) |
| This is an open cast iron ore mines. After blasting in the pits, RoM (Run off mine) is fed to Screening & Crushing unit to produce sized ore of 10-30 mm, 5-18 mm and -5 mm sized iron ores. Whatever material is fed for processing, same comes out as output of different size fractions. During the financial year 2014-15, 2015-16 & 2016-17 the production is nil due to temporary discontinuance of mining operation. | | | |

* Industry may use codes if disclosing details of raw material would violate contractual obligations, otherwise all industries have to name the raw materials used.

PART-C

Pollution discharged to environment/unit of output
(Parameters as specified in the consent issued)

| Pollutants | Quantity of pollution discharged (mass/day) | Concentrations of pollutants in discharges (mass/volume) | | Percentage of variation from prescribed standards with reasons | | | | |
|---|---|--|------|--|--------------------------------|---------------------------------|---|---------------------|
| Water | As the industry is operated on dry process technology, no liquid effluent is generated from the screening & crushing process. | | | | | | | |
| | Domestic waste water generated from residential colony is treated through Sewage Treatment Plant and the treated water is utilized for plantation & vehicle washing. | | | | | | | |
| | WATER QUALITY | | | | | | | |
| | PARAMETERS | Kasia nala up stream | | Kasia nala down stream | | STP outlet | | STANDARD (GSR 422E) |
| | | Min | Max | Min | Max | Min | Max | |
| | pH | 6.08 | 7.15 | 6.15 | 7.15 | 6.18 | 7.25 | 5.5-9.0 |
| | TSS, mg/l | 12 | 90 | 10 | 94 | 16 | 76 | 100 |
| | TDS, mg/l | 64 | 116 | 50 | 148 | 68 | 243 | 2100 |
| | Oil & grease, mg/l | <1 | 5 | <1 | 5 | 1 | 5 | 10 |
| | Fluoride, mg/l | <0.1 | 0.30 | <0.1 | 0.30 | <0.1 | 0.20 | 2.0 |
| Chlorides, mg/l | 7 | 27 | 9.1 | 35 | 18 | 59 | 1000 | |
| Iron, mg/l | 0.07 | 1.29 | 0.06 | 1.18 | 0.05 | 0.93 | 3 | |
| BOD, mg/l | 2 | 14 | 2 | 14 | 5 | 19 | 30 | |
| COD, mg/l | 10 | 56 | 9 | 57 | 24 | 70 | 250 | |
| Air | Concentration of ambient air quality parameters both in core & buffer zone varies in the following ranges throughout the year conforming the NAAQ standards. The monitoring results obtained from the locations covering core & buffer zone are submitted twice a year to the OSPCB, CPCB, MoEF, IBM. | | | | | | | |
| | The ambient air quality in & around the lease hold area during the year 2016-17 is within the permissible limit of NAAQ standards. | | | | | | | |
| | Parameters | Core Zone | | Buffer Zone | | Standards | Variation | |
| | | Min | Max | Min | Max | | | |
| | PM ₁₀ | 28 | 57 | 37 | 78 | 100 µg/m ³ (24 Hrly) | No deviation. All the values remain within the permissible limit. | |
| | PM _{2.5} | 8 | 29 | 10 | 54 | 60 µg/m ³ (24 Hrly) | | |
| | SO ₂ | 4.1 | 11.2 | 7.2 | 16.6 | 80 µg/m ³ (24 Hrly) | | |
| NO _x | 4.9 | 11.4 | 7.8 | 17.6 | 80 µg/m ³ (24 Hrly) | | | |
| CO | 0.01 | 0.65 | 0.04 | 1.07 | 02 mg/m ³ (8 Hrly) | | | |
| All parameters are in microgram/cubic meter except CO which is in mg/cubic meter. | | | | | | | | |

PART-D

(Hazardous Wastes)

[As specified under Hazardous Wastes (Management and Handling) rules, 1989]

| Hazardous waste | Total Quantity | |
|---------------------------------------|--|---|
| | During the previous financial year (2015-16) | During the current financial year (2016-17) |
| (a) From process | | |
| - Used Oil | 1.05 KL | Nil |
| - Waste Containing Oil | Nil | Nil |
| (b) From pollution control facilities | Nil | Nil |

PART-E

Solid Wastes

| Sources | Total Quantity | |
|--------------------------------------|--|---|
| | During the previous financial year (2015-16) | During the current financial year (2016-17) |
| (a) From process (Overburden) | Nil | Nil |
| (b) From pollution control facility | | Nil |
| (c) Quantity recycled or Re-utilized | | Nil |

PART-F

Please specify the characteristics (in terms of composition of quantum) of Hazardous as well as solid wastes and indicate disposal practice adopted for both these categories of wastes.

Hazardous Waste: (Used Oil & Waste Containing Oil)

Iron ore screening & crushing is operated on "Dry Process". No Hazardous waste is generated from the process except used oil which is drained from Machineries / Equipments. It is used for lubrication. Burnt oil are stored in barrel and kept over an impervious floor under shed in a demarcated area till its disposal to authorized recycler. Wastes containing oil or cotton waste are being disposed to an earmarked impervious pit.

PART-G

Impact of pollution abatement measures taken on conservation of natural resources and on the cost of production.

Significant resource conservation measures undertaken as follows.

1. During the year 2016-17 an amount of Rs 15,35,663.00 were spent towards environmental monitoring & management.
2. Garland drains around the mines have been maintained regularly at the toe of dumps, periphery of the quarries, stack yard. Before onset of monsoon all the garland drains are cleaned and made ready to check runoff from overburden dumps and to prevent surface runoff from entering into the quarry. Settling pits are made ready to arrest the suspended solids.

PART-H

Additional measures/investment proposal for environmental protection including abatement of pollution, prevention of pollution.

1. The Mine management celebrates and participates in Mine Environment & Mineral Conservation Week, Mines Safety Week & World Environment Day every year.
2. Installation of water flow meters at various water drawal points helps us on economical use of water.
3. Implementation of Rain Water Harvesting Structures & Artificial Recharge Structures in and around of lease hold area for conservation & improvement of ground water potentiality.
4. Greenery development at Mines and Screening & Crushing Unit by planting trees of mixed variety.
5. Waste dumps are stabilized through plantation.
6. Development of more green belt in & around of operational activities and nearby villages.
7. The mine has already been certified to ISO-14001 (Environment Management System), ISO-9001 (Quality Management System), OHSAS-18001 (Occupational Health and Safety Assessment Series), and maintaining the systems satisfactorily.
8. Top priority for WCM (World Class Manufacturing) activities for improvement in Safety, Environment, production, quality and sustainable development.

PART-I

Any other particulars for improving the quality of the environment

1. We have full-fledged Environment Department for monitoring, maintenance of pollution control equipment and for Green Belt development.
2. Monitoring of ambient air quality, noise, soil, DG stack emission and water quality is being done regularly.
3. Administration dept is taking care of Housekeeping and Civil department is taking care of operation of STP under the guidance of Geology department.
4. Geology & Horticulture Department is taking care of tree plantation and green belt development.
5. UBE (Unit Business Excellence) is used as a tool for better housekeeping, good maintenance practice and assist in control of pollution.



Dr. Khageswar Mahanta
Vice President (Geology)