MINERALS & MINERALS LIMITED

Regd. Office- Court Road, P.O. & Distt.-Lohardaga, Jharkhand-835302 Tel.-06526-223163

CIN NO. U26990JH1970PLC000875

Ref.: M&M/LHD/ENV/MoEF/ 713

Date- 23.05.2024

To,

The Dy.Director General of Forest (C)

Ministry of Environment, Forests and Climate Changes

2nd Floor, Headquarter-Jharkhand State Housing Board

Harmu Chowk, Ranchi, Jharkhand-834002

Sub: Compliance Report of EC conditions for Bimarla (134.526 ha) Bauxite Mining project of M/s Minerals & Minerals Limited located in Gumla, Jharkhand for the period October'23 to March'24.

Ref: Environmental Clearance letter no J-11015/87/2009-IA.II (M) dated 24th Sep, 2013

Sir,

With reference to the above, we are submitting herewith the Compliance status report of EC conditions for Bimarla (134.526 ha) Bauxite Mining project of M/s Minerals & Minerals Limited located in Gumla, Jharkhand for the period October'23 to March'24.

The lease detail is as below.

ease area (ha)	Production Capacity (MT)	Lease Period
134.526	300000	18.07.2009 to 17.07.2059

Hope you will find the same in order.

Thanking You

Yours Sincerely

FOR Minerals & Minerals Limited

(Basudev Gangopadhyay)

AVP (Planning, Environment & Compliance)

Enclosure: - As Above

CC: ro.ranchi-mef@gov.in, mef@ori.nic.in, mef@nic.in, mef.or@nic.in, mscb.cpcb@nic.in, zokolkatta.cpcb@nic.in, ranchijspcb@gmail.com, roranchi47@gmail.com

Name of the Project : Bimarla Bauxite Mine (134.526 ha)

M/s Minerals & Minerals Ltd

Environment Clearance No & date : J-11015/87/2009-IA. II (M) dated 24.09.2013.

Period of compliance Report : From 1st October'2023 to 31st March'2024

Specific Condition: -

Condition i: - The project proponent shall obtain Consent to Establish and Consent to Operate from the Jharkhand State Pollution Control Board and effectively implement all the conditions stipulated therein.

Reply: - Consent to Establish (CTE) and Consent to Operate (CTO) have been obtained. The Stipulated conditions of CTE/CTO are being Implemented and complied with. The existing Consent to Operate (CTO) is valid till 30th Sep 2024.

Condition ii: - Implementations of conditions laid down in the letter of the State Department of Forests vide dated 11.05.2012 with regard to permission for transportation of ore through the forest land.

Reply: - The conditions laid down in the said letter are being implemented and complied with.

Condition iii: - Necessary wildlife clearance as may be applicable to this project should be obtained. Measures for conservation of flora and fauna observed in the study area shall be undertaken. The Wildlife Conservation Plan shall be implemented in consultation with the State Forests and Wildlife Department.

Reply: - We understand that Wildlife Clearance is not applicable to this project as the mine is located beyond the eco-sensitive zone.

Safeguard Measures already implemented and being implemented as suggested by forest department are as follows: -

- 1. Minimum level of Noise during Mining.
- 2. Permanent pillars are established within in the mine lease area at 7.5m from the forest boundary.
- 3. Daily water sprinkling on haul road.
- 4. Transportation is carried out during daytime only.
- 5. Maintenance of mineral transportation road is being done regularly.
- 6. Social activities are being undertaken in nearby areas etc.

Also, we have been granted letter of approval for the Integrated Site-specific Wildlife Conservation Plan via Office Order No.28 dated 01.06.2023 by PCCF, Wildlife, Ranchi.

Condition iv - Adequate measures for control of air pollution in the area shall be taken and it shall be ensured that the pollution levels do not exceed the prescribed limits.

Reply: - Adequate Measures for control of air pollution in the area are being taken. Important measures are as follows.

- 1. Water sprinkling on haul roads and at places of source of pollution.
- 2. Control blasting practice.
- 3. Wet drilling is in practice.

Monitoring report of Ambient Air Quality is attached herewith as Annexure 2.

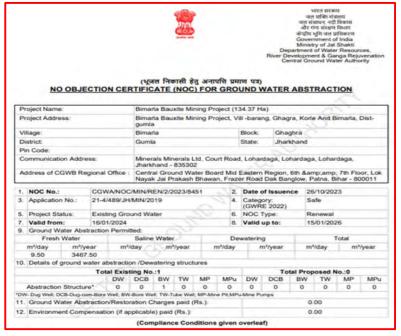
Condition v - No working shall be undertaken in the forest area for which forestry clearance has not been obtained.

Reply: - Noted. However, there is no forest land within the lease hold area. Therefore, there is no need for forest clearance.

Condition vi: - Necessary prior clearance, as applicable shall be obtained from CGWA for working below groundwater table.

Reply: - Since shallow depth mining is being carried out, hence there is no intersection with the groundwater table. In the future also, the working zone will be restricted to above the groundwater table. We assure that no mining is/was carried out below the groundwater table, and the same status will be maintained in the future also. Moreover, we are regularly monitoring the groundwater table through the installation of a piezometer. A copy of the water level report is attached herewith as **Annexure-1**.

However, we have already obtained an NOC for the extraction of groundwater from CGWA/CGWB for drinking purposes only. A copy of the same NOC is attached below.



NOC for Groundwater

Condition vii : - 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 noncompliances / violations of environmental norms to the Board of Directors of the company and / or shareholders or stakeholders.

Reply: - Policies towards Corporate Environment Responsibility is in place. The latest corporate environment policy enumerating corporate responsibilities is attached as **Annexure** 6. Company has implemented a system in line with the above policies which addresses following points. (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.

Condition viii: - The mining operations shall be restricted to above the groundwater table and it should not intersect the groundwater table, In case of working below the groundwater table, prior approval of the Ministry of Environment and Forests and the Central Ground Water Authority shall be obtained, for which a detailed hydrogeological study shall be carried out.

Reply: - Noted. Since shallow depth mining is being carried out in Bimarla Bauxite Mine. Therefore, Mining operation does not involve intersection of ground water table. However, we are regularly monitoring the ground water table through installation of piezometer.

As the water table is not intersecting during mining operation, the detailed hydro-geological study is not applicable for this mine.

Condition ix: - The project proponent shall ensure that no natural watercourse and/or water resources shall be obstructed due to any mining operations. The first order streams and the seasonal nallahs originating from the mining lease area shall be protected.

Reply: - No natural watercourse and/or water resource is being and will be obstructed due to any mining operations.

Condition x: - The topsoil, if any shall temporarily be stored at earmarked site(s) only and it should not be kept unutilized for long. The topsoil shall be used for land reclamation and plantation.

Reply: - Topsoil is being stacked temporally properly with proper slope as and when required. Concurrent backfilling and reclamation of mined out area are being exercised for which topsoil is being spread on backfilled area for reclamation. No OB dump is present in mines. The mining is being carried

out as per the approved mining plan. Monitoring and management of rehabilitated areas is being done through effective supervision.

Condition xi: - Monitoring and management of rehabilitated areas should continue until vegetation becomes self-sustaining. Compliance status should be submitted to the Ministry of Environment & Forests and its Regional Office, Bhubaneswar on six monthly basis.

Reply: - This Mine started production since 2015-16. Monitoring and management of rehabilitated areas is being done through effective supervision. Concurrent Backfilling has already been started as per approved mining plan in scientific manner. The Data pertaining to status of backfilling is attached as **Annexure-4**. Photographs of Reclaimed area are attached below.





Reclaimed area

Condition xii: - Catch drains and siltation ponds of appropriate size shall be constructed around the working pit, sub-grade dump, soil and mineral dumps to arrest flow of silt and sediment directly into the agricultural fields and the water bodies. 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, Garland drains settling tanks and check dams of appropriate size, gradient and length shall be constructed for both around the mine pit and sub-grade dump to prevent run off of water and flow sediments directly into the agricultural fields and the water bodies and sump capacity should be designed keeping 50% safety margin over and above peak sudden rainfall (based on 50 years data) and maximum discharge in the area adjoining the mine site. Sump capacity should also provide adequate retention period to allow proper settling of silt material. Sedimentation pits should be constructed at the corners of the garland drains and de silted at regular intervals.

Reply: - To collect & manage rainwater during monsoon, part of mined out area is used as settling tank for the runoff. Rainwater stored is being used for watering the mine area, roads, green belt development and sprinkling as necessary. Catch drains, Garland drains of appropriate size are being constructed and maintained in both around the mine pit to prevent runoff of water and flow of sediments directly into the agricultural field and water bodies, if

applicable. Sump of adequate capacity is being provided and maintained as required. Photographs of the same is attached below.



Rainwater Harvesting Pond





Condition

xiii: - Dimension of the retaining wall at the toe of sub-grade dump and OB benches within the mine to check run-off and siltation should be based on the rain fall data.

Reply: - There is no temporary dumps within the mining lease area. However, dimensions of the retaining wall of temporary OB dumps will be maintained based on average rain fall, if required.

Condition xiv: - The plantation is proposed over an area of 24 ha with 2500 samplings per ha.

Reply:- Total 4480 saplings have been planted in and around mine area for the FY2023-24. Total 8.24 ha areas have been planted till date. In addition to this agricultural activity is going on in reclaimed land as per the consent from landowners.

Green belt development programme is in progress with progress of mining activities



Plantation at mines

Condition xv: Effective safeguard measures, such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of particulate matter such as around loading and unloading point and all transfer points. Extensive water sprinkling shall be carried out on haul roads. It should be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.

Reply: - Effective safeguard measures, such as regular water sprinkling is being carried out on haul road and in critical areas prone to air pollution. Regular Ambient Air Quality (AAQ) monitoring is being carried out by NABL accredited Laboratory and all parameters are found within the prescribed limit. Monitoring report of AAQ is attached herewith as **Annexure-2**. Photographs of Water Tanker is attached herewith below.



Water Tanker for Sprinkling

Condition xvi: The project authority should implement suitable conservation measures to augment ground water resources in the area in consultation with the Regional Director, Central Ground Water Board.

Reply: - Effective measures have already been implemented. A detailed rainwater harvesting plan to augment ground water has been prepared and suitable measures like water harvesting pond etc. are created for augmentation of ground water in the area in consultation with Central Ground Water Board. Photograph of Rainwater Harvesting Pond is attached below.



Rainwater Harvesting Pond

Condition xvii: -Regular monitoring of ground water level and quality shall be carried out in and around the mine lease by establishing a network of existing wells and installing new piezometers during the mining 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 the Ministry of Environment and Forests and its Regional Office Bhubaneswar, the Central Ground Water Authority and the 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.

Reply: - We are not using ground water for any mining purpose. Since, Shallow depth mining is being carried out, hence there is no intersection of ground water table during the mining operation at present and in future also. A Piezometer has been installed for monitoring of ground water level. Water level and water quality reports are being sent regular to regional office of Ministry, CGWA/CGWB and JSPCB. The same is attached herewith as **Annexure 1 & 2**. Now, Regional office of MoEF&CC is in Ranchi.



Piezometer

Condition xviii: -Monitoring of the springs shall be carried out for the quality and quantity of water regularly so as to ensure that there is no adverse impact- on the same due to the project. Records in this regard shall be maintained.

Reply: - Spring water is being monitored regularly and Analysis report is attached as **Annexure 2.**

Condition xix: -It shall be ensured that there is no change in the hydrology of the area due to the project.

Reply: -Noted. We regularly monitor the ground water level and no adverse changes is observed.

Condition xx: -Suitable rainwater harvesting measures on long term basis shall be planned and implemented in consultation with the Regional Director, Central Ground Water Board.

Reply: - Suitable rainwater harvesting measures like harvesting pond have been constructed on long term basis for augmentation of ground water in the area, in consultation with Central Ground Water Board. Photograph of Rainwater Harvesting Pond is already attached in reply to above condition xvi.

Condition xxi: - Appropriate mitigative measures shall be taken to prevent pollution of the all the water bodies, in consultation with the State Pollution Control Board.

Reply: -We are not discharging any water outside mine lease area. Appropriate mitigative measures have been taken to prevent pollution of nearby water bodies. The drainage system in the mining lease area is designed to collect all rainwater within the lease into the pit/rainwater harvesting pond only and ensuring that water does not flow outside the boundaries of the mine lease under any circumstances.

Condition xxii: - Vehicular emissions shall be kept under control and regularly monitored. Measures shall be taken for maintenance of vehicles used in mining operations and in transportation of mineral from mine face to the beneficiation plant. The vehicles shall be covered with a tarpaulin and shall not be overloaded.

Reply: - Regular maintenance of vehicles is being undertaken to minimize vehicular emission. Measures are being taken to control emission. The vehicles are being covered with tarpaulin while transportation of mineral. Photograph of Tarpaulin Covered Vehicle and PUC Certificate are attached below.





Tarpaulin Covered Vehicle

PUC Certificate

Condition xxiii: Blasting operation shall be carried out only during the daytime. Controlled blasting shall be practiced. The mitigative measures for control of ground vibrations and to arrest fly rocks and boulders should be implemented.

Reply: - Blasting time is fixed during Lunch Time i.e. 1.00 PM -2.00 PM. Controlled blasting method is in practice. Ground vibration study has been conducted periodically. All efforts are being taken to mitigate impact of blasting.

Condition xxiv: - Drills shall either be operated with dust extractors or equipped with water injection system.

Reply: - Wet drilling is in practice.



Wet Drilling

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

Reply: - Water sprinkling is being carried out regularly at mineral handling area, loading and unloading areas to control the dust. Additionally, Fixed type water sprinkler has been installed near the weigh bridge to control dust emission.





Installation of Fixed Type Water Sprinkler

Condition xxvi: - Sewage treatment plant shall be installed for the colony. ETP shall also be provided for the workshop and wastewater generated during the mining operation.

Reply: - As of now there is no colony within the lease hold. However, Domestic Wastewater generated from mine office area is being collected through individual Septic Tank and followed by Soak Pit.

No wastewater is generated from our mining operation. However, only negligible amount of effluent is being generated from workshop and Oil & grease trap system is already installed for treatment of this effluent. The treated water is in close circuit and being reused for washing of vehicle in the workshop. We are not discharging any wastewater outside the mine lease area.

Furthermore, the quality of this treated water is being monitored regularly and the monitoring report is attached herewith as **Annexure 2**.





Washing Ramp with Oil and Grease trap System

Condition xxvii: - The project authorities should undertake sample survey to generate data on pre project community health status within a radius of 1 km from proposed mine.

Reply: - As a part of Community Health status check we regularly conduct medical camp in nearby areas since inception of Mine.

Condition xxviii: 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.

Reply: - As a company, we are truly concerned about the health and safety of our on-site workers and in consideration to that, the health examination camps are being setup/scheduled on regularly basis.

Condition xxix: - 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.

Reply: - We believe that the wellbeing of all the labours working within the site should be taken care of on a priority basis, so that they can work in a stress-free environment. Therefore, all the necessary infrastructure and basic facilities are being taken care of. Safe drinking water and medical facilities already provided.

Condition xxx: - The critical parameters such as RSPM (Particulate matter with size less than 10pm i.e. PM10) and NOx in the ambient air within the impact zone, peak particle velocity at 300m 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. 3-20012/1/2006- IA.11 (M) dated 27.05.2009 issued by Ministry of Environment and Forests, which is available on the website of the Ministry www.envfor.nic and shall also be referred in this regard for its compliance.

Reply: Noted and being adhered. We have established four ambient air quality monitoring stations in the core zone as well as buffer zone. Monitoring of Ambient Air Quality and Treated Water is being carried out by NABL accredited Laboratory and reported to the concerned authorities. Monitoring Report is attached herewith as **Annexure 2**. Half-yearly EC compliance along with Environmental monitoring reports is being uploaded on company website regularly.

A Display board is already installed near the mine gate office. We have also installed an online PM10 analyzer at mine site.

Condition xxxi: - A Final Mine Closure Plan along with details of Corpus Fund should be submitted to the Ministry of Environment & Forests 5 years in advance of final mine closure for approval.

Reply: - Noted and will be complied in due time. Progressive mine closure plan approved along Scheme of Mining. FMCP for total lease area will be prepared and submitted in due time as per applicable guideline and timelines mentioned in MCDR/IBM guideline who are competent authority to approve the same. Based on the present resource estimate, and peak rated production capacity mentioned in EC, Mining operation is being carried out.

General Conditions: -

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

Reply: - Noted.

Condition ii: - No change in the calendar plan including excavation, quantum of mineral bauxite and waste should be made.

Reply: - Calendar plan including excavation, quantum of mineral bauxite and waste is being done as per IBM approved mining scheme. Report is attached herewith as **Annexure 4.**

Condition iii: - Conservation measures for protection of flora and fauna in the core and buffer zone should be drawn up in consultation with the local forest and wildlife department.

Reply: - Conservation measures for protection of flora and fauna in core & buffer zone has been drawn up in consultation with local forest and wildlife department. Also, we prepared Integrated Site-specific Wildlife Conservation Plan (WLCP) and obtained approval from by PCCF, Wildlife, Ranchi vide Office Order No.28 dated 01.06.2023

Safeguard Measures already implemented and being implemented as suggested by forest department are as follows:

- 1. Minimum level of Noise during Mining.
- 2. Permanent pillars are established within in the mine lease area at 7.5m from the forest boundary.
- 3. Daily water sprinkling on haul road.
- 4. Transportation is carried out during daytime only.
- 5. Maintenance of mineral transportation road is being done regularly.
- 6. Social activities are being undertaken in nearby areas etc.

Condition iv: - 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.

Reply: - We have already established four ambient air quality monitoring stations in the core zone as well as buffer zone. Monitoring of Ambient Air Quality is being carried out by NABL accredited Laboratory and reported to the concerned authorities. Monitoring Report is attached herewith as **Annexure 2.**

Condition v: - Data on ambient air quality [(RSPM (Particulate matter with size less than 10micron i.e., PM10) and NOx] should be regularly submitted to the Ministry including its regional office located at: Bhubaneswar and the State Pollution Control Board / Central Pollution Control Board once in six months.

Reply: - The monitoring of ambient air quality is being conducted by an NABL-accredited laboratory, and reports are regularly submitted to the MoEF&CC and JSPCB, Ranchi. The monitoring report is attached herewith as **Annexure 2.** Now, Regional office of MoEF&CC is in Ranchi.

Condition vi: - Fugitive dust emissions from all the sources should be controlled regularly. Water spraying arrangement on haul roads, loading and unloading and at transfer points should be provided and properly maintained.

Reply: - Suitable water spraying arrangement is being made to control fugitive dust emissions from loading, unloading and transfer points as applicable. Photograph of the same is already attached in reply to specific condition no. xv.

Condition vii: - Measures should be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in operations of HEMM, etc. should be provided with ear plugs / muffs.

Reply: - Measures are being taken for control of noise levels below 85 dB (A) in the work environment. Workers engaged in operation of HEMM, etc. has been provided with ear plug / muffs. The noise level monitoring is being conducted at a regular interval. The noise level is within the prescribed norms. Report has been attached as **Annexure 2.**

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

Reply: - No wastewater is generated from our mining operation. However, only negligible amount of effluent is being generated from workshop and Oil & grease trap system is already installed for treatment of this effluent. The treated water is in close circuit and being reused for washing of vehicle in the workshop. We are not discharging any wastewater outside the mine lease area.

Furthermore, the quality of this treated water is being monitored regularly and the monitoring report is attached herewith as **Annexure 2**.





Washing Ramp with Oil and Grease trap System

Condition ix: - Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.

Reply: - All the workers have been provided with PPEs including dust mask and dust respirators. Apart from PPEs distribution to all workers, we are also providing adequate safety training and conducting awareness session on Safety and health aspects on regular basis. Periodical Occupational health surveillance program of the workers is being carried out and records maintained as per statute.

Condition x: - 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.

Reply: - A separate environmental management cell with suitable qualified personnel has been set up under the control of a Senior Executive, who is reporting directly to the Head of the Organization. The same is being attached herewith as **Annexure 3**.

Condition xi: - 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.

Reply: - Every year, the funds earmarked for environmental protection measures is being budgeted separately and its expenditure is being reported to the Ministry. The copy of the same is attached as **Annexure 5**. Now, the Regional Office of MoEF&CC is in Ranchi.

Condition xii: - The project authorities should inform to the Regional Office located at Bhubaneswar regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.

Reply: - It is an operational mine. Hence provisions related to financial closure is not applicable. Now, the Regional Office of MoEF&CC is in Ranchi.

Condition xiii: - The Regional Office of this Ministry located at Bhubaneswar shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information / monitoring reports.

Reply: - Agreed. Now, the Regional Office of MoEF&CC is in Ranchi.

Condition xiv: - The project proponent shall submit six monthly reports on the status of 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 Environment and Forests, its Regional Office Bhubaneswar, the respective Zonal Office of Central Pollution Control Board and the 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 Forests, Bhubaneswar, the respective Zonal Officer of Central Pollution Control Board and the State Pollution Control Board.

Reply: - Six monthly reports on status of compliance of the stipulated environmental clearance conditions including monitoring report are being submitted to the MoEFCC, Zonal office of CPCB & JSPCB, Ranchi and also uploaded on the website of the Hindalco's website. Now, the Regional Office of MoEF&CC is in Ranchi.

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

Reply: - Noted. The EC Letter has been submitted to JSPCB for display of same at its Regional office and other government offices.

Condition xvi: - The environmental statement for each financial year ending 31 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 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.

Reply: - Environment statement is being submitted regularly to Member Secretary, JSPCB. Also, the status of compliance of environmental clearance conditions is being sent to MoEF&CC and JSPCB, Ranchi on regular basis. Now, the Regional Office of MoEF&CC is in Ranchi.

Condition xvii: - The project authorities should advertise at least in two local newspapers of the 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 Board 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 this Ministry located at Bhubaneswar.

Reply: - Noted and complied. The information on grant of the EC has been published in two local newspapers. The copy of the advertisement has already been submitted to the Regional Office of the MoEFCC. Now, the Regional office of MoEF&CC is in Ranchi.

Annexure 1					
Piezometer reading - Bimarla Bauxite Mines					
S No Month Depth (meter)					
1	Oct-23	30.81			
2	Nov-23	30.42			
3	Dec-23	30.37			
4	Jan-24	30.22			
5	Feb-24	30.16			
6	Mar-24	30.08			



PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (IHARKHAND) GST NOI- 20AAECE9713D1Z4

ENGINEERING SERVICES PVT. LTD.

Email: info@elespl.co.in , eles.ranchi@gmail.com Phone no.: 0651-2290103 Website: www.elespl.co.in

TEST REPORT

Test Report No.	: ELES/RNC/2023/4405	Report Release Date	: 22.11.2023	
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023	

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/3931 : Near Weigh Bridge Bimarla Bauxite Mine (134.526 ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 13.10.2023 to 14.10.2023 : 28.10.2023	
Mines Status (Operational		Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	; 28.10.2023 to 09.11.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 25	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	: 58	4	Weather Condition	: Clear
5	Longitude	: 84°25'20.14"E	6	Latitude	: 23°17'6.19"N

Discipline : Chemica	d	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	67	100 (24hrs)		
Particulate Matter (PM2.5)	μg/m ³	IS 5182 (Part- 24): 2019	32	60 (24hrs)		
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2): 2001; RA2022	6.9	80 (24hrs)		
Nitrogen Di-Oxide (NO _z)	μg/m³	IS 5182 (Part-6): 2006; RA2022	23.4	80 (24hrs)		
Ozone (O ₃)	μg/m ¹	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)		
Ammonia (NH ₃)	μg/m	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)		
Lead (Pb)	μg/m²	IS 5182 (Part-22): 2004; RA2019	<0.002	1 (24hrs)		
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)		

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TEST REPORT

Test Report No.	: ELES/RNC/2023/4405	Report Release Date	: 22.11,2023
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023

Discipline : Chemi	ical	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Benzene (C ₆ H ₆)*	μg/m ¹	IS 5182 (Part-11)2006;RA2017	<1.0	05(Annual)		
Benzo-(a)-Pyrene*	ng/m³	IS 5182 (Part-12)2004;RA2019	<0.5	01(Annual)		

Remarks: (*)-Parameters are outsourced to other Lab.

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****End of Report****

Authorised Signatory

Dr. Deependra Kumar Sinha Ph. D. Environmental Engg. ELES Pvt. Ltd. Technical Manager

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TEST REPORT

Test Report No.	: ELES/RNC/2023/4406	Report Release Date	; 22.11.2023	
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/3932 : Near Quarry No 1B Bimarla Bauxite Mine (134.526 ha)	
Address Lohardaga, Jharkhand-835.		Sampling Date Sample Received Date	: 13.10.2023 to 14.10,2023 : 28.10,2023	
Mines Status	: Operational	Type of Sample Sampling Procedure Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	; 28.10.2023 to 09.11.2023	Sample Condition	: Sealed & Preserved	

M	ETEOROLOGICAL INFO	RMATION			
1	Average Temperature (°C)	: 25	2	Barometric Pressure (mmHg)	≥ 738
3	Relative Humidity (%)	: 58	4	Weather Condition	: Clear
5	Longitude	: 84°25'12.83"E	6	Latitude	: 23°17'1.82'N

Discipline: Chemica	ıl	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	μg/m ³	IS 5182 (Part-23): 2006; RA2022	46	100 (24hrs)		
Particulate Matter (PM2.5)	μg/m ³	IS 5182 (Part- 24): 2019	20	60 (24hrs)		
Sulphur Di-Oxide (SO ₂)	μg/m ³	JS 5182 (Part-2): 2001; RA2022	5.9	80 (24hrs)		
Nitrogen Di-Oxide (NO2)	μg/m ³	IS 5182 (Part-6): 2006; RA2022	22,5	80 (24hrs)		
Ozone (O ₃)	µg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)		
Ammonia (NH ₂)	µg/m³	IS 5182 (Part- 25); 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)		
Lead (Pb)	μg/m³	1S 5182 (Part-22); 2004; RA2019	0.009	1 (24hrs)		
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)		

Page 1 of 2

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TEST REPORT

Test Report No.	: ELES/RNC/2023/4406	Report Release Date	: 22.11.2023	
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023	

Discipline: Chemi	cal	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Benzene (C ₆ H ₆)*	μg/m³	IS 5182 (Part-11)2006;RA2017	<1.0	05(Annual)		
Benzo-(a)-Pyrene*	ng/m³	IS 5182 (Part-12)2004:RA2019	<0.5	Ol(Annual)		

Remarks: (*)-Parameters are outsourced to other Lab.

Reviewed by

****End of Report****

Authorised Signatory

Dr. Deependra Kumar Sinha Ph. D. Environmental Engg. ELES Pvt. Ltd. Technical Manager

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TEST REPORT

Test Report No.	; ELES/RNC/2023/4407	Report Release Date	: 22,11.2023	
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No.	: ELES/RNC/2023/AA/3933	
Address	: Lohardaga, Jharkhand-835302	Location	: Nav Prathmik Vidayalaya-Barar Path; Bimarla Bauxite Mine (134,526 ha)	
		Sampling Date Sample Received Date	: 13.10.2023 to 14.10.2023 : 28.10.2023	
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 28.10,2023 to 09.11,2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

MI	ETEOROLOGICAL INFOR	RMATION			
1	Average Temperature (°C)	1.25	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	: 58	4	Weather Condition	: Clear
5	Longitude	+84°25'12.83"E	6	Latitude	: 23°17'1.82"N

Discipline : Chemica	d	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23); 2006; RA2022	49	100 (24hrs)		
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	22	60 (24hrs)		
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2): 2001; RA2022	5.5	80 (24hrs)		
Nitrogen Di-Oxide (NO ₁)	μg/m³	IS 5182 (Part-6): 2006; RA2022	19.3	80 (24hrs)		
Ozone (O ₃)	μg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)		
Ammonia (NH ₃)	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m³	IS-5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)		
Lead (Pb)	μg/m³	IS 5182 (Part-22): 2004; RA2019	< 0.002	1 (24hrs)		
Nickel (Ni)	ng/m²	IS 5182 (Part-26):2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)		

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TEST REPORT

Test Report No.	: ELES/RNC/2023/4407	Report Release Date	: 22.11.2023	
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023	

Discipline : Chemi	cal	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Benzene (C ₆ H ₆)*	µg/m ^k	1S 5182 (Part-11)2006;RA2017	<1.0	05(Annual)		
Benzo-(a)-Pyrene*	ng/m³	IS 5182 (Part-12)2004;RA2019	<0.5	OI(Annual)		

Remarks: (*)-Parameters are outsourced to other Lab.



****End of Report****

Authorised Signatory

Ph. D. Environmental Engg. ELES Pvt. Ltd. Technical Manager

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TEST REPORT

Test Report No.	: ELES/RNC/2023/4408	Report Release Date	: 22.11.2023	
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/3934 : Near Mine Entry Gate; Bimarla Bauxite Mine (134.526 ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 13.10.2023 to 14.10.2023 : 28.10.2023	
Mines Status	Operational	Type of Sample Sampling Procedure	: ELES/DOC/SMPL/02	
Period of Analysis	; 28,10,2023 to 09,11,2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

MI	ETEOROLOGICAL INFO	RMATION			
1	Average Temperature (°C)	: 25	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	: 58	4	Weather Condition	: Clear
5	Longitude	: 84°25'35.93*E	6	Latitude	: 23°16'48.36"N

Discipline : Chemics	d	Group : A	tmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	51	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part-24); 2019	23	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m ³	IS 5182 (Part-2): 2001; RA2022	5.5	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part-6): 2006; RA2022	21.8	80 (24hrs)
Ozone (O ₃)	μg/m³	IS 5182 (Part-9): 1974; RA2019	<20,6	100 (8hrs)
Ammonia (NH ₂)	μg/m³	IS 5182 (Part- 25); 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	μg/m³	IS 5182 (Part-22): 2004; RA2019	0.009	1 (24hrs)
Nickel (Ni)	ng/m ⁴	IS 5182 (Part-26);2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)

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TEST REPORT

Test Report No.	: ELES/RNC/2023/4408	Report Release Date	; 22.11,2023	
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023	

Discipline : Chemi	ical	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Benzene (C ₆ H ₆)*	μg/m ³	IS 5182 (Part-11)2006;RA2017	<1.0	05(Annual)		
Benzo-(a)-Pyrene*	ng/m³	1S 5182 (Part-12)2004;RA2019	<0.5	Q1(Annual)		

Remarks: (*)-Parameters are outsourced to other Lab.

Reviewed hyp

****End of Report****

Authorised Signatory

Ph. D. Environmental Engg. ELES Pvt. Ltd. Technical Manager

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TEST REPORT

Test Report No.	: ELES/RNC/2023/4409	Report Release Date	: 22.11.2023	
Work Order No.	: M&M/23-24/01	Work Order Date	; 31.03.2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	ELES/RNC/2023/AA/3935 Near Korle Village Bimarla Bauxite Mine (134.526 ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 13.10,2023 to 14.10,2023 : 28.10.2023 : Ambient Air	
Mines Status	: Operational	Type of Sample Sampling Procedure	: ELES/DOC/SMPL/02	
Period of Analysis	: 28.10.2023 to 09.11.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

MI	ETEOROLOGICAL INFOR	RMATION		You was a second	
1	Average Temperature (°C)	: 25	2	Barometric Pressure (mmHg	738
3	Relative Humidity (%)	: 58	4	Weather Condition	: Cléar
5	Longitude	: 84°25'56.20"E	6	Latitude	: 23°17'30,46"N

Discipline : Chemica	d	Group : A	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit			
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	51	100 (24hrs)			
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	31	60 (24hrs)			
Sulphur Di-Oxide (SO ₂)	μg/m ⁵	IS 5182 (Part-2): 2001; RA2022	5.0	80 (24hrs)			
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part-6); 2006; RA2022	16.2	80 (24hrs)			
Ozone (O ₃)	μg/m'	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)			
Ammonia (NH ₃)	μg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)			
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)			
Lead (Pb)	μg/m³	1S 5182 (Part-22): 2004; RA2019	0.009	1 (24hrs)			
Nickel (Ni)	ng/m³	1S 5182 (Part-26):2020	<6,0	20 (Annual)			
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)			

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Website: www.elespl.co.in

TEST REPORT

Test Report No.	: ELES/RNC/2023/4409	Report Release Date	: 22.11.2023
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023

Discipline : Chemi	cal	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Benzene (C ₆ H ₆)*	μg/m ³	IS 5182 (Part-11)2006;RA2017	<1.0	05(Annual)		
Benzo-(a)-Pyrene*	ng/m ³	IS 5182 (Part-12)2004;RA2019	< 0.5	O1(Annual)		

Remarks. (*)-Parameters are outsourced to other Lab.

****End of Report****

Authorised Signatory
T. Deependra Kumar Sinha
Ph. D. Environmental Engg

ELES Pvt. Ltd. Technical Manager

Page 2 of 2

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA. RANCHI-834003 (JHARKHAND) GST NO-20AAECE9713D1Z4

ENGINEERING SERVICES PVT. LTD.

Email: info@elespl.co.in , eles.ranchi@gmail.com Phone no.: 0651-2290103 Website : www.elespl.co.in

TEST REPORT

Test Report No.	: ELES/RNC/2023/4410	Report Release Date	: 22.11.2023	
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/3936 : Near Barang Village Bimarla Bauxite Mine (134.526 ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 13.10.2023 to 14.10.2023 : 28.10.2023	
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	28.10.2023 to 09.11.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

M	ETEOROLOGICAL INFOR	MATION	-		
ī	Average Temperature (°C)	: 25	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	± 58	4	Weather Condition	: Clear
5	Longitude	: 84°25'16.51"E	6	Latitude	: 23°16'30.61"N

Discipline : Chemica	d	Group : A	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit			
Particulate Matter (PM10)	μg/m ³	1S 5182 (Part-23): 2006; RA2022	46	100 (24hrs)			
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	22	60 (24hrs)			
Sulphur Di-Oxide (SO ₂)	μg/m ¹	IS 5182 (Part-2): 2001; RA2022	<5.0	80 (24hrs)			
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part-6): 2006; RA2022	16.9	80 (24hrs)			
Ozone (O ₃)	μg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)			
Ammonia (NH ₁)	μg/m ⁸	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)			
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)			
Lead (Pb)	μg/m ³	IS 5182 (Part-22): 2004; RA2019	< 0.002	1 (24hrs)			
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)			
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)			

Page 1 of 2

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 20AAECE9713D1Z4

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Website: www.elespl.co.in

TEST REPORT

Test Report No.	: ELES/RNC/2023/4410	Report Release Date	: 22.11.2023
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023

Discipline : Chemi	Group ;	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (C ₆ H ₈)*	μg/m³	IS 5182 (Part-11)2006;RA2017	<1.0	05(Annual)
Benzo-(a)-Pyrene*	ng/m³	IS 5182 (Part-12)2004:RA2019	<0.5	01(Annual)

Remarks: (*)-Parameters are outsourced to other Lab.

Reviewed by

****End of Report****

Authorised Signatory

Ph. D. Environmental Engg. ELES Pvt. Ltd. Technical Manager

Page 2 of 2

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (IHARKHAND) GST NO- 20AAECE9715D124

ENGINEERING SERVICES PVT. LTD.

Email: info@elespl.co.in , eles.ranchi@gmail.com Phone na.: 0651-2290103 Website : www.elespl.co.in

TEST REPORT

Test Report No.	: ELES/RNC/2023/4411	Report Release Date	: 22.11.2023	
Work Order No.	: M&M/23-24/01	Work Order Date	÷31.03.2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/3937 : Near Ghaghra Village Bimarla Bauxite Mine (134.526 ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 13.10.2023 to 14.10.2023 : 28.10.2023	
Mines Status	- Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 28.10.2023 to 09.11.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Scaled & Preserved	

M	ETEOROLOGICAL INFOR	RMATION			
1	Average Temperature (°C)	: 25	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	: 58	4	Weather Condition	: Clear
5	Longitude	: 84°24'46.53"E	6	Latitude	: 23°17'14.34"N

Discipline : Chemica	ıl	Group : A	Atmospheric !	Pollution	
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m ²	IS 5182 (Part-23): 2006; RA2022	46	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m ³	IS 5182 (Part- 24): 2019	23	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m³	1S 5182 (Part-2): 2001; RA2022	<5.0	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m [‡]	IS 5182 (Part-6): 2006; RA2022	17.1	80 (24hrs)	
Ozone (O ₃)	μg/m³	1S 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH ₃)	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	µg/m³	IS 5182 (Part-22): 2004; RA2019	< 0.002	1 (24hrs)	
Nickel (Ni)	ng/m²	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)	

Page 1 of 2

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (IHARKHAND) GST NO:- 20AAECE9713D124

ENGINEERING SERVICES PVT. LTD.

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TEST REPORT

Test Report No.	: ELES/RNC/2023/4411	Report Release Date	: 22.11.2023	
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023	

Discipline : Chemi	cal	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Benzene (C ₆ H ₆)*	μg/m²	IS 5182 (Part-11)2006;RA2017	<1.0	05(Annual)		
Benzo-(a)-Pyrene*	ng/m³	IS 5182 (Part-12)2004;RA2019	<0.5	01(Annual)		

Remarks: (*)-Parameters are outsourced to other Lab.

Reviewed by

****End of Report****

Or. Deependra Kumar Sinha
Ph. D. Environmental Engg.
ELES Pvt. Ltd. Tachnical Manager

Page 2 of 2

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST ND:- 204AECE97130124

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Email: info@elespl.co.in , eles.ranchi@gmail.com Phone no:: 0651-2290103 Website: www.elespl.co.in

TEST REPORT

Test Report No.	: ELES/RNC/2023/4412	Report Release Date	: 22.11.2023	
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023	

CUSTOMER DET/	MLS	SAMPLE DETAILS		
Customer Name	Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/3938 : Near Bimarla Village Bimarla Bauxite Mine (134,526 ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 13.10.2023 to 14.10.2023 : 28.10.2023 : Ambient Air	
Mines Status	Operational	Sampling Procedure	; ELES/DOC/SMPL/02	
Period of Analysis	= 28.10.2023 to 09.11.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

MI	ETEOROLOGICAL INFOI	RMATION			
1	Average Temperature (°C)	: 25	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	:58	4	Weather Condition	: Clear
5	Longitude	: 84°25'27.92"E	6	Latitude	: 23°17'45.65"N

Discipline : Chemica	al	Group: A	tmospheric l	Pollution	
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	48	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m ²	IS 5182 (Part- 24): 2019	24	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m ³	IS 5182 (Part-2): 2001; RA2022	<5.0	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part-6); 2006; RA2022	18.1	80 (24hrs)	
Ozone (O ₁)	μg/m³	IS 5182 (Part-9); 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH ₂)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	μg/m³	IS 5182 (Part-22): 2004; RA2019	< 0.002	1 (24hrs)	
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)	

Page I of 2

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 20AAECE97130124

ENGINEERING SERVICES PVT. LTD.

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TEST REPORT

Test Report No.	: ELES/RNC/2023/4412	Report Release Date	: 22.11.2023	
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023	

Discipline : Chemi	cal	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₄ H ₆)*	μg/m³	1S 5182 (Part-11)2006;RA2017	<1.0	05(Annual)	
Benzo-(a)-Pyrene*	ng/m³	IS 5182 (Part-12)2004;RA2019	<0.5	01(Annual)	

Remarks: (*)-Parameters are outsourced to other Lab.

Reviewed by:

****End of Report****

Authorised Signatory

Ph. D. Environmental Engg. ELES Pvt. Ltd. Technical Manager

Page 2 of 2

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 20AAECE9713D1Z4

Email: info@elespl.co.in , eles.ranchi@gmail.com Phone no.: 0651-7290103 Website: www.elespl.co.in



TEST REPORT

Test Report No. : ELES/RNC/2023/4748 Report Release Date : 21,12,2023					
Test Report No.	: ELES/RNC/2023/4748	Report Release Date	. 41,14,4743		
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023		

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4218 : Near Weigh Bridge Bimarla Bauxite Mine (134,526 ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 11.11.2023 to 12.11,2023 : 24.11.2023	
Mines Status	: Operational	Type of Sample Sampling Procedure Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt, Ltd.	
Period of Analysis	: 24.11.2023 to 08.12.2023	Sample Condition	: Sealed & Preserved	

M	ETEOROLOGICAL INFOR	RMATION			
1	Average Temperature (°C)	:23	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	: 56	4	Weather Condition	: Clear
5	Longitude	: 84°25'20.14"E	6	Latitude	: 23°17'6.19"N

Discipline : Chemica	il	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	71	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	43	60 (24hrs)	
Sulphur Di-Oxide (SO ₁)	μg/m³	IS 5182 (Part-2): 2001; RA2022	7.6	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	μg/m³	IS 5182 (Part-6): 2006; RA2022	26.7	80 (24hrs)	
Ozone (O ₁)	μg/m³	18 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH ₃)	μg/m [®]	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m ²	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	μg/m³	IS 5182 (Part-22); 2004; RA2019	0.012	1 (24hrs)	
Nickel (Ni)	ng/m²	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)	

En Reviewed by

****End of Report****

of Whorised Signatory

Dr. Deependra Kumar Sinha

Page 1 of 1 __ES PVI Ltd Technical Memory and The December States and Condenses, unly on Company letter head in pro-lipical Memory The results shown in the Test Report refer or relates fully to the job/analysis done by the Laboratory only. The information stated on the Test Report reflects the findings done by the Laboratory at the time of involvement only and within the limits of client's instructions. The Laboratory is responsible for all the information or data provided on the report, except the information which is provided by the client. The Report cannot be reproduced except in full and any part of the report is not taken out of context, without prior written appeared of the Leboratory. The Report in full or in part shall not be published, advertise, used for any legal actions unless prior permission has been secured from the Management of the Laboratory. Attenuou is drawn to the limitation of liability, compensation and parasticitim issues. Any unsufferized attenuou & fulsification of the coment of appearance of the Test Report is unhawful and effenders may be prosecuted to the fullest extent of the law. All the samples are retained for 30days from the Date of release/issue of the Test Report. The samples from Regulatory bodies are to be retained as specified. Any type of Observations or Complaints regarding the Reports shall be done within 15days from the Date of Test Report released/issued. After the time period stated before, no complaints will be accepted. The entire Time schedule monitoned in Test Report is in 24hours format. Abbreviation used: N/A (Not Applicable); BOX. (Below Detection Limit), LDL (Lower Detection Limit).



PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (IHARNHANO) GST NO:- 20AAECE9713D1Z4

ENGINEERING SERVICES PVT. LTD.

Email: info@elespl.co.in , eles ranchi@gmail.com Phone no.: 0651-2290103

Website : www.elespl.co.in

TEST REPORT

Test Report No.	; ELES/RNC/2023/4748	Report Release Date	: 21.12.2023	
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4218 : Near Weigh Bridge Bimarla Bauxite Mine (134.526 ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	(11,1) 2023 to 12.11.2023 ; 24,11.2023	
Mines Status	.; Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 24.11.2023 to 08.12.2023 Sample Drawn By		: Sealed & Preserved	

MI	ETEOROLOGICAL INFOR	RMATION			
1	Average Temperature (°C)	: 23	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	: 56	4	Weather Condition	: Clear
_		: 84°25'20.14"E	6	Latitude	: 23°17'6.19"N

Discipline : Chem	ical	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Benzene (C ₆ H ₆)*	µg/m³	IS 5182 (Part-11)2006;RA2017	<1,0	05(Annual)		
Benzo-(a)-Pyrene*	ng/m³	IS 5182 (Part-12)2004;RA2019	<0.5	01(Annual)		

Remarks: (*)-Parameters are outsourced to other Lab.

Reviewed by

****End of Report****

Authorised Signatory
Ir. Deependra Kumar Sinha
Ph. D Environmental Engg
ES Pvt. Ltd. Technical Manager

Page 1 of 1

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 20AAECE9713D1Z4

Email: info@elespl.co.in , eles.ranchi@gmail.com Phone no.: 0651-2290103

Website: www.elespt.co.in



TEST REPORT

Test Report No.	t ELES/RNC/2023/4749	Report Release Date	: 21.12.2023	
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023	

CUSTOMER DET.	AILS	SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4219 : Near Quarry No 1B Birmarla Bauxite Mine (134.526 ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 11.11.2023 to 12.11.2023 : 24.11.2023	
Mines Status	Operational	Type of Sample Sampling Procedure Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt, Ltd.	
Period of Analysis	: 24.11,2023 to 08.12.2023	AND A PROPERTY AND A SECOND OF THE PROPERTY OF	: Sealed & Preserved	

M	ETEOROLOGICAL INFOR	RMATION			
1	Average Temperature (°C)	: 23	2	Barometric Pressure (mmHg)	736
3	Relative Humidity (%)	: 56	4	Weather Condition	: Clear
5	Longitude	: 84°25'12.83"E	6	Latitude	: 23°17'1.82"N

Discipline : Chemica	d	Group : A	tmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23); 2006; RA2022	55	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part-24); 2019	28	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2): 2001; RA2022	6.7	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part-6): 2006; RA2022	24.1	80 (24hrs)
Ozone (O ₁)	μg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lend (Pb)	jug/m ³	IS 5182 (Part-22): 2004; RA2019	0.013	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)

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****End of Report****

Authorised Signatory Dr. Deependra Kumar Sinha

Ph. D Environmental Enga.

Page 1 of I

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) G5T NO:- 20AAECE9713D1Z4

NGINEERING SERVICES PVT. LTD.

Email: Info@elespl.co.in , eles.ranchi@gmail.com Phone no.: 0651-2290103

Website : www.elespl.co.in

TEST REPORT

Test Report No.	: ELES/RNC/2023/4749	Report Release Date	: 21.12.2023	
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4219 : Near Quarry No 1B Birnarla Bauxite Mine (134,526 ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 11.11.2023 to 12.11.2023 : 24.11.2023	
Mines Status	: Operational	Type of Sample Sampling Procedure Sample Drawn By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 24.11.2023 to 08.12.2023	Sample Condition	: Sealed & Preserved	

M	ETEOROLOGICAL INFOR	RMATION			
1	Average Temperature (°C)	; 23	2	Barometric Pressure (mmHg)	:736
3	Relative Humidity (%)	: 56	- 4	Weather Condition	: Clear
5	Longitude	: 84°25'12.83°E	6	Latitude	: 23°17'1.82"N

Discipline : Chem	ical	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Benzene (C _n H ₆)*	μg/m ³	IS 5182 (Part-11)2006;RA2017	<1.0	05(Annual)		
Benzo-(a)-Pyrene*	ng/m²	IS 5182 (Part-12)2004; RA2019	<0.5	01(Annual)		

Remarks: (*)-Parameters are outsourced to other Lab.

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nuthorised Signature Sinha Ph. D Environmental Engg.

LES Pvt. Ltd. Technical Manager

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 20AAECE9713D1ZA

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TEST REPORT

Test Report No.	: ELES/RNC/2023/4750	Report Release Date	: 21.12.2023	
Work Order No.	: M&M/23-24/01	Work Order Date	; 31.03.2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4220 : Nav Prathmik Vidayalaya-Barang Path; Bimarla Bauxite Mine	
Address	: Lohardaga, Jharkhand-835302	Sampling Date	(134.526 ha) : 11.11.2023 to 12.11.2023	
Mines Status	(Operational	Sample Received Date Type of Sample Sampling Procedure	: 24,11,2023 : Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 24.11.2023 to 08.12.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

M	ETEOROLOGICAL INFO	RMATION			- C
1	Average Temperature (*C)	: 23	2	Barometric Pressure (mmHg)	736
3	Relative Humidity (%)	: 56	4	Weather Condition	Clear
5	Longitude	: 84°25'12.83"E	6	Latitude	: 23°17'1.82"N

Discipline : Chemica	1	Group : A	Atmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	52	100 (24hrs)
Particulate Matter (PM2.5)	μg/m ³	IS 5182 (Part- 24): 2019	26	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m ⁵	IS 5182 (Part-2): 2001; RA2022	6.6	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part-6): 2006; RA2022	22.2	80 (24hrs)
Ozone (O ₃)	μg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m²	IS 5182 (Part- 25); 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019	<1,0	2 (8hrs)
Lead (Pb)	μg/m³	IS 5182 (Part-22): 2004; RA2019	< 0.002	1 (24hrs)
Nickel (Ni)	ng/m ²	1S 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)

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Dr. Deependra Kumar Sink

Page 1 of 1

Ph D Environmental Engg.

The results to the result The Documers around is Test Report to be used by the Laboratory under General Terms and Conditions, only unafformation found in pre-upper points. The results shown in the Test Report relief ar relates only to the job analysis done by the Laboratory only. The information stated on the Test Report tented the analysis done by the Laboratory is the time of involvement only and within the limits of client's instructions. The Laboratory is responsible for all the information or data provided on the report, except the information which is provided by the client. The Report cannot be reproduced except in full and any part of the report is not taken out of content, without prior written approval of the Laboratory. The Report in full or in part shall not be published, advertise, used for any legal actions unless prior permission has been secured from the Management of the Laboratory. Attention is drawn to the limitation of liability, compensation and jurisdiction issues. Any unauthorized alteration & falsification of the content or appearance of the Test Report is unlawful and offenders may be prosecuted to the Fullest extent of the law. All the samples are retained for 30days from the Date of release scare of the Test Report. The samples from Regulatory bodies are to be retained as specified. Any type of Observations or Complaints regarding the Reports shall he done within 15days from the Date of Test Report released/issued. After the time period stated before, no complaints will be accepted. The entire Time schodule mentioned in Test Report to it 24hours format. Abbreviation used: N/A (Not Applicable), BDL (Below Detection Limit); LDL (Lower Detection Limit).



PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 20AAECE9713D124 ENGINEERING SERVICES PVT. LTD.

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TEST REPORT

Test Report No.	: ELES/RNC/2023/4750	Report Release Date	: 21.12.2023	
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	; Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4220 : Nav Pratbmik Vidayalaya-Barang Path; Bimarla Bauxite Mine	
Address	: Lohardaga, Jharkhand-835302	Sampling Date	(134.526 ha) : 11.11.2023 to 12.11.2023	
		Sample Received Date Type of Sample	: 24.11.2023 : Ambient Air	
Mines Status	: Operational	Sampling Procedure Sample Drawn By	ELES/DOC/SMPL/02 ELES Pvt. Ltd.	
Period of Analysis	: 24.11.2023 to 08.12.2023	Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFOR	RMATION			
1	Average Temperature (°C)	: 23	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	: 56	4	Weather Condition	: Clear
5	Longitude	: 84°25'12.83"E	6	Latitude	: 23°17'1.82"N

Discipline : Chem	ical	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Benzene (C ₆ H ₆)*	μg/m³	1S 5182 (Part-11)2006;RA2017	<1.0	05(Annual)		
Benzo-(a)-Pyrene*	ng/m³	IS 5182 (Part-12)2004;RA2019	< 0.5	01(Annual)		

Remarks: (*)-Parameters are outsourced to other Lab.



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Authorised Signatory
Deependra Kumar Sinha
Ph D Environmental Engg.
ES Pvt. Ltd. Technical Menantary

Page 1 of 1

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GS7 NO:- 20AAECE9713D1Z4

NGINEERING SERVICES PVT. LTD.

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TEST REPORT

Test Report No.	: ELES/RNC/2023/4751	Report Release Date	: 21.12.2023	
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023	

CUSTOMER DETA	MLS	SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4221 : Near Mine Entry Gate; Birnarla Bauxite Mine (134,526 ha	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 11.11.2023 to 12.11.2023 : 24.11.2023 : Ambient Air	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis 24.11.2023 to 08.12.2023	Sample Drawn By Sample Condition	: Sealed & Preserved		

M	ETEOROLOGICAL INFOR	RMATION			
1	Average Temperature (°C)	: 23	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	: 56	4	Weather Condition	; Clear
-	Longitude	: 84°25'35,93"E	6	Latitude	: 23°16'48.36"N

Discipline : Chemica	il	Group : A	tmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	(S 5182 (Part-23): 2006; RA2022	62	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24); 2019	34	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2): 2001; RA2022	6.6	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part-6): 2006; RA2022	23.3	80 (24hrs)
Ozone (O ₂)	μg/m'	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (Shrs)
Ammonia (NH ₂)	µg/m³	1S 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m³	IS 5182 (Part-22): 2004; RA2019	0.009	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)

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Page 1 of 1 ELES Pvt. Ltd. Technical Manual The results
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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 20AAECE9713D1Z4

VGINEERING SERVICES PVT. LTD.

Email: info@elespl.co.in , eles.ranchi@amail.com Phone no.: 0651-2290103

Website: www.elespl.co.in

TEST REPORT

Test Report No.	: ELES/RNC/2023/4751	Report Release Date	: 21.12.2023	
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023	

CUSTOMER DET.	AILS	SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4221 : Near Mine Entry Gate; Bimaria Bauxite Mine (134,526 ha	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	; 11.11.2023 to 12.11.2023 ; 24.11.2023	
Mines Status	- Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	= 24.11.2023 to 08.12.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

MI	ETEOROLOGICAL INFO	RMATION			
L	Average Temperature (°C)	: 23	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	: 56	4	Weather Condition	: Clear
5	Longitude	: 84°25'35.93"E	6	Latitude	: 23°16'48.36"N

Discipline: Chem	ical	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Benzene (C ₆ H ₆)*	μg/m ³	IS 5182 (Part-11)2006;RA2017	<1.0	05(Annual)		
Benzo-(a)-Pyrene*	ng/m³	15 5182 (Part-12)2004;RA2019	< 0.5	01(Annual)		

Remarks: (*)-Parameters are outsourced to other Lab.

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****End of Report****

Authorised Signatory

Di Deependra Kumar Sinhu Ph D Environmental Engg. LES Pvt. Ltd. Technical Manar

Page 1 of 1

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 20AAECE97130124

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TEST REPORT

Test Report No.	: ELES/RNC/2023/4752	Report Release Date	: 21.12.2023	
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS			
Customer Name	Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4222 : Near Korle Village Birnarla Bauxite Mine (134,526 ha		
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 12.11.2023 to 13.11.2023 : 24.11.2023 : Ambient Air		
Mines Status	Operational	Type of Sample Sampling Procedure	: ELES/DOC/SMPL/02		
Period of Analysis	: 24.11.2023 to 08.12.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved		

M	ETEOROLOGICAL INFORMAT	TION	-		
1	Average Temperature ("C) : 21	-	2	Barometric Pressure (mmHg)	₹737
3	Relative Humidity (%) : 53		4	Weather Condition	: Clear
5	Longitude 584	°25'56.20'E	6	Latitude	: 23°17'30.46"N

Discipline : Chemica	d	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23); 2006; RA2022	58	100 (24hrs)		
Particulate Matter (PM2.5)	μg/m³	1S 5182 (Part- 24): 2019	29	60 (24hrs)		
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2): 2001; RA2022	6.3	80 (24hrs)		
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part-6): 2006; RA2022	20.4	80 (24hrs)		
Ozone (O ₃)	μg/m'	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)		
Ammonia (NH ₃)	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)		
Lead (Pb)	µg/m³	1S 5182 (Part-22): 2004; RA2019	0.015	1 (24hrs)		
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)		

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Page 1 of 1

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 20AAECE9713D1Z4 ENGINEERING SERVICES PVT. LTD.

Email: info@elespl.co.in , eles.ranchi@gmail.com Phone no.: 0651-2290103

Website: www.elespl.co.in

TEST REPORT

Test Report No.	: ELES/RNC/2023/4752	Report Release Date	: 21,12,2023
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4222 : Near Korle Village Bimarla Bauxite Mine (134.526 ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: [2.] .2023 to 13.11.2023 : 24.] .2023	
Mines Status	nes Status : Operational Si		: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 24,11.2023 to 08.12.2023	Sample Drawn By Sample Condition	: Scaled & Preserved	

MI	ETEOROLOGICAL INFOR	RMATION			
1	Average Temperature ("C)	:21	2	Barometric Pressure (mmHg)	: 737
3	Relative Humidity (%)	: 53	4	Weather Condition	: Clear
5	Longitude	: 84°25'56.20"E	6	Latitude	: 23°17'30.46"N

Discipline : Chem	ical	Group:	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit			
Benzene (C ₀ H ₆)*	μg/m ¹	IS 5182 (Part-11)2006;RA2017	<1.0	05(Annual)			
Benzo-(a)-Pyrene*	ng/m³	IS 5182 (Part-12)2004;RA2019	<0.5	01(Annual)			

Remarks: (*)-Parameters are outsourced to other Lab.



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Dr. Deependra Kumar Sinha Ph. D Environmental Engg. ELES Pvt. Ltd. Tachnical Menager

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TEST REPORT

Test Report No.	: ELES/RNC/2023/4753	Report Release Date	: 21.12.2023	
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4223 : Near Barang Village Bimarla Bauxite Mine (134.526 ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 12.11.2023 to 13.11.2023 : 24.11.2023	
Mines Status	: Operational : 24,11,2023 to 08.12.2023	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis		Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

MI	ETEOROLOGICAL INFO	RMATION			
1	Average Temperature (°C)	: 21	2	Barometric Pressure (mmHg)	: 737
3	Relative Humidity (%)	: 53	4	Weather Condition	: Clear
5	Longitude	: 84°25'16.51"E	6	Latitude	: 23°16'30.61"N

Discipline : Chemica	d	Group: A	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit			
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	56	100 (24hrs)			
Particulate Matter (PM2,5)	µg/m³	IS 5182 (Part- 24): 2019	27	60 (24hrs)			
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2); 2001; RA2022	5.6	80 (24hrs)			
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part-6): 2006; RA2022	19.1	80 (24hrs)			
Ozone (O ₃)	μg/m ⁷	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)			
Ammonia (NH ₃)	µg/in ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)			
Carbon Monoxide (CO)	mg/m ^I	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)			
Lead (Pb)	μg/m³	IS 5182 (Part-22): 2004; RA2019	0.008	1 (24hrs)			
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)			
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)			

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DAutherised Signaturnar Sinha

Ph D Environmental En

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TEST REPORT

Test Report No.	: ELES/RNC/2023/4753	Report Release Date	: 21.12.2023
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4223 : Near Barang Village Bimarla Bauxite Mine (134,526 ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 12.11,2023 to 13.11.2023	
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 24.11.2023 to 08.12.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

M	ETEOROLOGICAL INFOR	RMATION			
1	Average Temperature (°C)	121	2	Barometric Pressure (mmHg)	: 737
3	Relative Humidity (%)	: 53	4	Weather Condition	: Clear
5	Longitude	= 84°25'16.51"E	6	Latitude	: 23°16'30.61"N

Discipline: Chem	ical	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Benzene (C ₆ H ₆)*	μg/m³	IS 5182 (Part-11)2006;RA2017	<1.0	05(Annual)		
Benzo-(a)-Pyrene*	ng/m³	IS 5182 (Part-12)2004;RA2019	< 0.5	01(Annual)		

Remarks: (*)-Parameters are outsourced to other Lab.

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****End of Report****

Authorised Signatory
Dr. Deependra Kurnar Sinha
Ph D Environmental Engg.
ES Pvt. Ltd. Technical Manager

Page 1 of 1

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- ZOAAECE9713D1Z4

ENGINEERING SERVICES PVT. LTD.

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Phone no.: 0651-2290103 Website: www.elespl.co.in



TEST REPORT

Test Report No.	: ELES/RNC/2023/4754	Report Release Date	: 21.12.2023	
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03,2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4224 : Near Ghaghra Village Bimarla Bauxite Mine (134.526 ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 12.11.2023 to 13.11.2023 : 24.11.2023	
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 24.11.2023 to 08.12.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

M	ETEOROLOGICAL INFOI	RMATION			
1	Average Temperature ("C)	221	2	Barometric Pressure (mmHg)	: 737
3	Relative Humidity (%)	± 53	4	Weather Condition	: Clear
5	Longitude	: 84°24'46.53"E	6	Latitude	: 23°17'14.34"N

Discipline : Chemica	it	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	µg/m ²	IS 5182 (Part-23): 2006; RA2022	54	100 (24hrs)		
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	28	60 (24hrs)		
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2): 2001; RA2022	5.9	80 (24hrs)		
Nitrogen Di-Oxide (NO ₁)	μg/m ³	IS 5182 (Part-6): 2006; RA2022	21.7	80 (24hrs)		
Ozone (O ₃)	μg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)		
Ammonia (NH ₃)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)		
Lead (Pb)	μg/m³	IS 5182 (Part-22); 2004; RA2019	< 0.002	1 (24hrs)		
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)		

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or Deependra Kumar Sinha

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Email: info@elespl.co.in , eles.ranchi@gmail.com

Phone no.: 0651-2290103 Website: www.elespi.co.in

TEST REPORT

Test Report No.	: ELES/RNC/2023/4754	Report Release Date	: 21.12.2023	
Work Order No.	: M&M/23-24/01	Work Order Date	; 31.03.2023	

CUSTOMER DET.	AILS	SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4224 : Near Ghaghra Village Bimarla Bauxite Mine (134.526 ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 12.11.2023 to 13.11.2023 : 24.11.2023	
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 24.11.2023 to 08.12.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

MI	TEOROLOGICAL INFOR	TOO TO TO TO	1.5		-
1	Average Temperature (°C)	121	2	Barometric Pressure (mmHg)	: 737
3	Relative Humidity (%)	: 53	4	Weather Condition	; Clear
5	Longitude	: 84°24'46.53"E	6	Latitude	: 23°17'14.34'N

Discipline: Chem	ical	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Benzene (C ₆ H ₆)*	μg/m ³	IS 5182 (Part-11)2006;RA2017	<1.0	05(Annual)		
Benzo-(a)-Pyrene*	ng/m	15 5182 (Part-12)2004;RA2019	< 0.5	01(Annual)		

Remarks: (*)-Parameters are outsourced to other Lab.

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Authorised Signatory
Dr. Deependra Kumar Sinhu
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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 20AAECE9713D1Z4

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Website: www.elespl.co.in



TEST REPORT

Test Report No.	: ELES/RNC/2023/4755	Report Release Date	: 21,12,2023	
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4225 : Near Bimarla Village Bimarla Bauxite Mine (134,526 ha	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 12.11.2023 to 13.11.2023 : 24.11.2023	
Mines Status	: Operational	Type of Sample Sampling Procedure	; Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 24.11.2023 to 08.12.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

MI	ETEOROLOGICAL INFO	RMATION		A-A-	
1	Average Temperature (°C)	:21	2	Barometric Pressure (mmHg)	:737
3	Relative Humidity (%)	: 53	4	Weather Condition	Clear
5	Longitude	: 84°25'27.92"E	6.	Latitude	: 23°17'45.65"N

Discipline : Chemica	d	Group: A	tmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM)0)	μg/m³	IS 5182 (Part-23): 2006; RA2022	59	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	28	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	1S 5182 (Part-2): 2001; RA2022	5.7	80 (24hrs)
Nitrogen Di-Oxide (NO ₁)	μg/m³	IS 5182 (Part-6): 2006; RA2022	23.3	80 (24hrs)
Ozone (O ₃)	μg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	μg/m³	IS 5182 (Part- 25); 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m³	IS 5182 (Part-22): 2004; RA2019	0.006	1 (24hrs)
Nickel (Ni)	ng/m³	1S 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)

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Authorised Signatory Dr. Deependra Kumar Sinha

Ph. D Environmental Engg.

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ENGINEERING SERVICES PVT. LTD.

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TEST REPORT

Test Report No.	: ELES/RNC/2023/4755	Report Release Date	: 21.12.2023	
Work Order No.	: M& M/23-24/01	Work Order Date	: 31.03.2023	

CUSTOMER DET.	AILS	SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4225 : Near Bimarla Village Bimarla Bauxite Mine (134.526 ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 12.11.2023 to 13.11.2023 : 24.11.2023	
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 24.11.2023 to 08.12.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

M	ETEOROLOGICAL INFOR	RMATION			
L	Average Temperature (°C)	: 21	2	Barometric Pressure (mm	Hg) : 737
3.	Relative Humidity (%)	533	4	Weather Condition	: Clear
5	Longitude	: 84°25'27.92"E	6	Latitude	= 23°17'45.65"N

Discipline: Chem	ical	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Benzene (C ₆ H ₆)*	μg/m³	IS 5182 (Part-11)2006;RA2017	<1.0	05(Annual)		
Benzo-(a)-Pyrene*	ng/m³	IS 5182 (Part-12)2004;RA2019	<0.5	01(Annual)		

Remarks: (*)-Parameters are outsourced to other Lab.



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Authorised Signatory
Dr. Deependra Kumar Sinha
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ELES Pvt. Ltd. Technical Manager

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Phone no.: 0651-2290103 Website: www.elespl.co.in

TEST REPORT

Test Report No.	; ELES/RAN/2023/3130	Report Release Date	: 21.12.2023	
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023	

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Sampling Date Sample Received Date	: ELES/RAN/2023/DW/3017 : 18.11.2023 : 24.11.2023	
Address	: Lohardaga, Jharkhand-835302	Type of Sample Source/Location of Sample	: Drinking Water : Near Quarry No.1B, Bimarla Bauxite Mine (134,526 ha)	
Mines Status	: Operational	Sampling Procedure Sample Collected By	: ELES/DOC/SMPL/01 : ELES Pyt. Ltd.	
Period of Analysis	: 24.11.2023 to 08.12.2023	Sample Condition	: Sealed & Preserved	

Discipline : Chem	ical	Group : Water			ory Limit 10500;2012
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
pH (at 24.7°C)		APHA 23 rd Ed.2017, 4500-H	6,72	6.5-8.5	No Relaxation
Turbidity	NTU	APHA 23rd Ed.2017, 2130 B	0.38	1.0	5.0
Taste	- A	APHA 23rd Ed 2017, 2160 C	Agreeable	Agreeable	Agreeable
Odour		IS 3025 (Part-5) :2018	Agreeable	Agreeable	Agreeable
Colour	Hazen	APHA 23rd Ed.2017, 2120B&D	1.0	5	15
Total Dissolved Solids (TDS)	mg/L	APHA 23 rd Ed.2017, 2540B,C&D	220	500	2000
Chloride (as Cl)	mg/L	APHA 23 rd Ed.2017, 4500 CI B	28.8	250	1000
Fluoride (as F)	mg/L	APHA 23 rd Ed.2017, 4500 F-D	BDL (DL: 0.1)	1.0	1.5
Total Alkalinity (as CaCO3)	mg/L	APHA 23 rd Ed.2017, 2320 B	74.8	200	600
Total Hardness (as CaCO ₃)	mg/L	APHA 23 rd Ed.2017, 2340 C	105	200	600
Sulphate (as SO ₄)	mg/L	APHA 23 rd Ed.2017, 4500 SO ₄ ⁻¹ -E	14.8	200	400
Nitrate (as NO ₃)	mg/L	APHA 23 rd Ed.2017, 4500 NO ₃ -B	2.46	45	No Relaxation
Phenolic Compound (as C ₆ H ₅ OH)	mg/L	1S 3025 (Part-43):1992;RA2019	BDL (DL: 0.0005)	0,001	0.002

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 20AAECE9713D124 ENGINEERING SERVICES PVT. LTD.

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TEST REPORT

Discipl	ine : Che	mical Group: V	Vater		tory Limit 10500:2012
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
Cyanide (as CN)	mg/L	APHA 23 st Ed.2017, 4500 CN-E	BDL (DL: 0.012)	0.05	No Relaxation
Residual Free Chlorine (RFC)	mg/L	1S 3025 (Part-26):2021	BDL (DL: 0.1)	0.02	1.0
Calcium (as Ca)	mg/L	APHA 23 rd Ed.2017, 3500 Ca B	27.6	75	200
Discipl	ine : Che	mical Group	: Residues in	Water	
Aluminum (as Al)	mg/L	IS 3025 (Part-55): 2003; RA2019	BDL (DL: 0.02)	0,03	0.2
Arsenic (as As)	mg/L	IS 3025 (Part 37): 2022	BDL (DL: 0.005)	0.01	No Relaxation
Boron (as B)	mg/L	IS 3025(Part-57); 2005; RA2021	BDL (DL: 0.2)	0.5	t.a
Cadmium (as Cd)	mg/L	APHA 23rd Ed.2017, 3111B	BDL (DL: 0.003)	0.003	No Relaxation
Total Chromium (as Cr)	mg/L	APHA 23 ^{td} Ed.2017, 3111B	BDL (DL: 0.03)	0.05	No Relaxation
Copper (as Cu)	mg/L	APHA 23 rd Ed.2017, 3111B	BDL (DL; 0.03)	0.05	1.5
Iron (as Fe)	mg/L	APHA 23 rd Ed.2017, 3111B	0.147	1.0	1.0
Lead (as Pb)	mg/L	APHA 23 rd Ed.2017, 3111B	BDL (DL: 0.01)	0,01	No Relaxation
Manganese (as Mn)	mg/L	APHA 23rd Ed.2017, 3111B	BDL (DL: 0.05)	0.1	0.3
Mercury (as Hg)	mg/L	IS 3025 (Part-48): 1994; RA2019	BDL (DL: 0.001)	0.001	No Relaxation
Selenium (as Se)	mg/L	IS 3025 (Part-56): 2003; RA2019	BDL (DL: 0.01)	0.01	No Relaxation
Zinc (as Zn)	mg/L	APHA 23 rd Ed.2017, 3111B	BDL (DL: 0.1)	5	15

Remarks: 1. pH & RFC done at Lab.

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TEST REPORT

 Test Report No.
 : ELES/RAN/2023/3130
 Report Release Date
 : 21.12.2023

 Work Order No.
 : M&M/23-24/01
 Work Order Date
 : 31.03.2023

Discipline: Che	mical		Group: Water	
Parameter	Unit	Test Protocol	Result	Regulatory Limit as per IS 10500:2012
Pesticides				
Alachior*	μg/L	APHA	BDL (DL: 1.0)	20
Atrazine*	μg/L	APHA	BDL (DL; 1.0)	2
Aldrin/Dieldrin*	μg/L	АРНА	BDL (DL: 0.01)	0.03
Alpha HCH*	μg/L	АРНА	BDL (DL: 0.001)	0.01
Beta HCH*	μg/L	APHA	BDL (DL: 0.01)	0.04
Butachlor*	μg/L	APHA	BDL (DL: 10)	125
Chlorpyriphos*	µg/L	АРНА	BDL (DL: 10)	30
Delta HCH*	μg/L	АРНА	BDL (DL: 0.01)	0.04
2,4 dichlorophenoxyacetic acid*	μg/L	АРНА	BDL (DL: 10)	30
DDT(o,p and p,p-isomers of DDT,DDE and DDD)*	μg/L	APHA	BDL (DL: 0.5)	I I
Endosulfan (alpha, beta, and sulphate)*	μg/L	АРНА	BDL (DL: 0.1)	0.4
Ethion*	μg/L	APHA	BDL (DL: 0.5)	3
Gamma HCH (Lindane)*	μg/L	APHA	BDL (DL: 0.5)	2
soproturon*	μg/L	АРНА	BDL (DL: 0.5)	9

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TEST REPORT

Test Report No.	: ELES/RAN/2023/3130	Report Release Date	: 21.12.2023
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023

Discipline : Biological		Group : 1	Water	Regulatory Limit us per IS 10500:2012	
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
Total Coliform	Per 100 mL	1S 15185:2016; RA 2021	Not Detected	Chall not l	be detected
Escherichia Coli (E. Coli)	Per 100 mL	IS 15185:2016; RA 2021	Not Detected	Shan not	ne detected
Discipline : Chemical		Group:	Water	Regulatory Limit as per IS 10500:2012	
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
Anionic Surfactants (as MBAS)*	mg/L	IS 3025 Part 68	BDL (DL: 0.1)	0.2	1.0
Mineral Oil*	mg/L	CL-6, IS: 3025 (P-39)	BDL (DL: 0.1)	1.0	No relaxation
Polynuclear Aromatic Hydrocarbons (PAH)*	mg/L	APHA 23 rd Edition	BDL (DL; 0,0001)	0.0001	No relaxation
Polychlorinated Biphenyls (PCB)*	mg/L	APHA 23rd Edition	BDL (DL: 0.0005)	0.0005	No relaxation

Remarks: 1. (*) Parameters are outsourced to other Lab.

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****End of Report****

Authorised Signatory
Dr. Deependra Kumar Sinha
Ph. D Environmental Engg.

CLES Pvt. Ltd. Technical Manage

Page 4 of 4

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 20AAECE97130124

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TEST REPORT

Test Report No.	: ELES/RAN/2023/3137	Report Release Date	± 21.12.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No.	: ELES/RAN/2023/EF/3024	
		Sampling Date	: 18.11.2023	
		Sample Received Date	: 24.11.2023	
Address	: Lohardaga, Jharkhand-835302	Type of Sample	: Effluent Water	
		Source of Sample	: Workshop Effluent - Bimarla Bauxite Mine (134.526 ha)	
		Sampling Procedure	: ELES/DOC/SMPL/01	
Mines Status	: Operational	Sample Collected By	: ELES Pvt. Ltd.	
Period of Analysis	: 24.11.2023 to 02.12.2023	Sample Condition	: Sealed & Preserved	

Discipline: Chemica		Group: Pollution & Env	ironment	Discharge Lim EPR, 1986 Sc	
Parameter	Unit	Test Protocol	Result	Inland Surface Water	Land for Irrigation
pH (at 25.0 °C)		APHA 23rd Ed.2017,4500-H*B	6.86	5,5-9.0	5.5-9.0
Total Suspended Solids (TSS)	mg/L	1S 3025 (Part-17):2022	28.8	100	200
Total Dissolved Solids (TDS)	mg/L	APHA 23rd Ed2017, 2540B, C&D	840	*	-
Temperature	°C	APHA 23 rd Ed.2017, 2550 B	25.3	Shall Not Exceed 5°C Above the Receiving Water Temperature	-
Chemical Oxygen Demand (COD)	mg/L	IS 3025 (Part-58): 2006: RA2022	54.6	250	-
Biochemical Oxygen Demand (BOD) (at 27 °C for 3 days)	mg/L.	IS 3025 (Part-44): 1993: RA2019	4.8	30	100.
Oil & Grease	mg/L	IS 3025 (Part-39): 2021	1.2	10	10
Calcium (as Ca)	mg/L	IS 3025 (Part-40):1991; RA2019	34.2		
Discipline: Chemica	1	Group: Resid	dues in Wate	r	
Aluminum (as Al)	mg/L	IS 3025 (Part-55): 2003; RA2019	BDL (DL: 0.02)	-	
Iron (as Fe)	mg/L	APHA 23rd Ed,2017; 3111B	0.326	3.0	

Remarks: 1. pH done at Lab.

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Dr. Deutlenbed Kinnal Sinha

Ph D Environmental Enga

Page 1 of 1 Ltd. Technical Manager

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TC-BBS

TEST REPORT

Test Report No.	: ELES/RNC/2024/0203	Report Release Date	: 15.01.2024	
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03,2023	
ULR No.	: TC883924000000186F			

CUSTOMER DET.	AILS	SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No.	; ELES/RNC/2023/AA/4802	
		Location	; Near Weigh Bridge	
			Bimarla Bauxite Mine (134,526 ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 16.12.2023 to 17.12.2023	
		Sample Received Date	: 26.12.2023	
		Type of Sample	: Ambient Air	
		Sampling Procedure	ELES/DOC/SMPL/02	
Mines Status	: Operational	Sampling Done By	: ELES Pvt. Ltd.	
Period of Analysis	: 26.12.2023 to 08.01.2024	Sample Condition	: Sealed & Preserved	

M	ETEOROLOGICAL INFO	RMATION			
T	Average Temperature (°C)	: 19	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	48	4	Weather Condition	:: Clear
5	Longitude	: 84°25'20.14"E	6	Latitude	: 23°17'6.19"N

Discipline : Chemica	d	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m³	IS 5182 (Part-23): 2006; RA2022	76	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part-24): 2019	46	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	µg/m³	IS 5182 (Part-2): 2001; RA2022	8.9	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m³	IS 5182 (Part-6): 2006; RA2022	29.1	80 (24hrs)	
Ozone (O ₃)	µg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH ₂)	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lend (Ph)	μg/m³	IS 5182 (Part-22): 2004; RA2019	0.007	1 (24hrs)	
Nickel (Ni)	ng/m³	1S 5182 (Part-26);2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)	

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****End of Report****

Authorised Signatory

Dr. Deependra Kumar Singa

Page 1 of I

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TEST REPORT

Test Report No.	2 ELES/RNC/2024/0203	Report Release Date	: 15.01.2024	
Work Order No.	2 M&M/23-24/01	Work Order Date	: 31.03.2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref, No. Location	: ELES/RNC/2023/AA/4802 : Near Weigh Bridge Bimarla Bauxite Mine (134.526 ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 16.12.2023 to 17.12.2023 : 26.12.2023	
		Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Mines Status	: Operational	Sampling Done By	: ELES Pvt. Ltd.	
Period of Analysis	: 26.12.2023 to 08.01.2024	Sample Condition	: Sealed & Preserved	

M	TEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 19	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	: 48		Weather Condition	: Clear
5	Longitude	: 84°25'20.14"E	- 5	Latitude	: 23°17'6.19"N

Discipline: Chem	ical	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C _o H _b)*	µg/m³	IS 5182 (Part-11)2006;RA2017	<1.0	05(Annual)	
Benzo-(a)-Pyrene*	ng/m³	IS 5182 (Part-12)2004;RA2019	< 0.5	01(Annual)	

Remarks: (*)-Parameters are outsourced to other Lab.

COURS &

Reviewed by a

****End of Report****

Ph D Environmental Engg

CLES Pvt Lid. Technical Manager

Page 1 of 1

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 20AAECE9713D1Z4

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TEST REPORT

Test Report No.	: ELES/RNC/2024/0204	Report Release Date	: 15.01.2024	
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023	
III R No	- TC883924800800187F			

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	- Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4803 : Near Quarry No 1B Bimarla Bauxite Mine (134.526 ha)	
Address	Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	; 16.12.2023 to 17.12.2023 ; 26.12.2023	
		Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Mines Status	: Operational	Sampling Done By	ELES Pvt. Ltd.	
Period of Analysis	26.12.2023 to 08.01.2024	Sample Condition	: Sealed & Preserved	

M	ETEOROLOGICAL INFO	RMATION			
1	Average Temperature (°C)	: 19	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	; 48	4	Weather Condition	: Clear
5	Longitude	: 84°25'12.83"E	6	Latitude	: 23°17'1.82"N

Discipline : Chemic	al	Group : Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m ³	IS 5182 (Part-23); 2006; RA2022	61	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	1S 5182 (Part- 24): 2019	33	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m ³	IS 5182 (Part-2): 2001; RA2022	7.3	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	μg/m³	IS 5182 (Part-6): 2006; RA2022	26.3	80 (24hrs)	
Ozone (O ₃)	μg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH ₃)	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	μg/m³	IS 5182 (Part-22): 2004; RA2019	0.016	1 (24hrs)	
Nickel (Ni)	ng/m³	1S 5182 (Part-26);2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)	

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Dr. Deependra Kumar Siriia

Page 1 of 1

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (IHARKHAND) GST NO:- 20AAECE9713D124

ENGINEERING SERVICES PVT. LTD.

Email: info@elespl.co.in , eles.ranchi@gmall.com

Phone no.: 0651-2290103 Website: www.elespl.co.in

TEST REPORT

Test Report No.	: ELES/RNC/2024/0204	Report Release Date	: 15.01.2024	
Work Order No.	; M&M/23-24/01	Work Order Date	: 31.03.2023	

CUSTOMER DET.	AILS	SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4803 : Near Quarry No 1B Bimarla Bauxite Mine (134,526 ha)	
Address	Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 16.12.2023 to 17.12.2023 : 26.12.2023	
Mines Status	: Operational	Type of Sample Sampling Procedure Sampling Done By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 26.12.2023 to 08.01.2024	Sample Condition	: Sealed & Preserved	

M	ETEOROLOGICAL INFOR	RMATION			
1	Average Temperature (°C)	: 19	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	148	4	Weather Condition	: Clear
5	Longitude	: 84°25'12.83"E	6	Latitude	: 23°17'1.82"N

Discipline: Chem	ical	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₆ H ₆)*	µg/m³	IS 5182 (Part-11)2006;RA2017	<1.0	05(Annual)	
Benzo-(a)-Pyrene*	ng/m³	IS 5182 (Part-12)2004; RA2019	<0.5	01(Annual)	

Remarks: (*)-Parameters are outsourced to other Lab.



****End of Report****

Authorised Signatory
Dr. Deependra Kurnar Sinna.
Ph. D Environmental Engg.
ELES Pvt. Ltd. Technical Manager

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO: 20AAECE9713D1Z4

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TEST REPORT

Test Report No.	: ELES/RNC/2024/0205	Report Release Date	: 15.01.2024
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023
ULR No.	: TC883924000000188F		

CUSTOMER DETA	MILS	SAMPLE DETAILS		
Customer Name	! Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4804 : Nav Prathmik Vidayalaya-Barang Path; Bimarla Bauxite Mine	
Address	Eohardaga, Jharkhand-835302	Sampling Date Sample Received Date	(134.526 ha) : 16.12.2023 to 17.12.2023 : 26.12.2023	
Mines Status	: Operational	Type of Sample Sampling Procedure Sampling Done By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 26.12.2023 to 08.01.2024	Sample Condition	: Sealed & Preserved	

M	ETEOROLOGICAL INFO	RMATION			
1	Average Temperature (°C)	:19	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	: 48	4	Weather Condition	: Clear
5.	Longitude	: 84°25'12.83"E	6	Latitude	: 23°17'1.82"N

Discipline: Chemic	al	Group: 2	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	.58	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m ³	IS 5182 (Part- 24): 2019	31	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m ³	1S 5182 (Pari-2): 2001; RA2022	7.5	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m³	1S 5182 (Part-6); 2006; RA2022	24.8	80 (24hrs)	
Ozone (O ₃)	μg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH ₃)	μg/m²	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	1S 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	μg/m³	IS 5182 (Part-22): 2004; RA2019	< 0.002	1 (24hrs)	
Nickel (Ni)	ng/m	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m ²	ELES/AIR/SOP/01	<2.0	06 (Annual)	

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TEST REPORT

Test Report No.	: ELES/RNC/2024/0205	Report Release Date	: 15.01.2024	
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4804 : Nav Prathmik Vidayalaya-Barang Path; Bimarla Bauxite Mine (134,526 ha)	
Address	Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 16.12.2023 to 17.12.2023 : 26.12.2023 : Ambient Air : ELES/DOC/SMPL/02	
Mines Status	: Operational	Sampling Done By	: ELES Pvt. Ltd.	
Period of Analysis	: 26.12.2023 to 08.01.2024	Sample Condition	: Sealed & Preserved	

M	ETEOROLOGICAL INFOR	RMATION			
1	Average Temperature ("C)	: 19	2	Barometric Pressure (mmHg)	= 738
3	Relative Humidity (%)	; 48	4	Weather Condition	: Clear
5	Longitude	: 84°25'12.83"E	6	Latitude	=23°17'1.82"N

Discipline : Chem	ical	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₆ H ₆)*	μg/m²	IS 5182 (Part-11)2006;RA2017	<1.0	05(Annual)	
Benzo-(a)-Pyrene*	ng/m³	IS 5182 (Part-12)2004;RA2019	<0.5	01(Annual)	

Remarks: (*)-Parameters are outsourced to other Lab.



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Dr. Deependra Kumar Sirina Ph. D Environmental Engg. ELES Pvt. Ltd. Technical Manager

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TEST REPORT

Test Report No.	: ELES/RNC/2024/0206	Report Release Date	: 15.01.2024
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023
ULR No.	: TC883924000000189F		

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4805 : Near Mine Entry Gate; Bintarla Bauxite Mine (134.526 ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	(134.526 ha) : 16.12.2023 to 17.12.2023 : 26.12.2023 : Ambient Air	
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 26.12.2023 to 08.01.2024	Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFO	RMATION			
1	Average Temperature (°C)	: 19	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	: 48	4	Weather Condition	: Clear
5	Longitude	: 84°25'35.93"E	6	Latitude	:: 23°16'48.36"N

Discipline : Chemica	d	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	63	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	37	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m³	IS 5182 (Part-2): 2001; RA2022	7.5	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part-6): 2006; RA2022	25.9	80 (24hrs)
Ozone (O ₂)	μg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₁)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	μg/m³	IS 5182 (Part-22): 2004; RA2019	0.011	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)

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Ph. D Environmental En

Page 1 of 1

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TEST REPORT

Test Report No.	: ELES/RNC/2024/0206	Report Release Date	: 15.01.2024
Work Order No.	: M&M/23-24/01	Work Order Date	; 31.03.2023

CUSTOMER DET/	AILS	SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	ELES/RNC/2023/AA/4805 Near Mine Entry Gate; Bimarla Bauxite Mine (134.526 ha)	
Address	: Lohardaga, Jhurkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 16.12.2023 to 17:12.2023 : 26.12.2023 : Ambient Air : ELES/DOC/SMPL/02	
Mines Status	: Operational	Sampling Done By	: ELES Pvt. Ltd.	
Period of Analysis	: 26.12.2023 to 08.01.2024	Sample Condition	; Sealed & Preserved	

MI	TEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	3.19	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	: 48	A	Weather Condition	: Clear
5	Longitude	: 84°25'35.93"E	6	Latitude	: 23°16'48.36"N

Discipline : Chem	ical	Group:	Atmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (C ₆ H ₆)*	µg/m³	15 5182 (Part-11)2006;RA2017	<1.0	05(Annual)
Benzo-(a)-Pyrene*	ng/m³	1S 5182 (Part-12)2004;RA2019	<0.5	01(Annual)

Remarks: (*)-Parameters are outsourced to other Lab.



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Ph. D Environmental Engg.
ELES Pvt. Ltd. Technical Manager

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TEST REPORT

Test Report No.	: ELES/RNC/2024/0207	Report Release Date	: 15.01.2024	
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023	
ULR No.	: TC883924000000190F			

CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4806 : Near Korle Village Bimarla Bauxite Mine (134,526 ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 17.12.2023 to 18.12.2023 : 26.12.2023 : Ambient Air
Mines Status	Operational	Sampling Procedure Sampling Done By	ELES/DOC/SMPL/02 ELES Pvt. Ltd.
Period of Analysis	: 26.12.2023 to 08.01.2024	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFOR	RMATION			
1	Average Temperature (°C)	:19	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	:48	4	Weather Condition	: Clear
5	Longitude	: 84°25'56.20"E	6	Latitude	: 23°17'30.46"N

Discipline : Chemica	d	Group: A	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m³	IS 5182 (Part-23); 2006; RA2022	61	100 (24hrs)	
Particulate Master (PM2,5)	μg/m ³	IS 5182 (Part- 24): 2019	33	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m ³	1S 5182 (Part-2); 2001; RA2022	6.7	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part-6): 2006; RA2022	22.3	80 (24hrs)	
Ozone (O ₃)	μg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH ₃)	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m ¹	IS 5182 (Part-T0): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	µg/m³	IS 5182 (Part-22): 2004; RA2019	0.011	1 (24hrs)	
Nickel (Ni)	ng/m1	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m¹	ELES/AIR/SOP/01	<2.0	06 (Annual)	

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****End of Report****

Apphorised Signatory ar Sirura

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 204AECE9713D174

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TEST REPORT

Test Report No.	: ELES/RNC/2024/0207	Report Release Date	: 15.01.2024	
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023	

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4806 : Near Korle Village Bimarla Bauxite Mine (134.526 ha	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	; 17.12,2023 to 18.12.2023 ; 26.12.2023	
		Type of Sample Sampling Procedure Sampling Done By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt, Ltd.	
Mines Status	- Operational	the second secon		
Period of Analysis : 26.12.2023 to 08.01.2024		Sample Condition	; Sealed & Preserved	

MI	ETEOROLOGICAL INFOR	RMATION			
1	Average Temperature (°C)	: 19	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	: 48	4	Weather Condition	; Clear
5	Longitude	: 84°25'56.20"E	6	Latitude	= 23°17'30.46"N

Discipline : Chem	ical	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (C ₄ H ₆)*	μg/m³	1S 5182 (Part-11)2006;RA2017	<1.0	05(Annual)
Benzo-(a)-Pyrene*	ng/m³	IS 5182 (Part-12)2004;RA2019	<0.5	Ol (Annual)

Remarks: (*)-Parameters are outsourced to other Lab.



****End of Report****

Authorised Signatory
The Control of Kurnar Sinna
Ph. 17 Environmental Engg
LES Ph. Ltd. Technical Manager

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 [JHARKHAND] G5T NO:- 20AAECE9733D124

Email: Info@elespl.co.in , eles.ranchi@gmail.com

Phone no.: 0651-2290103 Website: www.elespl.co.in



TEST REPORT

Test Report No.	: ELES/RNC/2024/0208	Report Release Date	: 15.01,2024	
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023	
ULR No.	: TC883924000000191F			

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4807 : Near Barang Village Bimarla Bauxite Mine (134.526 ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 17.12.2023 to 18.12.2023 : 26.12.2023	
Mines Status	: Operational	Type of Sample Sampling Procedure Sampling Done By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvl. Ltd.	
Period of Analysis	: 26.12.2023 to 08.01.2024	Sample Condition	: Sealed & Preserved	

M	ETEOROLOGICAL INFO	RMATION			
1	Average Temperature (°C')	: 19	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	: 48	- 14	Weather Condition	: Clear
5	Longitude	: 84°25'16,51"E	6	Latitude	: 23°16'30,61"N

Discipline : Chemica	ıł .	Group : A	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	57	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24); 2019	31	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2): 2001; RA2022	6.9	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	μg/m³	IS 5182 (Part-6): 2006; RA2022	23.2	80 (24hrs)	
Ozone (O ₃)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH ₃)	µg/m³	TS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	µg/m³	IS 5182 (Part-22): 2004; RA2019	< 0.002	1 (24hrs)	
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)	

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Authorised Signatory

Dr. Deependos K.

Page 1 of 1

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 20AAECE9713D124

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TEST REPORT

Test Report No.	: ELES/RNC/2024/0208	Report Release Date	: 15.01.2024
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4807 : Near Barang Village Bimarla Bauxite Mine (134,526 ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 17.12.2023 to 18.12,2023 : 26,12.2023	
		Type of Sample Sampling Procedure Sampling Done By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Mines Status	: Operational		The state of the s	
Period of Analysis	; 26.12.2023 to 08.01.2024	Sample Condition	: Sealed & Preserved	

M	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 19	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	: 48	4	Weather Condition	: Clear
5	Longitude	: 84°25'16.51'E	6	Latitude	: 23°16'30.61'N

Discipline : Chem	ical	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₆ H ₆)*	μg/m ¹	IS 5182 (Part-11)2006;RA2017	<1.0	05(Annual)	
Benzo-(a)-Pyrene*	ng/m³	IS 5182 (Part-12)2004;RA2019	<0.5	01(Annual)	

Remarks: (*)-Parameters are outsourced to other Lab.



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Dr. Deependra Kumar Sinita Ph. D Environmental Engg. GLES Pvt. Ltd. Technical Manager

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND). GST NO:- 20AAECE97130124

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TEST REPORT

Test Report No.	: ELES/RNC/2024/0209	Report Release Date	: 15.01.2024
Work Order No.	: M&M/23-24/01	Work Order Date	; 31.03.2023
ULR No.	: TC883924000000192F		

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4808 : Near Ghaghra Village Bimarla Bauxite Mine (134.526 ha)	
Address	; Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	17,12,2023 to 18.12,2023 26,12,2023	
Mines Status	: Operational	Type of Sample Sampling Procedure Sampling Done By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt, Ltd.	
Period of Analysis	: 26.12.2023 to 08.01.2024	Sample Condition	: Sealed & Preserved	

M	ETEOROLOGICAL INFOR	RMATION			
1	Average Temperature (°C)	: 19	2	Barometric Pressure (mmHg)	= 738
1	Relative Humidity (%)	: 48	4	Weather Condition	d Clear
5	Longitude	184°24'46.53'E	6	Latitude	: 23°17'14.34"N

Discipline : Chemica	ıl .	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	61	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	33	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	µg/m³	15 5182 (Part-2): 2001; RA2022	7.1	80 (24hrs)	
Nitrogen Di-Oxide (NO ₁)	μg/m ⁴	IS 5182 (Part-6): 2006; RA2022	25.4	80 (24hrs)	
Ozone (O ₃)	μg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH ₃)	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lend (Pb)	μg/m³	IS 5182 (Purt-22): 2004; RA2019	< 0.002	1 (24hrs)	
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)	

****End of Report****

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 204AECE9713D1Z4

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TEST REPORT

Test Report No.	: ELES/RNC/2024/0209	Report Release Date	: 15.01.2024
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4808 : Near Ghaghra Village Bimarla Bauxite Mine (134.526 ha)	
Address	; Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 17.12,2023 to 18.12.2023 : 26,12,2023	
		Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pv. Ltd.	
Mines Status	: Operational	Sampling Done By	The second of th	
Period of Analysis	: 26.12.2023 to 08.01.2024	Sample Condition	: Sealed & Preserved	

M	ETEOROLOGICAL INFOR	MATION		The second second second	
1	Average Temperature (°C)	:19	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	=48	4	Weather Condition	:: Clear
5	Longitude	: 84°24'46.53"E	6	Lafitude	: 23°17'14.34"N

Discipline : Chem	ical	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Benzene (C ₆ H ₀)*	μg/m ³	1S 5182 (Part-11)2006;RA2017	<1.0	05(Annual)		
Benzo-(a)-Pyrene*	ng/m³	1S 5182 (Part-12)2004;RA2019	<0.5	01(Annual)		

Remarks: (*)-Parameters are outsourced to other Lab.



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Dr. Deependra Kumar Situation
Ph. D Environmental Engg

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDAÑA HATTA, RANCHI-834003 (JHARKHAND) GST NO:- 20AAECE9713D124

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TEST REPORT

Test Report No.	: ELES/RNC/2024/0210	Report Release Date	: 15.01.2024
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023
ULR No.	: TC883924000000193F		

CUSTOMER DET.	AILS	SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4809 : Near Bimarla Village Bimarla Bauxite Mine (134.526 ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 17.12.2023 to 18.12.2023 : 26.12.2023 : Ambient Air	
Mines Status	: Operational	Type of Sample Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvl. Ltd.	
Period of Analysis	: 26.12.2023 to 08.01.2024	Sample Condition	: Sealed & Preserved	

M	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 19	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	; 48	4	Weather Condition	: Clear
5	Longitude	3 84°25'27.92"E	6-	Latitude	: 23°17'45.65"N

Discipline: Chemica	d	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23); 2006; RA2022	64	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	33	60 (24hrs)	
Sulphur Di-Oxide (SO ₁)	μg/m³	IS 5182 (Part-2): 2001; RA2022	6.2	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part-6): 2006; RA2022	21.7	80 (24hrs)	
Ozone (O ₃)	μg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH ₃)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10); 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	μg/m³	IS 5182 (Part-22): 2004; RA2019	0.009	1 (24hrs)	
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)	

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) G57 NO:- 20AAECE9713D124

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Phone no.: 0651-2290103 Website: www.elespi.ca.in

TEST REPORT

Test Report No.	: ELES/RNC/2024/0210	Report Release Date	: 15.01.2024	
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023	

ILS	SAMPLE DETAILS		
: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4809 : Near Bimarla Village Bimarla Bauxite Mine (134,526 ha)	
: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 17.12.2023 to 18.12.2023 : 26.12.2023	
Operational	Type of Sample Sampling Procedure Sampling Done By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
The Province of the Paris of th	Sample Condition	: Sealed & Preserved	
	: Minerals & Minerals Limited	: Minerals & Minerals Limited Sample Ref: No. Location : Lohardaga, Jharkhand-835302 Sampling Date Sample Received Date Type of Sample Sampling Procedure Sampling Done By	

METEOROLOGICAL INFORMATION						
1	Average Temperature (°C)	: 19	2	Barometric Pressure (mmHg)	: 738	
3	Relative Humidity (%)	: 48	4	Weather Condition	: Clear	
5	Longitude	= 84°25'27.92"E	6	Latitude	: 23°17'45.65"N	

Discipline : Chem	ical	Group : Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Benzene (C ₆ H ₆)*	μg/m ³	1S 5182 (Part-11)2006;RA2017	<1.0	05(Annual)		
Benzo-(a)-Pyrene*	ng/m³	1S 5182 (Part-12)2004;RA2019	<0.5	01(Annual)		

Remarks: (*) Parameters are outsourced to other Lab.



****End of Report****

Authorised Signatory

Dr. Deependra Kumar Siring Ph. D Environmental Engg.

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, BANCHI-834003 (JHARKHAND) GST NO:-20AAECE97130124

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TC 8839

TEST REPORT

Test Report No.	; ELES/RNC/2024/0523	Report Release Date	: 06.02.2024
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023
ULR No.	: TC883924000000494F		

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	ELES/RNC/2024/AA/0462 : Near Weigh Bridge Bimarla Bauxite Mine (134.526 ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 18.01,2024 to 19.01,2024 : 27.01,2024 : Ambient Air	
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	= 27.01.2024 to 05.02.2024	Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFO	RMATION			
1	Average Temperature (°C)	⊒18	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	: 46	4	Weather Condition	: Clear
5	Longitude	: 84°25'20.14"E	6	Latitude	: 23°17'6.19"N

Discipline : Chemica	d	Group ; A	Group ; Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit			
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	82	100 (24hrs)			
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	50	60 (24hrs)			
Sulphur Di-Oxide (SO ₂)	μg/m ¹	IS 5182 (Part-2): 2001; RA2022	10.5	80 (24hrs)			
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part-6): 2006; RA2022	31.6	80 (24hrs)			
Ozone (O ₁)	μg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)			
Ammonia (NH ₃)	µg/m³	IS 5182 (Part- 25); 2018	<10.0	400 (24hrs)			
Carbon Monoxide (CO)	mg/m³	1S 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)			
Lead (Pb)	µg/m ¹	IS 5182 (Part-22): 2004; RA2019	0.015	1 (24hrs)			
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)			
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	≤2,0	06 (Annual)			

Reviewed by

****End of Report****

Authorised Signatory Dr. Deependra Kumar Sinha

Pn, D Environmental Engg.

Page 1 of 1

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (IHARKHAND) GST NO:- 20A4ECE9713D124 ENGINEERING SERVICES PUT, LTD.

Email: info@elespl.co.in , eles.ranchi@amail.com Phone no.: 0651-2290103 Website : www.elespl.co.in

TEST REPORT

Test Report No.	: ELES/RNC/2024/0523	Report Release Date	: 06.02.2024	
Work Order No.	: M&M/23-24/01	Work Order Date	: 31,03,2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/0462 : Near Weigh Bridge Bimarla Bauxite Mine (134.526 ha)
Address Mines Status	: Lohardaga, Jharkhand-835302 : Operational	Sampling Date Sample Received Date Type of Sample Sampling Procedure Sampling Done By	: 18.01.2024 to 19.01.2024 : 27.01.2024 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 27.01.2024 to 05.02.2024	Sample Condition	: Scaled & Preserved

MI	ETEOROLOGICAL INFOR	MATION			200
L	Average Temperature (°C)	: 18	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	: 46	4	Weather Condition	: Clear
5	Longitude	84°25'20.14'E	6	Latitude	: 23°17'6.19"N

Discipline: Chem	ical	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₆ H ₆)*	μg/m³	IS 5182 (Part-11): 2006; RA2022	<1.0	05(Annual)	
Benzo-(a)-Pyrene*	ng/m³	IS 5182 (Part-12): 2004; RA2019	<0.5	01(Annual)	

Remarks: (*)-Parameters are outsourced to other Lah.



****End of Report****

Authorised Signatory

Ph. D Environmental Engg 28 Pvt. Ltd. Technical Manager

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) 55T NO:- 20AAECE97130124

ENGINEERING SERVICES PVT. LED.

Email: info@elespl.co.in , eles.ranchi@gmail.com

Phone no.: 0651-2290103 Website: www.elespl.co.in



TEST REPORT

Test Report No.	: ELES/RNC/2024/0524	Report Release Date	: 06.02.2024
Work Order No.	; M&M/23-24/01	Work Order Date	: 31.03.2023
ULR No.	: TC883924000000495F		

CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	ELES/RNC/2024/AA/0463 Near Quarry No 1B Birmarla Bauxite Mine (134,526 ha)
Address	(Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 18.01.2024 to 19.01.2024 : 27.01.2024 : Ambient Air
Mines Status	Operational	Sampling Procedure Sampling Done By	ELES/DOC/SMPL/02 ELES Pvt. Ltd.
Period of Analysis	: 27.01.2024 to 05.02.2024	Sample Condition	Sealed & Preserved

M	ETEOROLOGICAL INFOR	RMATION	-		-
J	Average Temperature (°C')	: 18	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	; 46	- 4	Weather Condition	: Clear
5	Longitude	: 84°25'12.83°E	6	Latitude	: 23°17'1.82"N

Discipline : Chemica	ıl	Group : A	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit			
Particulate Matter (PMT0)	μg/m³	IS 5182 (Part-23): 2006; RA2022	65	100 (24hrs)			
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	36	60 (24hrs)			
Sulphur Di-Oxide (SO ₂)	µg/m³	JS 5182 (Part-2): 2001; RA2022	7.9	80 (24hrs)			
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part-6): 2006; RA2022	29,1	80 (24hrs)			
Ozone (O ₃)	μg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)			
Ammonia (NH ₅)	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)			
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)			
Lead (Pb)	μg/m³	IS 5182 (Part-22): 2004; RA2019	0,011	1 (24hrs)			
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)			
Arsenic (As)	ng/m'	ELES/AIR/SOP/01	<2.0	06 (Annual)			

Reviewed by

****End of Report****

Dr. Deependra Kumar Sinha

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PLOT NO-30, MANSAROVAH ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) G37 NO:- 20AAECE9713D1Z4

ENGINEERING SERVICES PVT. LTD.

Email: info@elespl.co.in , eles.ranchi@gmail.com Phone no.: 0651-2290103

Phone no.: 0651-2290103 Website: www.elespi.co.in

TEST REPORT

Test Report No.	: ELES/RNC/2024/0524	Report Release Date	: 06.02.2024
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023

CUSTOMER DET	CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/0463 : Near Quarry No 1B Bimarta Bauxite Mine (134.526 ha)		
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 18.01.2024 to 19.01.2024 : 27.01.2024 : Ambient Air		
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.		
Period of Analysis	= 27.01.2024 to 05.02.2024	Sample Condition	: Sealed & Preserved		

METE	OROLOGICAL INFOR	MATION			
1 Av	erage Temperature (°C)	: 18	2	Barometric Pressure (mmHg)	: 738
3 Re	lative Humidity (%)	: 46	4	Weather Condition	: Clear
	ngitude	; 84°25'12.83°E	6	Latitude	: 23°17'1.82"N

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₄ H ₆)*	μg/m ⁸	IS 5182 (Part-11): 2006; RA2022	<1.0	05(Annual)	
Benzo-(a)-Pyrene+	ng/m³	IS 5182 (Part-12): 2004; RA2019	<0.5	01(Annual)	

Remarks: (*)-Parameters are outsourced to other Lab.

Reviewed by

****End of Report****

Authorised Signatory
or, Deependra Kumar Sinhu
Ph. D Environmental Engg.

LES Pvt. Ltd. Technical Mana

Page 1 of 1

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO: 20AAECE9713D1Z4

Email: info@elespl.co.in , eles.ranchi@amail.com

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TEST REPORT

: 06.02.2024 : ELES/RNC/2024/0525 Report Release Date Test Report No. : 31.03.2023 Work Order No. : M&M/23-24/01 Work Order Date ULR No. : TC883924000000496F

CUSTOMER DETA	CUSTOMER DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref, No. Location	ELES/RNC/2024/AA/0464 Nav Prathmik Vidayalaya-Barang Path; Bimarla Bauxite Mine (134,526 ha)
Address	Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	18,01,2024 to 19.01,2024 27,01,2024 Ambient Air
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	; 27.01.2024 to 05.02.2024	Sample Condition	; Sealed & Preserved

M	ETEOROLOGICAL INFO	RMATION			
+	Average Temperature (°C)	: 18	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	: 46	4	Weather Condition	: Clear
5	Longitude	: 84°25'12.83"E	6	Latitude	: 23°17'1.82"N

Discipline : Chemic	al	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	61	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part- 24): 2019	35	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	ag/m³	IS 5182 (Part-2): 2001; RA2022	10.8	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part-6); 2006; RA2022	26.1	80 (24hrs)	
Ozone (O _y)	μg/m	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH ₁)	μg/m³	IS 5182 (Part-25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	μg/m³	IS 5182 (Part-22); 2004; RA2019	< 0.002	1 (24hrs)	
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m	ELES/AIR/SOP/01	<2.0	06 (Annual)	

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****End of Report****

Authorised Signatory

Dr. Deependra Kumar Sinha

Page 1 of 1

Pn. D Environmental Engg.

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PLOT NO-50, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-R34003 (JHARKHAND) GST NO:-20A4ECE9713D124 ENGINEERING SERVICES PVT. LTD.

Email: info@elespl.co.in , eles.ranchi@gmail.com

Phone no.: 0551-2290103 Website: www.elespi.co.in

TEST REPORT

Test Report No.	: ELES/RNC/2024/0525	Report Release Date	: 06.02.2024
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/0464 : Nav Prathmik Vidayalaya-Barang Path; Bimarla Bauxite Mine (134.526 ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 18.01.2024 to 19.01.2024 : 27.01.2024 : Ambient Air : ELES/DOC/SMPL/02	
Mines Status	: Operational	Sampling Done By	; ELES Pvt. Ltd. ; Sealed & Preserved	
Period of Analysis	: 27.01.2024 to 05.02.2024	Sample Condition	2 Search & Frescived	

1	Average Temperature (*C)	and the same of th	12	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	: 46	4	Weather Condition	: Clear
5	Longitude	: 84°25'12.83"E	-	Latitude	: 23°17'1.82"

Discipline : Chem	ical	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₄ H ₀)*	μg/m ³	IS 5182 (Part-11): 2006; RA2022	<1.0	05(Annual)	
Benzo-(a)-Pyrene*	ng/m³	IS 5182 (Part-12): 2004; RA2019	< 0.5	01(Annual)	

Remarks: (*)-Parameters are outsourced to other Lab.



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Ph. D Environmental Engg.

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 20AAECE9713D1Z4

Email: info@elespl.co.in , eles.ronchi@gmail.com

Phone no.: 0651-2290103 Website: www.elespl.co.in



TC-8655

TEST REPORT

Test Report No.	; ELES/RNC/2024/0526	Report Release Date	: 06.02.2024
Work Order No.	: M&M/23-24/01	Work Order Date	; 31.03.2023
ULR No.	: TC883924000000497F		

CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name	Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/0465 : Near Mine Entry Gate; Bimarla Bauxite Mine (134.526 ha) (134.526 ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 18.01,2024 to 19.01,2024 : 27.01,2024
Mines Status	Operational	Type of Sample Sampling Procedure Sampling Done By	: Ambient Air :ELES/DOC/SMPL/02 :ELES Pvt, Ltd.
Period of Analysis	: 27.01.2024 to 05.02.2024	Sample Condition	: Sealed & Preserved

M	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (*C)	: 18	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	: 46	4	Weather Condition	: Clear
5	Longitude	84°25'35.93"E	6	Latitude	: 23°16'48.36"N

Discipline : Chemica	ıl	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23); 2006; RA2022	68	100 (24hrs)		
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part- 24): 2019	40	60 (24hrs)		
Sulphur Di-Oxide (SO ₂)	дg/m³	IS 5182 (Part-2): 2001; RA2022	10.7	80 (24iirs)		
Nitrogen Di-Oxide (NO ₂)	µg/m³	IS 5182 (Part-6): 2006; RA2022	28.1	80 (24hrs)		
Ozone (O ₂)	μg/m³	15 5182 (Part-9); 1974; RA2019	<20.0	100 (8hrs)		
Ammonia (NH ₃)	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)		
Lead (Pb)	µg/m ^T	IS 5182 (Part-22): 2004; RA2019	0.014	1 (24hrs)		
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)		

Reviewed by

****End of Report****

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 20AAECE9713D124

ENGINEERING SERVICES PYT. LTD.

Email: info@elespl.co.in , eles.ranchi@gmail.com Phone no.: 0651-2290103 Website: www.elespl.co.in

TEST REPORT

Test Report No.	: ELES/RNC/2024/0526	Report Release Date	: 06.02.2024
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023

CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/0465 : Near Mine Entry Gate; Birnarla Bauxite Mine (134,526 ha) (134,526 ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure Sampling Done By	: 18.01.2024 to 19.01.2024 : 27.01.2024 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Mines Status	- Operational	The state of the s	: Sealed & Preserved
Period of Analysis	: 27,01,2024 to 05.02,2024	Sample Condition	: Sealed & Freserved

ΜI	ETEOROLOGICAL INFOR	MATION	-		
1	Average Temperature (°C)	2.18	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	: 46	4	Weather Condition	: Clear
5	Longitude	: 84°25'35.93"E	6	Latitude	: 23°16'48.36'N

Discipline : Chem	ical	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C _n H _h)*	μg/m³	IS 5182 (Part-11): 2006; RA2022	<1.0	05(Annual)	
Benzo-(a)-Pyrene*	ng/m³	IS 5182 (Part-12): 2004; RA2019	< 0.5	01(Annual)	

Remarks: (*)-Parameters are outsourced to other Lab.

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Reviewed by

****End of Report****

Authorised Signatory
Dr. Deependra Kumar Sinha
Ph. D Environmental Engg
- 155 Pvt. Ltd. Technical Mans

Page 1 of I

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) G5T NO:- 20AAECE971301Z4

Email: Info@elespl.co.in , eles.ranchi@gmail.com

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TEST REPORT

Test Report No.	: ELES/RNC/2024/0527	Report Release Date	: 06.02.2024
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023
ULR No.	: TC883924000000498F		

CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/0466 : Near Korle Village Birnarla Bauxite Mine (134.526 ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	19,01,2024 to 20,01,2024 27,01,2024 Ambient Air
Mines Status	: Operational	Sampling Procedure Sampling Done By	ELES/DOC/SMPL/02 : ELES Pvt. Ltd. : Sealed & Preserved
Period of Analysis	: 27.01.2024 to 05.02.2024	Sample Condition	Scaled of Freserved

MI	ETEOROLOGICAL INFO	RMATION			
_	Average Temperature (°C)	And the second s	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	: 46	4	Weather Condition	† Clear
5	Longitude	: 84°25'56.20'E	6	Latitude	: 23°17'30.46"N

Discipline: Chemica	d	Group : A	tmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m³	IS 5182 (Part-23): 2006; RA2022	68	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	36	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2): 2001; RA2022	11.3	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part-6): 2006; RA2022	26.1	80 (24hrs)
Ozone (O ₃)	µg/m²	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₁)	μg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	15 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	μg/m³	IS 5182 (Part-22): 2004; RA2019	0.011	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m²	ELES/AIR/SOP/01	<2.0	06 (Amual)

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Page 1 of 1

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND)

GST NO: - TOAAECE9713D1Z4

ENGINEERING SERVICES PVT. LTD.

Email: info@elespl.co.in ; eles.ranchi@gmail.com

Phone no.: 0651-2290103 Website: www.elespi.co.in

TEST REPORT

Test Report No.	: ELES/RNC/2024/0527	Report Release Date	: 06.02.2024	
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023	

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/0466 : Near Korle Village Bimarla Bauxite Mine (134.526 ha)	
Address	2 Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 19.01.2024 to 20.01.2024 : 27.01.2024 : Ambient Air : ELES/DOC/SMPL/02	
Mines Status	∴ Operational	Sampling Done By	: ELES Pvt. Ltd. : Sealed & Preserved	
Period of Analysis	27,01.2024 to 05.02.2024	Sample Condition	: Scaled & Flescived	

М	TEOROLOGICAL INFOR	RMATION			
1 100	Average Temperature (°C)	: 18	.2.	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	: 46	4	Weather Condition	: Clear
5	Longitude	: 84°25'56.20°E	6	Latitude	: 23°17'30.46"N

Discipline: Chemi	ical	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Benzene (C ₆ H ₆)*	µg/m³	IS 5182 (Part-11): 2006; RA2022	<1.0	05(Annual)		
Benzo-(a)-Pyrene*	ng/m³	IS 5182 (Part-12); 2004; RA2019	<0.5	01(Annual)		

Remarks: (*)-Parameters are outsourced to other Lab.



****End of Report****

Authorised Signatory
Dr. Deependra Kumar Sinha
Ph. D Environmental Engg.

ELES Pvt. Ltd. Technical Menaute

Page 1 of I

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PLOT NO-30, MANSAROVAR ENCLAYE, TUPUDANA HATIA RANCHI-834003 (IHARKHAND) GST NO: 20AAECE9713D1Z4

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TEST REPORT

Test Report No.	: ELES/RNC/2024/0528	Report Release Date	: 06.02.2024
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023
ULR No.	: TC883924000000499F		

CUSTOMER DETA	CUSTOMER DETAILS		The second secon
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/0467 : Near Barang Village Birnarla Bauxite Mine (134.526 ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure Sampling Done By	: 19.01.2024 to 20.01.2024 ! 27.01.2024 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Mines Status	Operational	The state of the s	Sealed & Preserved
Period of Analysis	: 27.01.2024 to 05.02.2024	Sample Condition	; Sealed & Preserved

MI	ETEOROLOGICAL INFOR	RMATION			
T	Average Temperature (°C)	: 18	2	Barometric Pressure (mmHg)	: 738
_	Relative Humidity (%)	; 46	-4	Weather Condition	: Clear
5	Longitude	: 84°25'16.51"E	6	Latitude	23°16'30.61'N

Discipline : Chemica	1	Group : A	tmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m³	IS 5182 (Part-23): 2006; RA2022	67	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	36	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	15 5182 (Part-2); 2001; RA2022	7.3	80 (24hrs)
Nitrogen Di-Oxide (NO ₁)	μg/m³	IS 5182 (Part-6): 2006; RA2022	25,1	80 (24hrs)
Ozone (O ₃)	μg/m³	IS 5182 (Pari-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	цg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10); 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	μg/m³	IS 5182 (Part-22): 2004; RA2019	0.013	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part-26);2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)

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****End of Report****

Anthorised Signatory umar Sinha

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menboried in Test Report is in 24hours formal. Abbreviation used: N/A (Not Applicable); BDL (Below Detection Limit); LDL (Lower Detection Limit).



PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 [JHARKHAND] GST NO:- 20AAECE9713D1Z4

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TEST REPORT

Test Report No.	: ELES/RNC/2024/0528	Report Release Date	: 06.02,2024	
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023	

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/0467 : Near Barang Village Bimarla Bauxite Mine (134,526 ha	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 19.01.2024 to 20.01.2024 : 27.01.2024 : Ambient Air	
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd. : Seafed & Preserved	
Period of Analysis	: 27.01.2024 to 05.02.2024	Sample Condition	: Sealed & Preserved	

M	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 18	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	: 46	4	Weather Condition	Clear
5	Longitude	: 84°25'16.51"E	6	Latitude	: 23°16'30.61"N

Discipline : Chem	ical	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₀ H ₀)*	µg/m³	IS 5182 (Part-11): 2006; RA2022	<1.0	05(Annual)	
Benzo-(a)-Pyrene*	ng/m³	IS 5182 (Part-12): 2004; RA2019	<0.5	01(Annual)	

Remarks: (*)-Parameters are outsourced to other Lab,



****End of Report****

Authorised Signatory
Dr. Deependra Kumar Sinha Ph. D Environmental Enga. ELES PVI. Ltd. Technical Manager 1

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 20AAECE9713D124

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TEST REPORT

Test Report No.	; ELES/RNC/2024/0529	Report Release Date	: 06.02.2024
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023
ULR No.	: TC883924000000500F		

CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/0468 : Near Ghaghra Village Bimarla Bauxite Mine (134,526 ha)
Address	; Lohardaga, Iharkitand-\$35302	Sampling Date Sample Received Date	: 19.01.2024 to 20.01.2024 : 27.01.2024
	Downston I.	Type of Sample Sampling Procedure Sampling Done By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Mines Status	: Operational	Sample Condition	: Sealed & Preserved
Period of Analysis	: 27.01.2024 to 05.02.2024	Sample Condition	- Senieu & Flesciveu

M	ETEOROLOGICAL INFOR	EMATION			
1	Average Temperature (°C)	- 18	2	Barometric Pressure (mmHg)	738
3	Relative Humidity (%)	: 46	-4	Weather Condition	:: Clear
5	Longitude	:: 84°24'46.53"E	6	Latitude	: 23°17'14.34"N

Discipline: Chemica	ıl	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	μg/m ³	IS 5182 (Part-23): 2006; RA2022	63	100 (24hrs)		
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	32	60 (24hrs)		
Sulphur Di-Oxide (SO ₂)	μg/m ³	1S 5182 (Pari-2): 2001; RA2022	7.1	80 (24hrs)		
Nitrogen Di-Oxide (NO ₂)	μg/m ¹	1S 5182 (Part-6): 2006; RA2022	23.7	80 (24hrs)		
Ozone (O ₃)	ug/m³	1S 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)		
Ammonia (NH ₃)	µg/m³	IS 5182 (Pari- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019	<1,0	2 (8hrs)		
Lead (Pb)	μg/m³	IS 5182 (Part-22); 2004; RA2019	0.008	1 (24hrs)		
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)		

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Dr. Deependra Kumar Sinha

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 20AAECE97130124

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TEST REPORT

Test Report No.	; ELES/RNC/2024/0529	Report Release Date	: 06.02.2024
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023

CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name	; Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/0468 : Near Ghaghra Village Bimarla Bauxite Mine (134,526 ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 19.01.2024 to 20.01.2024 : 27.01.2024 : Ambient Air
Mines Status	Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd. : Sealed & Preserved
Period of Analysis	27.01.2024 to 05.02.2024	Sample Condition	: Sealed & Freserved

MI	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (*C)	=18	2	Barometric Pressure (mmHg)	3 738
3	Relative Humidity (%)	:46	- 4	Weather Condition	: Clear
5	Longitude	: 84°24'46.53"E	6	Latitude	: 23°17'14.34"N

Discipline: Chem	ical	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Benzene (C ₆ H ₆)*	μg/m³	IS 5182 (Part-11): 2006; RA2022	<1.0	05(Annual)		
Benzo-(a)-Pyrene*	ng/m³	IS 5182 (Part-12): 2004; RA2019	< 0.5	01(Annual)		

Remarks: (*)-Parameters are outsourced to other Lab.



****End of Report****

Dr. Deependra Kumar Sini
Ph. D Environmental Engg.
ELES Pvr. Ltd. Technical Mane

Page 1 of 1

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:-20AAECE9713D124

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TC-8839

TEST REPORT

Test Report No.	: ELES/RNC/2024/0530	Report Release Date	: 06.02.2024
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023
ULR No.	: TC883924000000501F		

CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name	Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/0469 : Near Birnarla Village Birnarla Bauxite Mine (134.526 ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 19.01.2024 to 20.01.2024 : 27.01.2024
		Type of Sample Sampling Procedure Sampling Done By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Mines Status	: Operational		
Period of Analysis	: 27.01.2024 to 05.02.2024	Sample Condition	: Sealed & Preserved

M	ETEOROLOGICAL INFO	RMATION			
1	Average Temperature (°C)	:18	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	†46	4	Weather Condition	: Clear
5	Longitude	: 84°25'27.92"E	6	Latitude	: 23°17'45.65"N

Discipline: Chemica	ď	Group : A	Atmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m ¹	IS 5182 (Part-23): 2006; RA2022	69	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	38	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2): 2001; RA2022	8.5	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part-6): 2006; RA2022	25.1	80 (24hrs)
Ozone (O ₃)	μg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m³	IS 5182 (Part- 25); 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	1S 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	μg/m³	IS 5182 (Part-22): 2004; RA2019	0.011	1 (24hrs)
Nickel (Ni)	ng/m ^t	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)

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****End of Report ****

Authorised Signatory Dr. Deependra Kumar Sinha

Page 1 of I

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPLIDANA HATIA; RANCHI-834003 (IHARKHAND) GST NO:- 20AAFCE9713D124

ENGINEERING SERVICES PVT. LTD.

Email: Info@elespl.co.in , eles.ranchi@gmail.com Phone no.: 0651-2290103

Website: www.elespl.co.in

TEST REPORT

Test Report No.	: ELES/RNC/2024/0530	Report Release Date	: 06.02.2024	
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023	

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	ELES/RNC/2024/AA/0469 Near Bimarla Village Bimarla Bauxite Mine (134.526 ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 19.01.2024 to 20.01.2024 : 27.01.2024	
Mines Status	: Operational	Type of Sample Sampling Procedure Sampling Done By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
	100	Sample Condition	; Sealed & Preserved	
Period of Analysis	: 27.01.2024 to 05.02.2024	State of the State	ii aperat se e con	

MI	TEOROLOGICAL INFOR	MATION		The second second	
1	Average Temperature (°C)	: 18	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	: 46	- 4	Weather Condition	: Clear
5	Longitude	: 84°25'27.92"E	6	Latitude	: 23°17'45.65"N

Discipline : Chem	ical	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₆ H ₆)*	μg/m³	IS 5182 (Part-11): 2006; RA2022	<1.0	05(Annual)	
Benzo-(a)-Pyrene*	ng/m³	IS 5182 (Part-12): 2004; RA2019	< 0.5	01(Annual)	

Remarks: (*)-Parameters are outsourced to other Lah.

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****End of Report****

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Dr. Deependra Kumar Sining Ph. D Environmental Engg. ELES Pyt. Ltd. Technical Maner

Page 1 of 1

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:-20AAECE9713D124

ENGINEERING SERVICES PVT. LED

Email: Info@elespl.co.in , eles.ranchi@gmail.com

Phone no.: 0651-2290103 Website: www.elespl.co.in



TEST REPORT

Test Report No.	: ELES/RNC/2024/0588	Report Release Date	: 06.02.2024	
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023	
ULR No.	: TC883924000000559F			

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Minerals & Minerals Limited	Sample Ref. No.	: ELES/RNC/2024/SW/0623
		Sampling Date	: 25.01.2024
		Sample Received Date	: 31.01.2024
Address	: Lohardaga, Jharkhand-835302	Type of Sample	: Surface Water
		Source of Sample	: Near Plot No 485, Bimarla Bauxite Mine(134.526 fta)
		Sampling Procedure	: ELES/DOC/SMPL/01
Plant Status	Operational	Sampling Done By	: ELES Pvt, Ltd.
Period of Analysis	= 31.01.2024 to 05.02.2024	Sample Condition -	: Sealed & Preserved

Discipline : Chemical		Group	: Water	Tolerance Limits
Parameter	Unit	Test Protocol	Result	as per IS 2296-1992 Class C (Inland Surface Water
pH (at 24.5 °C)	700	IS 3025 (Part 11): 2022	6.58	6.5-8.5
Temperature	°C	IS 3025 (Part 9):1984; RA2017	24.7	-
Chemical Oxygen Demand (COD)	9	IS 3025 (Part-58) :2006; RA2017	8.0	
Biochemical Oxygen Demand (BOD) (@ 20°C for 5 days)	mg/L	APHA 23 rd Ed.2017; 5210B	1.2	3.0
Total Dissolved Solids (TDS)	mg/L	IS 3025 (Part 16):1984; RA2017	98.6	1500
Total Suspended Solids (TSS)	mg/L	IS 3025 (Part-17):2022	12.8	
Oil & Grease	mg/L	IS 3025 (Part-39): 2021	BDL (DL: 0.1)	0.1
Calcium (as Ca)	mg/L	IS 3025 (Part-40):1991, RA2019	6.2	**
Discipline : Chen	nical	Group :	Residues in W	ater
Aluminium (Al)	mg/L	IS 3025 (Part-55) :2003; RA2019	BDL (DL: 0.02)	0.03
Iron (as Fe)	mg/L	APHA23 rd Ed 2017; 3111B	0.112	50

Remarks: 1. pli done at Lab.

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PLOT NO-30. MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:-20AAECE9713D124



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TEST REPORT

Test Report No.	: ELES/RNC/2024/0603	Report Release Date	: 06.02.2024	
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023	
ULR No.	: TC883924000000574F			

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Sampling Date	ELES/RNC/2024/SL/0638 : 19.01.2024
Address	: Lohardaga, Jharkhand-835302	Sample Received Date	31.01.2024
Address	- Lonardaga, Jharkhand-855302	Type of Sample Location of Sample	: Soil : Near Plot No 1517, Bimarla Bauxite Mine (134.526 ha)
Plant Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/05 : ELES PVL Ltd.
Period of Analysis	: 31.01.2024 to 05.02.2024	Sample Condition	: Sealed

Discipline : Chemical		Group: Pollution & En	vironment
Parameter	Unit	Test Protocol	Result
pH (1:2) at 24.6 °C		IS 2720 (Part 26):1987; RA2021	4.87
Conductivity (1:2) at 24.6 °C	μS/cm	IS 14767: 2000; RA2021	123.6
Total Organic Carbon (TOC)	%	Soil Testing in India: 2011 (Walkley & Black Method)	0.87
Available Phosphorus (as P) (1:10)	kg/ha	Soil Testing in India; 2011	0.44
Potassium (as K)	mg/kg	IS 9497:1980; RA 2020	1600
Available Nitrogen	%	Soil Testing in India: 2011	0.28
Chloride (1:2)	%	ELES/SOIL/SOP/01	0.14
Lead (as Pb)	mg/kg	US EPA 3050 A&B : 1996	BDL (DL: 0.1)
Cadmium (as Cd)	nig/kg	US EPA 3050 A&B: 1996	BDL (DL: 0.1)
Mercury (as Hg)	mg/kg	US EPA 7473 : 2007	BDL (DL: 0.01)
Magnesium (as Mg)	mg/kg	Soil Testing in India: 2011	319

Remarks: 1. pil-done at Lab.

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Dr. Daependra Kumar Sin...

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) 6ST NO:- 2044ECE9713D1Z4

ENGINEERING SERVICES PVT. LTD.

Email: info@elespl.co.in , eles.ranchi@gmail.com Phone no.: 0651-2290103 Website : www.elespl.co.in

TEST REPORT

Test Report No.	: ELES/RNC/2024/0603	Report Release Date	: 06.02.2024	
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023	

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Sampling Date Sample Received Date	: ELES/RNC/2024/SL/0638 - 19.01.2024 - 31.01.2024	
Address	; Lohardaga, Jharkhand-835302	Type of Sample Location of Sample	: Soil : Near Plot No 1517, Bimarla Bauxite Mine (134.526 ha)	
Plant Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/05 : ELES Pvt, Ltd.	
Period of Analysis	: 31.01.2024 to 05.02.2024	Sample Condition	: Sealed	

Discipline:	Chemical	Group: Pollution & E	nvironment
Parameter	Unit	Test Protocol	Result
Arsenic (as As)	mg/kg	1S 3025 (Part 37): 2022	BDL (DL: 0.005)
Selenium (as Se)	mg/kg	IS 3025 (Part-56) ;2003; RA 2019	BDL (DL: 0.01)

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Dr. Depondra Kumar Sin.
Ph DEnvironmental Engg.
a LES Pvi. Ltd. Technical January

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 20AAECE97130124

ENGINEERING SERVICES PVT. LTD

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Email: info@elespl.co.in , eles.ranchi@amail.com Phone no.: 0651-2290103



TE-8939

TEST REPORT

Test Report No.	: ELES/RNC/2024/1185	Report Release Date	: 13.02.2024
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023
ULR No.	: TC883924000001121F		

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1107 : Near Weigh Bridge Bimarla Bauxite Mine (134.526 ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 07,02,2024 to 08.02,2024 12.02,2024
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 12.02.2024 to 13.02.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

M	ETEOROLOGICAL INFOR	RMATION			
1	Average Temperature (°C)	: 22	2	Barometric Pressure (mmHg)	; 738
3	Relative Humidity (%)	: 49	4	Weather Condition	: Clear
5.	Longitude	: 84°25'20.14"E	6	Latitude	; 23°17'6.19"N

Discipline	: Chemical	Group : Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	79	100 (24hrs)		
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	47	60 (24hrs)		
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2): 2001; RA2022	11.5	80 (24hrs)		
Nitrogen Di-Oxide (NO2)	μg/m³	IS 5182 (Part-6); 2006; RA2022	28.2	80 (24hrs)		
Ozone (O ₃)	µg/m³	15 5182 (Part-9): 1974; RA2019	<20.0	(00 (8hrs)		
Ammonia (NH ₂)	μg/m³	IS 5182 (Part-25); 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019 (NDIR Method)	<1.0	2 (8hrs)		
Lead (Pb)	µg/m³	IS 5182 (Part-22): 2004; RA2019	0.018	J (24hrs)		
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)		

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Authorised Signatory

Dr. Deependra Kumar Sinha

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA. RANCHI-834003 (JHARKHAND) GST NO:- 20AAECES713D124 ENGINEERING SERVICES PYT. LTD.

Email: info@elespl.co.in , eles.ranchi@gmail.com

Phone no.: 0651-2290103 Website: www.elespl.co.in

TEST REPORT

Test Report No.	; ELES/RNC/2024/1253	Report Release Date	: 26.02.2024
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023

CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1107 : Near Weigh Bridge Bimarta Bauxite Mine (134.526 ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 07.02.2024 to 08.02.2024 : 12.02.2024 : Ambient Air
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02
Period of Analysis	; 12.02.2024 to 21.02.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

M	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 22	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	: 49	4	Weather Condition	: Clear
5	Longitude	: 84°25'20.14"E	6	Latitude	: 23°17'6.19"N

Discipline: Chemical		Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Benzene (C ₆ H ₆)*	μg/m³	IS 5182 (Part-11); 2006; RA2022	<1.0	05(Annual)		
Benzo-(a)-Pyrene*	ng/m³	IS 5182 (Part-12): 2004; RA2019	<0.5	01(Annual)		

Remarks: (*)-Parameters are outsourced to other Lab.



****End of Report****

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Dr. Deependra Kumar Sinha Ph. D Environmental Engg. ELES Pvt. Ltd. Technical Managers

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) G57 NO:- 20AAECE9713D124

ENGINEERING SERVICES PVT. LTD.

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TEST REPORT

Test Report No.	± ELES/RNC/2024/1186	Report Release Date	: 13.02.2024	
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03,2023	
ULR No.	: TC883924000001122F			

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1108 : Near Quarry No 1B Bimarla Bauxite Mine (134,526 ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 07.02.2024 to 08.02.2024 : 12.02.2024
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 12.02,2024 to 13.02,2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

M	ETEOROLOGICAL INFO	RMATION			
1	Average Temperature (°C)	: 22	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	: 49	4	Weather Condition	: Clear
5	Longitude	: 84°25'12.83"E	6	Latitude	: 23°17'1,82"N

Discipline : Chemical		Group : Atmosp	heric Pollutio	no
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m²	IS 5182 (Part-23): 2006; RA2022	68	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	15 5182 (Part- 24): 2019	39	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m ¹	IS 5182 (Part-2); 2001; RA2022	8.3	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m³	IS 5182 (Part-6): 2006; RA2022	28.1	80 (24hrs)
Ozone (O ₃)	µg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₂)	μg/m³	IS 5182 (Part-25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m³	IS 5182 (Part-22); 2004; RA2019	0.015	1 (24hrs)
Nickel (Ni)	ng/m ⁷	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (Ax)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)

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PEOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 20AAECE9713D1Z4 Emall: info@elespl.co.in , eles.ranchi@gmail.com

Phone no.: 0651-2290103 Website: www.elespi.co.in

TEST REPORT

Test Report No.	; ELES/RNC/2024/1254	Report Release Date	: 26.02.2024
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023

CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1108 : Near Quarry No 1B Bimarla Bauxite Mine (134,526 ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 07.02,2024 to 08.02,2024 : 12.02,2024
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 12.02.2024 to 21.02.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

M	ETEOROLOGICAL INFOR	MATION	-		
1	Average Temperature (°C)	; 22	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	: 49	4	Weather Condition	Clear
5	Longitude	: 84°25'12.83"E	- 6	Latitude	23°17'1.82'N

Discipline: Chemical		Group: Atmospheric Pollution				
Parameter	Linit	Test Protocol	Result	Regulatory Limit		
Benzene (C ₆ H ₄)*	µg/in³	IS 5182 (Part-11); 2006; RA2022	<1.0	05(Annual)		
Benzo-(a)-Pyrene*	ng/m ³	1S 5182 (Part-12): 2004; RA2019	< 0.5	01(Annual)		

Remarks: (*)-Parameters are outsourced to other Lab.



****End of Report****

Authorised Signatory
Dr. Deependra Kumar Sinha
Ph. D Environmental Engg.
ELES Pvt. Ltd. Technical Manager

Page 1 of 1

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ENGINEERING SERVICES PVT. LTD.

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Phone no.: 0651-2290103 Website: www.elespl.co.in



TC-8835

TEST REPORT

Test Report No.	: ELES/RNC/2024/1187	Report Release Date	: 13.02.2024	
Work Order No.	: M&M/23-24/01	Work Order Date	7 31.03.2023	
ULR No.	: TC883924000001123F	-		

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1109 : Nav Prathmik Vidayalaya- Barang Path: Bimarla Bauxite Mine (134.526ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 07.02.2024 to 08.02.2024 : 12.02.2024 : Ambient Air	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02	
Period of Analysis	: 12.02.2024 to 13.02.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

M	ETEOROLOGICAL INFO	RMATION			
1	Average Temperature (°C)	: 22	2	Barometric Pressure (mmHg)	:738
3	Relative Humidity (%)	: 49	4	Weather Condition	: Clear
5	Longitude	: 84°25'12.83"E	6	Latitude	: 23°17'1.82'N

Discipline	: Chemical	Group : Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	μg/m ³	IS 5182 (Part-23): 2006; RA2022	57	100 (24hrs)		
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	30	60 (24hrs)		
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2): 2001; RA2022	8.8	80 (24hrs)		
Nitrogen Di-Oxide (NO ₂)	μg/m ³	IS 5182 (Part-6): 2006; RA2022	22,4	80 (24hrs)		
Ozone (O ₃)	μg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)		
Ammonia (NH ₃)	μg/m³	IS 5182 (Part- 25); 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m³	1S 5182 (Part-10): 1999; RA2019 (NDIR Method)	<1.0	2 (8hrs)		
Lead (Pb)	µg/m³	IS 5182 (Part-22): 2004; RA2019	<0.002	1 (24hrs)		
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annial)		

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****End of Report***

Authorised Signatory

Dr. Deependra Kumar Sinha

Page 1 of 1

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 20AAECE97130124

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TEST REPORT

Test Report No.	: ELES/RNC/2024/1255	Report Release Date	: 26,02.2024
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1109 : Nav Prathmik Vidayalaya- Barang Path; Bimarla Bauxite Mine (134,526ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 07.02.2024 to 08.02.2024 : 12.02.2024	
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 12.02.2024 to 21.02,2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

M	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (*C)	: 22	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	:49	4	Weather Condition	: Clear
5	Longitude	: 84°25'12.83"E	6	Latitude	: 23°17'1.82"N

Discipline: Chemical		Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Benzene (C _e H _e)*	μg/m³	IS 5182 (Part-11): 2006; RA2022	<1.0	05(Annual)		
Benzo-(a)-Pyrene*	ng/m ²	IS 5182 (Part-12): 2004; RA2019	<0.5	01(Annual)		

Remarks: (*)-Parameters are outsourced to other Lab.



****End of Report***

Authorised Signatory

Dr. Deependra Kumar Sinha Ph. D Environmental Engg. ELES Pvt. Ltd. Tephnical Manager

Page 1 of 1

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ENGINEERING SERVICES PVT. LTD.

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TEST REPORT

Test Report No.	: ELES/RNC/2024/1188	Report Release Date	: 13.02,2024
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023
ULR No.	: TC883924000001124F		

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	; ELES/RNC/2024/AA/1110 ; Near Mine Entry Gate; Bimarla Bauxite Mine (134.526 ha)
Address	Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 07.02.2024 to 08.02.2024 : 12.02.2024
Mines Status	Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	; 12.02.2024 to 3.02.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

M	ETEOROLOGICAL INFO	RMATION			
1	Average Temperature (°C)	2 22	2	Barometric Pressure (mmHg)	:738
3	Relative Humidity (%)	: 49	4	Weather Condition	: Clear
5	Longitude	: 84°25'35.93°E	6	Latitude	: 23°16'48.36"N

Disciplin	: Chemical	Group : Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	μg/m ²	1S 5182 (Part-23): 2006; RA2022	73	100 (24hrs)		
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	42	60 (24hrs)		
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2); 2001; RA2022	11.8	80 (24hrs)		
Nitrogen Di-Oxide (NO ₂)	μg/m ³	IS 5182 (Part-6): 2006; RA2022	26.4	80 (24hrs)		
Ozone (O ₁)	μg/m ¹	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)		
Ammonia (NH ₁)	μg/m³	IS 5182 (Part- 25); 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019 (NDIR Method)	<1.0	2 (8hrs)		
Lead (Pb)	µg/m³	IS 5182 (Part-22): 2004; RA2019	0.012	1 (24hrs)		
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)		

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Authorised Signatory

Dr. Deependra Kumar Sinha

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Emall: info@elespl.co.in , eles.ranchi@gmail.com Phone no.: 0651-2290103 Website : www.elespl.co.in

TEST REPORT

Test Report No.	: ELES/RNC/2024/1256	Report Release Date	: 26.02.2024	
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1110 : Near Mine Entry Gate; Bimarla	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	Bauxite Mine (134.526 ha) : 07.02.2024 to 08.02.2024 : 12.02.2024	
Mines Status	Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 12.02.2024 to 21.02.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

M	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 22	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	: 49	4	Weather Condition	: Clear
5	Longitude	: 84°25'35.93"E	6	Latitude	: 23°16'48.36"N

Discipline: Chemical		Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Benzene (C ₆ H ₆)*	μg/m³	IS 5182 (Part-11): 2006; RA2022	<1.0	05(Annual)		
Benzo-(a)-Pyrene*	ng/m³	[S 5182 (Part-12): 2004; RA2019	<0.5	0)(Annual)		

Remarks: (*)-Parameters are outsourced to other Lab.



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Authorised Signatory

Dr. Deependra Kumar Siriba Ph. D Environmental Engg. ELES Pvt. Ltd. Technical Manag. r

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ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, HANCHI-834003 (JHARKHAND) GST NO:- 20AAECE9713D124

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Phone no.: 0651-2290103 Website: www.elespi.co.in



elespi.co.in TC-8835

TEST REPORT

Test Report No.	: ELES/RNC/2024/1189	Report Release Date	: 13.02.2024	
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023	
ULR No.	: TC883924000001125F			

CUSTOMER DET	ATLS	SAMPLE DETAILS	
Customer Name	Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1111 : Near Korle Village Bimarla Bauxite Mine (134.526 ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 07.02.2024 to 08.02.2024 : 12.02.2024 : Ambient Air
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02
Period of Analysis	: 12.02.2024 to 13.02.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

M	ETEOROLOGICAL INFO	RMATION			
T	Average Temperature (°C)	: 22	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	_49	4	Weather Condition	Clear
5	Longitude	: 84°25'56.20"E	6	Latitude	: 23°17'30.46"N

Discipline	: Chemical	Group : Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	64	100 (24hrs)		
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	32	60 (24hrs)		
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2): 2001; RA2022	10.1	80 (24hrs)		
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part-6): 2006; RA2022	23.7	80 (24hrs)		
Ozone (O ₃)	µg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)		
Ammonia (NH ₂)	μg/m ²	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m²	IS 5182 (Part-10): 1999; RA2019 (NDIR Method)	<1.0	2 (8hrs)		
Lead (Pb)	µg/m³	IS 5182 (Part-22); 2004; RA2019	0.009	1 (24hrs)		
Nickel (Ni)	ng/m³	1S 5182 (Part-26):2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m ¹	ELES/AIR/SOP/01	<2.0	06 (Annual)		

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Authorised Signatory

Dr. Deependra Kumar Sinha

Page 1 of 1

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- ZUAAECE9713D1Z4

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TEST REPORT

Test Report No.	: ELES/RNC/2024/1257	Report Release Date	: 26.02.2024	
Work Order No.	; M&M/23-24/01	Work Order Date	: 31.03.2023	

CUSTOMER DETA	MLS	SAMPLE DETAILS	
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1111 : Near Korle Village Bimarla Bauxite Mine (134,526 ha).
Address	; Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 07.02.2024 to 08.02.2024 : 12.02.2024
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 12.02.2024 to 21.02.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Scaled & Preserved

M	TEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 22	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	: 49	4	Weather Condition	: Clear
5	Longitude	484°25'56,20"E	6	Latitude	: 23°17'30.46"N

Discipline: Chemical		Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Benzene (C ₆ H ₆)*	μg/m ³	IS 5182 (Part-11): 2006; RA2022	<1.0	05(Annual)		
Benzo-(a)-Pyrene*	ng/m³	IS 5182 (Part-12): 2004; RA2019	< 0.5	Ol(Annual)		

Remarks: (*)-Parameters are outsourced to other Lab.



****End of Report****

Authorised Signatory
Dr. Deependra Rumar Sinku.
Ph. D Environmental Engg.
ELES Pvl. Ltd. Technical Manager

Page 1 of 1

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 20AAECE9713D1Z4

ENGINEERING SERVICES PVT. LTD.

Email: Info@elespl.ca.in , eles.ranchi@amail.com

Phone no.: 0651-2290103 Website: www.elespl.co.in



TC 8839

TEST REPORT

Test Report No.	: ELES/RNC/2024/1190	Report Release Date	: 13.02.2024
Work Order No.	; M&M/23-24/01	Work Order Date	: 31.03.2023
ULR No.	: TC883924000001126F		

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	ELES/RNC/2024/AA/1112 Near Barang Village Bimarla Bauxite Mine (134,526 ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	07.02.2024 to 08.02.2024 : 12.02.2024
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 12.02.2024 to 13.02.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

NA.	TEOROLOGICAL INFO				
1	Average Temperature (°C)	3.22	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	: 49	4	Weather Condition	Clear
5	Longitude	: 84°25'16.51"E	6	Latitude	: 23°16'30.61"N

Discipline : Chemical		Group : Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	µg/m³	1S 5182 (Part-23); 2006; RA2022	62	100 (24hrs)		
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	31	60 (24hrs)		
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2); 2001; RA2022	7.8	80 (24hrs)		
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part-6); 2006; RA2022	22.5	80 (24hrs)		
Ozone (O ₁)	μg/m³	15 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)		
Ammonia (NH ₃)	μg/m³	1S 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019 (NDIR Method)	<1.0	2 (8hrs)		
Lead (Pb)	μg/m³	IS 5182 (Part-22); 2004; RA2019	0.007	1 (24hrs)		
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)		

Reviewed by

****End of Report****

Authorised Signatory

Dr. Deependra Kumar Sinna

Page | of 1

Ph. D Environmental Fngg

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 20AAECE9713D174 ENGINEERING SERVICES PYT. LTD.

Email: info@elespl.co.in , eles.ranchi@gmail.com Phone no.: 0651-2290103 Website : www.elespl.co.in

TEST REPORT

Test Report No.	: ELES/RNC/2024/1258	Report Release Date	: 26.02.2024	
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1112 : Near Barang Village Bimarla Bauxite Mine (134.526 ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 07.02.2024 to 08.02.2024 : 12.02.2024
Mines Status	- Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 12.02.2024 to 21.02.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

MI	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 22	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	: 49	4	Weather Condition	Clear
3	Longitude	: 84°25'16.51"E	6	Latitude	= 23°16'30.61"N

Discipline: Chemical		Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Benzene (C _k H ₆)*	µg/m³	IS 5182 (Part-11): 2006; RA2022	<1.0	05(Annual)		
Benzo-(a)-Pyrene*	ng/m³	IS 5182 (Part-12); 2004; RA2019	<0.5	01(Annual)		

Remarks (*)-Parameters are outsourced to other Lab.



****End of Report****

Authorised Signatory
Dr. Deependra Kumar Sinita
Ph. D Environmental Engg.
ELES Pvt. Ltd. Technical Manager

Page 1 of 1

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (IHARKHAND) GST NO:- 20AAECE9713D124

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TC-881

TEST REPORT

Test Report No.	: ELES/RNC/2024/1191	Report Release Date	: 13.02.2024	
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023	
ULR No.	: TC883924000001127F			

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1113 : Near Ghaghra Village Bimarla Bauxite Mine (134,526 ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 07.02.2024 to 08.02.2024 : 12.02.2024	
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 12.02.2024 to 13.02,2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Scaled & Preserved	

METEOROLOGICAL INFORMATION					
1	Average Temperature ("C)	: 22	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	; 49	4	Weather Condition	: Clear
5	Longitude	: 84°25'16.51"E	6	Latitude	=23°16'30.61"N

Discipline	: Chemical	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	58	100 (24hrs)		
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	30	60 (24hrs)		
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2): 2001; RA2022	7.5	80 (24hrs)		
Nitrogen Di-Oxide (NO2)	µg/m³	IS 5182 (Part-6)/ 2006; RA2022	23.8	80 (24hrs)		
Ozone (O ₁)	μg/m [†]	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)		
Ammonia (NH ₃)	μg/m ³	15 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m ¹	IS 5182 (Part-10); 1999; RA2019 (NDIR Method)	<1.0	2 (8hrs)		
Lead (Pb)	µg/m²	IS 5182 (Part-22): 2004; RA2019	< 0.002	1 (24hrs)		
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)		

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****End of Report****

Authorised Signal

Dr. Deependra Kumar Sinne

Ph D.Environmental Enga

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be done within 1 Slays from the Date of Test Report released/issued. After the time period stated before, no compliants will be accepted. The entire 1 me arthodole menhanded in Test Report to in 24bours fortun. Abbrevious used N/A (Not Applicable), BDL (Below Descrion Limit), LDL (Lower Descrion Limit).

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 20AAECE9713D124

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Phone no.: 0651-2290103 Website: www.elespl.co.in

TEST REPORT

Test Report No.	: ELES/RNC/2024/1259	Report Release Date	: 26.02.2024	
Work Order No.	: M&M/23-24/01	Work Order Date	; 31.03.2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1113 : Near Ghaghra Village Bimarla Bauxite Mine (134,526 ha)	
Address	Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 07.02.2024 to 08.02.2024 : 12.02.2024	
Mines Status	Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 12.02.2024 to 21.02,2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

MI	ETEOROLOGICAL INFOR	MATION			
T	Average Temperature (°C)	: 22	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	: 49	4	Weather Condition	: Clear
3	Longitude	: 84°25'16.51"E	6	Latitude	: 23°16'30.61"N

Discipline: Chemical		Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Benzene (C ₆ H ₆)*	μg/m³	IS 5182 (Part-11): 2006; RA2022	<1.0	05(Annual)		
Benzo-(a)-Pyrene*	ng/m³	IS 5182 (Part-12); 2004; RA2019	< 0.5	01(Annual)		

Remarks: (*)-Parameters are outsourced to other Lab.



****End of Report****

Dr. Deependra Kumai Sinha Ph. D Environmental Engg. ELES Pvl. Ltd. Technical Manager

Page 1 of 1

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (IMARKHAND) GST NO:- 20AAECE9713D1Z4

ENGINEERING SERVICES PVT. LTD.

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TEST REPORT

Test Report No.	; ELES/RNC/2024/1192	Report Release Date	: 13.02.2024
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023
ULR No.	: TC883924000001128F		I - NIONIAU -

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1114 : Near Bimarla Village Bimarla
Address	c Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	Bauxite Mine (134.526 ha) : 07.02.2024 to 08.02.2024 : 12.02.2024
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 12.02.2024 to 13.02.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

_	ETEOROLOGICAL INFO	The state of the s			
3	Average Temperature (°C)	: 22	2	Barometric Pressure (mmHg)	:738
3	Relative Humidity (%)	: 49		Weather Condition	: Clear
5	Longitude	: 84°25'27.92"E	6	Latitude	: 23°17'45.65"N

Disciplin	e : Chemical	Group : Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	μg/m²	IS 5182 (Part-23): 2006; RA2022	66	100 (24hrs)		
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	34	60 (24hrs)		
Sulphur Di-Oxide (SO ₂)	μg/m ³	IS 5182 (Part-2): 2001; RA2022	7.9	80 (24hrs)		
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part-6): 2006; RA2022	23.4	80 (24hrs)		
Ozone (O ₃)	µg/m²	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)		
Ammonia (NH ₁)	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)		
Lead (Pb)	µg/m³	IS 5182 (Part-22): 2004; RA2019	0.008	1 (24hrs)		
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	96 (Annual)		

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****End of Report****

Authorised Signatory

Dr. Deependra Kumar Sinha

Page 1 of 1

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDAMA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 20AAECE9713D124

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TEST REPORT

Test Report No.	: ELES/RNC/2024/1260	Report Release Date	: 26.02.2024
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1114 : Near Bimarla Village Bimarla Bauxite Mine (134,526 ha)	
Address	† Lohardaga. Jharkhand-835302	Sampling Date Sample Received Date	: 07.02.2024 to 08.02.2024 : 12.02.2024	
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 12.02.2024 to 21.02.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

M	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 22	1.2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	: 49	-4	Weather Condition	: Clear
5	Longitude	: 84°25'27.92"E	6	Latitude	: 23°17'45.65"N

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₄ H ₄)*	µg/m ⁴	IS 5182 (Part-11): 2006; RA2022	<1.0	05(Annual)	
Benzo-(a)-Pyrene*	ng/m³	IS 5182 (Part-12): 2004; RA2019	<0.5	01(Annual)	

Remarks: (*)-Parameters are outsourced to other Lab.



****End of Report****

Dr. Deependra Kumar Sining Ph. D Environmental Engg. ELES Pvt. Ltd. Technical Manager

Page 1 of 1

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 20AAECE9713D124

ENGINEERING SERVICES PVT. LTD.

Email: info@elespl.co.in , eles.ranchi@gmail.com Phone no.: 0651-2290103 Website : www.elespi.co.in

TEST REPORT

Test Report No.	: ELES/RAN/2024/1314	Report Release Date	: 11.03.2024	
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023	

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No.	: ELES/RAN/2024/DW/1174	
	Commence of the second	Sampling Date	: 08.02.2024	
	to a control of the control of	Sample Received Date	: 14.02.2024	
Address	. Loberdaga, Jharkhand-835302	Type of Sample	: Drinking Water	
		Source/Location of Sample	: Near Quarry No.1B, Bimarla Bauxite Mine (134,526 ha)	
		Sampling Procedure	: ELES/DOC/SMPL/01	
Mines Status	: Operational	Sample Collected By	: ELES Pvt. Ltd.	
Period of Analysis	14.02.2024 to 23.02.2024	Sample Condition	: Sealed & Preserved	

Discipline : Chemie	cal	Group : Water	Regulatory Limit as per 1S 10500:2012		
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
pH (at 24.6 °C)	141	APHA 23 rd Ed.2017, 4500-H	7.18	6.5-8.5	No Relaxation
Turbidity	NTU	APHA 23rt Ed.2017, 2130 B	0.78	1.0	5.0
Taste	4	APHA 23rd Ed.2017, 2160 C	Agreeable	Agreeable	Agreeable
Odour	7-	IS 3025 (Part-5):2018	Agreeable	Agreeable	Agreeable
Colour	Hazen	APHA 23 nd Ed.2017, 2120B&D	2.0	5	15
Total Dissolved Solids (TDS)	mg/L	APHA 23 rd Ed.2017, 2540B,C&D	228	500	2000
Chloride (as Cl)	mg/L	APHA 23rd Ed.2017, 4500 CLB	42,8	250	1000
Fluoride (as F)	mg/L	APHA 23 rd Ed.2017, 4500 F-D	0.182	1.0	1.5
Total Alkalinity (as CaCO ₂)	mg/L	APHA 23 rd Ed.2017, 2320 B	98.6	200	600
Total Hardness (as CaCO ₃)	mg/L	APHA 23 rd Ed.2017, 2340 C	86.8	200	600
Sulphate (as SO ₄)	mg/L	APHA 23 rd Ed.2017, 4500 SO ₄ rd -E	28.6	200	400
Nitrate (as NO ₃)	mg/L	APHA 23 rd Ed.2017, 4500 NO ₃ -B	4.82	45	No Relaxation
Phenolic Compound (as C _b H ₃ OH)	mg/L	IS 3025 (Part-43):1992;RA2019	BDL (DL: 0.001)	0.001	0.002

Page 1 of 4

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 20AAECE9713D124

ENGINEERING SERVICES PVT. LTD.

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TEST REPORT

Test Report No. : ELES/RAN/2024/1314 Report Release Date : 11.03.2024

Work Order No. : M&M/23-24/01 Work Order Date : 31.03.2023

Discipl	ine: Che	mical Group: V	Vater		ory Limit 10500:2012
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
Cyanide (as CN)	mg/L	APHA 23 rd Ed.2017, 4500 CN-E	BDL (DL: 0.012)	0.05	No Relaxation
Residual Free Chlorine (RFC)	mg/L	IS 3025 (Part-26):2021	BDL (DL: 0.1)	0.02	1.0
Calcium (as Ca)	mg/L	APHA 23 rd Ed,2017, 3500 Ca B	23.2	75	200
Discipl	ine: Che	mical Group	: Residues in	Water	
Aluminum (as Al)	mg/L	IS 3025 (Part-55): 2003; RA2019	BDL (DL: 0.02)	0.03	0.2
Arsenic (as As)	mg/L	IS 3025 (Part 37): 2022	BDL (DL: 0.005)	0.01	No Relaxation
Boron (as B)	mg/L	IS 3025(Part-57): 2005; RA2021	BDL (DL: 0.2)	0.5	1.0
Cadmium (as Cd)	mg/L	APHA 23 rd Ed.2017, 3111B	BDL (DL: 0.003)	0.003	No Relaxation
Total Chromium (as Cr)	mg/L	APHA 23rd Ed.2017, 3111B	BDL (DL: 0.03)	0.05	No Relaxation
Copper (as Cu)	mg/L	APHA 23rd Ed.2017, 3111B	BDL (DL: 0.03)	0.05	1.5
Iron (as Fe)	mg/L	APHA 23rd Ed.2017, 3111B	0.384	1.0	1.0
Lead (as Pb)	mg/L	APHA 23 rd Ed.2017, 3111B	BDL (DL: 0.01)	0.01	No Relaxation
Manganese (as Mn)	mg/L	APHA 23rd Ed.2017, 3111B	BDL (DL: 0.05)	0.1	0.3
Mercury (as Hg)	mg/L	IS 3025 (Part-48): 1994; RA2019	BDL (DL: 0.001)	0.001	No Relaxation
Selenium (as Se)	mg/L	IS 3025 (Part-56): 2003; RA2019	BDL. (DL: 0.01)	0.01	No Relaxation
Zinc (as Zn)	mg/L	APHA 23 rd Ed.2017, 3111B	BDL (DL: 0.1)	5	15

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CIN: U740991HZ018PTC011125

ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 20AAECE97130124 ENGINEERING SERVICES PVT. LTD.

Email: info@elespl.co.in , eles.ranchi@gmail.com Phone no.: 0651-2290103

Website : www.elespl.co.in

TEST REPORT

 Test Report No.
 : ELES/RAN/2024/1314
 Report Release Date
 : 11.03.2024

 Work Order No.
 : M&M/23-24/01
 Work Order Date
 : 31.03.2023

Discipline : Cl	nemical	Group:	Water		tory Limit 10500:2012
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
Pesticides					
Alachlor*	µg/L	APHA 23 rd Edition 6630 B&C	BDL (DL: 1,0)	20	No Relaxation
Atrazine*	μg/L	APHA 23 rd Edition 6630 B&C	BDL (DL; 1.0)	2.0	No Relaxation
Aldrin/Dieldrin*	μ <u>α</u> /L	APHA 23 rd Edition 6630 B&C	BDL (DL: 0.01)	0.03	No Relaxation
Alpha HCH*	μg/L	USEPA 508:1985	BDL (DL: 0.001)	0.01	No Relaxation
Beta HCH*	µg/L	USEPA 508:1985	BDL (DL: 0.01)	0.04	No Relaxation
Butachlor*	µg/L	APHA 23rd Edition 6630 B&C	BDL (DL: 10)	125	No Relaxation
Chlorpyriphos*	μg/L	USEPA 8141 A	BDL (DL: 10)	30	No Relaxation
Delta HCH*	µg/L	USEPA 508:1985	BDL. (DL: 0.01)	0.04	No Relaxation
2,4 dichlorophenoxyacetic acid*	μg/L	APHA 23 rd Edition 6640 B	BDL (DL: 10)	30	No Relaxation
DDT(o,p and p,p-isomers of DDT,DDE and DDD)*	μg/L	APHA 23 rd Edition 6630 B&C	BDL (DL: 0.5)	1.0	No Relaxation
Endosulfan (alpha, beta, and sulphate)*	µg/L	APHA 23 rd Edition 6630 B&C	BDL (DL; 0,1)	0.4	No Relaxation
Ethion*	μg/L	USEPA 1657 A	BDL (DL: 0.5)	3.0	No Relaxation
Gamma HCH (Lindane)*	μg/L	USEPA 508:1985	BDL (DL: 0.5)	2.0	No Relaxation
Isoproturon*	µg/L	USEPA 532:2000	BDL (DL: 0.5)	9.0	No Relaxation

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Email: info@elespl.co.in , eles.ranchi@gmail.com Phone no.: 0651-2290103 Website: www.elespl.co.in

TEST REPORT

Test Report No. : ELES/RAN/2024/1314 Report Release Date : 11.03.2024 Work Order No. : M&M/23-24/01 : 31.03.2023 Work Order Date

Dissiplies : P	intention	Conne. V	Vatan	Regulate	ory Limit
Discipline : Biological		Group: Water		as per 1S 10500:2012	
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
Total Coliform	Per 100 mL	IS 15185:2016; RA 2021	Not Detected	Shall not be detecte	
Escherichia Coli (E. Coli)	Per 100 mL	IS 15185;2016; RA 2021	Not Detected		
Discipline :	Chemical	Change . Y	Masau	Regulate	ory Limit
Discipine :	Chemicai	Group: \	vater	as per IS 10500:2012	
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
Anionic Surfactants (as MBAS)*	mg/L	IS 3025 (Part- 68); 2019 (RA2023)	BDL (DL: 0.1)	0.2	1.0
Polynuclear Aromatic Hydrocarbons (PAH)*	mg/L	APHA 23rd Edition: 6440 B	BDL (DL: 0.0001)	0.0001	No Relaxation
Polychlorinated Biphenyls (PCB)*	mg/L	APHA 23 rd Edition: 6431B	BDL (DL: 0.0005)	0.0005	No Relaxation

Reviewed

****End of Report****

Authorised Signatory Dr. Deependra Kumar Sinha Ph. D Environmental Engg. ELES Pvt. Ltd. Technical Manager

Page 4 of 4

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TEST REPORT

Test Report No.	; ELES/RAN/2024/1328	Report Release Date	: 11.03.2024
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03,2023
CUSTOMER DET.	AILS	SAMPLE DETAILS	and the later of t
Customer Name	: Minerals & Minerals Limited	Sample Ref, No. Sampling Date Sample Received Date	: ELES/RAN/2024/EF/1177 : 09.02.2024 : 14.02.2024
Address	1 Lohardaga, Jharkhand-835302	Type of Sample Source of Sample	: Effluent Water : Workshop Effluent – Bimarla Bauxite Mine (134.526 ha)
Mines Status	; Operational	Sampling Procedure Sample Collected By	: ELES/DOC/SMPL/01 : ELES Pvt. Ltd.
Period of Analysis	14.02.2024 to 21.02.2024	Sample Condition	: Sealed & Preserved

Discipline: Chemical		Group: Pollution & Env	ironment	Discharge Lim EPR, 1986 Sc	
Parameter	Unit	Test Protocol	Result	Inland Surface Water	Land for Irrigation
pH (at 24.8 °C)	-	APHA 23rd Ed.2017,4500-H/B	6.68	5,5-9,0	5.5-9.0
Total Suspended Solids (TSS)	mg/L	IS 3025 (Part-17):2022	28.6	100	200
Total Dissolved Solids (TDS)	mg/L	APHA 23rd Ed2017, 2540B, C&D	886		
Temperature	"C	APHA 23 rd Ed.2017, 2550 B	24.8	Shall Not Exceed 5°C Above the Receiving Water Temperature	-3
Chemical Oxygen Demand (COD)	mg/L	IS 3025 (Part-58): 2006: RA2022	72.6	250	-
Biochemical Oxygen Demand (BOD) (at 27 °C for 3 days)	mg/L	IS 3025 (Part-44): 1993: RA2019	7.8	. 30	100
Oil & Grease	mg/L	IS 3025 (Part-39): 2021	1.2	10	1.0
Calcium (as Ca)	mg/L	IS 3025 (Part-40):1991; RA2019	24.4	. ><.	
Discipline: Chemica	d	Group: Resi	dues in Wate	r	
Álumínum (as Al)	mg/L	IS 3025 (Part-55): 2003; RA2019	BDL (DL: 0.02)	- Der C	-
Iron (as Fe)	mg/L	APHA 23rd Ed.2017; 3111B	0.848	3.0	100

Remarks: 1. pHatereal

Reviewed by

****End of Report****

Authorised Signatory Dr. Deependra Kumar Sinha

Page 1 of 1

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 20AAECE97130124

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TEST REPORT

Test Report No.	: ELES/RAN/2024/1332	Report Release Date	: 11.03.2024
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023

CUSTOMER DE	TAILS	SAMPLE DETAILS		
Customer Name Address	: Minerals & Minerals Limited : Lohardaga, Jharkhand-835302	Sampling Date Sampling Received Date Type of Sample Sampling procedure Sampling Done By	: 08.02,2024 to 09.02,2024 : 14.02,2024 : Ambient Noise : ELES/DOC/SMPL/03 : ELES Pvt. Ltd.	
Mines Status	Operational	Period of Analysis	: 14.02.2024 to 20.02.2024	

METEOROLOGICAL INFORMATION					
F	Average Temperature (°C)	22	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	: 49	4	Weather Condition	Clear

Location	Unit Test Protocol		Resu	Regulatory Limit (Industrial Zone)			
			Time	L_{eq}			
Near Mine Office Bimarla Bauxite Mine (134.526 ha)	dB(A)	CIRCAL	IS 9989;1981. RA 2020	Day Time	62	75 dB(A) Day Time &	
Sample ID: ELES/RAN/2024/AN/1167					Night Time	47	70 dB(A) Night Time



****End of Report***

Dr. Deependra Kumar Sinha
Ph. D Environmental Engg
ELES Pvt. Ltd. Technical Manager

Page 1 of 1

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ENGINEERING SERVICES PVT. LTD.

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TEST REPORT

Test Report No.	: ELES/RAN/2024/1346	Report Release Date	: 11.03.2024	
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023	

CUSTOMER DE	TAILS	SAMPLE DETAILS		
Customer Name Address	: Minerals & Minerals Limited : Lohardaga, Jharkhand-835302	Sampling Date Sampling Received Date Type of Sample Sampling procedure Sampling Done By	: 08.02.2024 : 14.02.2024 : Workzone Noise : ELES/DOC/SMPL/03 : ELES Pvt. Ltd.	
Mines Status	; Operational	Period of Analysis	: 14.02.2024 to 20.02.2024	

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C) 12	2	Barometric Pressure (mmHg)	: 738	
3	Relative Humidity (%) 4	4	Weather Condition	: Clear	

Location	Unit	Test Protocol	Resi	ult	Regulatory Limit (Industrial Zone)
Bimarla Mine Area –			Time	Leq	
Bimarla Bauxite Mine (134,526 ha)	dB(A)	IS 4758;1968; RA 2017	Day Time	69	90 dB (A)
Sample ID: ELES/RAN/2024/WN/1170					



****End of Report***

Authorised Signatory

Ph. D Environmental Engg.

6LES Pvt. Ltd. Technical Manager

Page 1 of L

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TEST REPORT

Test Report No.	± ELES/RNC/2024/1481	Report Release Date	: 10.04.2024
Work Order No.	; M&M/23-24/01	Work Order Date	: 31,03.2023
CUSTOMER DET		SAMPLE DETAILS	
Customer Name Address	: Minerals & Minerals Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample	: ELES/RNC/2024/AA/1429 : Near Weigh Bridge Bimarla Bauxite Mine (134.526 hg) : 12.03.2024 to 13.03.2024 : 18.03.2024 : Ambient Air
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02
Period of Analysis	: 18.03.2024 to 23.03.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

Average Temperature (°C) = 25	17	Barometric Pressure (mml-	lav + 728
Relative Humidity (%) : 47		Weather Condition	: Clear

Discipline:	Chemical	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m³	IS 5182 (Part-23): 2006; RA2022	72	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m ²	1S 5182 (Part- 24); 2019	38	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	µg/m³	IS 5182 (Part-2): 2001; RA2022	9,3	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	$\mu g/m^3$	IS 5182 (Part-6): 2006; RA2022	25.7	80 (24hrs)	
Ozone (O ₃)	µg/m [€]	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH ₃)	µg/m¹	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	µg/m	IS 5182 (Part-22): 2004; RA2019	0.018	1 (24hrs)	
Nickel (Ni)	ng/m ¹	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m ⁷	ELES/AIR/SOP/01	<2.0	06 (Annual)	
Benzene (C ₆ H ₆)	µg/m³	ELES/GC/SOP/06	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05	<0.5	O1(Annual)	

Reviewed by :

Bert

**** End of Report****

Jharkhand

of Colons

Authorised Signatury:

(Saswata Burman Roy, Dy. Quality Manager)

The !

(Bapan Das, Dy. Technical Manager)





Lab (MSG, R-3 Housing Colony, Bhankad, Pin - 826001, Scale | Blackhand \$ 9830067044 / \$ 93045 (2737)

TEST REPORT

Test Report No.	: ELES/RNC/2024/1482	Report Release Date	: 10.04.2024
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023
CUSTOMER DET	AllS	SAMPLE DETAILS	
Address Mines Status	Minerals & Minerals Limited Lohardaga, Jharkhand-835302 Operational	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure	: ELES/RNC/2024/AA/1430 ; Near Quarry No 1B Bimarla Bauxite Mine (134,526 ha) : 12.03.2024 to 13.03.2024 : 18.03.2024 ; Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	+ 18.03.2024 to 23.03.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Scaled & Preserved

M	METEOROLOGICAL INFORMATION				
1	Average Temperature (°C) (25	2	Barometric Pressure (mm)	lg) : 738	
3	Relative Humidity (%) : 47	.4	Weather Condition	: Clear	

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m³	IS 5182 (Part-23): 2006; RA2022	62	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	30	60 (24hrs)	
Sulphur Di-Oxide (SO ₇)	µg/m³	IS 5182 (Part-2): 2001; RA2022	7,1	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m³	IS 5182 (Part-6); 2006; RA2022	25.8	80 (24hrs)	
Ozone (O ₂)	μg/m ³	15 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH ₃)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	µg/m³	IS 5182 (Part-22): 2004; RA2019	0.011	1 (24hrs)	
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)	
Benzene (C ₄ H ₅)	µg/m³	ELES/GC/SOP/06	<2,5	05(Annual)	
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05	<0.5	O1(Annual)	

Reviewed by :

****End of Report****

Authorised Signatory:

1900-1 -

(Saswata Burman Roy, Dy. Quality Manager)



(Bapan Das, Dy. Technical Manager)



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TE/11503

TEST REPORT

Test Report No.	: ELES/RNC/2024/1483	Report Release Date	: 10.04.2024
Work Order No.	: M& M/23-24/01	Work Order Date	: 31,03,2023
CUSTOMER DET	AILS	SAMPLE DETAILS	
Address Mines Status	: Minerals & Minerals Limited : Lohardaga, Jharkhand-835302 : Operational	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure	: ELES/RNC/2024/AA/1431 Nav Prathmik Vidayalaya: Barang Path; Bimarla Bauxite Mine (134.526ha) : 12.03.2024 to 13.03.2024 : 18.03.2024 : Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 18.03.2024 to 23.03.2024	Sampling Done By Sample Condition	ELES Pvt. Ltd. Scaled & Preserved

MI	ETEOROLOGICAL INFOR	MATION			
	Average Temperature (°C)	: 25	2	Barometric Pressure (mmHg)	. 170
3	Relative Humidity (%)	4.47		The state of the s	1/38
				Weather Condition	: Clear

	Chemical	Group: Atn	nospheric Poll	ution
Parameter Unit		Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m ³	IS 5182 (Part-23): 2006; RA2022	61	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	33	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m³	IS 5182 (Part-2): 2001; RA2022	9.3	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	15 5182 (Part-6): 2006; RA2022	25.1	
Ozone (O ₁)	μg/m²	IS 5182 (Part-9): 1974; RA2019	<20.0	80 (24hrs)
Ammonia (NH ₃)	μg/m²	IS 5182 (Part- 25): 2018	<10.0	100 (8hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019 (NDIR Method)	<1.0	400 (24hrs) 2 (8hrs)
Lead (Pb)	μg/m ³	1S 5182 (Part-22): 2004; RA2019	< 0.002	(24hrs)
Nickel (Ni)	ng/m	1S 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)
Benzene (C ₆ H ₆)	μg/m³	ELES/GC/SOP/06	<2.5	
Benzo-(a)-Pyrene	ng/m ³	ELES/GC/SOP/05	<0.5	01(Annual)

Reviewed by :

Contract.

****End of Report****

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Jharkhand 826001

Authorised Signatory;

(Saswata Burman Roy, Dy. Quainy Manager)

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(Bapan Das, Dy. Technical Manager)



Operational

: 18.03.2024 to 23.03.2024

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TEST REPORT

Test Report No.	± ELES/RNC/2024/1484	Report Release Date	: 10,04,2024
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023
CUSTOMER DE	TAILS	SAMPLE DETAILS	
Customer Name	; Minerals & Minerals Limited	Sample Ref. No. Location	ELES/RNC/2024/AA/1432 Near Mine Entry Gate; Bimarla
Address	Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	Bauxite Mine (134.526 ha) : 12.03.2024 to 13.03.2024 : 18.03.2024

Type of Sample

Sampling Procedure

Sampling Done By

Sample Condition

M	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 25	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%) : 47	4	Weather Condition	: Clear

Discipline: Chemical		Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	65	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	37	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m ³	IS 5182 (Part-2); 2001; RA2022	8.3	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part-6): 2006; RA2022	25.2	80 (24hrs)
Ozone (O ₃)	$\mu g/m^3$	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NHz)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	μg/m ⁷	IS 5182 (Part-22): 2004; RA2019	0.009	1 (24hrs)
Nickel (Ni)	ng/m ³	15 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m"	ELES/AIR/SOP/01	<2.0	06 (Annual)
Benzene (C6H6)	μg/m³	ELES/GC/SOP/06	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05	<0.5	01(Annual)

Reviewed by :

2900

Mines Status

Period of Analysis

****End of Report****

Authorised Signatory :

: Ambient Air

: ELES Pvt. Ltd.

: Sealed & Preserved

: ELES/DOC/SMPL/02

(Saswata Burman Roy, Dy. Quality Manager)

Jharkhand **
826001

(Bapair Das, Dy. Technical Manager)

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Lab. Mis. 6-3 Rouning Colony, Dhanimé, Pin. 826001, State - Backband \$ 9830067044 / \$ 9301513737

TEST REPORT

Test Report No.	: ELES/RNC/2024/1485	Report Release Date	: 10.04.2024
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023
CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name Address	: Minerals & Minerals Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Location Sampling Date Sample Received Date	: ELES/RNC/2024/AA/1433 : Near Korle Village Bimarla Bauxite Mine (134,526 ha) = 13.03,2024 to 14.03,2024 = 18.03,2024
Mines Status	; Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 18.03,2024 to 23.03,2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

MI	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 26	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	147	4	Weather Condition	; Clear

Discipline: Chemical		Group: Atm	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m ³	IS \$182 (Part-23): 2006; RA2022	60	100 (24hrs).	
Particulate Matter (PM2.5)	μg/m ³	IS 5182 (Part- 24): 2019	29	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	µg/m ¹	IS 5182 (Part-2): 2001; RA2022	13.1	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m³	IS 5182 (Part-6): 2006; RA2022	19.8	80 (24hrs)	
Özone (O₂)	µg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH ₅)	μg/m ⁷	IS 5182 (Part- 25): 2018	<10.0	400 (Z4hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	µg/m³	IS 5182 (Part-22): 2004; RAZ019	0.011	1 (24hrs)	
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m²	ELES/AIR/SOP/01	<2.0	96 (Annual)	
Benzene (C ₆ H ₆)	μg/m ³	ELES/GC/SOP/06	<2.5	.05(Annual)	
Benzo-(a)-Pyrene	ng/m/	ELES/GC/SOP/05	<0.5	VI(Annual)	

Reviewed by :

****End of Report***

Authorised Signatory :

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(Saswata Burman Roy, Dy. Quality Manager)



(Bapan Das, Dy. Technical Manager)

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Lab (MHC, R. 3. Housing Colony, Dhantral: Phys. B26001, State - Blackhand (9830067044 / (9394515737

TEST REPORT

Test Report No.	: ELES/RNC/2024/1486	Report Release Date	: 10.04.2024
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023
CUSTOMER DE	TAILS	SAMPLE DETAILS	
Customer Name	: Minerals & Minerals Limited	Sample Ref. No.	: ELES/RNC/2024/AA/1434

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Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1434 : Near Barang Village Bimarla Bauxite Mine (134,526 ha)
Address	Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	13.03.2024 to 14.03.2024 : 18.03.2024
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	18.03,2024 to 23.03.2024	Sampling Done By Sample Condition	ELES Pvt. Ltd. Sealed & Preserved

MI	TEOROLOGICAL INFORMATION			
4	Average Temperature (°C) : 26	2	Barometric Pressure (mmH	g) : 738
3	Relative Humidity (%) 47	-4	Weather Condition	: Clear

Discipline: Chemical		Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	1S 5182 (Part-23): 2006; RA2022	56	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	25	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2): 2001; RA2022	6.4	80 (24hrs)
Nitrogen Di-Oxide (NO2)	μg/m³	1S 5182 (Part-6): 2006; RA2022	20.6	80 (24hrs)
Ozone (O ₅)	μg/m ²	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₅)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10); 1999; RA2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m"	IS 5182 (Part-22): 2004; RA2019	0.008	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)
Benzene (C ₀ H ₀)	µg/m ²	ELES/GC/SOP/06	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m²	ELES/GC/SOP/05	< 0.5	01(Annual)

Reviewed by :

190-6

****End of Report****

(Bapun Das, Dy. Technical Manager)

Authorised Signatory z

(Saswaia Burman Roy, Dy. Quality Manager)







TEST REPORT

Test Report No.	: ELES/RNC/2024/1487	Report Release Date	: 10,04,2024
Work Order No.	: M&M/23-24/01	Work Order Date	: 31,03,2023
CUSTOMER DET	AILS	SAMPLE DETAILS	
Address Mines Status	: Minerals & Minerals Limited : Lohardaga, Jharkhand-835302 : Operational	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure	: ELES/RNC/2024/AA/1/35 : Near Ghaghra Village Bimarla Bauxite Mine (134.526 ha) : 13.03.2024 to 14.03.2024 : 18.03.2024 : Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: (8.03.2024 to 23.03.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

MI	ETEOROLOGICAL INFORMAT	ON		
1	Average Temperature (°C) : 26	2	Barometric Pressure (mml-	lg) : 738
3	Relative Humidity (%) ; 47	4	Weather Condition	: Clear

Discipline: Chemical		Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	51	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	28	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2): 2001; RA2022	6.6	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	1S 5182 (Part-6); 2006; RA2022	20.3	80 (24hrs)
Ozone (O1)	μg/m ¹	IS 5182 (Part-9): 1974; RA2019	<20.0	(00 (8hrs)
Ammonia (NH ₂)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10); 1999; RA2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	μg/m²	1S 5182 (Part-22): 2004; RA2019	< 0.002	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)
Benzene (C ₆ H ₆)	µg/m³	ELES/GC/SOP/06	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m	ELES/GC/SOP/05	< 0.5	01(Annual)

Reviewed by :

****End of Report***

Authorised Signatory:

(Suswata Burman Roy, Dy. Quality Manager)

Jharkhand * 825001

(Bapan Das, Dy. Technical Manager)

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TEST REPORT

Test Report No.	: ELES/RNC/2024/1488	Report Release Date	: 10.04,2024
Work Order No.	2 M&M/23-24/01	Work Order Date	: 31.03.2023
CUSTOMER DET	The state of the s	SAMPLE DETAILS	- Contractor
Address Mines Status	: Minerals & Minerals Limited : Lohardaga, Jharkhand-835302 : Operational	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sample	: ELES/RNC/2024/AA/1436 : Near Bimarla Village Bimarla Bauxite Mine (134.526 ha) : 13.03,2024 to 14.03,2024 : 18.03,2024 : Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 18.03.2024 to 23.03.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

MI	TEOROLOGICAL INFORMATION				
1	Average Temperature (°C) : 26	2	Barometric Pressure (mmH	1 770	_
3	Relative Humidity (%) 47			g) : 738	
-	- some running (20) -47	4	Weather Condition	: Clear	-

Discipline	Chemical	Group: Atn	nospheric Poll	ution
Parameter Unit		Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m³	1S 5182 (Part-23); 2006; RA2022	58	100 (24hrs)
Particulate Matter (PM2.5)	$\mu g/m^3$	15 5182 (Part- 24): 2019	31	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m ²	IS 5182 (Part-2): 2001; RA2022	6.7	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m³	IS 5182 (Part-6): 2006; RA2022	22.6	
Ozone (O ₃)	µg/m [±]	IS 5182 (Part-9): 1974; RA2019	<20.0	80 (24hrs)
Ammonia (NH ₃)	µg/m ³	IS 5182 (Pari- 25): 2018	<10.0	100 (8hrs)
Carbon Monoside (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019 (NDIR Method)	<1.0	400 (24hrs) 2 (8hrs)
Lead (Pb)	µg/m³	IS 5182 (Part-22): 2004; RA2019	< 0.002	1 (24hrs)
Nickel (Ni)	ng/m	IS 5182 (Part-26):2020	<6.0	
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	20 (Annual)
Benzene (C ₆ H ₆)	μg/m³	ELES/GC/SOP/06	<2.5	06 (Annual)
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05	<0.5	05(Annual) 01(Annual)

Reviewed by :

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****End of Report****

Authorised Signatory:

(Saswata Burman Roy, Dy. Quality Manager)

Colony De

(Bapan Das, Dy. Technical Manager)

Page 1 of 1

Kolkata Office : 63/B, Restraguru Avenue, Kolkata - 700028 (033-25792891/25497490 Emali envirueneck5@@gmall.com



TEST REPORT

Test Report No.	: ELES/RNC/2024/1545	Report Release Date	: 10.04.2024	
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023	

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name Address	: Minerals & Minerals Limited : Lohardaga, Darkhund-835302	Sample Ref. No. Sampling Date Sample Received Date Type of Sample Source of Sample Location of Sample	: ELES/RNC/2024/SW/1453 : 14/03/2024 : 18.03/2024 : Surface Water : Spring Water : Korly, Binnarla Bouxite Mine (134/526 ba)	
Mines Status Period of Analysis	: Operational : 18.03.2024 to 29.03.2024	Sampling Procedure Sample Collected By Sample Condition	: ELES/DOC/SMPL/01 : ELES Pvt. Ltd. : Sealed & Preserved	

Discipline : Chemie	tat	Group	: Water	Tolerance Limits
Parameter	Unit	Test Protocol	Result	as per IS 2296-1992 Class C (Inland Surface Water)
pH (at 25.1 °C)	040	IS 3025 (Part 11): 2022	6.62	6.5-8.5
Colour	Hazen	IS 3025 (Part -4): 2021	9.0	300
Odour	-	IS 3025 (Part-5): 2018	Unobjectionable	-
Taste	4	APHA 23rd Ed.2017, 2160 C	N/A.	-
Turbidity	mg/L	IS 3025 (Part-10):1984;RA2017	4.58	-
Total Dissolved Solids (TDS)	mg/L	IS 3025 (Part 16):1984; RA2017	205	1500
Total Alkalinity (as CaCO:)	mg/L	IS 3025 (Pan-23):1986; RA2019	64.2	~
Total Hardness (as CaCO ₃)	mg/L	IS 3025 (Part-21): 2009; RA2019	85.2	-
Sulphate (as SO ₁)	mg/L	IS 3025 (Part 24); 1986; RA2019	6.8	400
Nitraté (as NO ₃)	mg/L	APHA 23st Ed.2017, 4500 NOs-B	1.53	50
Chloride (as Cl)	mg/L	IS 3025 (Part-32):1988; RA2019	23.5	600
Fluoride (as F)	mg/L	IS 3025 (Part-60) :2008; RA2019	BDL (DL: 0.1)	1.5
Cyanide (as CN)	mg/L	APHA 23rd Ed.2017, 4500 CN-E	BDL (DL: 0.012)	0.05
Phenois Compounds (as Call-OH)	mg/L	IS 3025 (Part-43): 1992;RA2019	(DL: 0.001)	0.005



Lab : MIG. R-3 Housing Colony, Dhanbari, Pin - 826001, State - Burkhand (9830067046 / (9304513737

TEST REPORT

: 10.04.2024 Test Report No. TELES/RNC/2024/1545 Report Release Date Work Order No. : M&M/23-24/01 Work Order Date : 31.03.2023

Discipline: Chem	ical	Group: Wat	er	Tolerance Limits	
Parameter	Unit	Test Protocol	Result	as per 1S 2296-1992 Class C (Inland Surface Water)	
Calcium (as Ca)	mg/L	IS 3025 (Part-40): 1991;RA2019	22.7	5-1	
Free Residual Chlorine (RFC)	mg/L	IS 3025 (Part-26):2021	(DL: 0.1)	-	
Anionic Surfactants (as MBAS)	mg/L	APHA 24 th Ed.2023, 5540-C	BDL (DL; 0.025)	1.0	
Discipline: Chemic	al	Group: Residu	es in Water		
Aluminium (as Al)	mg/L	IS 3025 (Part-55) :2003; RA2019	BDL (DL: 0.02)	(-)	
Arsenic (as As)	mg/L	IS 3025 (Part-37); 2022	BDL (DL; 0.005)	0.2	
Boron (as B)	mg/L	IS 3025 (Part-57) :2021	BDL (DL: 0.2)	4	
Cadmium (as Cd)	mg/L	APHA23 rd Ed.2017; 3111B	BDL (DL: 0.003)	0.01	
Total Chromium (as Cr)	mg/L	APHA 23 rd Ed.2017; 3111B	BDL (DL: 0.03)	-	
Copper (as Cu)	mg/L	APHA 23 rd Ed.2017; 3111B	BDL (DL: 0.03)	1.5	
(ron (as Fe)	mg/L	APHA 23 rd Ed.2017; 5111B	0.458	50	
Lead (as Pb)	mg/L	APHA 23 rd Ed,2017, 3111 B	BDL (DL: 0.01)	0.1	
Manganese (as Mn)	mg/L	APHA 23 rd Ed;2017; 3111 B	BDL (DL: 0.05)	-	
Mercury (as Hg)	mg/L	IS 3025 (Part-48) :1994; RA2019	BDL (DL: 0.001)	-	
Selenium (as Se)	mg/L	1S 3025 (Part-56) :2003; RA2019	BDL (DL: 0.01)	0.05	
Zinc (as Zn)	mg/L	APHA 23 rd Ed.2017, 3111/B	BDL (DL: 0.1)	15	
Polynuclear Aromatic Hydrocarbons (PAH)	µg/L	ELES/GC/SOP/04	BDL (DL: 0.05)	-	

Remarks: 1. pH & RFC done at Lab,





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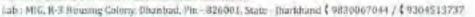
TEST REPORT

Test Report No.	: ELES/RNC/2024/1545	Report Release Date	: 10.04.2024	
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023	

Parameter	Unit	Test Protocol	Result	as per 15 2296-1992 Class C (Inland Surface Water)
Pesticides				
Alachler	µg/L	ELES/GC/SOP/01	BDL (DL: 0.5)	-
Atrazine	µg(L	ELES/GC/SOP/01	BDL (DL: 0.5)	
Butachlor	μg/L	ELES/GC/SOP/01	BDL (DL: 0.5)	/m.
Chlorpyriphos	μg/L	ELES/GC/SOP/01	BDL (DL: 0.5)	-
Ethion	ng/L	ELES/GC/SOP/01	BDL (DL: 0.5)	-
Malathion	μg/1	ELES/GC/SOP/01	BDL (DL: 0.5)	-
Methyl parathion	μg/1_	ELES/GC/SOP/01	BDL (DL: 0,1)	-
Monocrotophos	μу/1	ELES/GC/SOP/01	BDL (DL; 0.5)	-
Phorate	μg/L	ELES/GC/SOP/01	BDL (DL; 0.5)	
Phorate Sulphone	μg/L	ELES/GC/SOP/01	BDL (DL: 0.5)	-
Dieldrin	µg/L	ELES/GC/SOP/02	BDL (DL: 0.01)	7
Alpha HCH	μg/L	ELES/GC/SOP/02	BDL (DL; 0.006)	
Beta HCH	μg/L	ELES/GC/SOP/02	BDL (DL: 0.02)	75.
Delta HCH	ив/1.	ELES/GC/SOP/02	BDL (DL: 0.02)	
Gamma HCH (Lindane)	µg/L	ELES/GC/SOP/02	BDL (DL: 0.02)	
Endosulfan (alpha, beta and sulphate)	ug/L	ELES/GC/SOP/02	BDL (DL: 0.05)	-
DDT(o.p and p.p-isomers of DDT,DDEand DDD)	ug/L	ELES/GC/SOP/02	BDL (DL: 0.05)	-



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TEST REPORT

Test Report No.	: ELES/RNC/2024/1545	Report Release Date	: 10.04.2024	
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023	

Discipline : Bi	ological	Group : Wa	ater	Tolerance Limits
Parameter	Unit	Test Protocol	Result	as per 18 2296-1992 Class C (Inland Surface Water)
Total Coliform	CFU/100 mL	IS 15185: 2016, RA2021	3.27×10 ²	5000
Escherichia Coli	CFU/100 mL	IS 15185; 2016; RA2021	47.0	-

Reviewed by :

****End of Report****

Authorised Signatory:

Elin'

(Saswata Burman Roy, Dy. Quality Manager)



(Bapan Das, Dy. Technical Manager)





Latt : MIC, R.3 Housing Colony, Bhambad, Pin - 826001; State - Backband (9830067044 / (9304513737

TEST REPORT

Test Report No.	: ELES/RNC/2024/1545	Report Release Date	: 10.04,2024	
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023	

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Sampling Date Sample Received Date Type of Sample	: ELES/RNC/2024/SW/1453 : 14303/2024 : 18303/2024 : Surface Water	
Address	: Lohardaga, Jharkhand-835302	Source of Sample Location of Sample	: Spring Water : Korly, Bimarla Bauxite Mine (134.526 ha)	
Mines Status	: Operational	Sampling Procedure Sample Collected By	: ELES/DOC/SMPL/01 : ELES Pvt. Ltd.	
Period of Analysis	: 18.03.2024 to 29.03.2024	Sample Condition	: Sealed & Preserved	

Discipline: Chemie	eat	Group	st Water	Tolerance Limits
Parameter	Unit	Test Protocol	Result	as per 15 2296-1992 Class C (Inland Surface Water)
pH (at 25.1 °C)	-	IS 3025 (Part 11): 2022	6.62	6.5-8.5
Colour	Hazen	IS 3025 (Part -1) : 2021	9:0	300:
Odour		IS 3025 (Part-5): 2018	Unobjectionable	-27
Taste	-	APHA 23 rd Ed.2017, 2160 C	N/A	
Turbidity	mg/L	IS 3025 (Part-10):1984;RA2017	4.58	-
Total Dissolved Solids (TDS)	ing/L	IS 3025 (Part 16):1984; RA2017	205	1500
Total Alkalinity (as CaCOs)	mg/L	IS 3025 (Part-23):1986; RA2019	64.2	_
Total Hardness (as CaCO ₁)	mg/L	1S 3025 (Part-21) : 2009; RA2019	85.2	
Sulphate (as SO ₁)	mg/L	IS 3025 (Part 24) : 1986; RA2019	6.8	400
Nitrate (as NO ₂)	mg/L	APHA 23 rd Ed.2017, 4500 NO1-B	1.53	-50
Chloride (as Cl)	mg/L	IS 3025 (Part-32):1988; RA2019	23.5	600
Fluoride (as F)	mg/L	IS 3025 (Part-60) :2008; RA2019	BDL (DL: 0.1)	1,5
Cyanide (as CN)	mg/L	APHA 23rd Ed.2017, 4500 CN-E	BDL (DL: 0.012)	0.05
Phenois Compounds (as C ₆ H ₂ OH)	mg/L	IS 3025 (Part-43): 1992;RA2019	BDL (DL: 0.001)	0.005





Talk MIG. R-9 Housing Colony, Dhanbard, Par. 825001, State. The rehand \$4830067044 / \$9304513737

TEST REPORT

Test Report No.	: ELES/RNC/2024/1545	Report Release Date	: 10.04.2024	
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023	

Discipline: Chem	ical	Group: Wat	er	Tolerance Limits	
Parameter	Unit	Test Protocol	Result	as per IS 2296-1992 Class C (Inland Surface Water)	
Calcium (as Ca)	mg/L	IS 3025 (Part-40): 1991;RA2019	22.7	_	
Free Residual Chlorine (RFC)	mg/L	18-3025 (Part-26) ;2021	BDL (DL: 0,1)	-	
Anionic Surfactants (as MBAS)	mg/L	APHA 24th Ed.2023, 5540-C	BDL (DL: 0.025)	1.0	
Discipline: Chemic	cal	Group: Residu	es in Water		
Aluminium (as Al)	mg/L	IS 3025 (Part-55) (2003; RA2019	BDL (DL: 0.02)	+	
Arsenic (as As)	mg/L	1S 3025 (Part-37): 2022	BDL (DL; 0.005)	0.2	
Boron (as B)	mg/L	IS 3025 (Part-57) :2021	BDL (DL: 0.2)	+	
Cadmium (as Cd)	nig/L	APHA23 rd Ed.2017; 3111B	BDL (DL: 0.003)	0.01	
Fotal Chromium (as Cr)	mg/L	APHA 23 rd Ed.2017; 3111B	BDL (DL; 0.03)	114	
Copper (as Cu)	mg/L	APHA 23rd Ed.2017; 3111B	BDL (DL: 0.03)	1.5	
Iron (as Fe)	mg/L	APHA 23 ^{rt} Ed.2017; 3111B	0.458	50	
Lead (as Pb)	mg/L	APHA 23rd Ed.2017, 3111 B	BDL (DL: 0.01)	0.1	
Manganese (as Mn)	mg/L	APHA 23 rd Ed.2017; 3111 B	BDL (DL: 0.05)	-	
Mercury (as Hg)	mg/L	IS 3025 (Part-48) :1994; RA2019	BDL (DL: 0.001)	+	
Selenium (as Se)	mg/L	IS 3025 (Part-56) :2003; RA2019	BDL (DL: 0.01)	0.05	
Zinc (as Zn)	mg/L	APHA 23 th Ed.2017, 3111 B	BDL (DL; 0.1)	15	
Polynuclear Aromatic Hydrocarbons (PAH)	ug/L	ELES/GC/SOP/04	BDL (DL: 0.05)	-	

Remarks: I. pH & RFC done at Lab.



Establish 2012 K. Der Colle C. 2011 Company Lamenton.

Lab : MIG. R-3 Rousing Colony Bhanland, Pin 826001, State - Harkland C 9830067044 / C 9304513737



TEST REPORT

Test Report No.	± ELES/RNC/2024/1545	Report Release Date	: 10.04.2024	
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023	

Parameter	Unit	Test Protocol	Result	as per 15 2296-1992 Class C (Inland Surface Water)
Pesticides				
Alachlor	µg/L	ELES/GC/SOP/01	BDL (DL: 0.5)	-
Atrazine	µg/L	ELES/GC/SOP/01	BDL (DL: 0.5)	-
Bujachlor	µg/L	ELES/GC/SOP/01	BDL (DL: 0.5)	-
Chlorpyriphos	μg/L	ELES/GC/SOP/01	BDL (DL: 0.5)	
Ethion	μg/L	ELES/GC/SOP/01	BDL (DL: 0.5)	
Malathion	µg/L	ELES/GC/SOP/01	BDL (DL: 0.5)	- +
Methyl parathion	pg/L	ELES/GC/SOP/01	BDL. (DL: 0.1)	1.8
Monocrotophús	µg/L	ELES/GC/SOP/01	BDL (DL: 0.5)	1.
Phorate.	µg/L	ELES/GC/SOP/01	BDL (DL: 0.5)	-
Phorate Sulphone	µg/L	ELES/GC/SOP/01	BDL (DL: 0.5)	
Dieldrin	μg/L	ELES/GC/SOP/02	BDL (DL: 0.01)	-
Alpha HCH	μg/L	ELES/GC/SOP/02	BDL (DL: 0.006)	
Beta HCH	μg/L	ELES/GC/SOP/02	BDL (DL: 0.02)	-
Delta HCH	μg/L	ELES/GC/SOP/02	BDL (DL: 0.02)	-
Gamma HCH (Lindane)	µg/L	ELES/GC/SOP/02	BDL (DL: 0.02)	-
Endosulfan (alpha, beta and sulphate)	µg/L	ELES/GC/SOP/02	BDL (DL: 0.05)	÷
DDT(o,p and p,p-isomers of DDT,DDEand DDD)	µg/L	ELES/GC/SOP/02	BDL (DL: 0.05)	-





Lab : MNS B-3 Housing Colony, Dhanbad, Pin - B26001, State - [har/klund § 9830067044 / § 9304513737

TEST REPORT

Test Report No.	: ELES/RNC/2024/1545	Report Release Date	: 10.04,2024	
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023	

Discipline : Bi	ological	Group : Wa	Tolerance Limits		
Parameter	Unit	Test Protocol	Result	as per IS 2296-1992 Class C (Inland Surface Water	
Total Coliform	CFLV100 mL	IS 15185: 2016, RA2021	3.27×10 ²	5000	
Escherichia Coli	CFU/100 mL	IS 15185; 2016; RA2021	47.0	-	

Reviewed by :

****End of Report****

Authorised Signatory:

That

(Saswata Burman Roy, Dy. Quality Manager)



(Bapan Das, Dy. Technical Manager)

MINERALS & MINERALS LIMITED

Regd. Office- Court Road, P.O. & Distt.-Lohardaga, Jharkhand-835302 Tel.-06526-223163

CIN NO. U26990JH1970PLC000875

Ref.:	Date

Annexure 3

Date - 20.05.2024

Office Order

Environmental Cell has been re-constituted at Bimarla Bauxite Mine (Area 134.526 ha) comprising below mentioned team members. The team will ensure compliance of Environment Act, Regulation & Rule in respect of the said mines of Minerals & Minerals Industries Limited.

- 1. Mr. Vangalapudi Kumar (Coordinator)
- 2. Mr. Mihir Barai Geologist
- 3. Ms. Abhilasha Singh-Environment Engineer
- 4. Mr. Anand Prakash Tiwari– Environment Engineer

The Undersigned is the in charge of above Environment Management Cell constituted for the purpose of ensuring compliances of environmental act rule and regulation for the above mine.

Basudev Gangopadhyay

AVP (Planning, Environment & Compliance)

Annexure 4

	Production, Mined Out, Back Filled and Over Burden removal from October'23 to March'24								
S No	Name of the Mines	Mining lease area (ha)	Production Capacity (MT)*	Lease Period*	Production (MT)	Mined out area (ha)	Back filled area (ha)	Over burden (Cu.M)	
1	Bagru Bauxite Mine	75.41	85000	22.01.1974 to 31.03.2030	NIL	NIL	NIL	NIL	
2	Bhusar Bauxite Mine	65.31	280000	11.07.1981 to 31.03.2030	102292	0.68	0.32	68480.59	
3	Hisri (New) Bauxite Mine	14.55	100000	19.07.1981 to 31.03.2030	42069	0.8	0.00	39067.98	
4	Pakhar (8.09) Bauxite Mine	8.09	80000	16.05.1973 to 31.03.2030	NIL	NIL	NIL	NIL	
5	Pakhar (35.12) Bauxite Mine	35.12	200000	17.04.1975 to 31.03.2030	NIL	NIL	NIL	NIL	
6	Pakhar (115.13) Bauxite Mine	115.13	300000	19.07.1996 to 31.03.2030	130749.2	2.06	0.56	534025.4	
7	Sherangdag-A Bauxite Mine	155.81	260000	16.10.1974 to 31.03.2030	11950	0.81	0.76	55693.68	
8	Serangdag-B Bauxite Mine	77.89	100000	04.10.1978 to 31.03.2030	36230	2.81	1.65	116122.92	
9	Jalim & Sanai Bauxite Mine	12.14	50000	16.10.1974 to 31.03.2030	16450	0.07	0.06	17533.27	
10	Gurdari Bauxite Mine	584.19	325000	23.03.1985 to 22.03.2035	145680	5.91	3.23	201022.508	
11	Kujam - I Bauxite Mine	80.87	150000	13.03.2006 to 12.03.2056	5480	0.46	2.91	72661.44	
12	Kujam - II Bauxite Mine	157.38	300000	24.03.2006 to 23.03.2056	66000	2.79	9.53	61380.23	
13	Amtipani Bauxite Mine	190.95	150000	13.03.2006 to 12.03.2056	48600	1.85	1.15	131087.65	

	Minerals & Minerals Limited							
14	Pakhar (109.507) Bauxite Mine	109.507	280000	26.07.2008 to 25.07.2058	142288	1.01	1.12	213450.18
15	Pakhar (15.58) Bauxite Mine	15.58	60000	28.04.1965 to 31.03.2030	NIL	NIL	NIL	NIL
16	Bimarla Bauxite Mine	134.526	300000	18.07.2009 to 17.07.2059	67450	3.41	3.29	101973.71
17	Amtipani Chirodih Bauxite Mines	130.01	450000	11.01.2017 to 10.01.2067	123330	8.583	5.67	208720.97

^{*}Static information about the mines included in the above table

Basudev Gangopadhyay

AVP (Planning, Environment and Compliance)

BREAK UP THE COST OF ENVIRONMENTAL MEASURES DURING THE YEAR 2023-24

The composite cost during the year 2023-24 for environmental protection & pollution control by Jharkhand Mines division of M/s Hindalco Industries Ltd & M/s Minerals & Minerals Ltd for implementation of the suggested measures in EC at our all the operating mines in the state of Jharkhand-namely Bagru (75.41 ha), Hisri New (14.55 ha), Bhusar (65.31 ha), Pakhar (115.13 ha), Pakhar (109.507 ha), Pakhar (15.58 ha), Pakhar (8.09 ha), Pakhar (35.12 ha), Sherangdag (155.81 ha), Serangdag (77.89 ha), Jalim & Sanai (12.14 ha), Bimarla Bauxite Mines (134.526 ha), Gurdari (584.19 ha), Amtipani (190.95 ha), Kujam I (80.87 ha) Kujam II (157.38 ha), and Amtipani Chirodih (130.01 ha) Bauxite Mines.

S No	Description	Budget (in Rupees) FY 2023-24	Actual (in Rupees) FY 2023-24 (From Oct'23 to Mar'24)
1	Pollution Control & Environment monitoring	1,57,41,102.00	73,14,906.01
2	Reclamation/ Back filing & Rehabilitation**	1,36,62,095.00	6,53,29,973.21
3	Green belt, Plantation & Water sprinkling arrangement	67,45,898.00	32,08,288.90
4	Rural Development	6,19,33,534.00	2,08,14,673.36

^{**}Part of OB removed cost.

Basudev Gangopadhyay
AVP (Planning, Environment & Compliance)



ENVIRONMENT POLICY

We, at Hindalco Industries Limited, operating across the process chain from mining to semi-fabricated products in non-ferrous metals, will strive to continually improve our environmental performance for sustainable operations and responsible growth globally, by integrating sound environmental systems & practices and Pollution Prevention approach.

To achieve this, we shall:

- Continue to comply with all applicable legal and other requirements on environment.
- Continually improve environmental performance by strengthening the Environmental Management System conforming to national /international standards, including setting up and reviewing targets and measuring, monitoring and reporting their progress.
- Allocate sufficient resources such as organisational structure, technology and funds for implementation of the policy and for regular monitoring of performance.
- Adopt pollution prevention approach for all our processes; enhance material efficiency and achieve high productivity.
- Conserve key resources like electricity, coal, water, oil, and raw materials, by promoting efficient technologies and manufacturing process improvements, water conservation programmes, and efficient use of raw materials.
- Adopt energy efficient and cleaner technologies based on techno-economic viability, appropriate to the region in which we operate, and in line with our growth and diversification plans.
- Promote the principles of waste prevention, reduction, reuse, recycling and recovery to minimize waste generation and strengthen the practices for management of wastes.
- Work in partnership with regulatory authorities, relevant suppliers, contractors, distributors and logistics partners and all other stakeholders, as applicable, to understand and initiate improvement actions.
- Engage with internal and external stakeholders including key business partners such as joint
 venture partners, licensees and outsourcing partners and wider communities, to broaden our
 understanding of environmental priorities and initiate actions on key environmental challenges.
- Adapt environmental performance over life cycle as an important input to the <u>decision-making</u> processes in the <u>organization</u>.
- Raise environmental awareness at all levels of our operations, through training and effective communication, participation and consultation.
- Communicate this Policy within the Organization. Develop and follow appropriate communication system to inform other stakeholders, as applicable, about our environmental commitment and performance.
- Conduct environmental, health and safety due diligence before undergoing any mergers and acquisitions.

This policy shall be made available to all employees, suppliers, customers, community and other stakeholders, as appropriate. The implementation of this policy is the responsibility of respective heads of units with the monitoring and tracking done by the Apex Sustainability Committee under the guidance of the Managing Director.

Satish Pai

MD. Hindalco Industries Limited

Date: 9th August, 2022