सेल SAIL

स्टील अथॉरिटी ऑफ इण्डिया लिमिटेड
STEEL AUTHORITY OF INDIA LIMITED
राउरकेला स्टील प्लांट
ROURKELA STEEL PLANT
बोलानी ओर्स माइन्स
BOLANI ORES MINES

Ref No: - BOM/ENV/6.9/HD-380 **Date:-31.01.2024**

To,

Dy. Director General of Forests (Central),
Ministry of Environment, Forest and Climate Change,
Regional Office (EZ),
A/3, Chandersekharpur,
Bhubaneswar – 751023

Sub: Six monthly status of compliance to the conditions stipulated in the Environmental Clearance granted by MoEFCC for 15000 TPA Manganese Ore production from 6.90 sq. Miles ML vide letter no. J–11015/396/2008–IA.II(M) dated 21/12/2012 for the period Jul'23 – Dec'23

Sir,

Please find enclosed herewith the Six monthly compliance report for the period **Jul'23 – Dec'23** with respect to the conditions stipulated by GoI, MoEF, New Delhi, in the Environmental Clearance grant order of Bolani Ores Mines for the production of 15000 TPA Manganese Ore from 6.90 sq Miles ML vide ministry's letter no. J–11015/396/2008–IA.II(M) dated 21/12/2012. The report also contains the updated status of the environmental monitoring reports pertaining to the above period.

Thank you,

Yours faithfully,

Chief General Manager
Bolani Ores Mines

CGM (Mines), BOM
BOLANI

Encl: As above

Copy:

1. Director, IA Division, MoEF&CC, GOI, Indira Paryavaran Bhavan, Aliganj, Jor Bagh Road, New Delhi - 110 003.
2. The Member Secretary, State Pollution Control Board, Paribesh Bhawan, A/118, Nilkantha Naga, Unit – VIII, Bhubaneshwar – 751 012, Odisha

Six Monthly

COMPLIANCE REPORT OF ENVIRONMENTAL CLEARANCE CONDITIONS

(Grant Order no: J-11015/396/2008-IA.II(M) dated 21/12/2012)

OF

BOLANI ORES MINES (6.90 Sq Miles ML) In Keonjhar District of Odisha

For the Period **July'23 - December'23**

STEEL AUTHORITY OF INDIA LIMITED
ROURKELA STEEL PLANT
BOLANI ORES MINES
BOLANI- 758037

A. SPECIFIC CONDITIONS

i. **Environmental Clearance is subject to obtaining clearance under the Wildlife (Protection) Act, 1972 from the competent authority, as applicable.**

Compliance:

Not Applicable as the Provision of Wildlife (Protection) ACT 1972 is not attracted to the Project.

ii. **The mining operation shall be restricted to above ground water table and it shall not intersect groundwater table. In case of working below the ground water table, Prior approval of the Ministry of Environment & Forest and Central Ground Water Authority shall be obtained for which a detailed hydrogeological study shall be carried out.**

Compliance:

The Mining operations are carried out above the ground water table at present. In case of working below the ground water table, a detailed hydrogeological study will be carried out and prior approval of the Ministry of Environment & Forest and Central Ground Water Authority will be obtained for working below Ground Water Table.

iii. **Mitigation measures to control RSPM levels shall continue to be implemented and air quality data will also be collected during operation of the mines. The data so collected shall be analyzed to see the effectiveness of the mitigation measures implemented. Based on the same, additional safeguard measures, as may be required shall be implemented in the project.**

Compliance:

Mitigation measures are regularly implemented to control the RSPM levels. The total dispatch of Ore is through rail route. As such, in order to improve the RSPM quality, SAIL-Bolani Ore Mines has completed the implementation of following mitigation measures:

a) Repaired and blacktopped the Road from Karo Bridge to Bolani entry point (3.2 km) at a cost of Rs.732 lakhs.
b) Repaired and blacktopped the Balagoda - Bolani road (2.4 km) at a cost of Rs.20 lakhs.
c) Dry Fog Dust suppression system has been installed in the 600 TPH Crushing & Screening Plant
d) In addition to water sprinkling on haul roads, water sprinkling facility has been extended to the Public roads outside this lease.
e) Fixed water sprinkling system has been installed in the 600 TPH areas.
f) During ROM production from this ML, additional water sprinkling measures as planned in EMP will be undertaken.
g) Truck Mounted Mist cannon with a throw of 40-50m has been procured. Photographs of Mist cannon are enclosed as **Annexure - II**.

Regular Environmental Audits are part of the Environmental Management System (EMS) implemented at Bolani Ore Mines, which is certified under ISO-14001:2015 standard. These audits check the conformance of the air quality to the applicable norms and thereby effectiveness of the pollution control equipment / facilities is regularly reviewed for taking up any additional safeguard measures, if any required.

iv. **The biological survey shall be repeated during October- December and mid-May month to see the existence of wildlife corridors, if any. Based on the same, necessary Wildlife Conservation Plan as may be required shall be prepared and implemented in consultation with the state Forest and Wildlife Department.**

Compliance:

Necessary biological surveys were conducted by expert committees and Wild Life Experts and based on the same, Site Specific Wildlife Conservation Plan has been prepared and approved by the state Forest and Wildlife Department vide order no 10680/1WL-FC-Mrl-SSP-228/2018 Dt.22.11.2018 with a total financial outlay of Rs.1088.431 lakhs. An amount of Rs.772.999 lakhs has already been deposited in CAMPA account of Forest Dept. for interventions in Project impact area.

The Study revealed no Wildlife corridors within the Mining Lease area.

v. **The biological survey shall also be undertaken to identify the trees with orchids, if any such trees, so identified shall be protected and if need be, these trees may be relocated.**

Compliance:

Detailed study of the area for identification of orchids by the MoEF&CC empaneled consultant, M/s Grow Green Consortium Pvt. Ltd, had been completed. A Report based on survey including recommendations for preservation of the species has been submitted to Regional Office of MoEF&CC vide our letter no. BOM/ENV/HD-1707A dt. 17.07.2019.

vi. **The Over Burden (OB) generated during the mining operation shall be stacked at earmarked dump sites(s) only and should not be kept active for long period. In critical areas, use of geo textiles shall be undertaken for stabilization of dump. Monitoring and management of rehabilitated areas should continue until the vegetation becomes self-sustaining. Compliance status should be submitted to the Ministry of Environment & Forest and its Regional Office located at Bhubaneswar on six monthly basis.**

Compliance:

Over Burden (OB) generated from the mines is dumped at earmarked sites as per the IBM approved review of Mining Plan. All inactive dumps shall be reclaimed and rehabilitated as per the provisions of the Mining Plan.

vii. **Catch drains and siltation ponds of appropriate size shall be constructed to arrest silt and sediment flows from mine working, soil, OB and mineral**

dumps. The water so collected should be utilized for watering the mine area, roads, green belt development etc. The drains should be regularly de-silted particularly after monsoon and maintained properly.

Compliance:

Check dams and Check weirs have been proposed at appropriate places in consultation with Rainwater Harvesting Experts and Divisional Forest Office, Keonjhar. The plan for Runoff control management as approved by IBM, is under implementation since 2020-21.

viii. **Dimension of retaining wall at the toe of dumps and OB benches within the mine to check run-off and siltation should be based on the rainfall data**

Compliance:

All Mineral stack yards have been provided with Retaining walls with Garland drains for effective runoff management.

OB and Top soil dumps shall be provided with retaining walls when the mining activities are resumed.

ix. **The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered fauna such as elephant, leopard, sloth bear, wolf, gaur, python etc. Spotted in the study area and contribute towards the cost of implementation of the plan and/ or Regional Wild life Management plan for conservation of flora and fauna so prepared by the State Government. The amount so contributed shall be included in the project cost. A copy of action plan may be submitted to the Ministry and its Regional Office, Bhubaneswar within three months.**

Compliance:

Necessary biological surveys were conducted by expert committees and Wild Life Experts and based on the same, Site Specific Wildlife Conservation Plan has been prepared and approved by the state Forest and Wildlife Department vide order no 10680/1WL-FC-Mrl-SSP-228/2018 Dt. 22.11.2018 with a total financial outlay of Rs.1088.431 lakhs. An amount of Rs.772.999 lakhs has already been deposited in CAMPA account of Forest Dept. for interventions in Project impact area.

The Study revealed no Wildlife corridors within the Mining Lease area.

x. **The critical parameters such as RSPM (Particulate matter with size less than 10 micron i.e. PM_{10} and NOx in the ambient air within the impact zone, peak particle velocity at 300 m distance or within the nearest habitation, whichever is closer shall be Monitored periodically. Further, quality of discharged water shall also be monitored [TDS, DO, PH and Total Suspended Solids (TSS)]. The monitored data shall be uploaded on the website of the company as well as displayed on a display board at the project site at a suitable location near the main gate of the Company in public domain. The Circular No. J-20012/1/2006-IA.II(M) dated 27.05.2009 issued by Ministry of Environment and Forest,**

which is available on the website of the Ministry www.envfor.nic.in shall also be referred in this regard for the compliance.

Compliance:

The core zone of 6.90 sq. miles ML falls in the buffer zone of adjoining 5.10 sq. miles ML and vice versa, both being the Mining Leases of same user agency i.e., M/s SAIL. Hence, the 1(One) nos. of Continuous Ambient Air quality monitoring Stations installed in buffer zone of 5.10 sq. miles lease fall in the core zone of 6.90 sq. miles ML and 2 (two) nos. CAAQM Stations installed in core zone of 5.10 sq. miles lease fall in the buffer zone of 6.90 sq. miles ML. The details of Air quality monitoring locations are provided as follows:

SL. NO.	LOCATION	PARAMETERS MONITORED	ZONE*
AMBIENT AIR QUALITY			
1	Bolani Basthi Community Center (Habitation area)	PM_{10}, $PM_{2.5}$, SO_2, NOx & CO	6.90 Core & 5.10 Buffer
2	General Office Area	PM_{10}, $PM_{2.5}$	5.10 Core & 6.90 Buffer
3	Field Station (Township Nursery – near Hospital)	PM_{10}, $PM_{2.5}$	5.10 Core & 6.90 Buffer
4	DAV Public School (Township)	PM_{10}, $PM_{2.5}$, SO_2, NOx & CO	6.90 Core & 5.10 Buffer
5	Karo Guest House	PM_{10}, $PM_{2.5}$, SO_2, NOx & CO	6.90 Core & 5.10 Buffer
6	Limtur Village	PM_{10}, $PM_{2.5}$, SO_2, NOx & CO	6.90 Core & 5.10 Buffer
FUGITIVE DUST MONITORING (WORKZONE)			
SL. NO.	**LOCATION**	**PARAMETERS MONITORED**	**ZONE***
7	Maingate Entry	RSPM, SPM	5.10 ML
8	F Mining area near hilltop Feed Crusher	RSPM, SPM	5.10 ML
9	G Mining area	RSPM, SPM	5.10 ML
10	D & Panposh Haul road	RSPM, SPM	5.10 ML
11	Mn Quarry - 10	RSPM, SPM	6.90 ML
12	Mn Quarry - 5	RSPM, SPM	6.90 ML
13	600 TPH cum Lump Loading plant area	RSPM, SPM	6.90 ML
14	Fines Loading plant area	RSPM, SPM	6.90 ML
15	Fines handling site (Near Weighbridge)	RSPM, SPM	5.10 ML

Bolani Ore Mines (BOM) is regularly monitoring water quality within the complex at 12 water quality monitoring stations identified by the characteristics of sub-water shed confining the contributing and receiving streams of hydrologic regime of the area spread over Core and Buffer zone of its adjoining Leases. The details of stations are as follows:

SURFACE WATER TO BE MONITORED MONTHLY				
SL. NO.	**LOCATION**	**PARAMETERS MONITORED**	**ZONE***	**REMARKS**
16	Karo River Upstream	pH, TSS, TDS, Oil & Grease, BOD, COD, Iron, Manganese, Arsenic, Mercury, Lead, Cadmium, Hexavalent Chromium, Copper, Zinc, Nickel, Cyanide, Flouride, Total Residual Chlorine, Fecal Coliform, Sulfide, Phenolic Compounds, Nitrate Nitrogen	6.90 sq. miles ML	Flowrate to be Measured
17	KaroRiver Downstream		6.90 sq. miles ML	
18	Bottom garage effluent		5.10 sq. miles ML	Effluent
19	Jhinkaria Nallah		5.10 sq. miles ML	Flowrate to be Measured
20	Panposh Nallah		5.10 sq. miles ML	Flowrate to be Measured
21	Tailing Pond Seepage/ Balagoda nallah/ Mega settling pond outlet		Both	Seasonal
22	CBRS/ G-area Mechanical ETP		5.10 sq. miles ML	Effluent
23	Outlet of water treatment plant		5.10 sq. miles ML	Drinking water

The Collected Data is analyzed regularly to identify, predict and evaluate the environmental impacts of the ongoing mining and allied activities. Accordingly, potential impacts on environment have been assessed and suitable Environmental Management Plan has been formulated.

B. GENERAL CONDITIONS

i. **No change in mining technology and scope of working should be made without prior approval of the Ministry of Environment & Forests**

Compliance:

There is no change in Mining technology or scope of work from that which is approved in Mining Plan/Review of Mining Plan. Prior approval from MoEF&CC shall be sought to change Mining technology or scope of working.

ii. **No change in the calendar plan including excavation, quantum of mineral iron ore and waste should be made.**

Compliance:

No change in the calendar plan including excavation, quantum of mineral iron ore and waste will be made.

iii. **The project proponent shall obtain Consent to establish from the State Pollution Control Board, Orissa and effectively implement all the conditions stipulated therein.**

Compliance:

Extension for validity of Consent to Establish has been granted vide Order no. 4897/Ind-II-NOC-5374 dt 22/05/2019, till 20.12.2023. Subsequently, CTO has been granted vide no. 4631 Dt. 24/03/2023.

The conditions are effectively implemented and a compliance report has already been submitted to OSPCB during grant of consent to operate.

iv. **A final mine closure plan along with details of Corpus Fund should be submitted to the Ministry of Environment & Forest 5 years in Advance of final mine closure for approval.**

Compliance:

Final Mine Closure plan along with details of Corpus fund will be submitted to the Ministry 5 years in advance of final mine closure for approval.

However, the Progressive Mine Closure Plan (PMCP) has been approved by IBM vide their letter no. MRMP/A/16-ORI/BHU/2021-22 Dt. 05.08.2021.

v. **The project proponent shall practice Suitable rain water harvesting measures on long term basis and work out detailed scheme rain water harvesting in consultation with Central Ground Water Authority and submit a copy of the same to the Ministry of Environment & Forests and its Regional Office, Bhubaneswar.**

Compliance:

The Rainwater Harvesting measures, proposed in report of "Technical Feasibility Study on Rain Water Harvesting & Master Plan for Ground Water Recharges" by

consultant, M/s KRG Rainwater Foundation, have been approved by CGWB Bhubaneswar vide their letter no.: 5-22/ CGWA/ SER/2018-19-1306 Dt. 26.12.2018.

Meanwhile, departmental initiatives for Soil and moisture Conservation had been taken up, measures such as de-silting of network of seasonal water channels, Plantations of drought hardy plant species on the degraded lands, water harvesting structure s along seasonal channels, have been taken up by Bolani Ore Mines, SAIL to augment ground water recharge, as per schemes prepared with in-house expertise, in line with prevailing guidelines of CGWB. Bolani Ore Mines is not using any ground water either for domestic purpose or for industrial purpose, neither has any plan to do so for future mining activities.

vi. **Vehicular emissions should be kept under control and regularly monitored. Measures shall be taken for maintenance of vehicles used in mining operations and in transportation of Mineral. The vehicles should be covered with a tarpaulin and shall not be overloaded.**

Compliance:

Vehicular emissions are kept under control and regularly monitored. Maintenance of vehicles used in mining operations and in transportation of Mineral is carried out regularly. The vehicles are covered with a tarpaulin and are not overloaded.

vii. **No Blasting shall be carried out after the sunset. Blasting operation should be carried out only during the day time. Controlled Blasting should be practiced. The mitigative measures for control of ground vibrations and to arrest fly rocks and boulders should be implemented.**

Blasting is carried out only during the daytime and controlled blasting is practiced, with due precaution to control ground vibrations and fly rocks and boulders.

viii. **Mineral handling area shall be provided with adequate number of high efficiency dust extraction system. Loading and unloading areas including all the transfer point should also have efficient dust control arrangements. These should be properly maintained and operated.**

Compliance:

In the Mineral handling areas such as Loading plant area, High Pressure fixed dust suppression system in 600 TPH Plant and fixed water sprinkling systems have been provided.

ix. **Sewage treatment plant should be installed for the colony. ETP should also be provided for the workshop and wastewater generated during mining operation**.

Compliance:

Based on the conceptual plan submitted by IIT KGP a detail feasibility report (FR), Technical Specification (TS) for STP of capacity 2.4 MLD Capacity has been prepared by CET, an in-house consultant of SAIL, for execution. Implementation period of the job is 24 months.

In this regard, Two Work Orders have been issued for laying of Drainage Network and Construction of STP at financial outlays of Rs. 4.40 crores and Rs. 6.68 crores respectively. The Job of installing the drainage network is in final stages of completion.

Meanwhile, individual septic tanks followed by soaking pits have been provided in all quarters and office locations.

3 nos. of ETPs (Oil and Grease catch traps) have been provided at mechanical workshops and equipment washing junctions in the adjoining 5.10 sq. miles ML for collection and treatment of workshop effluent.

x. **Pre-placement medical examination and periodical medical examination of the workers engaged in the project shall be carried out and records maintained. For the purpose, schedule of health examination of the workers should be drawn and followed accordingly.**

Compliance:

All newly appointed workers undergo a comprehensive medical examination (Pre-Employment Medical Examination) and subsequently a Periodical Medical Examination (PME) at regular intervals. All workers undergo a PME every 5 years; however, for workers whose age is >45 years the PME is done every 3 years. All contractual workers also undergo medical examination. The findings are maintained in each worker's individual medical record maintained throughout his service. These records are manually maintained and also computerized. The above tests are carried out at the Bolani Mines Hospital. A three-tier health monitoring program is in vogue the hospital. The mine's hospital has an Occupational Health Department O.P.D. run by Occupational Health Physician. The mine hospital is a 50 bedded multi-specialty hospital with facilities to handle major and minor surgeries and a casualty department.

xi. **Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.**

Compliance:

Most of the labours engaged in the construction activity belong to nearby villages. However, provisions have also been made, as and when required, for the housing of construction labour in adjacent to the construction sites in non-forest lands on temporary basis till completion of the project. Infrastructure and facilities, available at Bolani such as safe drinking water, medical health care etc. are enjoyed by the labors.

xii. **Regular monitoring of ground water level and quality should be carried out in and around the mines lease by establishing a network of existing wells and installing new piezometers during the operation. The periodic monitoring (at least four times in a year: Pre- monsoon (April-May) monsoon (august), Post**

monsoon (November) and winter (January) ; once in each season) shall be carried out in consultation with the State Ground Water Board / Central Ground Water Authority and the data thus collected may be sent regularly to Ministry of Environment and Forests and its Regional Office, Bhubaneswar, Central Ground Water Authority and Regional Director, Central Ground Water Board. If at any stage, it is observed that the groundwater table is getting depleted due to the mining activity; necessary corrective measures shall be carried out.

Compliance:

As per present practice, monitoring of ground water quality and levels of existing wells inside the ML area is done quarterly in the existing wells of Bolani and Balagoda Village and data is submitted along with compliance reports.

xiii. **The project proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of surface water, if any, required for the project.**

Compliance:

Water Drawl agreement for extraction of the 7 cusec (for envisaged level of production) of surface water from Karo River and tributaries has been executed with Executive Engineer, Baitarini Division, Salapada vide agreement no.662 Dt.23.02.2023, with validity of 01(one) year.

Presently the average consumption is well within the permitted quantity.

xiv. **The Company shall submit within 3 months their policy towards Corporate Environment Responsibility which should inter- alia provide for (i) Standard operating process/ process to bring into focus any infringement/ deviation/ violation of the environmental or forest norms/ conditions, (ii) Hierarchical system or Administrative order of the company to deal with the environmental issues and for ensuring compliance with the EC conditions and (iii) System of reporting of non- compliances / violations of environmental norms to the Board of Directors of the company and/or shareholders or stakeholders.**

Compliance:

The Policy towards Corporate Environmental Responsibility including details of set up have been submitted to Ministry vide our letter no RMD/ BOM/E&L/5.1sqMiles/EC/2013/91 dt 18-03-2013. Necessary steps are being taken for implementation of the same (common for the adjoining 5.10 sq. miles ML of SAIL) regularly.

SAIL has always been environmentally conscious and responsible company. Way back in 1996, it was a pioneer in adopting a Corporate Environmental Policy. In view of the rapid technological advancements in the past two decades and growing stringency of regulatory requirements, SAIL has revised its Environmental Policy and made "Corporate Environmental Vision, Policy and Responsibility", which is under

implementation and copy of the same had been attached in EC compliance report for the period of Oct'15 to Mar'16 submitted vide letter no. BOM/ENV/5.1/HD-3600 Dt.30.06.2016

xv. **At least four ambient air quality-monitoring stations should be established in the core zone as well as in the buffer zone for RSPM (Particulate matter with size less than 10 micron i.e. PM10) and NOx monitoring. Location of the stations should be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets and frequency of monitoring should be undertaken in consultation with the State Pollution Control Board**.

Compliance:

The core zone of 6.90 sq. miles ML falls in the buffer zone of adjoining 5.10 sq. miles ML and vice versa, both being the Mining Leases of same user agency i.e., M/s SAIL. Hence, the 1(One) nos. of Continuous Ambient Air quality monitoring Stations installed in buffer zone of 5.10 sq. miles lease fall in the core zone of 6.90 sq. miles ML and 2 (two) nos. CAAQM Stations installed in core zone of 5.10 sq. miles lease fall in the buffer zone of 6.90 sq. miles ML. The details of the Environmental parameter monitoring stations are provided in compliance status of Special Condition No. x (A) above.

The AAQ monitoring reports for the period Jul'23-Dec'23 are enclosed as **Annexure – I(A).**

xvi. Data on Ambient Air Quality [RSPM (PM_{10}) and NOx] should regularly be submitted to the Ministry including its Regional Office, Bhubaneswar and the State Pollution Control Board/ Central Pollution Control Board once in six months.

Compliance:

At present, the data on ambient air quality (RSPM, SO_2, NOx & CO) is regularly submitted on six-monthly basis along with the compliance status reports.

After the installation of CAAQMS system, the data on ambient air quality (PM_{10}, $PM_{2.5}$, SO_2, NOx & CO) will be automatically uploaded to OSPCB server. The AAQ monitoring reports for the period Jul'23-Dec'23 are enclosed as **Annexure – I(A).**

xvii. The top soil, if any, shall temporarily be stored at earmarked site only and should not be kept unutilized for a period more than three years. The topsoil should be used for land reclamation and plantation.

Compliance:

Top soil generated during Jul'23-Dec'23 was utilized for plantation and Nursery development.

xviii. **Measures should be taken for control of noise levels below 85dBA in the work environment. Workers engaged in operations of HEMM, etc. should be provide with ear plugs/ muffs.**

Compliance:

Critical areas responsible for noise generation beyond the norms are duly identified. Accordingly, site-specific measures pertinent to the Noise generation source will provided to minimize the noise exposure levels on resumption of mining activity. Some of the Noise control measures implemented by BOM are as follows:

a) To avoid the noise generation from blown-out holes in blasting, proper stemming is carried out under the supervision of a qualified Foreman.
b) To control unnecessary noise generation from the HEMMs, periodical maintenance of the equipment is carried out. Further, all HEMM operator cabins are sound proof.
c) Engine testing cabins are fully isolated to avoid noise leakage from testing procedures.
d) All control panels of the ore processing plant and Loading Plant are placed in noise isolated cabins.
e) All working personnel are provided with Noise Plugs as a part of standard PPE kit and Noise Isolation Earmuffs are provided to all personnel working near noise prone areas.
f) Further, to minimize the exposure of personnel deployed near Noise generating Sources, the personnel are rotated every Four hours.

Additionally, regular Noise level monitoring is carried out at the identified critical areas. The noise monitoring report for the period of Jul'23-Dec'23 is enclosed **in Annexure – I(B).**

xix. **Industrial waste water (workshop and waste water from mine) should be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19th May, 1993 and 31st December, 1993 or as amended from time to time. Oil and grease trap should be installed before discharge of workshop effluents.**

Compliance:

All vehicle and equipment maintenance will be carried out at designated workshops and washing bays provided with 03(Three) nos. of ETPs (Oil and Grease catch traps) to collect and treat workshop effluent. The quality of the treated water conforms to the prescribed standards. The treated water is used for vehicle and floor washing.

xx. **A separate environmental management cell with suitable qualified personnel should be set up under the control of a Senior Executive, who will report directly to the Head of the Organization.**

Compliance:

An Environment Management Section (EMS) is established as a separate section under the Mines Department under direct control of Chief General Manager (Mines). The details of constitution is as follows :

1. General Manager (Env & Lease)
2. Manager (Env & Lease)
3. Mining Mate (Env & Lease)

General Manager (Environment & Lease) co-ordinates the day to day activities pertaining to communications related to statutory clearances and compliances of Environment, Forest & Lease Renewal issues and reports to the General Manager (Mining) and Mines Manager who being statutory head regularly reviews the compliances of various Stipulations, Acts and Regulations pertaining to Environmental Matters of Mines and reports to Head of Mines. One (1) Manager (Environment & Lease) is posted in the EMC who expedites initiation of proposals as per Environmental Management Plan and coordinates field implementation of the jobs. A Mining Mate (Environment & Lease) assists him in the day to day activities. Necessary measures are also being taken up for capacity building of the Environment Management Cell by appointment of required qualified personnel as planned in EMP

Further, an Environmental Management System (EMS) has been implemented at Bolani Ore Mines which has been certified as per ISO 14001:2015 Standard. The EMS of BOM covers Mining activities, Maintenance activities, Mineral Beneficiation and all other allied activities. As per the EMS, a senior executive of the organization in the level of GM(Elect.), I/c Projects functions as Management Representative and is responsible for strict implementation.

xxi. The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to the Ministry and its Regional Office located at Bhubaneswar.

Compliance:

The fund earmarked for environmental protection measures is kept in separate account and is not diverted for other purpose. An amount of **Rs. 423.66** lakhs has been booked for environment & forest protection measures till date against an allocated budget of Rs.424.34 lakhs for the period of 2023-24.

xxii. Project authorities should inform to the Regional Office, Bhubaneswar regarding date of financial closures and final approval of the project by concerned authorities and date of start of land development work.

Compliance:

Bolani Ores Mines will inform Regional Office, Bhubaneswar regarding date of financial closures and final approval of the project by concerned authorities and date of start of land development work as soon as the mining commences.

xxiii. Regional office of this Ministry located at Bhubaneswar shall monitor compliance of stipulated conditions. The project authorities should extend full

co-operation to the officer(s) of the Regional Office by furnishing requisite date/ information/ monitoring reports.

Compliance:

BOM has and always will extend wholehearted co-operation to the inspecting authorities by furnishing requisite date/ information/ monitoring reports and minutely examining the scope of further actions for improvement.

xxiv. **The project proponent shall submit six monthly report on the status of the compliance of the stipulated environmental clearance conditions including results of monitored data (both in hard copies as well as by e-mail) to the Ministry of Environmental and Forests, its Regional Office, Bhubaneswar, the respective Zonal office of Central Pollution Control Board and State Pollution Control Board. The proponent shall upload the status of compliance of the environmental clearance conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of the Ministry of Environment and Forest, Bhubaneswar, the respective Zonal Officer of Central Pollution Control Board and the State Pollution Control Board.**

Compliance:

Six monthly compliance reports on the status of implementation of environmental safeguards are being submitted to MoEF&CC, New Delhi, Regional Office – MoEF&CC, Bhubaneshwar, Central Pollution Control Board and State Pollution Control Board. Copy of the compliance report inclusive of Environmental Parameters Monitoring data is being uploaded to the SAIL web site i.e. www.sail.co.in

xxv. **A copy of clearance letter shall be sent by the proponent to concerned Panchayat, Zila Parisad/Municipal Corporation, Urban Local Body and the local NGO, if any, from whom suggestion/ representation has been received while processing the proposal. The clearance letter shall also be put on the website of the Company by the proponent, The State Pollution Control Board should display a copy of the clearance letter at the Regional Office, District Industry Center and Collector's office/ Tehsildar's office for 30 days.**

Compliance:

Copies of clearance letter were given to concerned local bodies, from whom suggestion/representation has been received while processing the proposal.

xxvi. **The State Pollution Control Board should display a copy of the clearance letter at the Regional Office, District Industry Centre and Collector's Office/ Tehsildar's Office for 30 days.**

Compliance:

Noted for Compliance.

xxvii. **The environmental statement for each financial year ending 31st march in Form-V as is mandated to be submitted by the project proponent to the**

concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of the compliance of environmental clearance conditions and shall also be sent to the respective Regional Office of the Ministry of Environment and Forests, Bhubaneswar by e-mail.

Compliance:

Environment Statement for 2021-22 of Bolani Ores Mines was submitted vide our letter no. BOM/ENV/STMT/HD-73 Dt.05.09.2022. The environment statement is uploaded on the website of the SAIL along with the status of the compliance of environmental clearance conditions and is also sent to the respective Regional Office of the Ministry of Environment and Forests, Bhubaneswar by e-mail.

xxviii. **The project authorities should advertise at least in two local newspapers of the District or State in which the project is located and widely circulated, one of which shall be in the vernacular language of the locality concerned, within 7 days of the issue of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution Control Boards and also at web site of the Ministry of Environment and Forests at http://envfor.nic.in and a copy of the same should be forwarded to the Regional Office of the this Ministry located Bhubaneswar.**

Compliance:

Advertisements regarding grant of environmental clearance was published in Odiya daily SAMBADA, Bhubaneswar & Sambalpur Edition on date 27-12-2012 and Business Standard on date 27-12-2012.

8. **The Ministry or any other competent authority may alter /modify the above conditions or stipulate any further condition in the interest of environment protection.**

Compliance:

Duly noted. The conditions will be complied as and when stipulated.

9. **Failure to comply with any of the condition mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986.**

Compliance:

Noted.

10. **The above condition will be enforced inter-alia, under the provisions of the Water (prevention & Control of Pollution) Act, 1974, the Air (prevention and control of pollution) Act, 1981, the Environment (protection) Act, 1986 and public liability Insurance Act, 1991 along with their amendments and rules made there under.**

Compliance:

Noted.

11. Any appeal against this environmental clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days, as prescribed under section-16 of the National Green Tribunal Act 2010

Compliance:

Noted.

01/02/24

Chief General Manager (Mines)
Bolani Ores Mines
RSP - SAIL

जयदेव चट्टोपाध्याय/Joydev Chattopadhyay
मुख्य महाप्रबंधक (खान) / Chief General Manager (Mines)
सेल-आर.एस.पी-बोलानी अयस्क खदान
SAIL-RSP-Bolani Ores Mines
बोलानी-758037, क्योंझर, ओडीसा
Bolani-758 037, Keonjhar, Odisha

ANNEXURE - I(A)
AMBIENT AIR QUALITY

Real Time Data Acquisition And Monitoring

Site Name: Bolani Iron Ore Mines (6.9 SQ. Miles) Of M/s Steel Authority Of India Ltd.

Report: Custom Report

From Date: 2023/07/01 00:00:00 To Date : 2024/01/01 00:00:00

Description	AAQMS_1_CISF_Colony-PM10_U	AAQMS_1_CISF_Colony-PM2.5_U
Prescribed Standards	0 - 100	0 - 60
Maximum Data	195.85	235.69
Minimum Data	0.0	0.0
Arithmetic Mean	49.55	27.96
Median	52.25	22.11
Standard Deviation	23.89	28.68
Maximum Value At Time	2023-08-23	2023-08-25
Minimum Value At Time	2023-08-26	2023-09-19
Valid Data Points	176	176
Total Data Points	185	185
Data Availability %	95.14%	95.14%

	Time	AAQMS_1_CISF_Colony-PM10_U	AAQMS_1_CISF_Colony-PM2.5_U
Sl No.			
1	2023-07-01	31.75	21.56
2	2023-07-02	31.94	21.28
3	2023-07-03	31.69	21.21
4	2023-07-04	31.39	21.11
5	2023-07-05	31.48	21.33
6	2023-07-06	31.39	20.92
7	2023-07-07	31.56	21.03
8	2023-07-08	31.83	20.81
9	2023-07-09	31.63	20.30
10	2023-07-10	31.61	20.10
11	2023-07-11	31.47	20.10
12	2023-07-12	31.14	20.10
13	2023-07-13	31.60	20.10
14	2023-07-14	31.34	20.10

Sl No.	Time	AAQMS_1_CISF_Colony-PM10_U	AAQMS_1_CISF_Colony-PM2.5_U
15	2023-07-15	31.42	20.10
16	2023-07-16	31.14	20.10
17	2023-07-17	31.66	20.10
18	2023-07-18	34.71	20.10
19	2023-07-19	38.76	20.10
20	2023-07-20	35.80	14.24
21	2023-07-21	35.65	4.59
22	2023-07-22	36.01	10.58
23	2023-07-23	38.03	10.58
24	2023-07-24	41.67	10.58
25	2023-07-25	40.37	10.58
26	2023-07-26	36.97	21.53
27	2023-07-27	35.93	21.74
28	2023-07-28	40.12	21.58
29	2023-07-29	44.40	21.33
30	2023-07-30	36.14	21.53
31	2023-07-31	39.43	21.62
32	2023-08-01	36.49	21.75
33	2023-08-02	35.48	21.19
34	2023-08-03	32.60	20.99
35	2023-08-04	32.09	21.36
36	2023-08-05	37.52	21.39
37	2023-08-06	45.53	22.29
38	2023-08-07	51.26	21.84
39	2023-08-08	58.03	21.70
40	2023-08-09	63.10	22.23

Sl No.	Time	AAQMS_1_CISF_Colony-PM10_U	AAQMS_1_CISF_Colony-PM2.5_U
41	2023-08-10	63.62	22.01
42	2023-08-11	59.13	22.09
43	2023-08-12	53.82	21.50
44	2023-08-13	52.10	21.32
45	2023-08-14	53.06	21.76
46	2023-08-15	49.82	22.03
47	2023-08-16	55.46	22.38
48	2023-08-17	40.23	26.48
49	2023-08-18	43.42	21.96
50	2023-08-19	NA	NA
51	2023-08-20	NA	NA
52	2023-08-21	NA	NA
53	2023-08-22	NA	NA
54	2023-08-23	195.85	22.90
55	2023-08-24	31.66	168.44
56	2023-08-25	47.50	235.69
57	2023-08-26	0.00	198.36
58	2023-08-27	0.00	131.87
59	2023-08-28	35.20	77.81
60	2023-08-29	60.25	22.27
61	2023-08-30	60.24	27.41
62	2023-08-31	31.56	21.63
63	2023-09-01	30.13	21.57
64	2023-09-02	30.13	22.00
65	2023-09-03	27.06	20.79
66	2023-09-04	30.13	21.71

Sl No.	Time	AAQMS_1_CISF_Colony-PM10_U	AAQMS_1_CISF_Colony-PM2.5_U
67	2023-09-05	30.13	21.17
68	2023-09-06	30.13	21.06
69	2023-09-07	30.13	21.09
70	2023-09-08	30.13	20.86
71	2023-09-09	NA	NA
72	2023-09-10	65.25	22.35
73	2023-09-11	65.25	22.35
74	2023-09-12	65.25	21.34
75	2023-09-13	110.70	23.70
76	2023-09-14	70.70	142.20
77	2023-09-15	46.85	109.41
78	2023-09-16	65.25	31.14
79	2023-09-17	65.25	31.14
80	2023-09-18	31.73	15.14
81	2023-09-19	0.00	0.00
82	2023-09-20	0.00	0.00
83	2023-09-21	0.00	0.00
84	2023-09-22	0.00	13.12
85	2023-09-23	23.21	18.91
86	2023-09-24	52.25	22.75
87	2023-09-25	52.25	22.19
88	2023-09-26	52.25	22.65
89	2023-09-27	52.25	23.18
90	2023-09-28	52.25	23.55
91	2023-09-29	52.25	23.70
92	2023-09-30	52.25	22.33

	Time	AAQMS_1_CISF_Colony-PM10_U	AAQMS_1_CISF_Colony-PM2.5_U
Sl No.			
93	2023-10-01	52.25	22.13
94	2023-10-02	50.34	24.26
95	2023-10-03	52.25	22.56
96	2023-10-04	52.25	21.92
97	2023-10-05	52.25	23.17
98	2023-10-06	52.25	22.83
99	2023-10-07	52.25	22.87
100	2023-10-08	52.25	22.47
101	2023-10-09	52.25	23.24
102	2023-10-10	52.25	23.70
103	2023-10-11	52.25	23.49
104	2023-10-12	52.25	22.66
105	2023-10-13	52.25	22.35
106	2023-10-14	52.25	25.83
107	2023-10-15	52.25	25.01
108	2023-10-16	52.25	31.17
109	2023-10-17	52.25	25.18
110	2023-10-18	52.25	25.71
111	2023-10-19	58.88	23.70
112	2023-10-20	65.25	22.87
113	2023-10-21	65.25	22.48
114	2023-10-22	65.25	22.75
115	2023-10-23	65.25	23.45
116	2023-10-24	65.25	24.00
117	2023-10-25	65.25	23.70
118	2023-10-26	65.25	23.63

	Time	AAQMS_1_CISF_Colony-PM10_U	AAQMS_1_CISF_Colony-PM2.5_U
Sl No.			
119	2023-10-27	65.25	23.30
120	2023-10-28	65.25	23.28
121	2023-10-29	65.25	23.74
122	2023-10-30	65.25	23.48
123	2023-10-31	49.35	18.19
124	2023-11-01	20.46	12.53
125	2023-11-02	19.90	11.72
126	2023-11-03	19.69	11.25
127	2023-11-04	19.42	10.76
128	2023-11-05	18.41	10.73
129	2023-11-06	18.36	11.57
130	2023-11-07	17.87	11.16
131	2023-11-08	18.54	10.58
132	2023-11-09	18.17	10.54
133	2023-11-10	19.07	11.37
134	2023-11-11	19.30	12.21
135	2023-11-12	19.42	12.69
136	2023-11-13	49.65	13.22
137	2023-11-14	80.93	10.46
138	2023-11-15	101.44	9.65
139	2023-11-16	104.88	17.06
140	2023-11-17	68.51	12.63
141	2023-11-18	40.42	12.42
142	2023-11-19	65.34	11.94
143	2023-11-20	60.70	12.01
144	2023-11-21	59.75	12.82

Sl No.	Time	AAQMS_1_CISF_Colony-PM10_U	AAQMS_1_CISF_Colony-PM2.5_U
145	2023-11-22	74.75	12.10
146	2023-11-23	78.55	40.60
147	2023-11-24	83.61	45.90
148	2023-11-25	91.17	49.08
149	2023-11-26	80.85	44.31
150	2023-11-27	70.36	37.43
151	2023-11-28	68.49	36.11
152	2023-11-29	63.99	32.14
153	2023-11-30	73.15	34.04
154	2023-12-01	71.79	37.88
155	2023-12-02	83.66	44.39
156	2023-12-03	81.89	38.90
157	2023-12-04	73.59	40.22
158	2023-12-05	33.39	19.22
159	2023-12-06	34.63	17.04
160	2023-12-07	24.02	11.59
161	2023-12-08	NA	NA
162	2023-12-09	NA	NA
163	2023-12-10	NA	NA
164	2023-12-11	37.84	24.09
165	2023-12-12	53.03	27.29
166	2023-12-13	61.95	30.51
167	2023-12-14	50.48	28.18
168	2023-12-15	62.34	28.80
169	2023-12-16	56.10	26.38
170	2023-12-17	58.48	29.13

Sl No.	Time	AAQMS_1_CISF_Colony-PM10_U	AAQMS_1_CISF_Colony-PM2.5_U
171	2023-12-18	66.22	35.04
172	2023-12-19	59.51	32.21
173	2023-12-20	70.20	35.65
174	2023-12-21	68.17	39.18
175	2023-12-22	73.92	35.86
176	2023-12-23	66.59	35.73
177	2023-12-24	51.11	26.27
178	2023-12-25	56.60	27.71
179	2023-12-26	87.77	39.28
180	2023-12-27	68.68	39.13
181	2023-12-28	79.57	45.14
182	2023-12-29	81.96	45.42
183	2023-12-30	85.83	48.16
184	2023-12-31	103.52	57.84
185	2024-01-01	NA	NA

Real Time Data Acquisition And Monitoring

Site Name: Bolani Iron Ore Mines (6.9 SQ. Miles) Of M/s Steel Authority Of India Ltd.

Report: Custom Report

From Date: 2023/07/01 00:00:00 To Date : 2024/01/01 00:00:00

Description	AAQMS_2_Campus_Store-PM10_U	AAQMS_2_Campus_Store-PM2.5_U	AAQMS_2_Campus_Store-SO2_U	AAQMS_2_Campus_Store-NOx_U	AAQMS_2_Campus_Store-CO_U
Prescribed Standards	0 - 100	0 - 60	0 - 80	0 - 80	0 - 4
Maximum Data	94.72	36.05	44.12	85.72	1.06
Minimum Data	24.27	6.59	15.15	10.38	0.1
Arithmetic Mean	42.67	14.05	19.26	19.94	0.76
Median	29.82	12.17	17.81	18.66	0.86
Standard Deviation	19.05	5.79	5.03	8.96	0.2
Maximum Value At Time	2023-11-13	2023-11-04	2023-12-31	2023-09-25	2023-09-07
Minimum Value At Time	2023-09-14	2023-07-21	2023-11-04	2023-11-06	2023-10-14
Valid Data Points	148	148	148	148	145
Total Data Points	185	185	185	185	185
Data Availability %	80.0%	80.0%	80.0%	80.0%	78.38%

Sl No.	Time	AAQMS_2_Campus_Store-PM10_U	AAQMS_2_Campus_Store-PM2.5_U	AAQMS_2_Campus_Store-SO2_U	AAQMS_2_Campus_Store-NOx_U	AAQMS_2_Campus_Store-CO_U
1	2023-07-01	30.95	9.43	18.65	18.19	0.59
2	2023-07-02	40.24	10.75	19.55	18.67	0.59
3	2023-07-03	29.77	10.51	18.90	18.66	0.70
4	2023-07-04	25.83	18.55	17.69	18.28	0.67
5	2023-07-05	29.69	10.18	17.05	18.66	0.59
6	2023-07-06	28.35	10.62	16.79	18.22	0.59
7	2023-07-07	27.70	8.20	18.41	18.66	0.59
8	2023-07-08	27.04	7.23	16.96	18.66	0.60
9	2023-07-09	28.02	8.28	16.71	18.66	0.79
10	2023-07-10	29.33	10.04	17.28	18.66	0.79
11	2023-07-11	30.16	10.30	17.91	18.65	0.79
12	2023-07-12	28.95	8.64	16.95	18.66	0.79
13	2023-07-13	28.49	8.78	16.83	18.61	0.79

	Time	AAQMS_2_Campus_Store-PM10_U	AAQMS_2_Campus_Store-PM2.5_U	AAQMS_2_Campus_Store-SO2_U	AAQMS_2_Campus_Store-NOx_U	AAQMS_2_Campus_Store-CO_U
Sl No.						
14	2023-07-14	28.62	12.03	17.23	18.66	0.79
15	2023-07-15	27.87	10.17	16.84	18.66	0.79
16	2023-07-16	27.78	8.67	17.77	18.66	0.79
17	2023-07-17	27.56	7.81	17.78	18.66	0.79
18	2023-07-18	27.90	7.81	17.61	18.66	0.83
19	2023-07-19	28.50	7.51	16.96	18.22	0.86
20	2023-07-20	27.01	7.09	17.34	18.66	0.86
21	2023-07-21	27.27	6.59	16.95	18.66	0.86
22	2023-07-22	27.33	6.89	17.32	18.66	0.86
23	2023-07-23	26.31	7.26	17.69	18.22	0.86
24	2023-07-24	27.66	8.06	17.49	18.66	0.86
25	2023-07-25	27.88	7.77	17.14	17.79	0.86
26	2023-07-26	26.57	6.91	17.71	18.66	0.87
27	2023-07-27	27.41	6.97	17.57	18.18	0.87
28	2023-07-28	28.33	7.88	17.97	18.59	0.86
29	2023-07-29	27.01	9.22	17.51	18.66	0.86
30	2023-07-30	27.10	8.21	17.54	18.66	0.86
31	2023-07-31	26.62	9.24	17.04	18.66	0.86
32	2023-08-01	27.39	8.13	17.58	18.66	0.86
33	2023-08-02	27.40	7.86	17.66	18.66	0.86
34	2023-08-03	27.49	6.86	17.28	18.66	0.86
35	2023-08-04	26.90	6.98	17.20	18.66	0.86
36	2023-08-05	27.92	7.84	17.25	18.66	0.87
37	2023-08-06	28.74	9.76	17.39	18.66	0.88
38	2023-08-07	28.22	11.48	17.76	18.66	0.86
39	2023-08-08	29.62	12.72	18.16	18.66	0.86
40	2023-08-09	30.15	14.45	17.64	18.66	0.86
41	2023-08-10	31.41	15.64	17.81	18.24	0.88
42	2023-08-11	28.91	21.30	18.05	18.66	0.86

Sl No.	Time	AAQMS_2_Campus_Store-PM10_U	AAQMS_2_Campus_Store-PM2.5_U	AAQMS_2_Campus_Store-SO2_U	AAQMS_2_Campus_Store-NOx_U	AAQMS_2_Campus_Store-CO_U
43	2023-08-12	29.13	13.46	17.61	18.66	0.86
44	2023-08-13	28.45	13.27	18.04	18.66	0.86
45	2023-08-14	29.50	13.46	18.06	18.66	0.86
46	2023-08-15	29.26	13.25	18.31	18.66	0.86
47	2023-08-16	29.30	13.87	18.77	18.66	0.88
48	2023-08-17	28.29	9.64	17.36	18.24	0.87
49	2023-08-18	27.42	12.53	17.63	18.66	0.89
50	2023-08-19	NA	NA	NA	NA	NA
51	2023-08-20	NA	NA	NA	NA	NA
52	2023-08-21	NA	NA	NA	NA	NA
53	2023-08-22	NA	NA	NA	NA	NA
54	2023-08-23	27.37	11.98	16.95	18.65	0.86
55	2023-08-24	27.60	9.91	19.04	18.65	0.94
56	2023-08-25	28.96	11.79	18.24	18.66	1.00
57	2023-08-26	30.41	13.67	18.16	18.66	1.00
58	2023-08-27	32.10	17.66	18.09	18.66	1.00
59	2023-08-28	32.91	18.52	18.82	18.66	1.00
60	2023-08-29	34.16	20.10	19.28	18.66	1.00
61	2023-08-30	34.30	18.14	18.07	18.66	1.00
62	2023-08-31	31.30	15.11	18.64	18.66	1.00
63	2023-09-01	32.70	16.84	18.02	18.66	1.00
64	2023-09-02	31.62	17.24	18.92	18.66	1.00
65	2023-09-03	29.50	13.09	19.37	18.66	0.94
66	2023-09-04	28.13	10.86	19.32	18.66	0.92
67	2023-09-05	28.66	8.33	17.80	18.66	0.90
68	2023-09-06	28.27	7.84	18.70	18.66	1.05
69	2023-09-07	28.05	8.41	18.23	18.66	1.06
70	2023-09-08	27.40	7.78	17.21	17.73	1.05
71	2023-09-09	NA	NA	NA	NA	NA

Sl No.	Time	AAQMS_2_Campus_Store-PM10_U	AAQMS_2_Campus_Store-PM2.5_U	AAQMS_2_Campus_Store-SO2_U	AAQMS_2_Campus_Store-NOx_U	AAQMS_2_Campus_Store-CO_U
72	2023-09-10	27.89	13.98	19.33	18.66	0.87
73	2023-09-11	29.88	13.55	18.84	18.66	0.90
74	2023-09-12	30.55	11.82	18.38	18.66	0.90
75	2023-09-13	28.58	11.33	18.40	18.23	0.89
76	2023-09-14	24.27	15.34	17.05	18.66	0.86
77	2023-09-15	27.32	9.68	17.57	18.66	0.86
78	2023-09-16	28.58	11.87	18.57	18.66	0.86
79	2023-09-17	27.38	14.07	18.12	18.66	0.86
80	2023-09-18	28.84	13.44	17.47	18.66	0.86
81	2023-09-19	28.74	12.31	17.39	18.17	0.86
82	2023-09-20	27.26	10.75	17.20	18.25	0.90
83	2023-09-21	28.04	11.16	18.18	18.66	0.86
84	2023-09-22	27.60	11.13	16.96	18.65	0.86
85	2023-09-23	27.57	10.73	16.82	57.40	0.86
86	2023-09-24	28.03	12.68	17.46	64.43	0.86
87	2023-09-25	28.34	15.23	15.51	85.72	0.86
88	2023-09-26	30.74	16.98	17.29	35.60	0.86
89	2023-09-27	28.23	14.95	17.04	18.57	0.86
90	2023-09-28	27.45	14.68	17.13	18.60	0.86
91	2023-09-29	29.86	17.14	18.32	18.82	0.86
92	2023-09-30	28.66	11.95	17.39	18.74	0.86
93	2023-10-01	27.61	10.21	18.03	18.55	0.86
94	2023-10-02	27.91	11.20	18.19	18.45	0.86
95	2023-10-03	28.09	10.03	18.26	18.66	0.86
96	2023-10-04	27.65	10.39	17.76	18.25	0.86
97	2023-10-05	36.70	13.17	17.93	18.59	0.86
98	2023-10-06	34.14	11.85	17.63	19.09	0.86
99	2023-10-07	40.36	15.09	17.72	18.64	0.75
100	2023-10-08	48.53	17.07	18.52	18.64	0.64

	Time	AAQMS_2_Campus_Store-PM10_U	AAQMS_2_Campus_Store-PM2.5_U	AAQMS_2_Campus_Store-SO2_U	AAQMS_2_Campus_Store-NOx_U	AAQMS_2_Campus_Store-CO_U
Sl No.						
101	2023-10-09	65.08	21.61	18.96	18.58	0.64
102	2023-10-10	67.45	21.65	18.57	18.65	0.64
103	2023-10-11	63.72	20.65	18.25	18.67	0.65
104	2023-10-12	63.34	20.27	17.82	18.68	0.67
105	2023-10-13	54.71	17.62	17.40	18.45	0.37
106	2023-10-14	71.58	22.68	18.65	18.64	0.10
107	2023-10-15	69.85	21.74	18.49	18.70	1.03
108	2023-10-16	69.48	21.41	19.27	18.66	1.03
109	2023-10-17	68.21	21.88	18.86	18.66	0.98
110	2023-10-18	64.86	22.37	18.53	18.66	0.95
111	2023-10-19	68.01	23.02	17.74	18.24	0.90
112	2023-10-20	60.77	26.65	17.75	18.23	0.61
113	2023-10-21	55.30	28.32	18.17	18.61	0.73
114	2023-10-22	59.54	19.58	18.06	18.66	0.76
115	2023-10-23	61.99	20.88	18.24	18.66	0.78
116	2023-10-24	56.45	19.93	18.60	18.65	0.78
117	2023-10-25	58.84	19.43	17.77	18.66	0.78
118	2023-10-26	68.21	22.25	18.55	18.66	0.68
119	2023-10-27	63.68	21.18	18.37	18.66	0.66
120	2023-10-28	61.38	19.85	18.92	18.66	0.63
121	2023-10-29	57.90	19.69	17.56	18.66	0.59
122	2023-10-30	65.13	21.43	18.63	18.66	0.59
123	2023-10-31	67.11	22.95	18.80	18.66	0.59
124	2023-11-01	64.59	20.71	18.08	18.21	0.59
125	2023-11-02	60.90	20.33	18.57	18.65	0.59
126	2023-11-03	57.07	18.52	17.98	18.66	0.59
127	2023-11-04	58.03	36.05	15.15	67.07	0.48
128	2023-11-05	54.66	21.73	16.47	11.14	0.35
129	2023-11-06	62.70	22.19	16.39	10.38	0.41

Sl No.	Time	AAQMS_2_Campus_Store-PM10_U	AAQMS_2_Campus_Store-PM2.5_U	AAQMS_2_Campus_Store-SO2_U	AAQMS_2_Campus_Store-NOx_U	AAQMS_2_Campus_Store-CO_U
130	2023-11-07	70.92	22.12	16.36	10.78	0.43
131	2023-11-08	75.12	24.41	16.49	10.77	0.54
132	2023-11-09	79.43	24.92	16.66	10.53	0.67
133	2023-11-10	77.38	24.14	16.60	10.72	0.96
134	2023-11-11	70.79	20.26	16.45	10.70	0.96
135	2023-11-12	76.31	20.09	16.85	10.80	0.93
136	2023-11-13	94.72	25.81	16.41	10.78	0.83
137	2023-11-14	79.18	21.94	16.32	10.79	0.61
138	2023-11-15	67.51	19.70	17.30	10.84	0.61
139	2023-11-16	63.09	18.53	16.81	10.82	0.61
140	2023-11-17	NA	NA	NA	NA	NA
141	2023-11-18	NA	NA	NA	NA	NA
142	2023-11-19	NA	NA	NA	NA	NA
143	2023-11-20	NA	NA	NA	NA	NA
144	2023-11-21	NA	NA	NA	NA	NA
145	2023-11-22	NA	NA	NA	NA	NA
146	2023-11-23	NA	NA	NA	NA	NA
147	2023-11-24	NA	NA	NA	NA	NA
148	2023-11-25	NA	NA	NA	NA	NA
149	2023-11-26	NA	NA	NA	NA	NA
150	2023-11-27	NA	NA	NA	NA	NA
151	2023-11-28	NA	NA	NA	NA	NA
152	2023-11-29	NA	NA	NA	NA	NA
153	2023-11-30	NA	NA	NA	NA	NA
154	2023-12-01	NA	NA	NA	NA	NA
155	2023-12-02	NA	NA	NA	NA	NA
156	2023-12-03	NA	NA	NA	NA	NA
157	2023-12-04	NA	NA	NA	NA	NA
158	2023-12-05	NA	NA	NA	NA	NA

Sl No.	Time	AAQMS_2_Campus_Store-PM10_U	AAQMS_2_Campus_Store-PM2.5_U	AAQMS_2_Campus_Store-SO2_U	AAQMS_2_Campus_Store-NOx_U	AAQMS_2_Campus_Store-CO_U
159	2023-12-06	NA	NA	NA	NA	NA
160	2023-12-07	NA	NA	NA	NA	NA
161	2023-12-08	NA	NA	NA	NA	NA
162	2023-12-09	NA	NA	NA	NA	NA
163	2023-12-10	NA	NA	NA	NA	NA
164	2023-12-11	NA	NA	NA	NA	NA
165	2023-12-12	NA	NA	NA	NA	NA
166	2023-12-13	NA	NA	NA	NA	NA
167	2023-12-14	NA	NA	NA	NA	NA
168	2023-12-15	NA	NA	NA	NA	NA
169	2023-12-16	NA	NA	NA	NA	NA
170	2023-12-17	NA	NA	NA	NA	NA
171	2023-12-18	64.59	8.89	28.06	22.40	NA
172	2023-12-19	59.31	9.13	28.03	23.00	NA
173	2023-12-20	62.88	8.78	26.45	23.00	NA
174	2023-12-21	62.74	8.86	31.11	22.97	0.14
175	2023-12-22	63.78	8.79	37.24	23.10	0.27
176	2023-12-23	67.18	9.03	38.16	22.95	0.25
177	2023-12-24	50.45	8.92	25.68	23.06	0.28
178	2023-12-25	56.54	9.03	28.04	22.94	0.22
179	2023-12-26	81.42	10.88	31.04	35.33	0.46
180	2023-12-27	73.14	8.81	33.30	26.30	0.28
181	2023-12-28	79.52	10.05	38.82	22.96	0.30
182	2023-12-29	78.25	9.54	36.44	23.12	0.37
183	2023-12-30	80.71	9.54	42.78	23.11	0.38
184	2023-12-31	86.68	9.54	44.12	23.03	0.41
185	2024-01-01	NA	NA	NA	NA	NA

Real Time Data Acquisition And Monitoring

Site Name: Bolani Iron Ore Mines (6.9 SQ. Miles) Of M/s Steel Authority Of India Ltd.

Report: Custom Report

From Date: 2023/07/01 00:00:00 To Date : 2024/01/01 00:00:00

Description	AAQMS_3_JNRC-PM10_U	AAQMS_3_JNRC-PM2.5_U
Prescribed Standards	0 - 100	0 - 60
Maximum Data	364.77	69.15
Minimum Data	23.2	13.6
Arithmetic Mean	61.12	29.44
Median	52.64	27.54
Standard Deviation	37.89	13.48
Maximum Value At Time	2023-12-24	2023-12-31
Minimum Value At Time	2023-07-06	2023-08-03
Valid Data Points	176	176
Total Data Points	185	185
Data Availability %	95.14%	95.14%

	Time	AAQMS_3_JNRC-PM10_U	AAQMS_3_JNRC-PM2.5_U
Sl No.			
1	2023-07-01	31.54	27.54
2	2023-07-02	35.49	27.54
3	2023-07-03	34.05	27.54
4	2023-07-04	31.19	27.54
5	2023-07-05	29.64	27.54
6	2023-07-06	23.20	27.54
7	2023-07-07	25.03	26.14
8	2023-07-08	23.65	22.19
9	2023-07-09	34.14	20.54
10	2023-07-10	46.31	24.76
11	2023-07-11	45.80	29.54
12	2023-07-12	37.80	29.54
13	2023-07-13	39.66	29.54
14	2023-07-14	45.32	27.02

Sl No.	Time	AAQMS_3_JNRC-PM10_U	AAQMS_3_JNRC-PM2.5_U
15	2023-07-15	37.57	15.87
16	2023-07-16	35.47	15.80
17	2023-07-17	33.61	14.94
18	2023-07-18	32.02	14.86
19	2023-07-19	30.24	14.00
20	2023-07-20	28.90	13.87
21	2023-07-21	29.44	13.68
22	2023-07-22	27.54	13.69
23	2023-07-23	32.34	14.26
24	2023-07-24	34.83	14.72
25	2023-07-25	30.93	14.78
26	2023-07-26	27.36	13.73
27	2023-07-27	30.23	13.98
28	2023-07-28	35.75	14.83
29	2023-07-29	37.41	16.68
30	2023-07-30	30.08	14.75
31	2023-07-31	32.46	15.09
32	2023-08-01	28.84	14.58
33	2023-08-02	28.62	14.48
34	2023-08-03	26.20	13.60
35	2023-08-04	27.52	13.84
36	2023-08-05	29.38	14.72
37	2023-08-06	35.25	15.94
38	2023-08-07	39.72	16.65
39	2023-08-08	46.92	17.09
40	2023-08-09	51.48	17.50

Sl No.	Time	AAQMS_3_JNRC-PM10_U	AAQMS_3_JNRC-PM2.5_U
41	2023-08-10	54.81	18.42
42	2023-08-11	56.27	18.30
43	2023-08-12	56.43	25.70
44	2023-08-13	45.89	17.17
45	2023-08-14	53.01	20.79
46	2023-08-15	45.39	17.52
47	2023-08-16	58.34	20.26
48	2023-08-17	41.83	17.60
49	2023-08-18	35.71	16.20
50	2023-08-19	NA	NA
51	2023-08-20	NA	NA
52	2023-08-21	NA	NA
53	2023-08-22	NA	NA
54	2023-08-23	41.73	17.28
55	2023-08-24	35.81	16.20
56	2023-08-25	41.84	16.92
57	2023-08-26	49.71	18.43
58	2023-08-27	65.28	25.12
59	2023-08-28	67.33	26.28
60	2023-08-29	69.12	28.28
61	2023-08-30	56.78	52.04
62	2023-08-31	52.82	34.94
63	2023-09-01	59.82	21.46
64	2023-09-02	55.60	20.68
65	2023-09-03	38.92	20.77
66	2023-09-04	33.84	15.56

Sl No.	Time	AAQMS_3_JNRC-PM10_U	AAQMS_3_JNRC-PM2.5_U
67	2023-09-05	31.50	14.34
68	2023-09-06	27.88	13.72
69	2023-09-07	25.06	17.11
70	2023-09-08	31.12	14.59
71	2023-09-09	NA	NA
72	2023-09-10	39.78	16.10
73	2023-09-11	43.32	16.92
74	2023-09-12	41.10	16.73
75	2023-09-13	36.24	16.46
76	2023-09-14	26.96	13.76
77	2023-09-15	33.87	14.88
78	2023-09-16	36.08	15.19
79	2023-09-17	40.21	16.52
80	2023-09-18	40.88	16.26
81	2023-09-19	36.98	15.49
82	2023-09-20	29.78	14.96
83	2023-09-21	31.01	14.69
84	2023-09-22	33.48	16.15
85	2023-09-23	38.45	16.54
86	2023-09-24	75.38	20.14
87	2023-09-25	89.74	23.51
88	2023-09-26	63.68	21.26
89	2023-09-27	63.21	20.89
90	2023-09-28	84.39	23.09
91	2023-09-29	74.10	22.93
92	2023-09-30	56.15	19.62

Sl No.	Time	AAQMS_3_JNRC-PM10_U	AAQMS_3_JNRC-PM2.5_U
93	2023-10-01	33.65	15.01
94	2023-10-02	98.63	18.75
95	2023-10-03	77.35	35.24
96	2023-10-04	35.79	17.49
97	2023-10-05	46.74	20.84
98	2023-10-06	47.20	19.40
99	2023-10-07	58.25	20.43
100	2023-10-08	74.57	26.45
101	2023-10-09	109.57	36.05
102	2023-10-10	131.41	36.09
103	2023-10-11	131.75	35.96
104	2023-10-12	122.66	34.91
105	2023-10-13	91.20	34.14
106	2023-10-14	124.95	37.59
107	2023-10-15	117.88	33.65
108	2023-10-16	124.97	35.29
109	2023-10-17	122.01	35.92
110	2023-10-18	99.73	33.73
111	2023-10-19	81.48	36.89
112	2023-10-20	83.51	60.62
113	2023-10-21	91.47	30.62
114	2023-10-22	95.32	29.15
115	2023-10-23	97.14	33.50
116	2023-10-24	85.22	31.21
117	2023-10-25	69.13	29.14
118	2023-10-26	66.27	34.20

Sl No.	Time	AAQMS_3_JNRC-PM10_U	AAQMS_3_JNRC-PM2.5_U
119	2023-10-27	54.91	34.58
120	2023-10-28	50.57	33.70
121	2023-10-29	40.50	30.13
122	2023-10-30	41.02	32.87
123	2023-10-31	50.22	35.01
124	2023-11-01	51.30	54.84
125	2023-11-02	99.03	31.73
126	2023-11-03	80.13	28.40
127	2023-11-04	68.60	25.90
128	2023-11-05	59.35	34.70
129	2023-11-06	106.55	45.89
130	2023-11-07	104.85	35.96
131	2023-11-08	130.51	43.63
132	2023-11-09	135.46	43.59
133	2023-11-10	126.80	43.29
134	2023-11-11	127.02	40.74
135	2023-11-12	146.21	46.83
136	2023-11-13	130.50	60.74
137	2023-11-14	80.15	49.79
138	2023-11-15	64.17	41.60
139	2023-11-16	61.53	38.14
140	2023-11-17	45.98	34.05
141	2023-11-18	50.75	26.70
142	2023-11-19	54.81	29.68
143	2023-11-20	56.58	31.59
144	2023-11-21	67.69	40.15

Sl No.	Time	AAQMS_3_JNRC-PM10_U	AAQMS_3_JNRC-PM2.5_U
145	2023-11-22	72.23	45.94
146	2023-11-23	89.53	47.09
147	2023-11-24	84.28	52.72
148	2023-11-25	89.92	57.92
149	2023-11-26	74.62	53.14
150	2023-11-27	66.37	45.65
151	2023-11-28	68.15	47.51
152	2023-11-29	61.78	42.27
153	2023-11-30	49.98	45.90
154	2023-12-01	75.41	52.12
155	2023-12-02	84.32	58.19
156	2023-12-03	64.69	48.05
157	2023-12-04	72.98	46.21
158	2023-12-05	29.14	24.94
159	2023-12-06	30.97	22.34
160	2023-12-07	25.16	18.13
161	2023-12-08	NA	NA
162	2023-12-09	NA	NA
163	2023-12-10	NA	NA
164	2023-12-11	52.16	38.97
165	2023-12-12	52.46	38.30
166	2023-12-13	59.24	43.90
167	2023-12-14	50.16	37.71
168	2023-12-15	57.90	42.30
169	2023-12-16	47.78	46.61
170	2023-12-17	51.49	40.18

Sl No.	Time	AAQMS_3_JNRC-PM10_U	AAQMS_3_JNRC-PM2.5_U
171	2023-12-18	64.44	47.72
172	2023-12-19	55.60	44.33
173	2023-12-20	59.23	46.80
174	2023-12-21	58.19	42.97
175	2023-12-22	60.82	43.90
176	2023-12-23	66.99	52.47
177	2023-12-24	364.77	38.01
178	2023-12-25	195.11	40.20
179	2023-12-26	62.45	57.62
180	2023-12-27	65.25	49.51
181	2023-12-28	67.80	53.96
182	2023-12-29	69.63	54.57
183	2023-12-30	76.32	57.60
184	2023-12-31	86.44	69.15
185	2024-01-01	NA	NA

Real Time Data Acquisition And Monitoring

Site Name: Bolani Iron Ore Mines (6.9 SQ. Miles) Of M/s Steel Authority Of India Ltd.

Report: Custom Report

From Date: 2023/07/01 00:00:00 To Date : 2024/01/01 00:00:00

Description	AAQMS_4_Near_Karo_Bridge-PM10_U	AAQMS_4_Near_Karo_Bridge-PM2.5_U
Prescribed Standards	0 - 100	0 - 60
Maximum Data	289.96	264.67
Minimum Data	31.75	9.76
Arithmetic Mean	148.41	80.33
Median	142.4	80.24
Standard Deviation	56.27	38.75
Maximum Value At Time	2023-12-31	2023-08-05
Minimum Value At Time	2023-09-08	2023-08-07
Valid Data Points	176	176
Total Data Points	185	185
Data Availability %	95.14%	95.14%

	Time	AAQMS_4_Near_Karo_Bridge-PM10_U	AAQMS_4_Near_Karo_Bridge-PM2.5_U
Sl No.			
1	2023-07-01	113.71	120.82
2	2023-07-02	125.41	64.73
3	2023-07-03	125.36	61.27
4	2023-07-04	85.24	66.85
5	2023-07-05	120.68	50.68
6	2023-07-06	89.20	37.09
7	2023-07-07	101.57	45.34
8	2023-07-08	111.53	36.01
9	2023-07-09	73.98	40.51
10	2023-07-10	125.68	79.34
11	2023-07-11	140.10	55.35
12	2023-07-12	115.23	44.56
13	2023-07-13	95.70	41.81
14	2023-07-14	124.73	63.53

	Time	AAQMS_4_Near_Karo_Bridge-PM10_U	AAQMS_4_Near_Karo_Bridge-PM2.5_U
Sl No.			
15	2023-07-15	120.40	45.47
16	2023-07-16	94.02	38.19
17	2023-07-17	42.06	42.89
18	2023-07-18	59.80	33.15
19	2023-07-19	86.21	31.59
20	2023-07-20	67.03	33.47
21	2023-07-21	72.25	30.28
22	2023-07-22	73.13	32.43
23	2023-07-23	58.63	38.83
24	2023-07-24	84.96	34.58
25	2023-07-25	87.71	31.79
26	2023-07-26	71.01	26.00
27	2023-07-27	62.01	33.79
28	2023-07-28	97.15	35.46
29	2023-07-29	126.09	49.63
30	2023-07-30	73.42	34.60
31	2023-07-31	105.99	53.05
32	2023-08-01	117.94	66.92
33	2023-08-02	65.89	33.24
34	2023-08-03	123.37	70.07
35	2023-08-04	205.30	155.03
36	2023-08-05	91.02	264.67
37	2023-08-06	96.22	53.78
38	2023-08-07	140.63	9.76
39	2023-08-08	144.91	9.76
40	2023-08-09	118.85	58.61

Sl No.	Time	AAQMS_4_Near_Karo_Bridge-PM10_U	AAQMS_4_Near_Karo_Bridge-PM2.5_U
41	2023-08-10	217.77	9.76
42	2023-08-11	153.24	9.76
43	2023-08-12	88.34	21.31
44	2023-08-13	162.85	56.98
45	2023-08-14	139.45	60.14
46	2023-08-15	169.61	85.17
47	2023-08-16	100.46	64.06
48	2023-08-17	104.79	49.66
49	2023-08-18	88.75	34.57
50	2023-08-19	NA	NA
51	2023-08-20	NA	NA
52	2023-08-21	NA	NA
53	2023-08-22	NA	NA
54	2023-08-23	153.51	54.24
55	2023-08-24	130.48	45.16
56	2023-08-25	128.05	44.61
57	2023-08-26	130.95	103.08
58	2023-08-27	209.13	55.20
59	2023-08-28	216.73	62.52
60	2023-08-29	133.30	68.67
61	2023-08-30	198.28	53.22
62	2023-08-31	179.09	54.45
63	2023-09-01	143.91	76.83
64	2023-09-02	158.07	63.74
65	2023-09-03	136.51	53.49
66	2023-09-04	85.23	40.18

Sl No.	Time	AAQMS_4_Near_Karo_Bridge-PM10_U	AAQMS_4_Near_Karo_Bridge-PM2.5_U
67	2023-09-05	56.58	40.73
68	2023-09-06	77.73	29.01
69	2023-09-07	74.84	31.81
70	2023-09-08	31.75	59.07
71	2023-09-09	NA	NA
72	2023-09-10	111.96	49.93
73	2023-09-11	78.41	63.16
74	2023-09-12	120.30	53.56
75	2023-09-13	91.42	43.57
76	2023-09-14	73.89	33.38
77	2023-09-15	84.18	35.10
78	2023-09-16	106.16	42.65
79	2023-09-17	117.23	46.13
80	2023-09-18	88.73	58.46
81	2023-09-19	102.95	41.30
82	2023-09-20	78.06	35.88
83	2023-09-21	80.78	30.75
84	2023-09-22	117.62	54.77
85	2023-09-23	122.92	42.29
86	2023-09-24	107.65	48.60
87	2023-09-25	104.23	84.40
88	2023-09-26	158.60	85.91
89	2023-09-27	171.73	87.74
90	2023-09-28	141.73	95.00
91	2023-09-29	144.34	88.24
92	2023-09-30	97.61	64.54

Sl No.	Time	AAQMS_4_Near_Karo_Bridge-PM10_U	AAQMS_4_Near_Karo_Bridge-PM2.5_U
93	2023-10-01	84.00	54.61
94	2023-10-02	125.07	66.87
95	2023-10-03	82.85	54.97
96	2023-10-04	63.10	67.40
97	2023-10-05	106.98	66.48
98	2023-10-06	102.99	63.07
99	2023-10-07	103.71	67.96
100	2023-10-08	133.90	74.08
101	2023-10-09	188.04	96.77
102	2023-10-10	178.76	107.99
103	2023-10-11	212.61	96.18
104	2023-10-12	206.99	92.44
105	2023-10-13	144.04	104.00
106	2023-10-14	199.37	101.68
107	2023-10-15	228.96	109.52
108	2023-10-16	130.56	106.50
109	2023-10-17	213.68	114.52
110	2023-10-18	185.71	103.30
111	2023-10-19	183.46	108.35
112	2023-10-20	136.09	100.30
113	2023-10-21	130.64	84.11
114	2023-10-22	172.28	104.63
115	2023-10-23	154.51	97.15
116	2023-10-24	135.53	84.40
117	2023-10-25	170.20	88.07
118	2023-10-26	199.56	97.02

Sl No.	Time	AAQMS_4_Near_Karo_Bridge-PM10_U	AAQMS_4_Near_Karo_Bridge-PM2.5_U
119	2023-10-27	186.13	103.75
120	2023-10-28	164.70	106.57
121	2023-10-29	171.88	93.36
122	2023-10-30	167.35	102.07
123	2023-10-31	159.75	108.10
124	2023-11-01	162.91	110.36
125	2023-11-02	165.92	98.46
126	2023-11-03	146.68	98.65
127	2023-11-04	143.08	87.27
128	2023-11-05	139.49	81.36
129	2023-11-06	131.37	100.66
130	2023-11-07	195.85	110.59
131	2023-11-08	219.89	124.16
132	2023-11-09	238.44	134.36
133	2023-11-10	226.35	132.13
134	2023-11-11	208.56	124.88
135	2023-11-12	218.88	129.17
136	2023-11-13	224.75	147.77
137	2023-11-14	230.23	145.34
138	2023-11-15	182.62	126.76
139	2023-11-16	178.20	106.96
140	2023-11-17	139.50	83.17
141	2023-11-18	190.85	85.60
142	2023-11-19	153.34	81.15
143	2023-11-20	171.92	95.28
144	2023-11-21	195.03	105.78

Sl No.	Time	AAQMS_4_Near_Karo_Bridge-PM10_U	AAQMS_4_Near_Karo_Bridge-PM2.5_U
145	2023-11-22	223.83	118.54
146	2023-11-23	204.26	119.03
147	2023-11-24	182.87	126.27
148	2023-11-25	243.20	129.20
149	2023-11-26	225.88	117.81
150	2023-11-27	238.84	109.30
151	2023-11-28	235.79	110.42
152	2023-11-29	209.94	102.81
153	2023-11-30	153.23	107.30
154	2023-12-01	220.73	109.88
155	2023-12-02	278.69	125.00
156	2023-12-03	159.87	121.31
157	2023-12-04	285.46	115.52
158	2023-12-05	151.46	72.48
159	2023-12-06	68.60	67.22
160	2023-12-07	80.25	59.99
161	2023-12-08	NA	NA
162	2023-12-09	NA	NA
163	2023-12-10	NA	NA
164	2023-12-11	146.45	84.98
165	2023-12-12	231.75	107.36
166	2023-12-13	269.01	101.12
167	2023-12-14	197.99	108.38
168	2023-12-15	216.19	111.67
169	2023-12-16	214.84	121.14
170	2023-12-17	186.22	94.12

Sl No.	Time	AAQMS_4_Near_Karo_Bridge-PM10_U	AAQMS_4_Near_Karo_Bridge-PM2.5_U
171	2023-12-18	181.30	147.21
172	2023-12-19	196.22	121.18
173	2023-12-20	201.40	125.35
174	2023-12-21	213.11	124.03
175	2023-12-22	228.03	128.76
176	2023-12-23	234.41	137.11
177	2023-12-24	152.37	116.52
178	2023-12-25	203.19	119.89
179	2023-12-26	175.25	118.77
180	2023-12-27	232.08	138.44
181	2023-12-28	230.16	145.69
182	2023-12-29	224.35	150.70
183	2023-12-30	241.86	149.12
184	2023-12-31	289.96	170.69
185	2024-01-01	NA	NA

ANNEXURE - I(B)

NOISE MONITORING DATA

NOISE MONITORING REPORT

MONTH OF JULY- 2023

Sl No	Location	Noise Level 1 hr Leq in dB(A)
A	**AMBIENT NOISE LEVEL**	
1	Bolani Township	54.5
2	Karo Guest House	59.1
B	**WORK ZONE NOISE LEVEL**	
1	F- Area Mine Pit	63.9
2	G-Area Mine pit	60.8
3	Panposh Quarry	69.6
4	D-Area Mine Pit	67.3
5*	Near Feed Hopper , F-area	76.9
6*	Secondary Crusher room	73.6
7*	Washing Plant	73.1
8	Loading Plant	67.4
9*	Inside operator's Cabin Drill Machine(in running condition)	74.9
10*	Inside operator's Cabin of running Dumper with Load	78.0
11*	Inside engine Testing Room during Engine Testing	80.2
12	Quarry-5 Mine Pit	69.9
13	600 TPH C&S Plant	73.4
14*	Inside operator's Cabin of running Loader	79.1

*Noise Exposure less than - 8 hours

NOISE MONITORING REPORT

MONTH OF AUGUST- 2023

Sl No	Location	Noise Level 1 hr Leq in dB(A)
A	**AMBIENT NOISE LEVEL**	
1	Bolani Township	54.9
2	Karo Guest House	57.2
B	**WORK ZONE NOISE LEVEL**	
1	F- Area Mine Pit	64.1
2	G-Area Mine pit	60.4
3	Panposh Quarry	69.2
4	D-Area Mine Pit	67.6
5*	Near Feed Hopper , F-area	76.3
6*	Secondary Crusher room	72.6
7*	Washing Plant	72.1
8	Loading Plant	66.4
9*	Inside operator's Cabin Drill Machine(in running condition)	73.9
10*	Inside operator's Cabin of running Dumper with Load	77.2
11*	Inside engine Testing Room during Engine Testing	79.2
12	Quarry-5 Mine Pit	68.5
13	600 TPH C&S Plant	73.6
14*	Inside operator's Cabin of running Loader	78.9

*Noise Exposure less than - 8 hours

NOISE MONITORING REPORT

MONTH OF SEPTEMBER- 2023

Sl No	Location	Noise Level 1 hr Leq in dB(A)
A	**AMBIENT NOISE LEVEL**	
1	Bolani Township	53.9
2	Karo Guest House	59.2
B	**WORK ZONE NOISE LEVEL**	
1	F- Area Mine Pit	64.2
2	G-Area Mine pit	59.9
3	Panposh Quarry	68.9
4	D-Area Mine Pit	68.2
5*	Near Feed Hopper , F-area	75.9
6*	Secondary Crusher room	74.8
7*	Washing Plant	74.4
8	Loading Plant	74.1
9*	Inside operator's Cabin Drill Machine(in running condition)	75.6
10*	Inside operator's Cabin of running Dumper with Load	79.2
11*	Inside engine Testing Room during Engine Testing	80.1
12	Quarry-5 Mine Pit	70.3
13	600 TPH C&S Plant	72.5
14*	Inside operator's Cabin of running Loader	79.3

*Noise Exposure less than - 8 hours

NOISE MONITORING REPORT

MONTH OF OCTOBER- 2023

Sl No	Location	Noise Level 1 hr Leq in dB(A)
A	**AMBIENT NOISE LEVEL**	
1	Bolani Township	58.2
2	Karo Guest House	54.8
B	**WORK ZONE NOISE LEVEL**	
1	F- Area Mine Pit	63.8
2	G-Area Mine pit	68.8
3	Panposh Quarry	65.7
4	D-Area Mine Pit	69.5
5*	Near Feed Hopper , F-area	72.7
6*	Secondary Crusher room	79.2
7*	Washing Plant	70.4
8	Loading Plant	72.6
9*	Inside operator's Cabin Drill Machine(in running condition)	69.8
10*	Inside operator's Cabin of running Dumper with Load	78.9
11*	Inside engine Testing Room during Engine Testing	81.2
12	Quarry-5 Mine Pit	68.9
13	600 TPH C&S Plant	69.1
14*	Inside operator's Cabin of running Loader	76.3

*Noise Exposure less than - 8 hours

NOISE MONITORING REPORT

MONTH OF NOVEMBER- 2023

Sl No	Location	Noise Level 1 hr Leq in dB(A)
A	**AMBIENT NOISE LEVEL**	
1	Bolani Township	51.2
2	Karo Guest House	58.4
B	**WORK ZONE NOISE LEVEL**	
1	F- Area Mine Pit	68.2
2	G-Area Mine pit	69.1
3	Panposh Quarry	70.3
4	D-Area Mine Pit	62.7
5*	Near Feed Hopper , F-area	74.5
6*	Secondary Crusher room	74.8
7*	Washing Plant	78.1
8	Loading Plant	69.4
9*	Inside operator's Cabin Drill Machine(in running condition)	75.9
10*	Inside operator's Cabin of running Dumper with Load	81.4
11*	Inside engine Testing Room during Engine Testing	78.2
12	Quarry-5 Mine Pit	69.5
13	600 TPH C&S Plant	69.9
14*	Inside operator's Cabin of running Loader	77.2

*Noise Exposure less than - 8 hours

NOISE MONITORING REPORT

MONTH OF DECEMBER- 2023

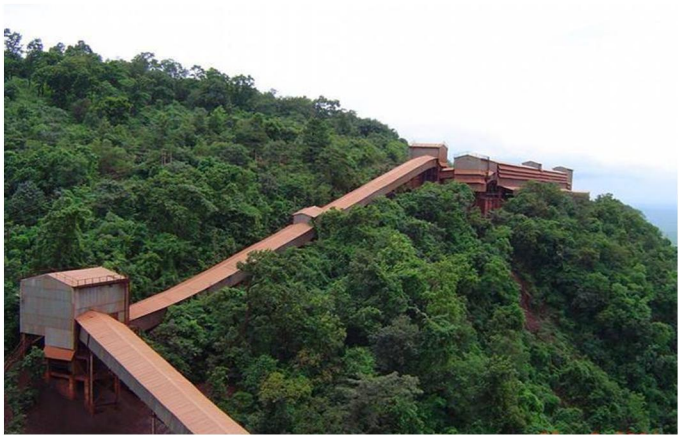
Sl No	Location	Noise Level 1 hr Leq in dB(A)
A	**AMBIENT NOISE LEVEL**	
1	Bolani Township	56.6
2	Karo Guest House	51.4
B	**WORK ZONE NOISE LEVEL**	
1	F- Area Mine Pit	64.6
2	G-Area Mine pit	63.7
3	Panposh Quarry	65.8
4	D-Area Mine Pit	64.6
5*	Near Feed Hopper , F-area	71.3
6*	Secondary Crusher room	76.2
7*	Washing Plant	72.2
8	Loading Plant	68.5
9*	Inside operator's Cabin Drill Machine(in running condition)	78.9
10*	Inside operator's Cabin of running Dumper with Load	80.5
11*	Inside engine Testing Room during Engine Testing	80.8
12	Quarry-5 Mine Pit	62.8
13	600 TPH C&S Plant	69.2
14*	Inside operator's Cabin of running Loader	70.8

*Noise Exposure less than - 8 hours

ANNEXURE - II

Annexure-II

PHOTOGRAPHS SHOWING MITIGATION MEASURES FOR COPNTROL OF RESPIRABLE SUSPENDED PARTICULATE MATTERS (RSPM)



Photograph showing Covered conveyors from feed hopper at Hill top

Imagery showing Covered conveyors from feed hopper at Hill top till Despatch Point

Photograph showing Bag House installed at seconndary Crushing Point

Photograph showing Dry Fog Dust suppression System installed at Feed Hopper at Hill Top Plant

Photograph showing Wet Drilling

Photograph showing Water sprinkling on Haul Road by 28 KL BEML Water Sprinkler

Annexure-II

PHOTOGRAPHS SHOWING MITIGATION MEASURES FOR CONTROL OF RESPIRABLE SUSPENDED PARTICULATE MATTERS (RSPM)

FOR SUPPRESSION OF FUGITIVE DUST AROUND STOCK PILE AREAS AND HAUL ROAD

Photograph showing Fixed water sprinkling system on Haul Road from Panposh

Photograph showing water sprinkling system on Haul Road near 600 TPH Plant

Photograph showing Mist generation for suppression of dust at Ore stockpiles

Photograph showing Truck Mounted Mist cannon in operation

Photograph showing canvassing on the ban of Single Use Plastic (SUP)

Photograph showing distribution of phamplets for awareness on ban of Single Use Plastics(SUP)