## **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/4 24

Date: 25:11:2023

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 Pakhar (109.507 ha) Bauxite Mining project of M/s Minerals & Minerals Limited located in the District of Lohardaga, Jharkhand for the period April'23 to September'23.

Ref: Environmental Clearance letter no J-11015/518/2008-IA II (M) dated 21st Oct 2010.

Sir,

With reference to the above, we are submitting herewith the Compliance status report of EC conditions for **Pakhar (109.507 ha)** Bauxite Mining project of **M/s Minerals & Minerals Limited**, located in Lohardaga, Jharkhand for the period April'23 to September'23.

The lease detail is as below.

Lease area (ha)	Production Capacity (MT)	Lease Period
109.507	280000	26.07.2008 to 25.07.2058

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

Name of the Project	:	Pakhar Bauxite Mine (109.507 ha) M/s Minerals & Minerals Ltd
Environment Clearance No. & date	:	J-11015/518/2008-IA.II(M), dated 21.10.2010
Period of compliance Report	:	From 1 <sup>st</sup> April 2023 to 30 <sup>th</sup> September 2023

### **Specific Conditions**

# 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:** - Implementations of stipulated conditions in NOC are fulfilled post which consent to operate has been granted by SPCB from time to time. The existing consent to operate is valid up to 31.03.2025. Productions of bauxite are within limits specified in consent to operate.

### Condition ii: - The environmental clearance is subject to approval of the state land use Department, Government of Jharkhand for diversion of agricultural land for nonagricultural use.

**Reply:** - Land acquisition is being done with permission of competent authority of State Government i.e. concerned Deputy Commissioner (D.C.) under CNT Act. The land lease agreement is being done with raiyat (Landowner) for 20 years with permission of State Govt with provision of returning the land as per the norms set by D.C. The compensation and facilities are being provided as per norms set in agreement. Thus, land acquisition has the approval of State Government.

Condition iii: - The mining operation shall be confined to the hill tops only and restricted to above ground water table and it should not intersect the ground water table. In case of working below ground water table, prior approval of the Ministry of Environment & Forests and Central Ground Water Authority shall be obtained, for which a detailed hydro – geological study shall be carried out.

**Reply:** - Working zone is being restricted to above ground water table. It is not intersecting ground water table during mining operation. We undertake that no mining is/was carried out below ground water table and the same status will be maintained in future also.

Condition iv: - The project proponent shall ensure that no natural watercourse and/or water resources are obstructed due to any mining operations. Adequate measures shall be taken for protection of seasonal channels, if any emanating from the mine lease, during the course of mining operation.

**Reply:** - There is no natural watercourse and / or water resources within the mining lease area. Shallow depth mining methodology is adopted for mining process. Hence, there is no impact of mining operation on natural water course.

Condition v: - The topsoil 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:** - - Backfilling and reclamation is being done concurrently by overburden. 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 vi: - The over burden (OB) generated shall be temporarily stacked in the earmarked area for a period of one year and thereafter concurrently backfilled. There shall be no external overburden dump. The backfilled area shall be progressively afforested. Monitoring and management of rehabilitated areas should continue until the vegetation becomes self-sustaining. Compliance status should be submitted to the Ministry of Environment & Forests and its Regional Office located at Bhubaneshwar on six monthly basis.

**Reply:** - Sequential backfilling and reclamation of mined out area are being practiced. Backfill data is enclosed as **Annexure 4.** Monitoring and management of rehabilitated areas is continuing until vegetation becomes self-sustaining through supervision. There is no OB dump present currently, in the mine lease area.

Condition vii: - The void left unfilled in an area of 0.41 ha shall be converted into water body. The higher benches of excavated void/ mining pits shall be terraced and plantation done to stabilize the slopes. The slopes of higher benches shall be made gentler for easy accessibility by local people to use the water body. Peripheral fencing shall be carried out along the excavated area.

**Reply:** - Implementation of condition is in progress. Mining is being carried out in a scientific manner. Rainwater harvesting pond of 1.26 ha has been provided. Fencing provided.



Rainwater Harvesting Pond

Condition viii: - Catch drains and siltation ponds of appropriate size should be constructed around the mine working, soil and mineral dumps to prevent run off of water and flow of sediments directly into the agricultural fields, the Kisko Nadi, the Sankh Nadi, the Surang River, the Chaupat Nadi and other water bodies. The water so collected should be utilized for watering the mine area, roads, green belt development etc. The drains should be regularly desilted, particularly after monsoon and maintained properly. Garland drain, settling tanks and check dams of appropriate size, gradient and length shall be constructed around the mine pit, topsoil, dumps and the mineral dumps to prevent runoff water and flow sediments directly into the agricultural fields, the Kisko Nadi, the Sankh Nadi, the Surang River, the Chaupat Nadi and other 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 setting of silt material. Sedimentation pits should be constructed at the corners of the garland drains and desilted at regular intervals.

**Reply:** - No run-off is generated from mining activities. However, 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 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.



Garland drains

Siltation pond

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

Reply: - The dimension of the retaining wall of OB dumps is based on the average rainfall.

Condition x: - Plantation shall be raised in an area of 6.3 ha including a 7.5 m. wide statutory barrier all around the mining lease, reclaimed and rehabilitated areas, around

water body, etc. by planting the native species in consultation with the local DFO / Agriculture Department. The density of the trees should be around 2000 plants per ha. Greenbelt shall be developed all along the mine lease area in a phased manner and shall be completed within first five years.

**Reply:** - Progressive plantation is being carried out in consultation with local forest department. Total 12.68 ha has been covered with plantation till September'23. Green belt development programme is in progress with progress of mining activities. Nos of sapling planted in between the period April'23 to September'23 is 4350 nos. In addition to these agricultural activities is going on reclaimed land as per consent from landowners.





Plantation at mines

Condition xi: - Regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of SPM and RSPM such as around crushing and screening plant, 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:-** Water tankers have been provided for sprinkling of water on haul roads and are being engaged at the places where active mining is in progress to arrest fugitive dust emission. AAQ parameters are being regularly monitored. The report is enclosed as **Annexure 2**.



Water sprinkling through tanker

Condition xii: - Regular monitoring of the flow rate of the springs and perennial nallahs flowing in and around the mine lease shall be carried out and records maintained.

**Reply: -** Spring is being monitored, Analysis report is attached as **Annexure 2.** 

Condition xiii: - 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:** - Implementation of suitable conservation measures to augment ground water resources in the area viz Rainwater harvesting pond and non-use of ground water etc. are implemented.

Condition xiv: - Regular monitoring of ground water level and quality should be carried out by establishing a network of existing wells and constructing new piezometers during the mining operation. The periodic monitoring [(at least four times in a year – premonsoon (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 Bhubaneshwar, The Central Ground Water Authority and the Regional Director, Central Ground Water Board. If at any stage, it is observed that the ground water table is getting depleted due to the mining activity, necessary corrective measures shall be carried out.

**Reply:** - Working zone is being restricted to above ground water table. Considering that we strictly adhere to the compliance condition and there is no chance to intersect ground water table during mining operation present and in future. A Piezometer has been installed for monitoring of ground water level. Water quality and water level report are attached herewith as **Annexure 1**.



Piezometer

Condition xv: - Appropriate mitigative measures shall be taken to prevent pollution of the Kisko Nadi, the Sankh Nadi, the Surang River, the Chaupat Nadi in consultation with the State Pollution Control Board.

**Reply:** - No natural watercourse has been obstructed.

Condition xvi: - The project proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of surface water (from natural spring) required for the project.

**Reply:** - Water is being drawn from water harvesting pond. No Natural spring is being used for mining purposes. No Objection Certificate (NOC) for ground water abstraction for Pakhar (109.507 ha) mines has been obtained for drinking purpose only.

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NOC for GW Abstraction

Condition xvii: - 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 such as rainwater harvesting pond, garland drain and non-use of ground water etc being implemented with the progress of mining.

Condition xviii: - 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 within the mine lease up to the stock yard. The mineral transportation within the mine lease shall be carried out through the covered trucks only and the vehicles carrying the mineral shall not be overloaded.

**Reply:** - Regular maintenance of vehicles are undertaken to minimize vehicular emission. All the transporters have been instructed to obtain PUC for their vehicles from competent authority and submit to the concerned officer for verification. Vehicles are having PUC and emissions are under control.



Tarpaulin cover on truck loaded with material

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PUC Certificate

Condition xix: - Blasting operation should be carried out only during the daytime. Controlled blasting shall be practiced. The mitigative measures for control of ground vibration 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 by IIT, Kharagpur. All efforts are being taken to mitigate impact of blasting.

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

**Reply: -** Wet drilling is in practice.



Wet drilling

Condition xxi: - 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 loading, unloading and mineral handling areas.

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

**Reply:** - The sewage water from domestic uses is being collected through individual Septic Tank and Soak Pits. Effluent treatment mechanism (Oil-grease trap) are installed at suitable site in Pakhar plateau.



Oil & Grease Trap

Condition xxiii: - 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: -** This is being done on a continuous basis through medical camp and CSR activity.

Condition xxiv: - 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 xxv: - The land Oustees and land losers/ affected people shall be compensated/ rehabilitation as per the National Policy of Resettlement and Rehabilitation of project Affected Families (NPRR)

**Reply:** - Land acquisition activities is done as per CNT Act and with permission of competent authority i.e., concerned Deputy Commissioner (D.C.) with lease agreement Raiyat (Landowner) for 20 years period and the land will be returned so acquired as per the norms set by D.C. in land purchased agreement. The compensation and rehabilitation benefit are also being provided through this agreement as per norms set in agreement.

Condition xxvi: - Door to door sample survey should be undertaken within the impact zone to assess the family-based need of the tribals and it should be appropriately addressed in the CSR activities to be undertaken in the area. An action plan in this regard should be prepared and submitted.

**Reply:** - As a company, we are immensely dedicated towards enhacing the quality of life of the people living in the impact zone area. Therefore, Company's CSR team is doing regular assessment of the family-based need of the tribals, and it is made sure that the problems are properly addressed.

Condition xxvii: - 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, creche etc. The housing may be in the form of the 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 baiss, so that they can work in a stress free environment. Therefore, all the necessary infrastructure and basic facilities mentioned above, are being taken care of.

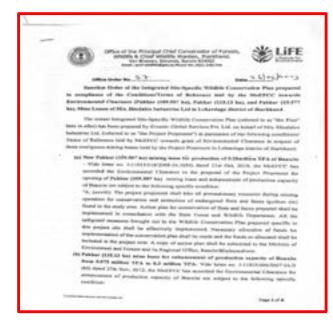
Condition xxviii: - The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered flora and fauna (python etc.) found in the study area. Action plan for conservation of flora and fauna prepared shall be implemented in consultation with the State Forest and Wildlife Department. All the safeguard measured brought out in the Wildlife conservation plan prepared specific to this project site shall be effectively implemented. Necessary allocation of funds for implementation of the conservation plan shall be made and the funds so allocated shall be included in the project cost. A copy of action plan shall be submitted to the Regional Office of the Ministry of Environment and Forests, Bhubaneswar.

**Reply:** - Suitable precautionary measures during mining operation are being implemented for conservation and protection of endangered flora and fauna.

Action taken for conservation of flora and fauna as under:

- 1) Permanent pillars are established within the mine lease area.
- 2) Maintenance of the forest road
- 3) Ensured necessary air and noise pollution control measures.
- 4) Daily water sprinkling is being carried out on the forest road
- 5) Transportation is being done during daytime.
- 6) Patrolling is being done.

Also, we have been granted letter of approval for the Integrated Site-specific Wildlife Conservation Plan via Office Order No.27 dated 26.05.2023 by PCCF, Wildlife, Ranchi.



Approval Letter

Condition xxix: - The critical parameters such as RSPM (Particulate matter with size less than 10  $\mu$ m (i.e. PM<sub>10</sub>) and NO<sub>x</sub> in the ambient air within the impact zone, peak particle velocity at 300 m. distance or within the nearest habitation, whichever is closer shall be monitored periodically. Further, quality of discharge water shall also be monitored [(TDS, DO, PH and Total Suspended Solids (TSS)], The monitored data shall be uploaded on the website of the Company as well as displayed on a display board at the project site at a suitable location near the main gate of the Company in Public domain. The Circular no. J-20012/1/2006-IA.II (M) dated 27.05.2009 issued by Ministry of Environment and Forests, which is available on the website of the Ministry www.envfor.nic.in shall also be referred in this regard for its compliance.

**Reply:** - Complied Monitoring Reports is enclosed as **Annexure-2**. Presently, there is no discharge of water from the mines. In case of discharge monitoring will be ensured.

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

**Reply:** - Progressive Mine Closure Plan duly approved by Indian Bureau of Mines. FMCP related provision will be compiled as per statue. 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 plan scheme. Report is attached herewith as **Annexure 4**.

Condition iii: - At least four ambient air quality-monitoring station should be established in the core zone as well as in the buffer zone for RSPM (Particulate matter with size less than 10  $\mu$ m (i.e. PM<sub>10</sub>) & NO<sub>X</sub> monitoring. Location of the stations should be decided based on the metrological 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 is being carried out and reported to the concerned authorities. Report is attached as **Annexure 2**.

Condition iv: - Data on ambient air quality RSPM [(Particulate matter with size less than 10  $\mu$ m i.e. PM<sub>10</sub>) & NO<sub>X</sub> ] should be regularly submitted to the Ministry including its Regional office located at Bhubneshwar and the State Pollution Control Board / Central pollution Control Board once in six months.

Reply: - Monitoring Reports are enclosed as Annexure-2.

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

**Reply:** - Water tankers have been provided for sprinkling of water on haul roads and are generally being engaged at the places where active mining is in progress to contain fugitive dust.

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

**Reply:** - Noise monitoring is being carried out at various locations of the work zone area and a monitoring report for the period of reporting six monthly compliance is enclosed. Workers engaged in operation of HEMMs, etc have also been provided with PPEs such as ear plug and earmuffs.

Condition vii: - Industrial wastewater (workshops and wastewater from the mine) Should be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19<sup>th</sup> May, 1993 and 31<sup>st</sup> December,1993 or as amended from time to time. Oil and grease trap should be installed before discharge of workshop effluents.

**Reply:** - There is no industrial wastewater generated from workshop within mine lease area. We are not discharging any wastewater outside mine lease area. Oil and grease trap installed at Pakhar plateau at suitable site.

Condition viii: - Personnel working in dusty areas should wear protective respiratory devices and they should also 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:-** Complied. We are ensuring that the use of Personal Protective Equipment (PPE)should be done by individuals daily. Mine workers are being regularly and periodically sent to our own hospital for health checkup for any contraction of diseases due to exposure in dusty and noisy areas. Training on safety, health and environmental aspects of mining is being regularly imparted through VT centre and through various other training programmes conducted by the State Government, recognized agencies, etc.

# Condition ix: - 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:** - Adhering to our environmental policies and in order to create more awarenessat mines site regarding environment, separate Environmental Management Cell (EMC) has been constituted and is functioning effectively. Copy is enclosed as Annexure-3.

Condition x: - 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 Bhubaneshwar.

**Reply:** - Statement of budgetary provision and actual expenses for environmental protection measure is enclosed as **Annexure-5**.

Condition xi: - The project authorities should inform to the Regional Office located at Bhubneshwar 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:** Since it is an operational mine, hence this provision is not applicable. Currently, the Regional Office is located at Ranchi.

Condition xii: - The Regional Office of this Ministry located at Bhubneshwar 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. Currently, the Regional Office is located at Ranchi.

Condition xiii: - The project proponent shall submit six monthly report on the status of the compliance of the stipulated environmental Clearance conditions including results of monitoring data (both in hard copies as well as by e-mail) to the Ministry of Environment

and Forests, its Regional Officer, Bhubaneshwar, the respective Zonal office of Central Pollution Control Board 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, Bhubaneshwar, the respective Zonal Office of Central Pollution Control Board and State Pollution Control Board.

Reply: - Duly submitted. Currently, the Regional Office is located at Ranchi.

Condition xiv: - A copy of clearance letter shall be sent by the proponent to concerned Panchayat, Zila Parisad/ Municipal Corporation, Urban Local Body and the Local NGO, if any, from whom suggestions/ representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the Company by the proponent.

Reply: - Complied.

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

Reply: - Displayed.

Condition xvi: - The environmental statement for each financial year ending 31<sup>st</sup> March in Form – V as is mandated to be submitted by the project proponent to the concerned Stated pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of the compliance of environmental clearance conditions and shall also be sent to the Regional Office of the Ministry of Environment and Forests, Bhubaneswar by e-mail.

Reply: - Submitted. Currently, the Regional Office is located at Ranchi.

Condition xvii: - The project authorities should advertise at least in two local newspapers widely circulated, one of which locality concerned, within 7days 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 <u>http://envfor.nic.in</u> and a copy of the same should be forwarded to the Regional Office of this Ministry located at Bhubaneshwar.

**Reply: -** Complied. (Documents already submitted). Currently, the Regional Office is located at Ranchi.

	Annexure 1					
Pi	Piezometer Reading - Pakhar 109.507 ha					
S No	Month	Depth (meter)				
1	April'23	39.15				
2	May'23	39.36				
3	June'23	39.52				
4	July'23	39.61				
5	August'23	39.62				
6	Sept'23	39.72				



PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (IHARKHAND) 557 NO:- 20AAECE9713D124

### ENGINEERING SERVICES PVT. LTP.

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



	TE	ST REPORT		
Test Report No.	: ELES/RNC/2023/2008	Report Release Date	: 12.06.2023	-
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023	-
ULR No.	: TC88392300000969F			-

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/1435 : Near Mine Quarry No-K7 Pakhar (109.507 ha) Bauxite Mine	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 08.04.2023 to 09.04.2023	
Plant Status	: Operational	Type of Sample Sample Drawn By	Ambient Air ELES/DOC/SMPL/02	
Period of Analysis	= 10.05.2023 to 08.06.2023	Sample Condition	: Sealed & Preserved	

	Average Temperature (°C) : 30	2	Barometric Pressure (mmHg	) 1739
3	Relative Humidity (%) . 59	4	Weather Condition	Clear
5	Longitude 84°36'43.86"E	6	Latitude	: 23°33'29, 12"N

### NABL Accredited

Discipline : Chemical G		Group	Group : Atmospheric Pollution	
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part-23): 2006; RA2022	63	100 (24hrs)
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	35	60 (24hrs)
Sulphur Di-Oxide (SOz)	µg/m <sup>3</sup>	IS 5182 (Part-2): 2001; RA2022	7.9	80 (24hrs)
Nitrogen Di-Oxide (NO2)	μg/m <sup>3</sup>	LS 5182 (Part-6): 2006; RA2022	15.2	80 (24hrs)
Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH <sub>2</sub> )	µg/m	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m³	IS 5182 (Part-22): 2004; RA2019	0.007	1 (24hrs)
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m <sup>1</sup>	ELES/AIR/SOP/01	<2.0	06 (Annual)

ā. Reviewed by

Authorized Signatory

\*\*\*\*End of Report\*\*\*\*

Dr. Deependra Kumar Sinha

Page 1 of 1

Ph. D. Environmental Engo.

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) 65T NO:- 36AAECE9713D124

### ENGINEERING SERVICES PVT. LTD.

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



Test Report No.	: ELES/RNC/2023/2009	Report Release Date	: 12.06.2023
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023
ULR No.	: TC88392300000970F		

CUSTOMER DET/	AILS	SAMPLE DETAILS	
Customer Name	: Minerals & Minerals Limited	Sample Ref. No.	= ELES/RNC/2023/AA/1436
		Location	- Near Mine Quarry No-K9 Pakhar (109.507 ha) Bauxite Mine
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 08.04.2023 to 09.04.2023
		Sample Received Date	: 10.05.2023
Mana Castor	0	Type of Sample	: Ambient Air
Plant Status	: Operational	Sample Drawn By	: ELES/DOC/SMPL/02
Period of Analysis	10.05,2023 to 08.06.2023	Sample Condition	: Scaled & Preserved

1	Average Temperature (°C)	: 30	2	Barometric Pressure (mmHg)	: 739
3	Relative Humidity (%)	: 59	4	Weather Condition	; Clear
5	Longitude	: 84º37'7.83"E	6	Latitude	: 23°33'30.72"N

NABL Accredited Discipline :	Chemical	Group	Atmospheri	e Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part-23): 2006; RA2022	67	100 (24hrs)
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	32	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m <sup>3</sup>	IS 5182 (Part-2): 2001; RA2022	9.2	80 (24hrs)
Nitrogen Di-Oxide (NO2)	μg/m <sup>3</sup>	IS 5182 (Part-6): 2006; RA2022	12.5	80 (24hrs)
Ozone (O3)	µg/m <sup>3</sup>	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH3)	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m <sup>3</sup>	IS 5182 (Part-22): 2004; RA2019	0.015	1 (24hrs)
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01	2.4	06 (Annual)

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Authorized Signatory

\*\*\*\*End of Report\*\*\*\*

Dr. Deependra Kumar Sinh Ph. D. Environmental Engg.

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

	TE	ST REPORT	
Test Report No.	: ELES/RNC/2023/2009	Report Release Date	: 12.06.2023
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/1436 Near Mine Quarry No-K9 Pakhar (109,507 ha) Bauxite Mine
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 08.04.2023 to 09.04.2023 : 10.05.2023
Plant Status	: Operational	Type of Sample Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 10.05.2023 to 08.06.2023	Sample Condition	: Sealed & Preserved

MI	TEOROLOGICAL INFOR	RMATION			
1	Average Temperature (°C)	: 30	2	Barometric Pressure (mmHg)	: 739
3	Relative Humidity (%)	: 59	4	Weather Condition	Clear
5	Longitude	; 84°37'7.83"E	6	Latitude	: 23°33'30.72"N

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

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



\*\*\*\*End of Report\*\*\*\*

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

### Page 1 of 1

The Decument stated as Test Report, is issued by the Laboratory under General Turns and Conditions, only on Company letter head in pre-approved formati. The results shown in the Test Report refer or relates only 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 approval of the Laboratory. The Report in full or in part shall not be published, advertise, used for any legal actions unless prior permission his been secured from the Management of the Laboratory. Attention is drawn to the limition of liability, compensation and jurisdiction issues. Any unauthorized alteration & falsationtion of the limits of release/issue of the Test Report is unlawful and offenders may be prosecuted to the fullest extent of the law. All the samples are retained for Makey from the Dime to the Report shall be accepted. The entire false from the Dime of release/issue of the Test Report. The samples from Regulatory budies are to be retained as specified. Any type of Observations will be accepted. The entire false schedules the full extent before, no complaints will be accepted. The entire false schedules the false before, no complaints will be accepted. The entire false schedules to XA (Not Applicable), BDL (Below Detection Limit), LDL (Lower Detection Limit)

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

### ENGINEERING SCREYCES PVT. LTD

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	TE	ST REPORT		
Test Report No.	: ELES/RNC/2023/2010	Report Release Date	: 12.06.2023	
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023	
ULR No.	: TC883923000000971F			

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/1437 : Near Mine Quarry No-K10 Pakhar (109.507 ha) Bauxite Mine	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 08.04.2023 to 09.04.2023 : 10.05.2023	
Plant Status	t Operational	Type of Sample Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 10,05.2023 to 08.06.2023	Sample Condition	: Sealed & Preserved	

	Average Temperature ("C)	: 30	2	Barometric Pressure (mmHg)	: 739
3	Relative Humidity (%)	: 59	4	Weather Condition	: Clear
5	Longitude	: 84°37'21.94"E	6	Latitude	: 23°33'14.59"N

### NABL Accredited

METRODAL ACIDAL DIRAMA

Discipline :	Chemical	Group	Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part-23): 2006; RA2022	66	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	37	60 (24hrs)	
Sulphur Di-Oxide (SO2)	µg/m <sup>3</sup>	IS 5182 (Part-2): 2001; RA2022	8.9	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m <sup>3</sup>	1S 5182 (Part-6): 2006; RA2022	21.2	80 (24hrs)	
Ozone (O3)	µg/m <sup>3</sup>	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH3)	µg/m <sup>9</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m <sup>1</sup>	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	µg/m <sup>3</sup>	IS 5182 (Part-22): 2004; RA2019	0.017	1 (24hrs)	
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)	

Enginte Reviewed by

Authorized Signatory

Dr. Deependra Kumar Sinha Ph. D. Environmental Engo

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NOI- 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/RNC/2023/2010	Report Release Date	± 12.06.2023	
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/1437 : Near Mine Quarry No-K10 Pakhar (109,507 ha) Bauxite Mine	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 08.04.2023 to 09.04.2023 : 10.05.2023	
Plant Status	: Operational	Type of Sample Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	a 10.05.2023 to 08.06.2023	Sample Condition	: Sealed & Preserved	

M	TEOROLOGICAL INFOR	MATION		and the second sec	
1	Average Temperature (°C)	: 30	2	Barometric Pressure (mmHg)	: 739
3	Relative Humidity (%)	: 59	4	Weather Condition	: Clear
5	Longitude	: 84°37'21,94"E	6	Latitude	: 23°33'14.59"N

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

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



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

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (IHARKHAND) 65T NO:- JOAAECE97130124

### ENGINEERING SERVICES PUT, LTD

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



	TE	ST REPORT		
Test Report No.	: ELES/RNC/2023/2011	Report Release Date	: 12.06.2023	
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023	
ULR No.	: TC883923000000972F			_

CUSTOMER DET.	AILS	SAMPLE DETAILS	
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/1438 : Pakhar Loading Area Pakhar (109.507 ha) Bauxite Mine
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	= 08.04.2023 to 09.04.2023 = 10.05.2023
Plant Status	Operational	Type of Sample Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 10.05.2023 to 08.06,2023	Sample Condition	Sealed & Preserved

M	ETEOROLOGICAL INFOR	MATION			
	Average Temperature (°C)	: 30	2	Barometric Pressure (mmHg)	: 739
	Relative Humidity (%)	: 59	4	Weather Condition	: Clear
5	Longitude	: 84°36'53.77*E	6	Latitude	: 23°33'15.01"N

### NABL Accredited

Discipline :	Chemical	Group	Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m <sup>3</sup>	IS 5182 (Part-23): 2006; RA2022	76	100 (24hrs)	
Particulate Matter (PM2,5)	µg/m <sup>3</sup>	IS 5182 (Part- 24); 2019	42	60 (24hrs)	
Sulphur Di-Oxide (SO2)	µg/m <sup>3</sup>	IS 5182 (Part-2): 2001; RA2022	13.1	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m <sup>3</sup>	15 5182 (Part-6): 2006; RA2022	25.3	80 (24hrs)	
Ozone (O3)	µg/m <sup>3</sup>	1S 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH3)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	µg/m <sup>3</sup>	IS 5182 (Part-22); 2004; RA2019	0.013	1 (24hrs)	
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)	

Reviewed by

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\*\*\*\*End of Report\*\*\*\*

Dr. Deependra Kumar Sinha

Page 1 of 1

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

### NGINEERING SERVICES PVT. LTD.

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

· · · · · · · · · · · · · · · · · · ·	TE	ST REPORT		
Test Report No.	: ELES/RNC/2023/2011	Report Release Date	: 12.06.2023	
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/1438 Pakhar Loading Area Pakhar (109 507 ha) Bauxite Mine
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	08.04.2023 to 09.04.2023 10.05.2023
Plant Status	: Operational	Type of Sample Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 10.05.2023 to 08.06.2023	Sample Condition	1 Sealed & Preserved

MI	TEOROLOGICAL INFOR	MATION			
	Average Temperature (°C)	: 30	2	Barometric Pressure (mmHg)	: 739
3	Relative Humidity (%)	= 59	-4	Weather Condition	; Clear
5	Longitude	: 84°36'53.77"E	6	Latitude	: 23°33'15.01"N

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

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



\*\*\*\*End of Report\*\*\*\*

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

#### Page 1 of 1

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PLOT NO-30, MANSAROVAR ENCLAVE, ITIPUDANA HATM, RANCHI-534003 (JHARKHAND) GET NO.-20A&ECE97130124

CTV 11743999830837700112275

town), introlledespitza 10. sies winehil@omuli.com Phone no.: 0553-2250103 Website ; www.slessLcn.in



Test Report No.	: ELES/RNC/2023/1936	Report Release Date	: 12.06.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC88392300000897F		

CUSTOMER DET.	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/1363
		Location	: Near Bunglapart Village
	the second second	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Pakhar Bauxite Mine
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 19.04.2023 to 20.04.2023
		Sample Received Date	: 10.05.2023
	12	Type of Sample	: Ambient Air
Plant Status	: Operational	Sample Drawn By	: ELES/DOC/SMPL/02
Period of Analysis	: 10.05.2023 to 08.06.2023	Sample Condition	; Sealed & Preserved

	Average Temperature (*C) ±33	2	Barometric Pressure (mm	Hg) : 743	
3	Relative Humidity (%) :61	4	Weather Condition	; Clear	

NABL Accredited				
Discipline :	Chemical	Group	: Atmospheri	e Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part-23): 2006; RA2022	63	100 (24hrs)
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part-24): 2019	34	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m³	IS 5182 (Part-2): 2001; RA2022	7,9	80 (24hrs)
Nitrogen Di-Oxide (ND2)	µg/m <sup>3</sup>	IS 5182 (Part-6): 2006; RA2022	14.4	80 (24hrs)
Ozone (O3)	µg/m <sup>2</sup>	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (Shrs)
Ammonia (NH3)	µg/m³	1S 5182 (Part-25): 2018	<10.0	-400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>1</sup>	15 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m <sup>3</sup>	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 <sup>3</sup>	ELES/AIR/SOP/01	<2.0	06 (Annual)

Reviewed by

Anthonized Signatory Sinha

\*\*\*\*End of Report\*\*\*\*

Dr. Despandint

Page 1 of 1

Page 1 of 1 ELES Port Line, responsible for all the information or data provided on the regord. except the information which is provided by the chieff. The Report cannot be reproduced except in full and any part of the report is not taken out of context, without prior written approval of the Laboratory. The Report in full or in part shall not be published, advertise, ased for any legal actions unless provident premission has been secured from the Management of the Laboratory. Attention is drawn to the Imitation of hability, compensation and jurisdiction issues. Any unautorized alternation & falsification of the content or appearance of the Test Report is unlowful and offendors only 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 Compliants regarding the Reports shall he done within 15days from the Date of Test Report released/issued. After the time period istated before, no complaints will be useepiod. The entire Time schedule. mentioned in Test Report is of 34hours format. Abbreviation used: N/A (Na) Applicable), BDL (Below Detection Limit), LDL (Lower Detection Limit)



KLDT NO-50, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) 637 NO:-20A42CE9713D124 NGINEERING SERVICES PVT. ATD.

Email: <u>info@elespl.co.in</u>, <u>eles.ranchi@amail.com</u> Phone no.: 0651-2250109 Website : www.elespl.co.in

TEST REPORT					
Test Report No.	: ELES/RNC/2023/1936	Report Release Date	: 12,06.2023		
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	_	

CUSTOMER DET/	AILS .	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/1363 : Near Bunglepart Village Pakhar Bauxite Mine
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 19.04.2023 to 20.04.2023 : 10.05.2023 : Ambient Air
Plant Status	: Operational	Sample Drawn By	: ELES/DOC/SMPL/02
Period of Analysis	± 10.05.2023 to 08.06.2023	Sample Condition	: Sealed & Preserved

MI	TEOROLOGICAL INFOR	RMATION				
1	Average Temperature (°C)	:33	2	Barometric Pressure (mml	Hg) : 743	
3	Relative Humidity (%)	: 61	4	Weather Condition	: Clear	

Discipline : Chemical		Group : Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene*	μ <u>2</u> /m <sup>3</sup>	IS:5182 (part-11): 2006;RA2017	<1.0	05(Annual)	
Benzo (a) Pyrene*	ng/m <sup>3</sup>	(S:5182 (Part-12): 2004;RA2019	<0.5	01(Annual)	

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



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#### Page 1 of 1

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## RONMENTAL LABORATORIE

FLOT NO-JO, MAINEAROVAR ENCLAVE THEPUDANA HATTA RANCHI-534003 (IHANIGHAND) 05T NO-20445CE07130124

Evolit Info@atexol.go.in , electronicit@antail.com



Phone mo.: 0451-2290103 Website : www.clesol.co.in

	TE	ST REPORT	
Test Report No.	: ELES/RNC/2023/1937	Report Release Date	: 12.06.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883923000000898F		

CUSTOMER DET.	AILS	SAMPLE DETAILS	
Customer Name	: Hindaleo Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/1364 ; Yatri Shed (Near K-10) Pakhar Bauxite Mine
Address	+ Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 19.04.2023 to 20.04.2023 : 10.05.2023 : Ambient Air
Plant Status	: Operational	Sample Drawn By	; ELES/DOC/SMPL/02
Period of Analysis	: 10.05.2023 to 08.06.2023	Sample Condition	: Sealed & Preserved

Average	Temperature (°C) : 33	2	Barometric Pressure (mm	iHg) ; 743
3 Relative	Humidity (%) : 61	4	Weather Condition	t Clear

NABL Accredited					
Discipline :	Chemical	Group	: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limi	
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part-23): 2006; RA2022	67	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	18 5182 (Part- 24): 2019	36	60 (24hrs)	
Sulphur Di-Oxide (SO2)	µg/m <sup>3</sup>	IS 5182 (Part-2): 2001; RA2022	10,2	80 (24hrs)	
Nitrogen Dl-Oxide (NO2)	µg/m <sup>3</sup>	IS 5182 (Part-6); 2006; RA2022	17.6	80 (24hrs)	
Ozone (O <sub>5</sub> )	µg/m <sup>3</sup>	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NHs)	ug/m <sup>4</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	µg/m²	IS 5182 (Part-22): 2004; RA2019	0.012	1 (24hrs)	
Nickel (Ni)	ng/m <sup>2</sup>	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01	<3.0	06 (Annual)	

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PLOT NG-30, WANSAROVAR ENCLAVE, TÜFÜDANA HATIA: RANCH-EZADOS (IMARKHAND) 657 NO-20AAECE97130124 NGINEERING SERVICES PVP. LTH.

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

TEST REPORT					
Test Report No.	: ELES/RNC/2023/1937	Report Release Date	: 12.06.2023	_	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023		

CUSTOMER DET/	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/1364 : Yatri Shed (Near K-10) Pakhar Bauxite Mine
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 19.04.2023 to 20.04.2023 : 10.05.2023
Plant Status	: Operational	Type of Sample Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 10.05.2023 to 08.06.2023	Sample Condition	: Sealed & Preserved

MJ	TEOROLOGICAL INFO	RMATION				
1	Average Temperature (C)	: 33	2	Barometric Pressure (mm	Hg) : 743	
3	Relative Humidity (%)	: 61	4	Weather Condition	: Clear	

Discipline : Chemical		Group : Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene*	µg/m <sup>3</sup>	IS:5182 (part-11): 2006;RA2017	<1.0	05(Annoal)	
Benzo (a) Pyrene*	ng/m <sup>3</sup>	IS:5182 (Part-12): 2004;RA2019	<0.5	01(Annual)	

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



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FLOT NO-30, MANSAROVAR ENCLAVE, TUPUTHNA HATUN, RANCH-ESADO3 (HARRIAND) 65T http://daacceotistolej

Email: mly@plaspl.co.ig., eles.republikymail.com Phone nu.: 11651-2290103 Website : www.wlaspl.co.in



Test Report No.	: ELES/RNC/2023/1938	Report Release Date	: 12.06.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
ULR No.	: TC883923000000899F			

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/1365 : Near Utkarmit Rajkiya Prathmik	
Address	: Lohardaga, Jharkhand-835302	Sampling Date	Vidyalaya Bunglapart Village Pakhar Bauxite Mine : 19.04.2023 to 20.04.2023	
		Sample Received Date Type of Sample	: 10.05.2023 : Ambient Air	
Plant Status	: Operational	Sample Drawn By	: ELES/DOC/SMPL/02	
Period of Analysis	: 10.05.2023 to 08.06.2023	Sample Condition	: Sealed & Preserved	

1	Average Temperature (°C)	: 33	2	Barometric Pressure (mm)	Hg) 5743
3	Relative Humidity (%)	; 61	-4	Weather Condition	; Clear

NABL Accredited Discipline :	Chemical	Group	Atmospheri	e Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m <sup>3</sup>	15 5182 (Part-23): 2006; RA2022	58	100 (24hrs)
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	29	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	IS 5182 (Part-2): 2001; RA2022	6.3	80 (24hrs)
Nitrogen Di-Oxide (NO2)	$\mu g/m^3$	IS 5182 (Part-6): 2006; RA2022	13.4	80 (24hrs)
Ozone (O <sub>3</sub> )	µg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m <sup>3</sup>	IS 5182 (Part-22): 2004; RA2019	<0.002	1 (24hrs)
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01	<2.0	06 (Annual)

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PLOT NO-30, MANSAROVAH ENCLAVE, TUPMDANA HATIA, RANCHI-E34008 (JHARKHANO) GST NG:- 20AAECE97130124 WOINDERING SERVICES PVT. LTD.

Email: Info@elespi.co.in , eles.ronchi@omail.com Phone-noi / 0651-2290109 Website : www.elespi.co.in

TEST REPORT				
Test Report No.	: ELES/RNC/2023/1938	Report Release Date	: 12.06.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name Address	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/1365 : Near Utkarmit Rajkiya Prathmik Vidyalaya Bunglapart Village Pakhar Bauxite Mine	
Plant Status	: Operational	Sampling Date Sample Received Date Type of Sample Sample Drawn By	: 19.04.2023 to 20.04.2023 : 10.05.2023 : Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	= 10.05.2023 to 08.06.2023	Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFORMATI	ON	in the second second	
1	Average Temperature (°C) : 33	2	Barometric Pressure (mn	oHg) : 743
3	Relative Humidity (%) : 61	4	Weather Condition	; Clear

Discipline : Chemical		Group : Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene®	µg/m <sup>2</sup>	IS:5182 (part-11): 2006;RA2017	<1.0	05(Annual)	
Benzo (a) Pyrene	ng/m <sup>3</sup>	1S:5182 (Pan-12): 2004;RA2019	<0.5	01(Annual)	

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



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### Save Environment, Save Future'



PLOT NO-30, MANSANOVAR ENCLAVE, CUMUCAWA NATIA, RANCHE-624002 (JHARRHAND) EST NO: 2004EC597(30)24 amull (ida@elespl.cu.ln., eles.remchi@amali.co.in



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

	TE	ST REPORT	
Test Report No.	: ELES/RNC/2023/1939	Report Release Date	: 12.06.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883923000000900F		

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	ELES/RNC/2023/AA/1366     Near Utkarmit Rajkiya Prathmik     Vidyalaya Dumrapart Village     Dala Density Miss	
Address Plant Status	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sample Drawn By	Pakhar Bauxite Mine : 19.04.2023 to 20.04.2023 : 10.05.2023 : Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 10.05.2023 to 08.06.2023	Sample Condition	: Sealed & Preserved	

1	Average Temperature (°C) 33	2	Barometric Pressure (mm	iHg) : 743
3	Relative Humidity (%) :61	4	Weather Condition	: Clear

NABL Accredited	Chambral	Calur	Atomatica	- Dellasian	
Discipline :	1		Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m <sup>1</sup>	IS 5182 (Part-23): 2006; RA2022	66	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m <sup>1</sup>	IS 5182 (Part- 24): 2019	34	60 (24hrs)	
Sulphur Di-Oxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	IS 5182 (Part-2): 2001; RA2022	7,3	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m <sup>3</sup>	IS 5182 (Part-6): 2006; RA2022	13.5	80 (24hrs)	
Ozone (O3)	µg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (Shrs)	
Ammonia (NH2)	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m <sup>1</sup>	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	µg/m <sup>3</sup>	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/m <sup>1</sup>	ELES/AIR/SOP/01	<2.0	06 (Annual)	

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except the information which is provided by the client. The Report estinate be reportanced except to fail and nov part of the report is not taken out of context, without prior written approval of the Laboratory. The Report is fail 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 lability, compensation and jurisdiction issues. Any unauthorized alteration & falsification of the content or appearance of the Test Report is unlewful and offenders may be prosecuted to the faillest extent of the law, All the samples are retained for 30days from the Date of release/assue of the Test Report. The samples from Regulatory bodies are to be retained as specified. Any type of Observations of Compliants regarding the Report is laboratory is been accepted. The entire Time schedule mentioned in Test Report is in 14knows format. Abbreviation used N/A (Not Applicable), BDI (Below Detection Unit), UDI (Lower Detection Limit).

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PLOT NO-30, MANSAHOVAR ENCLAVE, TUPUDANA NATIA, RANCHI-839803 (IHARNHAND) GST NO-204AECE87130124 NGINCERINO SERVICES PVT. LTD.

Email: (nfo@eiespl.ca.in , eles.ranchi@amail.com Phane no.: 0651-2280103 Website : www.elespl.ca.in

	TEST	REPORT	
Test Report No.	: ELES/RNC/2023/1939	Report Release Date	: 12.06.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Location	: ELES/RNC/2023/AA/1366 : Near Utkarmit Rajkiya Prathmik Vidyalaya Dumrapart Village Pakhar Bauxite Mine
Plant Status	: Operational	Sampling Date Sample Received Date Type of Sample Sample Drawn By	: 19.04.2023 to 20.04.2023 : 10.05.2023 : Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 10.05.2023 to 08.06.2023	Sample Condition	: Sealed & Preserved

	Average Temperature (°C) : 33	2	Barometric Pressure (mm	iHg) : 743
3	Relative Humidity (%) : 61	4	Weather Condition	: Clear

Discipline : Chemical		Group : Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene*	µg/m³	IS:5182 (part-11): 2006;RA2017	<1.0	05(Annual)	
Benzo (a) Pyrene*	ng/m <sup>2</sup>	1S:5182 (Part-12): 2004;RA2019	<0.5	01(Annual)	

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



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## IRONMENTAL LABORAT

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) 65T NO:~ 20AAECE9713D1Z4

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

ENV: U749/98/H2018PTC011125

TEST REPORT				
Test Report No.	: ELES/RAN/2023/0509	Report Release Date	: 06.05.2023	
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023	

CUSTOMER DET	AILS	SAMPLE DETAILS	and the second second
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Sampling Date Sample Received Date	: ELES/RAN/2023/DW/0394 : 16.04.2023 : 26.04.2023
Address	; Lohardaga, Jharkhand-835302.	Type of Sample Source/Location of Sample	: Drinking Water : Near Mine Quarry No-K7 Pakhar(109.507 ha)Bauxite Mine
Mines Status	Operational	Sampling Procedure Sample Collected By	: ELES/DOC/SMPL/01 : ELES Pvt. Ltd.
Period of Analysis	: 26.04.2023 to 05.05.2023	Sample Condition	: Scaled & Preserved

Discipline : Chemi	ical	Group : Water		Regulatory Limit as per IS 10500:2012	
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
pH (at 25.3 °C)	2	APHA 23" Ed.2017, 4500-H	6.68	6.5-8.5	No. Relaxation
Turbidity	NTU	APHA 23rd Ed.2017, 2130 B	0.24	1.0	5.0
Taste	14	APHA 23 <sup>64</sup> Ed.2017, 2160 C	Agreeable	Agreeable	Agreeable
Odour	1.1	IS 3025 (Part-5) :2018	Agreeable	Agreeable	Agreeable
Colour	Hazen	APHA 23 <sup>rd</sup> Ed.2017, 2120B&D	1.0	5	15
Total Dissolved Solids (TDS)	mg/L	APHA 23rd Ed.2017, 2540B,C&D	336	500	2000
Chloride (as Cl)	mg/L	APHA 23rd Ed.2017, 4500 CI B	59.4	250	1000
Fluoride (as F)	mg/L	APHA 23*8 Ed.2017, 4500 F-D	BDL (DL: 0.1)	1.0	1.5
Total Alkalinity (as CaCO3)	mg/L.	APHA 23rd Ed.2017, 2320 B	88.4	200	600
Total Hardness (as CaCO3)	mg/L.	APHA 23 <sup>rd</sup> Ed.2017, 2340 C	178	200	600
Sulphate (as SO <sub>4</sub> )	mg/L	APHA 23nd Ed.2017, 4500 SO4-2-E	16.4	200	400
Nitrate (as NO <sub>3</sub> )	mg/L	APHA 23 <sup>nd</sup> Ed.2017, 4500 NO <sub>3</sub> -B	3.48	45	No Relaxation
Phenolic Compound (as C6H4OH)	mg/L	IS 3025 (Part-43):1992;RA2019	BDL (DL: 0.0005)	0.001	0.002

### Page 1 of 4

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## ENVIRONMENTAL L/

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

### ERVICES PVT. LT

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

CIN-U749990H2016PTC011125

Test Report No. : ELES/RAN/2023/0509	Report Release Date	+ 06.05.2023
Work Order No. : M&M/23-24/01	Work Order Date ± 31.03.2023	
		Regulatory Limit

AND INCOMES OF TAXA

Discipline : Chemical		nical Group : W	Group : Water		as per 1S10500:2012	
Parameter	Unit	Test Protocol	Result	Acceptable	Permissible Limit	
Cyanide (as CN)	mg/L	APHA 23 <sup>rd</sup> 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 <sup>id</sup> Ed.2017, 3500 Ca B	46.4	75	200	
Discipli	ine : Cher	nical 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		1S 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 23rd 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	
		APHA 23rd Ed.2017, 3111B	0.328	1.0	1.0	
Iron (as Fe) mg/L Lead (as Pb) mg/L		APHA 23rd Ed.2017, 3111B	BDL (DL: 0.01)	0.01	No Relaxation	
Manganese (as Mn) mg/L		APHA 23 <sup>rd</sup> 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 <sup>nd</sup> Ed,2017, 3111B	BDL (DL: 0.1)	5	15	

Remarks: 1. pH & RFC done at Lab.

#### Page 2 of 4

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## ENVIRONMENTAL LABORA

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

### G SERVICES PVT. LTD.

Email: info@elespl.co.in , eles.ranchi@gmail.com Phone no.: 0551-2290103 Website : www.elespl.co.in

TEST REPORT				
Test Report No.	: ELES/RAN/2023/0509	Report Release Date	: 06.05.2023	
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023	

Discipline : Cher	nical		Group : Water		
Parameter	Unit	Test Protocol	Result	Regulatory Limit as per IS 10500:2012	
Pesticides					
Alachlor*	µg/L	АРНА	BDL (DL: 1.0)	20	
Atrazine*	µg/L	АРНА	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/1.	APHA	BDL (DL: 0.01)	0.04	
Butachlor*	µg/L	АРНА	BDL (DL: 10)	125	
Chlorpyriphos*	ng/L	ДРНА	BDL (DL: 10)	30	
Delta HCH*	μg/1.	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	АРНА	BDL (DL: 0.5)	1	
Endosulfan (alpha, beta, and sulphate)*	µg/L	АРНА	BDL (DL; 0,1)	0.4	
Ethion*	µg/L	АРНА	BDL (DL: 0.5)	3	
Gamma HCH (Lindane)*	µg/L	АРНА	BDL (DL: 0.5)	2	
Isoproturon*	µg/L	ÁPHA	BDL (DL: 0.5)	9	

#### Page 3 of 4

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

### GINEERING SERVICES PVT, LTD

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

	TE	ST REPORT		
Test Report No.	: ELES/RAN/2023/0509	Report Release Date	: 06.05.2023	
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023	

Discipline : Biological		Group : V	Regulatory Limit as per IS 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 detected	
Escherichia Coli (E. Coli)	Per 100 mL	IS 15185:2016; RA 2021	Not 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	15 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 <sup>rd</sup> Edition	BDL (DL: 0,0001)	0.0001	No relaxation
Polychlorinated Biphenyls (PCB)*	mg/L	APHA 23 <sup>rd</sup> Edition	BDL (DL: 0.0005)	0.0005	No relaxation

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



\*\*\*\* End of Report\*\*\*\*

Authorised Signatory Rekna Saxena B. Sc. M. Sc. (Botany) Director ELES Pvt. Ltd.

#### Page 4 of 4

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

## ENGINEERING SERVICES PVT. LTD.



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

and the second se	TE	ST REPORT		
Test Report No.	: ELES/RNC/2023/2339	Report Release Date	: 01.07.2023	
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023	
ULR No.	: TC883923000001261F			

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/1812 : Near Mine Quarry No-K7 Pakhar (109.507 ha) Bauxite Mine	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 22.05.2023 to 23.05.2023 : 06.06.2023	
Plant Status	tus : Operational Type of Sample Sample Drawn		Ambient Air	
Period of Analysis	: 06.06.2023 to 07.06.2023	Sample Condition	: Sealed & Preserved	

1	Average Temperature (°C)	: 35	2	Barometric Pressure (mmHg)	: 730
3	Relative Humidity (%)	: 59	4	Weather Condition	: Clear
5	Longitude	: 84°36'43.86"E		Latitude	: 23°33'29.12"N

Discipline :	Chemical	Group : Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part-23): 2006; RA2022	60	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	30	60 (24hrs)	
Sulphur Di-Oxide (SO2)	µg/m <sup>3</sup>	IS 5182 (Part-2): 2001; RA2022	7.2	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m <sup>3</sup>	IS 5182 (Part-6): 2006; RA2022	15.2	80 (24hrs)	
Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH <sub>3</sub> )	µg/m <sup>2</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	µg/m <sup>3</sup>	IS 5182 (Part-22): 2004; RA2019	0.005	1 (24hrs)	
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01	<2.0	06 (Annual)	

Reviewed by

Authorized Signatory Sinha

\*\*\*\*End of Report\*\*\*\* Page 1 of 1

ELES Pvt. Ltd. Technical Manager

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

### ENGINEERING 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/2023/2339	Report Release Date	: 01.07.2023	
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.	: ELES/RNC/2023/AA/1812	
		Location	: Near Mine Quarry No-K7 Pakhar (109,507 ha) Bauxite Mine	
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 22.05.2023 to 23.05.2023	
		Sample Received Date	: 06.06.2023	
Plant Status	: Operational	Type of Sample Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 06.06.2023 to 07.06.2023	Sample Condition	: Sealed & Preserved	

MJ	ETEOROLOGICAL INFOR	RMATION	-		
1	Average Temperature (%C)	:: 35	2	Barometric Pressure (mmHg)	: 739
3	Relative Humidity (%)	: 59	4	Weather Condition	: Clear
5	Longitude	: 84°36'43.86"E	6	Latitude	: 23°33'29.12"N

Discipline	: Chemical	Group : Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Benzene*	µg/m <sup>3</sup>	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\*\*\*\*

Authorized Signatory Dr. Deependra Kumar Sinha 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@amail.com Phone no.: 0651-2290103 Website : www.elespl.co.in

TEST REPORT				
Test Report No.	: ELES/RNC/2023/2340	Report Release Date	: 01.07.2023	
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.	: ELES/RNC/2023/AA/1813	
		Location	: Near Mine Quarry No-K9 Pakhar (109,507 ha) Bauxite Mine	
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 22.05.2023 to 23.05.2023	
	the second second	Sample Received Date	: 06.06.2023	
Plant Status	: Operational	Type of Sample Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 06.06.2023 to 07.06.2023	Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFOR	RMATION			
1	Average Temperature (°C)	: 35	2	Barometric Pressure (mmHg)	: 739
3	Relative Humidity (%)	; 59	4	Weather Condition	: Clear
5	Longitude	: 84°37'7.83"E	6	Latitude	: 23°33'30.72"N

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

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



\*\*\*\*Ead of Report\*\*\*\*

Authorized Signatory T. Deependra Kulfrar Sinna Ph. D. Environmental Engg. ELES Pyt. Ltd. Technical Manager

#### Page 1 of 1

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#### the Room Company of the New Yorks and



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

### ENGINEERING SERVICES PVT. LTD.



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

	TE	ST REPORT		
Test Report No.	: ELES/RNC/2023/2341	Report Release Date	: 01.07.2023	-
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023	-
ULR No.	: TC883923000001263F		1.01100000	-

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	ELES/RNC/2023/AA/1814 Near Mine Quarry No-K10 Pakhar (109.507 ha) Bauxite Mine	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 22.05.2023 to 23.05.2023 : 06.06.2023	
Plant Status	nt Status : Operational Type of Sample Sample Drawn By		: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 06.06.2023 to 08.06.2023	Sample Condition	: Sealed & Preserved	

1	Average Temperature (°C)	: 35	2	Barometric Pressure (mmHg)	- 730
3	Relative Humidity (%)	: 59	_	Weather Condition	: Clear
5	Longitude	: 84°37'21.94"E	-	Latitude	: 23°33'14,59"N

NABL	Accredited

Discipline : Chemical		Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part-23): 2006; RA2022	60	100 (24hrs)
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	23	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m <sup>3</sup>	1S 5182 (Part-2): 2001; RA2022	5.4	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m <sup>3</sup>	IS 5182 (Part-6): 2006; RA2022	10.5	80 (24hrs)
Ozone (O <sub>1</sub> )	µg/m <sup>1</sup>	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH3)	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8irs)
Lead (Pb)	µg/m <sup>3</sup>	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/m <sup>3</sup>	ELES/AIR/SOP/01	<2.0	06 (Annual)

Reviewed by

\*\*\*\*End of Report\*\*\*\*

Authorized Signatory Dr. Deependra Kumar Sinha

The Discoment stated as Test Report, is issued by the Laboratory under General Terms and Conditions, only on Company letter head in pre-approved formal. The results shown in the Test Report refer or relates only 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 approval of the Laboratory. The Report in fall 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 jurediction issues. Any unauthorized alteration & fabsification of the content or appearance of the Test Report is inflawful and offenders may be prosecuted to the fullest extent of the law. All the samples are rotained for 30days from the Date of releasenssue of the Test Report. The samples from Regulatory bodies are to be retained as specified. Any type of Observations or Compliants regarding the Reports shall be done within 15days from the Date of Test Report released/issued. After the time period stated before, no complasus will be accepted. The entire Time schedule mentioned 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 (JHARNHAND) GST NO:- 20AAECE9713D124

### ENGINEERING SERVICES PVT, LTD.

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

TEST REPORT					
Test Report No.	: ELES/RNC/2023/2341	Report Release Date	: 01.07.2023		
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.	: ELES/RNC/2023/AA/1814	
		Location	: Near Mine Quarry No-K10 Pakhar (109.507 ha) Bauxite Mine	
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 22.05.2023 to 23.05.2023	
	and the second second p	Sample Received Date	: 06.06,2023	
		Type of Sample	: Ambient Air	
Plant Status	: Operational	Sample Drawn By	: ELES/DOC/SMPL/02	
Period of Analysis	: 06.06.2023 to 08.06.2023	Sample Condition	: Sealed & Preserved	

MI	TEOROLOGICAL INFOR	RMATION			
1	Average Temperature (°C)	: 35	2	Barometric Pressure (mmHg)	: 739
3	Relative Humidity (%)	; 59	4	Weather Condition	: Clear
5	Longitude	: 84°37'21.94"E	6	Latitude	: 23°33'14.59"N

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

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



\*\*\*\* End of Report\*\*\*\*

Jt. Deependra Signateror Sinha Ph. D. Environmental Engg. ELES Pvt. Ltd. Technical Manager

#### Page 1 of 1

The Document stated as Test Report, is issued by the Laboratory under General Terms and Conditions, only on Company letter head in pre-approved format. The results shown in the Test Report refer or relates only 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 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 flability, compensation and jurisdiction issues. Any unauthorized alteration & fabrification 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/saue of the Test Report. The samples from Regulatory bodies are to be ratained as specified. Any type of Observations or Complaints regarding the Reports shall be done within 15days from the Done of Test Report released/issued. After the time period stated before, no complaints will be accepted. The entire Time schedule mentioned in Test Report is in 24hours format. Abbreviation used: N(A (Not Applicable); BDL (Below Detection Limit); LDL (Lower Detection Limit).



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

### ENGINEERING SERVICES PTT. LTD.



Email: Info@elespl.co.in , eles.ronchi@gmail.com Phone no.: 0551-2290103 Website : www.elespl.co.in

	TE	ST REPORT	
Test Report No.	: ELES/RNC/2023/2342	Report Release Date	: 01.07.2023
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023
ULR No.	: TC883923000001264F		

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/1815 : Pakhar Loading Area	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	Pakhar (109.507 ha) Bauxite Mine : 22.05.2023 to 23.05.2023 : 06.06.2023	
Plant Status	: Operational	Type of Sample Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 06.06.2023 to 08.06.2023	Sample Condition	: Sealed & Preserved	

1	Average Temperature (°C)	: 35	2	Barometric Pressure (mmHg)	- 730
3	Relative Humidity (%)	: 59	4	Weather Condition	: Clear
5	Longitude	: 84°36'53.77"E		Latitude	: 23°33'15.01"N

NABL .	Accredited

Discipline : Chemical		Group : Atmospheric Pollution		
Unit	Test Protocol	Result	Regulatory Limit	
µg/m <sup>3</sup>	IS 5182 (Part-23): 2006; RA2022	65	100 (24hrs)	
μg/m <sup>3</sup>	1S 5182 (Part- 24): 2019		60 (24hrs)	
µg/m <sup>3</sup>	IS 5182 (Part-2): 2001; RA2022		80 (24hrs)	
µg/m <sup>3</sup>	IS 5182 (Part-6): 2006; RA2022		80 (24hrs)	
µg/m <sup>3</sup>	IS 5182 (Part-9): 1974; RA2019		100 (8hrs)	
µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018		400 (24hrs)	
mg/m <sup>3</sup>	IS 5182 (Part-10): 1999; RA2019		2 (8hrs)	
µg/m?	IS 5182 (Part-22): 2004; RA2019		1 (24hrs)	
ng/m <sup>3</sup>	IS 5182 (Part-26):2020	1	20 (Annual)	
ng/m <sup>3</sup>	ELES/AIR/SOP/01	<2.0	D6 (Annual)	
	Unit µg/m <sup>3</sup> µg/m <sup>3</sup> µg/m <sup>3</sup> µg/m <sup>3</sup> µg/m <sup>3</sup> µg/m <sup>3</sup> µg/m <sup>3</sup> mg/m <sup>3</sup> µg/m <sup>3</sup>	Unit         Test Protocol           μg/m³         IS 5182 (Part-23): 2006; RA2022           μg/m³         IS 5182 (Part-24): 2019           μg/m³         IS 5182 (Part-24): 2019           μg/m³         IS 5182 (Part-2): 2001; RA2022           μg/m³         IS 5182 (Part-6): 2006; RA2022           μg/m³         IS 5182 (Part-6): 2006; RA2022           μg/m³         IS 5182 (Part-9): 1974; RA2019           μg/m³         IS 5182 (Part-25): 2018           mg/m³         IS 5182 (Part-10): 1999; RA2019           μg/m³         IS 5182 (Part-25): 2004; RA2019           μg/m³         IS 5182 (Part-20): 2004; RA2019           μg/m³         IS 5182 (Part-22): 2004; RA2019           μg/m³         IS 5182 (Part-22): 2004; RA2019           μg/m³         IS 5182 (Part-22): 2004; RA2019	Unit         Test Protocol         Result           μg/m³         IS 5182 (Part-23): 2006; RA2022         65           μg/m³         IS 5182 (Part-24): 2019         36           μg/m³         IS 5182 (Part-2): 2001; RA2022         10.7           μg/m³         IS 5182 (Part-2): 2001; RA2022         20.2           μg/m³         IS 5182 (Part-6): 2006; RA2022         20.2           μg/m³         IS 5182 (Part-6): 2006; RA2019         <20.0	

Reviewed by

\*\*\*\*End of Report\*\*\*\*

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Page 1 of 1

Dr. Deependra Kumar Sinha

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

	TE	ST REPORT	
Test Report No.	: ELES/RNC/2023/2342	Report Release Date	: 01.07.2023
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/1815 : Pakhar Loading Area Pakhar (109.507 ha) Bauxite Mine	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 22.05.2023 to 23.05.2023 : 06.06.2023	
Plant Status	: Operational	Type of Sample Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 06.06.2023 to 08.06.2023	Sample Condition	: Sealed & Preserved	

ŧ.	Average Temperature (°C)	: 35	2	Barometric Pressure (mmHg)	: 739
3	Relative Humidity (%)	: 59	4	Weather Condition	: Clear
5	Longitude	: 84°36'53.77"E	6	Latitude	: 23°33'15.01"N

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

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



\*\*\*\*End of Report\*\*\*\*

Authorized Signatory Dr. Deependra Multiar Sinno Ph. D. Environmental Engg. ELES Pvt. Ltd. Technical Manager

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PLOT NO-30, MANSAROYAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (IHARUIJAND) GNT NO: 204450297130124

Email: Infa@eletal.co.m., elet.rahch@amail.com Phone na.: 0651-1290103 Website : www.eletal.co.in



Test Report No.	: ELES/RNC/2023/2267	Report Release Date	: 01.07.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
ULR No.	: TC883923000001189F			

CUSTOMER DET/	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/1740 : Near Bunglapart Village Pakhar Bauxite Mine
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 21.05.2023 to 22.05.2023 : 06.06.2023 : Ambient Air
Plant Status	: Operational	Sample Drawn By	: ELES/DOC/SMPL/02
Period of Analysis	: 06.06.2023 to 08.06.2023	Sample Condition	: Sealed & Preserved

1	Average Temperature (%C) : 34	2	Barometric Pressure (mm	(Hg) : 743
3	Relative Humidity (%) : 59	4	Weather Condition	: Clear

NABL Accredited					
Discipline :	Chemical	Group : Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part-23): 2006; RA2022	67	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24); 2019	31	60 (24lus)	
Sulphur Di-Oxide (SO <sub>2</sub> )	ng/m <sup>3</sup>	IS 5182 (Part-2): 2001; RA2022	7.0	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m <sup>1</sup>	IS 5182 (Part-6): 2006; RA2022	16.2	80 (24hrs)	
Ozone (O <sub>3</sub> )	µg/m <sup>1</sup>	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (Shrs)	
Ammonia (NH <sub>5</sub> )	µg/m³	IS 5182 (Part- 25): 2018	<10,0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	µg/m <sup>3</sup>	IS 5182 (Part-22): 2004; RA20 (9	< 0,002	1 (24hrs)	
Nickel (Ni)	ng/m <sup>2</sup>	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m <sup>1</sup>	ELES/AIR/SOP/01	<2.0	05 (Annual)	

Reviewed by

Buthorized Signatory

Sinha

\*\*\*\*End of Report\*\*\*\*

ELES PUT UN Technologi Manader

Dr.

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FLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) EST NO- \$04ABCE\$7130124 Email: înfo@elesal.co.in , elex ranchi@amail.com

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

	1651	REPORT	
Test Report No.	: ELES/RNC/2023/2267	Report Release Date	: 01.07.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
CUSTOMER DET/	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/1740 Near Bunglapart Village Pakhar Bauxite Mine
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 21.05.2023 to 22.05.2023 : 06.06.2023 : Ambient Air
Plant Status	Operational	Sample Drawn By	ELES/DOC/SMPL/02
Period of Analysis	1:06:05:2023 to 08:06:2023	Sample Condition	: Sealed & Preserved

1	Average Temperature (°C) : 34	2	Barometric Pressure (mm	Hg) : 743
_	Relative Humidity (%) : 59	4	Weather Condition	: Clear

Discipline : Chemical		Group : Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene*	µg/m <sup>3</sup>	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 Reporteess

Authorized Signatory Dr. Despendre Kumar Sinha Ph. O. Environmental Engg. ELES Co. Ch. Termont Manager

#### Page 1 of 1

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### Salve Edictronometer, Salve Fadure



PLDT ND-30, MANSAROVAR ENCLAVE. TUPNOANA HATIA, RANCHI-E34603 [JHARKHAND] GST NO:- 20AAECE97130124

Email: info@elessis.co.in , eles ror his apirali torio Phone no.: 0651-2290103 Website ! www.elanet.on.lo



	TE	ST REPORT	
Test Report No.	: ELE5/RNC/2023/2268	Report Release Date	: 01.07.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883923000001190F		

CUSTOMER DET/	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/1741 ; Yatri Shed (Near K-10) Pakhar Bauxite Mine	
Address	: Lohurdaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 21.05.2023 to 22.05.2023 : 06.06.2023 : Ambient Air	
Plant Status	: Operational	Sample Drawn By	: ELES/DOC/SMPL/02	
Period of Analysis	: 06.06.2023 to 08.06.2023	Sample Condition	: Sealed & Preserved	

1	Average Temperature (°C)	: 34	.2	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%)	: 59	4	Weather Condition	: Clear

NABL Accredited				
Discipline :	Chemical	Group :	Atmospheri	e Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part-23): 2006; RA2022	60	100 (24hrs)
Particulate Matter (PM2.5)	µg/m <sup>2</sup>	IS 5182 (Part- 24): 2019	33	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m <sup>3</sup>	IS 5182 (Part-2): 2001; RA2022	7.6	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m <sup>1</sup>	IS 5182 (Part-6): 2006; RA2022	14.2	80 (24hrs)
Ozone (O3)	Jug/m <sup>3</sup>	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH3)	µg/m <sup>1</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>1</sup>	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m <sup>2</sup>	IS 5182 (Part-22): 2004; RA2019	0.008	1 (24hrs)
Nickel (Ni)	ng/m <sup>3</sup>	1S 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m <sup>2</sup>	ELES/AIR/SOP/01	<2.0	06 (Annual)

Reviewed by

Authorized Signatory

Dr. Deepandra Kumar Sinha

Page 1 of 1

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FLES For LH. Teranoni Manager The Document stated as Test Reports in assumpting the Laboratory state General Terms and Conditions, only on Company labor hand in pre-approved format. The results allown in the Test Report refer or relates unity to the Job that is along by the Laboratory only. The information stated on the Test Report reflects the findings date by the Laboratory in the time of involvement only and wattors die limits of chem's instructions. The Laboratory in responsible for all like information or data provided on the report, except the information which is provided by the cliem. The Report cannot be reproduced except in fall and any part of the report to not taken init of context, without proc. written approval of the Laboratory. The Report in full or in part shall not be published, advertise, used for any legal actions solicits prior permission has been secured from the Management of the Laboratory. Attention is drawn to the limitation of fizbility, compensation and jurisdiction owns. Any unaudistated alteration of the conversion approximate all the Text Report to an lawful and antibrates may be prosecuted to the failest extent of the law. Ail the samples are retained for 30days from the Date of release/some of the Test Report. The samples from Regulatory hollow are to be retained as specified. Any type of Observations or Compliants regarding the Reports dust he done within 15days must the Date of Test Report released/wand. After due take period, must before, no acceptants will be accepted. The entre Time allocate remained in Test Report 0 in T4boury format. Abbreviation and: 30/A (You Applicable); BDJ. (Below Detection 1 (00)); UDL (Lower Detection 1 (00));



PLOT NO-30, MANSAROVAR ENCLAVE, TUFUDANA HATLA, RANCHI-834003 (JHARKHAND) GST NO: 2044ECEST130124 ENGINEERING SERVICES PTT. \_TD.

Email: <u>info@elespl.co.in</u>, <u>eles.ranchi@amail.com</u> Phane no.: 0651-2290103 Website : www.elespl.co.in

Test Report No.	: ELES/RNC/2023/2268	Report Release Date	: 01.07.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

CUSTOMER DET.	AILS	SAMPLE DETAILS	
Customer Name	t Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/1741 : Yatri Shed (Near K-10) Pakhar Bauxite Mine
Address	( Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 21.05.2023 to 22.05.2023 : 06.06.2023 : Ambient Air
Plant Status	: Operational	Sample Drawn By	: ELES/DOC/SMPL/02
Period of Analysis	: 06.06.2023 to 08.06.2023	Sample Condition	: Sealed & Preserved

M	ETEOROLOGICAL INFORMATION	V.		
1	Average Temperature (°C) : 34	2	Barometric Pressure (mn	nHg) : 743
3	Relative Humidity (%) : 59	4	Weather Condition	; Clear

Discipline	: Chemical	Group	: Atmospheri	e Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene <sup>a</sup>	ug/m <sup>3</sup>	IS 5182 (Part-11)2006;RA2017	<1.0	05(Annual)
Benzo (a) Pyrene*	ng/m <sup>3</sup>	IS 5182 (Part-12)2004;RA2019	<0.5	01(Annual)

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



++++End of Reportanad

Authorized Signatory Or, Deependre Kurhen Sinha Ph. D. Environmenter Engg. ELES NY: Lid Teomoter Manager

#### Page 1 of 1

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA: RANCH/834003 (IHARKHAND) 637 NG 204450597130124 Email: Info@vietoi.co.in, elgesconth@onoil.com

Phone no., 0651-2290103 Website : www.elesol.co.in



Test Report No.	: ELES/RNC/2023/2269	Report Release Date	: 01,07.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
ULR No.	: TC883923000001191F			

CUSTOMER DET.	AILS	SAMPLE DETAILS		
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Location	: ELES/RNC/2023/AA/1742 : Near Utkannit Rajkiya Prathmik Vidyalaya Bunglapart Village Pakhar Bauxite Mine	
Plant Status	: Operational	Sampling Date Sample Received Date Type of Sample Sample Drawn By	: 21.05.2023 to 22.05.2023 : 06.06.2023 : Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 06.06.2023 to 08.06.2023	Sample Condition	: Sealed & Preserved	

M	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 34	2	Barometric Pressure (mn	allg) : 743
3	Relative Humidity (%) : 59	4.	Weather Condition	t Clear

NABL Accredited				
Discipline ±	Chemical	Group	: Atmospheri	c Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part-23): 2006; RA2022	54	100 (24firs)
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	26	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m <sup>3</sup>	15 5182 (Part-2): 2001; RA2022	5.7	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m <sup>3</sup>	IS 5182 (Part-6): 2006; RA2022	10.9	80 (24hrs)
Ozone (Q <sub>3</sub> )	µg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>3</sup>	15 5182 (Part-10): 1999; RA2019	<1.0	2 (Shrs)
Lead (Pb)	µg/m <sup>3</sup>	15 5182 (Part-22): 2004; RA2019	< 0.002	1 (24hrs)
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m <sup>1</sup>	ELES/AIR/SOP/01	<2.0	06 (Annual)

192 Reviewed by

\*\*\*\* End of Report\*\*\*\*

Dr. Deependra Kumar Sinha Pr. D. Brwinnmenst Engy.

Page 1 of 1

ELES Pvt. Ltd. Technical Manager

The Document solid as Text Report, it assocility the Laboratory under General Terms and Conditions, unly on Company terms head in pre-approved formal. The results above in the Text Report refers in scheme only to the provided on some by the Laboratory unity. The information model on the Text Report refers the findings done by the Laboratory at the time of involvement only and while the limits of elium's instructions. The Laboratory is responsible for all the enformation or data provided on the report, except the minimum orbit is provided by the cleant. The Report cannot be repeduced except in fail and any part of the report is not taken out of courses, without previous approximation which is provided by the cleant. The Report cannot be repeduced except in fail and any part of the report is not taken out of courses, without previous approximation of the Laboratory. The Report in fail or in gert island in the provided except in fail and any part of the report is not taken out of courses, without previous approximation of the Laboratory. The Report is failed on the part and the distribution is previded from the Management of the Laboratory. Attention is drawn to the function of liability, compensation and jurisdiction usuals. Any unauthorized interfaces the fails and interfaces are not taken to the Date to the text appearance of the Text Report is movided on the Date of relatives may be prosecuted to the failers instead of the laboratory. Attention is drawn to the provided in the protected to the failers instead of the laboratory and the accepted of failers instead of the failers instead of the failers and the provided for failers instead of the laboratory and the report reflects the failers instead of the failers instead of the failers are retained for fiduary from the Date of reflects instead of the failers instead of the failers instead of the failers are retained for fiduary from the Date of reflects are provided by the taken of the failers instead of the failers instead of the failers are retained for fiduary



PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATTA, RANCHI-834003 (IHARNHAND) GIT NO-20AAECEFT130124

Email: Infa@elespl.co.in , eles.ranchi@gmail.com Phone no.: 0651-0290103 Website : www.elespl.co.in

Test Report No.	: ELES/RNC/2023/2269	Report Release Date	: 01.07.2023
Work Order No.	r 13612310218	Work Order Date	: 21.04.2023

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	; Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/1742 : Near Utkarmit Rajkiya Prathmik Vidyalaya Bunglapart Village	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	Pakhar Bauxite Mine : 21.05.2023 to 22.05.2023 : 06.06.2023	
Plant Status	1 Operational	Type of Sample Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	±06.06.2023 to 08.06.2023	Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFORMATION	Contraction of the second		
T.	Average Temperature (°C) : 34	2	Barometric Pressure (mm	Hg) : 743
3	Relative Humidity (%) : 59	4	Weather Condition	: Clear

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

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



\*\*\*\*End of Report\*\*\*\*

Authorized Signatory Dr. Deependiz Kumar Sinha Ph. D. Shviounin (1979) ELES Put

#### Page 1 of 1

The Decoment stated as Text Report, is exactly the Laboratory under General Terms and Conditions, only on Company letter teal in proceptioned format. The results forms in the Text Report refer or relates only to the job/neutrylli date by the Laboratory only. The information stated on the Text Report reflects the findings date by the Liberatory in the tene 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 fall and any part of the report is not taken out of contact, without prior written approval of the Laboratory. Altertion is drawn to the limits of fliction advertise, used for any legal actions unless prior permission has been secured from the Management of the Laboratory. Attention is drawn to the limits of fliction may be proceeded to the full and any part of the report is not taken out of contact, without prior written approval of the Laboratory. Attention is drawn to the limits of fliction may be proceeded to the full and any part of the report is not taken out of contact, without prior or any appearance of the Text Report is ordered in difference in the proceeded to the full take extent of the taboratory. Attention of the Date of releases of the Text Report is ordered and ofference are to be retained as specified. Any type of Observations as Completed for States that he date within 15days, from the Observations and Date at the time period instead before, no completely with the accepted. The enter Term schedule users within 15days, from the Observation or out 200 or offered and the time period instead before, no completes with the accepted. The enter Term schedule instrument of Text Report to in 200 on Date of Text Report which a difference or out 200 of the time period instead before, no completes with the table. Text Report to in 200 on Date of the table accepted. We of the time period instead before, and c

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATTA RANCHI-834003 (IHARKHAND) GST NO- JUAAECE97130124

Email Info@eletal.co.in . elek.ronati@acadi.enm Phone no.: 0651-2790103 Website I www.elexdr.on.in



Test Report No.	: ELES/RNC/2023/2270	Report Release Date	: 01.07.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
ULR No.	: TC883923000001192F			

CUSTOMER DET/	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/1743 : Near Utkarmit Rajkiya Prathmit Vidyalaya Dumrapart Village
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	Pakhar Bauxite Mine. : 21.05,2023 to 22.05,2023 : 06.06,2023 : Ambient Air
Plam Status	: Operational	Sample Drawn By	: ELES/DOC/SMPL/02
Period of Analysis	: 06.06.2023 to 08.06.2023	Sample Condition	; Sealed & Preserved

1	Average Temperature (°C) :	34	2	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%) :	59	4	Weather Condition	: Clear

NABL Accredited						
Discipline :	Chemical	Group	Group : Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limi		
Particulate Matter (PM10)	µg/m <sup>‡</sup>	IS 5182 (Part-23): 2006; RA2022	61	100 (24hrs)		
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	1S 5182 (Part- 24): 2019	32	60 (24hrs)		
Sulphur Di-Oxide (SO2)	µg/m <sup>3</sup>	IS 5182 (Part-2): 2001; RA2022	6,8	80 (24hrs)		
Nitrogen Di-Oxide (NO2)	µg/m <sup>3</sup>	IS 5182 (Part-6): 2006; RA2022	11.9	80 (24hrs)		
Ozone (O <sub>1</sub> )	µg/m <sup>3</sup>	IS 5182 (Part-9): 1974: RA2019	<20.0	100 (8hrs)		
Ammonia (NH <sub>1</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m <sup>3</sup>	15 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)		
Lead (Pb)	µg/m <sup>3</sup>	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 <sup>3</sup>	ELES/AIR/SOP/01	<2.0	06 (Annual)		

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Authorized Signatory Dr. Deependra Kumar Sinha

Page 1 of 1

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ELES EVI UN Templor Manager

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FLOT NO-30, MANSAROVAR ENCLAVE\_TUPUDANA HATTA: RANCHI-834003 (IHARKHAND) GST NG- 20AAECEPT120324 Englistentino Scanta elestronchi@amail.com

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

	TEST	REPORT	
Test Report No.	: ELES/RNC/2023/2270	Report Release Date	: 01.07.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
CUSTOMER DET/	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/1743 : Near Utkarmit Rajkiya Prathmik Vidyalaya Dumrapart Village
Address Plant Status	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sample Drawn By	Pakhar Bauxite Mine : 21.05.2023 to 22.05.2023 : 06.06.2023 : Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 06.06.2023 to 08.06.2023	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFORMATION			
W.	Average Temperature (°C) : 34	2	Barometric Pressure (mml	lg) : 743
3	Relative Humidity (%) : 59	-4	Weather Condition	; Cléar

Discipline : Chemical		Group : Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Benzene*	µg/m <sup>3</sup>	IS 5182 (Part-11)2006;RA2017	6.I>	05(Annual)		
Benzo (a) Pyrene*	ng/m <sup>3</sup>	IS 5182 (Part-12)2004;RA2019	<0.5	01(Annual)		

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

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\*\*\*\*End of Report\*\*\*\*

Authorized Signatory Dr. Deepenors Kumar Sinha Ph. D. Environmental Errog ELES Ph. De Technic Langer

#### Page 1 of 1

The Dacament initial as Test Report, is usual by the Laboratory under General Terms and Conditions, only on Company letter head in pre-approved format. The resching snown in the Test Report rest: or relines only in the job/initia/sis 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 walks the limits of client's instructions. The Laboratory is responsible for all the information or data provided on the report, everyt she information which is provided by the client. The Report cannot be reproduced except in fall and any part of the report is not taken out of context, without prior written information which is provided by the client. The Report cannot be reproduced except in fall and any part of the report is not taken out of context, without prior written information. Which is provided by the client in fall or in year shall not be published, advertise, used for any legal actions unless prior permission has been secured from the Management of the Laboratory. The Report is informed in information of liability, compensation and jurisdiction uses. Any unsubtorized alternation & failedication of the content or appearance of the Test Report. The samples from Regulatory below are to be inside in the failest extent of the from Avertained for 30days from the Date of the Test Report. The samples from Regulatory bodies are to be inside a specified. Any type of Observation or Complianti regarding the Report shall be dense written 15days from the Date of Test Report metersectory and N/A (Niet Applicable), EDL (Below Detection Lemit), LDL (Lower Detection Lemit).

### Says Environment, Saye Future'



PLOT NO-30; MANSARDVAR 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.elespl.co.in

TEST REPORT				
Test Report No.	: ELES/RNC/2023/2831	Report Release Date	: 29,07.2023	
Work Order No.	: M&M/23-24/01	Work Order Date	; 31.03.2023	
ULR No.	: TC883923000001696F			

CUSTOMER DETA	ILS	SAMPLE DETAILS	and the second se	
Customer Name Address Mines Status	: Minerals & Minerals Limited : Lohardaga, Jharkhand-835302 : Operational	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure Sample Drawn By	<ul> <li>ELES/RNC/2023/AA/2163</li> <li>Near Mine Quarry No-K7 Pakhar (109.507 ha) Bauxite Min</li> <li>19.06.2023 to 20.06.2023</li> <li>26.06.2023</li> <li>Ambient Air</li> <li>ELES/DOC/SMPL/02</li> <li>ELES Pvt. Ltd.</li> <li>Sealed &amp; Preserved</li> </ul>	
Period of Analysis	: 26.06.2023 to 07.07.2023	Sample Condition		

1	Average Temperature (*C)	2.34	-	Darometric Pressure (mining)	. 150
3	Relative Humidity (%)	:61	4	Weather Condition	: Clear
5	Longitude	: 84°36'43.86"E	6	Latitude	: 23°33'29.12"N

NABL Accredited Discipline :	Chemical	Group :	Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part-23): 2006; RA2022	57	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	26	60 (24hrs)	
Sulphur Di-Oxide (SO2)	µg/m <sup>3</sup>	IS 5182 (Part-2): 2001; RA2022	6.7	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m <sup>3</sup>	IS 5182 (Part-6): 2006; RA2022	18.9	80 (24hrs)	
Ozone (O3)	µg/m <sup>3</sup>	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH3)	μg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m <sup>3</sup>	1S 5182 (Part-10): 1999; RA2019	<1,0	2 (8hrs)	
Lead (Pb)	µg/m <sup>3</sup>	1S 5182 (Part-22): 2004; RA2019	0.007	1 (24hrs)	
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m <sup>2</sup>	ELES/AIR/SOP/01	<2.0	06 (Annual)	

En Reviewed by

Dr. Deependra Kumar Sinha

\*\*\*\*End of Report\*\*\*\*

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Page 1 of 1

ELES Pvt. Ltd. Technical Manager

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (IHARKHAND) 65T NO:- 20AAECE97130124

### ENGINEERING SERVICES PVT. LTD.



CIN: U74PSEMGQ18P7C031125

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/2023/2832	Report Release Date	: 29.07.2023		
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023		
ULR No.	± TC883923000001697F				

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/2164 : Near Mine Quarry No-K9 Pakhar (109.507 ha) Bauxite Mine	
Address : Lohardaga	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: Ambient Air	
Mines Status	: Operational	Sampling Procedure Sample Drawn By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd. : Sealed & Preserved	
Period of Analysis	: 26,06,2023 to 07.07,2023	Sample Condition		

1	Average Temperature (%C)	: 34	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	:61	4	Weather Condition	: Clear
5	Longitude	: 84°37"7.83"E	6	Latitude	: 23°33'30.72"N

Discipline :	Chemical	Group :	Atmospheri	c Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part-23): 2006; RA2022	65	100 (24hrs)
Particulate Matter (PM2,5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	32	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m <sup>3</sup>	15 5182 (Part-2): 2001; RA2022	10.7	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m <sup>3</sup>	IS 5182 (Part-6): 2006; RA2022	15.2	80 (24hrs)
Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	1S 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH3)	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>1</sup>	15 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m <sup>3</sup>	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/m <sup>3</sup>	ELES/AIR/SOP/01	<2.0	06 (Annual)

Reviewed by

Authorised Signatory ur. Deependra Kumar Sinha tr. D. Environmen

Page 1 of 1

\*\*\*\*End of Report\*\*\*\*

ELES Pvt. Ltd. Technical Manager

The Document stated as Test Report, is issued by the Laboratory under General Terms and Conditions, only on Company letter head in pre-approved format. The results shown in the Test Report refer or relates only 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 approval of the Laboratory. The Report in fall 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 presecuted 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 Dute of Test Report released/issued. After the time period stated before, no complaints will be accepted. The entire Time schedule mentioned in Test Report is in 24hours format. Abbreviation used: N/A (Not Applicable); BOL (Below Detection Limit); LDL (Lower Detection Limit).



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

: M&M/23-24/01

### ENGINEERING SERVICES PVY, LTD.



CIN: U74999/H2018PTC01112

Test Report No.

Work Order No.

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

: 31.03.2023

	1	
TE	STREPORT	
: ELES/RNC/2023/2832	Report Release Date : 29.07.2023	

CUSTOMER DETAILS		SAMPLE DETAILS			
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/2164 : Near Mine Quarry No-K9 Pakhar (109,507 ha) Bauxite Mine		
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 19.06.2023 to 20.06.2023 : 26.06.2023 : Ambient Air : ELES/DOC/SMPL/02		
Mines Status	: Operational	Sampling Procedure Sample Drawn By	: ELES PVL Ltd.		
Period of Analysis	: 26.06.2023 to 07.07.2023	Sample Condition	: Sealed & Preserved		

Work Order Date

MI	TEOROLOGICAL INFOR	RMATION			
1	Average Temperature (°C)	: 34	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	:61	4	Weather Condition	: Clear
5	Longitude	: 84°37'7.83"E	6	Latitude	: 23°33'30.72"N

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

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



\*\*\*\*End of Report\*\*\*\*

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

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

### ENGINEERING SERVICES PVT. LTD.



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

TEST REPORT					
Test Report No.	: ELES/RNC/2023/2833	Report Release Date : 29.07.2023			
Work Order No.	: M&M/23-24/01	Work Order Date : 31.03.2023			
ULR No.	LTC883923000001698F				

CUSTOMER DETAILS		SAMPLE DETAILS			
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/2165 : Near Mine Quarry No-K5 Pakhar (109.507 ha) Bauxite Mine		
Address	: Lohardaga, Jharkhand-835302 : Operational	Sampling Date Sample Received Date Type of Sample	: Ambient Air		
Mines Status		Sampling Procedure Sample Drawn By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.		
Period of Analysis	: 26.06.2023 to 07.07.2023	Sample Condition	: Sealed & Preserved		

1	Average Temperature (°C)	: 34	2	Barometric Pressure (mmHg)	= 738
3	Relative Humidity (%)	:61	4	Weather Condition	: Clear
5	Longitude	: 84°37'21.94"E	6	Latitude	: 23°33'14.59"N

Discipline :	Chemical	Group :	Atmospheri	e Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part-23): 2006; RA2022	57	100 (24hrs)
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	30	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m <sup>3</sup>	IS 5182 (Part-2): 2001; RA2022	6.3	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m <sup>3</sup>	1S 5182 (Part-6): 2006; RA2022	19.1	80 (24hrs)
Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH3)	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>3</sup>	1S 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m <sup>3</sup>	IS 5182 (Part-22): 2004; RA2019	0.007	I (24hrs)
Nickel (Ni)	ng/m <sup>1</sup>	1S 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m <sup>2</sup>	ELES/AIR/SOP/01	<2.0	06 (Annual)

Reviewed by

# Jr. Deependra Kumar Sinha

Page 1 of 1

\*\*\*\*End of Report\*\*\*\*

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:- 20AAECE9713D124

### ENGINEERING SERVICES PVT. LTD.

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

CIN: U7-2999/H201871C011125

TEST REPORT					
Test Report No.	: ELES/RNC/2023/2833	Report Release Date	: 29.07.2023		
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/2165 : Near Mine Quarry No-K5 Pakhar (109.507 ha) Bauxite Mine	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 19,06.2023 to 20.06.2023 : 26,06.2023	
Mines Status	: Operational	Type of Sample Sampling Procedure Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	= 26.06.2023 to 07.07.2023	Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFOR	MATION	_		
1	Average Temperature (°C)	:: 34	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	:: 61	4	Weather Condition	: Clear
5	Longitude	: 84°37'21.94"E	6	Latitude	: 23°33'14.59"N

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

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



\*\*\*\*End of Report\*\*\*\*

Authorised Signatory Jr. Deependra Kumar Sinhe. Ph. D. Environmental Engg. ELES Pvt. Ltd. Technical Manager

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (IHARKHAND) 65T NO:- 20AAECE9713D124

#### ENGINEERING SERVICES PVT. LTD.



CIN: 1/74/1998/1/2016/7/2011125

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

	TE	ST REPORT	
Test Report No.	: ELES/RNC/2023/2834	Report Release Date	: 29.07.2023
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023
ULR No.	: TC883923000001699F		

CUSTOMER DETAILS		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/2023/AA/2166 : Pakhar Loading Area Pakhar (109.507 ha) Bauxite Mine : 19.06.2023 to 20.06.2023 : 26.06.2023 : Ambient Air	
Mines Status	; Operational	Sampling Procedure Sample Drawn By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 26.06.2023 to 07.07.2023	Sample Condition	: Sealed & Preserved	

1	Average Temperature (°C)	: 34	2	Barometric Pressure (mmH	g) : 738
3	Relative Humidity (%)	: 61	4	Weather Condition	o Clear
5	Longitude	: 84º36'53.77"E	6	Latitude	: 23°33'15.01"N

Discipline :	Discipline : Chemical Group				
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part-23): 2006; RA2022	68	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	40	60 (24hrs)	
Sulphur Di-Oxide (SO2)	µg/m <sup>3</sup>	IS 5182 (Part-2): 2001; RA2022	12.5	80 (24hrs)	
Nitrogen Di-Oxide (NO1)	µg/m <sup>3</sup>	1S 5182 (Part-6): 2006; RA2022	23.6	80 (24hrs)	
Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part-10); 1999; RA2019	<1.0	2 (Shrs)	
Lead (Pb)	µg/m <sup>3</sup>	IS 5182 (Part-22): 2004; RA2019	0.008	1 (24hrs)	
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01	<2.0	06 (Annual)	

Reviewed by

Authorised Signatory

\*\*\*\*End of Report\*\*\*\*

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

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FLOT 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.elespl.co.in

CIN: U749990H2018PTC011125

	TI	EST REPORT		
Test Report No.	: ELES/RNC/2023/2834	Report Release Date	: 29.07.2023	
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/2166 : Pakhar Loading Area Pakhar (109.507 ha) Bauxite Mine	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 19.06.2023 to 20.06.2023 : 26.06.2023	
Mines Status	: Operational	Type of Sample Sampling Procedure Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 26.06.2023 to 07.07.2023	Sample Condition	: Sealed & Preserved	

MJ	ETEOROLOGICAL INFOR	MATION	_		
T.	Average Temperature (°C)	: 34	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	3.61	4	Weather Condition	: Clear
5	Longitude	: 84°36'53.77"E	6	Latitude	: 23°33'15.01"N

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

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



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Authorised Signatory Jr. Deependra Kumar Sinn, Ph. D. Environmental Engg. ELES Pvt. Ltd. Technical Manager

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#### ee hereisen ment Sawi Patane



PLOT NG-30, MANSAHOVAR ENULAVE, TUPUDANA HATIA, RANCHI-834003 (JHARMIAND) GST NO-20AAECESTLIDIZA ENGINEERING SERVICES PVT. LTD.

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



Test Report No.	: ELES/RNC/2023/2823	Report Release Date	: 29.07.2023	_
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
ULR No.	: TC883923000001688F			

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/2155 : Near Bunglapart Village Pakhar Bauxite Mine	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 17.06.2023 to 18.06.2023 : 26.06.2023 : Ambient Air : ELES/DOC/SMPL/02	
Mines Status	: Operational	Sample Drawn By	: ELES Pvt. Ltd. : Sealed & Preserved	
Period of Analysis	: 26.06.2023 to 06.07.2023	Sample Condition		

M	ETEOROLOGICAL INFORMATION				
	Average Temperature (°C) : 32	2	Barometric Pressure (mmHg	:) : 739	
	Relative Humidity (%) : 59	4	Weather Condition	: Clear	

NABL Accredited Discipline :	Chemical	Group :	Atmospheri	e Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part-23): 2006; RA2022	62	100 (24hrs)
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	1S 5182 (Part- 24): 2019	33	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m <sup>3</sup>	IS 5182 (Part-2): 2001; RA2022	7.4	80 (24hrs)
Nitrogen Di-Oxide (NO2)	ug/m <sup>3</sup>	IS 5182 (Pari-6): 2006; RA2022	18.5	80 (24hrs)
Ozone (O1)	µg/m <sup>3</sup>	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH <sub>1</sub> )	µg/m?	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>3</sup>	1S 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m <sup>3</sup>	IS 5182 (Part-22): 2004; RA2019	< 0.002	1 (24hrs)
Nickel (Ni)	pg/mª	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m <sup>2</sup>	ELES/AIR/SOP/01	<2.0	06 (Annual)

Reviewed by

21,19 Authorised Signatory

\*\*\*\*End of Report\*\*\*\*

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

Page 1 of 1

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA NATIA, RANCHI-E34003 (JHARKHAND) GST NO:+ 3044E0E97130124

GINEERING SERVICES PVT. LTD.

Email: Info@elespl.co.in , eles.conchi@amail.com Phone no.: 0651-2290103 Website : which elesplica in

TEST REPORT				
Test Report No.	: ELES/RNC/2023/2823	Report Release Date	: 29.07.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindaleo Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/2155 : Near Bunglapart Village Pakhar Bauxite Mine	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 17.06.2023 to 18.06.2023 : 26.06.2023 : Ambient Air	
Mines Status	: Operational	Sampling Procedure Sample Drawn By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd. : Sealed & Preserved	
Period of Analysis	: 26.06.2023 to 06.07.2023	Sample Condition	: Sealed of Fleselveb	

Mł	TEOROLOGICAL INFORMATION	1.0	1 m	720
1	Average Temperature (°C) : 32	2	Barometric Pressure (mm)	Hg) : 739
_		4	Weather Condition	: Clear
3	Relative Humidity (%) : 59	4	Weather Condition	- tortean

Discipline	: Atmospheri	e Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene*	µg/m <sup>3</sup>	IS:5182 (Part-11): 2006;RA2017	<1.0	05(Annual)
Benzo (a) Pyrene*	ng/m <sup>3</sup>	IS:5182 (Part-12): 2004;RA2019	<0.5	01(Annual)

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



\*\*\*\* Epd of Report \*\*\*\*

Authorised Signatory Ur. Deependra Kumar Sinha Ph. D. Environmental Engg. ELES PVI, Ltd. Technical Manager

#### Page 1 of I

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PLOT NO-30 MANSAROVAR ENCLAVE, TUPURANA HATTA, RANCHI-834003 (INARKHAND) GST.NO: 10AA80697130124

ENGINEERING SERVICES PVT. Small: Info@elessi.co.in, stes.randni@gmail.com

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

Barometric Pressure (mmHg)

Weather Condition



	TES	T REPORT	
Test Report No.	: ELES/RNC/2023/2824	Report Release Date	: 29.07.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883923000001689F		
CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	ELES/RNC/2023/AA/2156     Yatri Shed (Near K-10)     Pakhar Bauxite Mine

Address Mines Status	: Lohardaga, Jharkhand-835302 : Operational	Sampling Date Sample Received Date Type of Sample Sampling Procedure Sample Drawn By Sample Condition	: 18.06.2023 to 19.06.2023 : 26.06.2023 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd. : Sealed & Preserved
Period of Analysis	: 26.06.2023 to 06.07.2023	Sanipie Certainer	7001111111

2

4

METEOROLOGICA	L INFORMATION
the second se	

1 Average Temperature (\*C) : 33 : 59

Relative Humidity (%) 3

et and all	Groun	Atmospheri	e Pollution
1			Regulatory Limit
Unit			
µg/m <sup>3</sup>	IS 5182 (Part-23): 2006; RA2022	57	100 (24hrs)
µg/m <sup>3</sup>	15 5182 (Part- 24): 2019	31	60 (24hrs)
	1S 5182 (Part-2): 2001; RA2022	8.3	80 (24hrs)
	IS 5182 (Part-6): 2006; RA2022	16.8	80 (24hrs)
		<20.0	100 (Shrs)
	1S 5182 (Part- 25): 2018	<10.0	400 (24hrs)
	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
		0.005	1 (24hrs)
		<6.0	20 (Annual)
		<2.0	06 (Annual)
	Chemical Unit µg/m <sup>3</sup> µg/m <sup>3</sup> µg/m <sup>3</sup> µg/m <sup>3</sup> µg/m <sup>3</sup> µg/m <sup>3</sup> ng/m <sup>3</sup> ng/m <sup>3</sup> ng/m <sup>3</sup>	Unit         Test Protocol           μg/m³         IS 5182 (Part-23): 2006; RA2022           μg/m³         IS 5182 (Part-24): 2019           μg/m³         IS 5182 (Part-24): 2019           μg/m³         IS 5182 (Part-2): 2001; RA2022           μg/m³         IS 5182 (Part-6): 2006; RA2022           μg/m³         IS 5182 (Part-6): 2006; RA2022           μg/m³         IS 5182 (Part-6): 2006; RA2019           μg/m³         IS 5182 (Part-9): 1974; RA2019           μg/m³         IS 5182 (Part-25): 2018           mg/m³         IS 5182 (Part-10): 1999; RA2019           μg/m³         IS 5182 (Part-22): 2004; RA2019           μg/m³         IS 5182 (Part-22): 2004; RA2019           μg/m³         IS 5182 (Part-22): 2004; RA2019	Unit         Test Protocol         Result           μg/m³         IS 5182 (Part-23): 2006; RA2022         57           μg/m³         IS 5182 (Part-24): 2019         31           μg/m³         IS 5182 (Part-24): 2019         31           μg/m³         IS 5182 (Part-24): 2019         31           μg/m³         IS 5182 (Part-2): 2001; RA2022         8.3           μg/m³         IS 5182 (Part-6): 2006; RA2022         16.8           μg/m³         IS 5182 (Part-9): 1974; RA2019         <20.0

Reviewed by?

\*\*\*\*End of Report\*\*\*\*

Authorised Signatory Deependra Kumar Sinha Ph D. Environmental Engg.

: 739

: Clear

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#### Page 1 of 1

The Discument stated as Test Report, is issued by the Laboratory under General Terms and Conditions, only on Company letter head in pre-approved format. The results, shown in the Twit Report refer or relates only to the job/analysis fore by the Laboratory only. The information stated on the Test Report reflects the findings done by the Laboratory on the Twit Report reflects only and within the limits of chient'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 causes be reproduced except in fall and any part of the report is not taken out of control, without provided to the report. written approval of the Laboratory. The Report in fall or in part shall not be published, advertise, used for any legal actions unless price permission has been secured from the Management of the Laboratory. Amendon is drawn to the limitation of liability, compensation and jurisdiction associ. Any umatherized alteration & fundication of the content or appearance of the Tost Report is unlawful and offenders may be preserved to the fullest extent of the law. All the samples are returned for 30days from the Date of releasefessie 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 Tust Report released/issued. After the time period stated before, no complaints will be accepted. The entire Time schedule mentioned in Test Report to in 24beers format. Abbreviation used. N/A (Not Applicable), BDL (Below Detection Limit), LDL (Lower Detection Limit).



FLOT NO-30, MANSAROVAR ENCLAVE. TURUDANA HATIA, RANCHI-834002 (JH4RKHANO) GST NO:-2044ECE9713D124

### ENGINEERING SERVICES PVT. LTD.

Email: (nfo@elespl.co.in Phone no.: 0651-2290203 Website : www.elespl.co.in

TEST REPORT				
Test Report No.	: ELES/RNC/2023/2824	Report Release Date	: 29.07.2023	_
Work Order No.	: 13612310218	Work Order Date	; 21.04.2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/2156 : Yatri Shed (Near K-10) Pakhar Bauxite Mine	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 18.06.2023 to 19.06.2023 : 26.06.2023 : Ambient Air : ELES/DOC/SMPL/02	
Mines Status	; Operational	Sample Drawn By	: ELES Pvt. Ltd.	
Period of Analysis	: 26.06.2023 to 06.07.2023	Sample Condition	: Sealed & Preserved	

_	ETEOROLOGICAL INFORMATION	1.0	Description Description (mm 1/a)	. 720
1	Average Temperature (°C) : 33	4	Barometric Pressure (mmHg)	. 152
_	Relative Humidity (%) : 59	4	Weather Condition	: Clear

Discipline : Chemical			Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene®	µg/m <sup>3</sup>	IS:5182 (Part-11): 2006;RA2017	<1.0	05(Annual)	
Benzo (a) Pyrene*	ng/m <sup>1</sup>	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 Ph. D. Environmental Engg. ELES Pvt. Ltd. Technical Manager

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PLOT NO-30, MANSAROVAR ENCLAVE, TURUDANA HATTA RANCHI-234003 (IHARRHAND) 067 NO:- 20445/297130124

ENGINEERING SERVICES PVT. LTD. Small info@elesal.co.in , bles ranch/@umail.com Phone no.: 0651-2290103

Website : www.elespl.co.in



	TE	ST REPORT		
Test Report No.	: ELES/RNC/2023/2825	Report Release Date	: 29.07.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
HLR No.	: TC883923000001690F			

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample	: ELES/RNC/2023/AA/2157 : Near Utkarmit Rajkiya Prathmik Vidyalaya Bunglapart Village Pakhar Bauxite Mine : 17.06.2023 to 18.06.2023 : 26.06.2023 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd. : Sealed & Preserved	
Mines Status	3 Operational	Sampling Procedure Sample Drawn By		
Period of Analysis	: 26.06.2023 to 06.07.2023	Sample Condition		

Average Temperature (°C) 32	2	Barometric Pressure (mm)	Hg) ±739	
Relative Humidity (%) : 59	4	Weather Condition	: Clear	

NABL Accredited Discipline :	Chemical	Group :	Atmospheri	e Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	ug/m <sup>3</sup>	IS 5182 (Part-23): 2006; RA2022	51	100 (24hrs)
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	25	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m <sup>3</sup>	IS 5182 (Part-2): 2001; RA2022	6.1	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m <sup>3</sup>	IS 5182 (Part-6); 2006; RA2022	12.6	80 (24hrs)
Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	1S 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH3)	µg/m <sup>5</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>2</sup>	1S 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m <sup>2</sup>	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/m <sup>3</sup>	ELES/AIR/SOP/01	<2.0	06 (Annual)

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\*\*\*\*End of Report\*\*\*\*

Anthorised Signator Dr. Deependra Kumar Sinha Ph. D. Environmental Engg. INLES PVI. Ltd. Technical Manage-

Page 1 of 1

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FLDT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) G37 NOI- 20AAECE97130124

### ENGINEERING SERVICES PUT. LTD.

Email: info@elespl.co.in . eles\_sanchi@amail.com Phone no.: 0651-2290103 Website : www.elespil.co.in

TEST REPORT				
Test Report No.	: ELES/RNC/2023/2825	Report Release Date	: 29.07.2023	
Work Order No.	: 13612310218	Work Order Date	; 21.04.2023	

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Location	: ELES/RNC/2023/AA/2157 : Near Utkarmit Rajkiya Prathmik Vidyalaya Bunglapart Village Pakhar Bauxite Mine	
Mines Status	: Operational	Sampling Date Sample Received Date Type of Sample Sampling Procedure Sample Drawn By	: 17.06.2023 to 18.06.2023 : 26.06.2023 : Amblent Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 26.06.2023 to 06.07.2023	Sample Condition	: Scaled & Preserved	

METEOROLOGICAL INFORMATION			
1 Average Temperature ("C) : 32	2	Barometric Pressure (mm	Hg) : 739
3 Relative Humidity (%) : 59	4.	Weather Condition	: Clear
2 Reignice transmith [3n] 1505			

Discipline : Chemical Group			p : Atmospheric Pollution	
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene®	µg/m <sup>1</sup>	IS:5182 (Part-11): 2006;RA2017	<1,0	05(Annual)
Benzo (a) Pyrene*	ng/m <sup>3</sup>	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 Pn. D. Environmental Engg. ELES Pvi. Ltd. Technical Managor

#### Page 1 of 1

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PLOT NO.30, MANSAROVAR ENCLAVE, TUPUDANA HATIR, RANCHI-854003 (JHABKHAND) 35T NOI-204A2CE9713D124 ENGINEERING SERVICES PET. LTD.

Email: <u>Info@elesul op in , eles conchi@email.co.m</u> Phane no.:: 0651-2290103 Website : www.elesol.co.in



	TESI	REPORT	
Test Report No.	: ELES/RNC/2023/2826	Report Release Date	: 29.07.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	-TC883923000001691F		
CUSTOMER DET/	AILS	SAMPLE DETAILS	
Customer Name Address Mines Status	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302 : Operational	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure Sample Drawn By	: ELES/RNC/2023/AA/2158 : Near Utkarmit Rajkiya Prathmik Vidyalaya Dumrapart Village Pakhar Bauxite Mine : 18.06.2023 to 19.06.2023 : 26.06.2023 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 26.06.2023 to 06.07.2023	Sample Condition	: Sealed & Preserved

T	Average Temperature (°C)	: 33	2	Barometric Pressure (mmHg)	: 739
-	Relative Humidity (%)	: 59	4	Weather Condition	: Clear

NABL Accredited Discipline :	Chamical	Group ;	Atmospheri	e Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part-23): 2006; RA2022	57	100 (24hrs)
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	30	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m <sup>3</sup>	1S 5182 (Part-2): 2001; RA2022	7.4	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m <sup>3</sup>	IS 5182 (Part-6): 2006; RA2022	10.5	80 (24hrs)
Ozone (O <sub>1</sub> )	µg/m <sup>2</sup>	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>3</sup>	1S 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m <sup>3</sup>	IS 5182 (Part-22): 2004; RA2019	< 0.002	1 (24hrs)
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m <sup>2</sup>	ELES/AIR/SOP/01	<2.0	06 (Annual)

10117 Reviewed by

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### Authorised Signatory Dr. Deependra Kumar Sinha

\*\*\*\*End of Report\*\*\*\*

Ph. D. Environmentar Engla-

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PLDT ND-30, MANSARDVAR ENCLAVE, TUPUDANA RATIA, RANCHI-834003 (JMARKMAND) GST ND-20AAECE9713D124 NGINEERING SERVICES PVT, LTD.

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

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3 B.	- C. C. C.	10 M	P-E - 3	<b>HC</b> 1

Test Report No.	: ELES/RNC/2023/2826	Report Release Date	: 29.07.2023
Work Order No.	: 13612310218	Work Order Date	; 21.04.2023

CUSTOMER DET/	CUSTOMER DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/2158 : Near Utkarmit Rajkiya Prathmik Vidyalaya Dumrapart Village Pakhar Bauxite Mine
Address Mines Status	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 18.06.2023 to 19.06.2023 : 26.06.2023 : Ambient Air : ELES/DOC/SMPL/02 : ELES PvL Ltd
Period of Analysis	± 26.06.2023 to 06.07.2023	<ul> <li>Sample Drawn By Sample Condition</li> </ul>	: Sealed & Preserved

MF	TEOROLOGICAL INFORMATION			
T.	Average Temperature (°C) : 33	2	Barometric Pressure (mm	Hg) : 739
_	Relative Humidity (%) : 59	4	Weather Condition	: Clear

Discipline : Chemical		Group	: Atmospheri	e Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene <sup>p</sup>	µg/m³	1S:5182 (Part-11): 2006;RA2017	<1.0	05(Annual)
Benzo (a) Pyrene*	ng/m <sup>3</sup>	IS:5182 (Part-12): 2004;RA2019	<0.5	01(Annual)

Remarks; (")-Parameters are outsourced to other Lab.



\*\*\*\*End of Report\*\*\*\*

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

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

#### CW: U749993H2018PTC011125

### 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/2023/2958	Report Release Date	: 08.08.2023		
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023		
ULR No.	: TC883923000001805F				

CUSTOMER DETA	CUSTOMER DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/2744 : Near Mine Quarry No-K7 Pakhar (109.507 ha) Bauxite Mine
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 22.07.2023 to 23.07.2023 : 31.07.2023 : Ambient Air
Mines Status	: Operational	Sampling Procedure Sample Drawn By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 31.07.2023 to 07.08.2023	Sample Condition	: Sealed & Preserved

1 Average Temp	erature (°C) : 26	2	Barometric Pressure (mmh	fg) : 737
3 Relative Humi	and the second state of th	4	Weather Condition	: Partly Cloudy
5 Longitude	: 84°36'43.86"E	6	Latitude	: 23°33'29.12"N

Discipline :	Chemical	Group :	p : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	<b>Regulatory Limit</b>	
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part-23): 2006; RA2022	50	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	23	60 (24hrs)	
Sulphur Di-Oxide (SO2)	µg/m <sup>3</sup>	IS 5182 (Part-2): 2001; RA2022	5.2	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m <sup>3</sup>	IS 5182 (Part-6): 2006; RA2022	16.5	80 (24hrs)	
Ozone (O3)	µg/m <sup>3</sup>	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH3)	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	µg/m <sup>3</sup>	IS 5182 (Part-22): 2004; RA2019	0.009	1 (24hrs)	
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01	<2.0	06 (Annual)	



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\*\*\*\*End of Report\*\*\*\*

Dr. Deependra Kumar Sinha Ph. D. Environmental Enga

Page 1 of 1

Page 1 of 1 The Document stated as Test Report, is issued by the Laboratory under General Terms and Conditions, only ELES Part Ltd Technical Manager shown in the Test Report refer or relates only 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 approval of the Laboratory. The Report is full or in part shall not be published, advertise, used for any logal 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/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 schechile mentioned in Test Report is in 24hours formut. 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.

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

	<u>TI</u>	EST REPORT		
Test Report No.	: ELES/RNC/2023/2958	Report Release Date	: 08.08.2023	
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/2744 : Near Mine Quarry No-K7 Pakhar (109.507 ha) Bauxite Mine
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 22.07.2023 to 23.07.2023 : 31.07.2023 : Ambient Air
Mines Status	: Operational	Sampling Procedure Sample Drawn By	: ELES/DOC/SMPL/02 : ELES Pyt. Ltd.
Period of Analysis	: 31.07.2023 to 07.08.2023	Sample Condition	: Sealed & Preserved

1	Average Temperature (°C)	: 26	2	Barometric Pressure (mmHg)	: 737
3	Relative Humidity (%)	: 64	4	Weather Condition	: Partly Cloudy
5	Longitude	: 84°36'43.86"E	6	Latitude	: 23°33'29.12"N

Discipline	: Chemical	Group	: Atmospheri	e Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene*	µg/m <sup>3</sup>	IS:5182 (Part-11): 2006;RA2017	<1.0	05(Annual)
Benzo (a) Pyrene*	ng/m <sup>3</sup>	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 Manager

#### Page 1 of 1

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

CIN: U74999/H2018PTC011125

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Phone no.: 0651-22901 Website : www.elespl.co.	03
Website : www.elespl.co.	in

	TE	ST REPORT	
Test Report No.	: ELES/RNC/2023/2959	Report Release Date	: 08.08.2023
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023
ULR No.	: TC883923000001806F		

CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/2745 : Near Mine Quarry No-K9 Pakhar (109.507 ha) Bauxite Mine
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 22.07.2023 to 23.07.2023 : 31.07.2023 : Ambient Air
Mines Status	: Operational	Sampling Procedure Sample Drawn By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 31.07.2023 to 07.08.2023	Sample Condition	: Sealed & Preserved

1	Average Temperature (°C)	: 26	2	Barometric Pressure (mmHg)	: 737
3	Relative Humidity (%)	: 64	4	Weather Condition	: Partly Cloudy
5	Longitude	: 84°37'7.83"E	6	Latitude	: 23°33'30.72"N

Discipline :	Chemical	Group :	Atmospheri	e Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part-23): 2006; RA2022	53	100 (24hrs)
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	24	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m <sup>3</sup>	IS 5182 (Part-2): 2001; RA2022	6.1	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m <sup>3</sup>	IS 5182 (Part-6): 2006; RA2022	12.7	80 (24hrs)
Ozone (O3)	µg/m <sup>3</sup>	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH3)	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m <sup>3</sup>	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 <sup>3</sup>	ELES/AIR/SOP/01	<2.0	06 (Annual)



Authorised Signatory Dr. Deependra Kumar Sinha

\*\*\*\*End of Report\*\*\*\*

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

1-0.	TEST REPORT			
Test Report No.	: ELES/RNC/2023/2959	Report Release Date	: 08.08.2023	
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/2745 : Near Mine Quarry No-K9 Pakhar (109,507 ha) Bauxite Mine	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 22.07.2023 to 23.07.2023 : 31.07.2023	
Mines Status	ines Status : Operational		: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 31.07.2023 to 07.08.2023	Sample Drawn By Sample Condition	: Sealed & Preserved	

MI	TEOROLOGICAL INFOR	RMATION	1.2		
1	Average Temperature (°C)	: 26	2	Barometric Pressure (mmHg)	: 737
3	Relative Humidity (%)	: 64	4	Weather Condition	: Partly Cloudy
5	Longitude	: 84°37'7.83"E	6	Latitude	: 23°33'30.72"N

Discipline	: Chemical	Group	Group : Atmospheric Pollution	
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene*	µg/m <sup>3</sup>	IS:5182 (Part-11): 2006;RA2017	<1.0	05(Annual)
Benzo (a) Pyrene*	ng/m <sup>3</sup>	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 Shha Ph. D. Environmental Engg. ELES PVI, 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.elespl.co.in

	TE	EST REPORT		
Test Report No.	: ELES/RNC/2023/2960	Report Release Date	: 08.08.2023	
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023	
ULR No.	: TC883923000001807F			

CUSTOMER DET/	AILS	SAMPLE DETAILS	
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/2746 : Near Mine Quarry No-K5 Pakhar (109.507 ha) Bauxite Mine
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 22.07.2023 to 23.07.2023 : 31.07.2023 : Ambient Air
Mines Status	: Operational	Sampling Procedure Sample Drawn By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 31.07.2023 to 07.08.2023	Sample Condition	: Sealed & Preserved

1	Average Temperature (°C)	: 26	2	Barometric Pressure (mmHg)	: 737
3	Relative Humidity (%)	: 64	4	Weather Condition	: Partly Cloudy
5	Longitude	: 84°37'21.94"E	6	Latitude	: 23°33'14.59"N

Discipline :	Chemical	Group :	Atmospheri	c Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part-23): 2006; RA2022	50	100 (24hrs)
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	29	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m <sup>3</sup>	IS 5182 (Part-2): 2001; RA2022	6.9	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m <sup>3</sup>	1S 5182 (Part-6): 2006; RA2022	15,7	80 (24hrs)
Ozone (O3)	µg/m <sup>3</sup>	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH3)	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m <sup>3</sup>	IS 5182 (Part-22): 2004; RA2019	0.005	1 (24hrs)
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01	<2.0	06 (Annual)

Reviewoll lig +

Authorised Signatory Dr. Deependra Kumar Sinha

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Page 1 of 1 ELES Pvt. Ltd. Technical Manager The Document stated as Test Report, is issued by the Laboratory under General Terms and Conditions, only on Company letter head in pre-approved format. The results shown in the Test Report refer or relates only 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 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/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 mentioned in Test Report is in 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:- 20AAECE9713D1Z4

#### ENGINEERING SERVICES PVT. LTD.

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

	<u>T1</u>	EST REPORT		
Test Report No.	: ELES/RNC/2023/2960	Report Release Date	: 08.08.2023	
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/2746 : Near Mine Quarry No-K5 Pakhar (109,507 ha) Bauxite Mine
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 22.07.2023 to 23.07.2023 : 31.07.2023
Mines Status	: Operational	Type of Sample Sampling Procedure Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 31.07.2023 to 07.08.2023	Sample Condition	: Sealed & Preserved

1	Average Temperature (°C)	: 26	2	Barometric Pressure (mmHg)	: 737
3	Relative Humidity (%)	: 64	4	Weather Condition	: Partly Cloudy
5	Longitude	: 84°37'21.94"E	6	Latitude	: 23°33'14.59"N

Discipline	: Chemical	Group	: Atmospheri	c Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene*	µg/m <sup>3</sup>	IS:5182 (Part-11): 2006;RA2017	<1.0	05(Annual)
Benzo (a) Pyrene*	ng/m <sup>3</sup>	IS:5182 (Part-12): 2004;RA2019	<0.5	01(Annual)

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



\*\*\*\*End of Report\*\*\*\*

Authorised Signater Dr. Deependra Kumar Shha - Ph. D. Environmental Engg. ELES Pvt. Ltd. Technical Manager

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

#### CW-11749994H2018PTC011129

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

ENGINEERING SERVICES PVT. LTD.



	<u>T1</u>	EST REPORT	
Test Report No.	: ELES/RNC/2023/2961	Report Release Date	: 08.08.2023
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023
ULR No.	: TC883923000001808F		

CUSTOMER DET/	AILS	SAMPLE DETAILS	
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/2747 : Pakhar Loading Area Pakhar (109.507 ha) Bauxite Mine
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 22.07.2023 to 23.07.2023 : 31.07.2023 : Ambient Air
Mines Status	: Operational	Sampling Procedure Sample Drawn By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 31.07.2023 to 07.08.2023	Sample Condition	: Sealed & Preserved

1	Average Temperature (%C)	: 26	2	Barometric Pressure (mmHg)	: 737
3	Relative Humidity (%)	: 64	4	Weather Condition	: Partly Cloudy
5	Longitude	: 84°36'53.77"E	6	Latitude	: 23°33'15.01"N

Discipline :	Chemical	Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m <sup>3</sup>	IS 5182 (Part-23): 2006; RA2022	62	100 (24hrs)
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	33	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m <sup>3</sup>	IS 5182 (Part-2): 2001; RA2022	9.5	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m³	IS 5182 (Part-6): 2006; RA2022	18.2	80 (24hrs)
Ozone (O3)	µg/m <sup>3</sup>	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH3)	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>3</sup>	1S 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m <sup>3</sup>	IS 5182 (Part-22): 2004; RA2019	0.008	1 (24hrs)
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01	<2.0	06 (Annual)

Reviewed by 4

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

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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.elespl.co.in

	TI	EST REPORT		
Test Report No.	: ELES/RNC/2023/2961	Report Release Date	: 08.08.2023	
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/2747 : Pakhar Loading Area Pakhar (109.507 ha) Bauxite Mine	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 22.07.2023 to 23.07.2023 : 31.07.2023 : Ambient Air	
Mines Status	: Operational	Sampling Procedure Sample Drawn By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 31.07.2023 to 07.08.2023	Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFOR	RMATION		/	
1	Average Temperature (%C)	: 26	2	Barometric Pressure (mmHg)	: 737
3	Relative Humidity (%)	: 64	4	Weather Condition	: Partly Cloudy
5	Longitude	: 84°36'53.77"E	6	Latitude	: 23°33'15.01"N

Discipline : Chemical Group			: Atmospheri	e Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene*	µg/m <sup>3</sup>	IS:5182 (Part-11): 2006;RA2017	<1.0	05(Annual)
Benzo (a) Pyrene*	ng/m <sup>3</sup>	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 Manager

#### Page 1 of 1

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### Save Environment, Save Future'



PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) G37 ND-- 20AAECE9713D124

### ENGINEERING SERVICES PVT. LTD.



Email: info@elespl.co.in , eles.ranchi@amail.com Phone no.: 0551-2290103 Website : www.elespi.ca.in

	TE	STREPORT	
Test Report No.	: ELES/RNC/2023/2950	Report Release Date	: 08.08.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883923000001797F		

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/2621 : Near Bunglapart Village Pakhar Bauxite Mine	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 20.07.2023 to 21.07.2023 : 25.07.2023 : Ambient Air : ELES/DOC/SMPL/02	
Mines Status	: Operational	Sample Drawn By	: ELES Pvt. Ltd.	
Period of Analysis	: 25.07.2023 to 02.08.2023	Sample Condition	: Sealed & Preserved	

Average Temperature (PC) : 28	2	Barometric Pressure (mm)	Hg) :738
Relative Humidity (%) : 64	4	Weather Condition	; Partly Cloudy

NABL Accredited Discipline :	Chamical	Group	Atmospheri	e Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part-23): 2006; RA2022	52	100 (24hrs)
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	27	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m <sup>3</sup>	1S 5182 (Part-2): 2001; RA2022	6.2	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m <sup>3</sup>	IS 5182 (Part-6): 2006; RA2022	15.9	80 (24hrs)
Ozone (O3)	µg/m <sup>3</sup>	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH3)	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>3</sup>	1S 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m <sup>3</sup>	IS 5182 (Part-22): 2004; RA2019	<0.002	1 (24hrs)
Nickel (Ni)	ng/m <sup>3</sup>	1S 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m <sup>2</sup>	ELES/AIR/SOP/01	<2.0	06 (Annual)

Reviewed ÷

Authorised Signatory

Dr. Deependra Kumar Sinha

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Page 1 of 1 ELES Pvt. Ltd. Technical Manager The Document stated as Test Report, is issued by the Laboratory under General Terms and Canditions, only on Company letter head in pre-approver format. The results shown in the Test Report refer or relates only to the job/unstyles done by the Laboratory only. The information stated on the Test Report refers the findings done by the Laboratory at the time of involvement only and writer the listics 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 writtan approval of the Laboratory. The Report in full of its part shall not he published, advertise, used for any legal actions urbess prior permission has been secured from the Management of the Laboratory. Attention is drawn to the limitation of liability, compensation and jurisdiction issues. Any anauthorized alteration & falsification of the content of appearance of the Test Report is unlowful and offenders may be prosecuted to the fullest extent of the law. All the samples are retained for 30days from the Date of releasentstize of the Test Report. The sumples from Begolatory bodies and to be retained as specified. Any type of Observations or Complaints regarding the Reports shall be done within 15days from the take of Test Report released issued. After the time period stated before, no complaints will be accepted. The entire Time schedule mentioned in Test Report is in 24hours formert. Abbreviation used: N/A (Not Applicable), BDL (Below Detection Limit), LDL (Lower Detection Limit)

\*\*\*\* End of Report\*\*\*\*



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

ENGINEERING SERVICES PVT. LTD.

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

	TI	ST REPORT		
Test Report No.	: ELES/RNC/2023/2950	Report Release Date	: 08.08.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/2621 : Near Bunglapart Village Pakhar Bauxite Mine	
Address Mines Status	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure Sample Drawn By	: 20,07.2023 to 21.07.2023 : 25.07.2023 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 25.07.2023 to 02.08.2023	Sample Condition	: Sealed & Preserved	

Average Temperature (%) : 28	2	Barometric Pressure (mm	(Hg) : 738
Relative Humidity (%) : 64	4	Weather Condition	: Partly Cloudy

Discipline : Chemical			Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene*	μg/m <sup>3</sup>	IS:5182 (Part-11): 2006;RA2017	<1.0	05(Annual)	
Benzo (a) Pyrene*	ng/m <sup>3</sup>	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 Engo. ELES Pvt. Ltd. Technical Manager

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-934003 (JHARKHAND) GST NO-20AAECE9713D124

### ENGINEERING SERVICES PVT. LTD.



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

	TE	ST REPORT	
Test Report No.	: ELES/RNC/2023/2951	Report Release Date	: 08.08.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883923000001798F		

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Location Sampling Date Sample Received Date	: ELES/RNC/2023/AA/2622 : Yatri Shed (Near K-10) Pakhar Bauxite Mine : 21.07.2023 to 22.07.2023 : 25.07.2023 : Ambient Air	
Mines Status Period of Analysis	: Operational : 25.07.2023 to 02.08.2023	Type of Sample Sampling Procedure Sample Drawn By Sample Condition	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd. : Sealed & Preserved	

Average Temperature (°C) : 27	2	Barometric Pressure (mm	Hg) : 737
Relative Humidity (%) : 65	4	Weather Condition	: Partly Cloudy

NABL Accredited	20	Group :	Atmospheri	e Pollution
Discipline :		Internet in a structure of the structure		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part-23): 2006; RA2022	51	100 (24hrs)
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	26	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m <sup>3</sup>	IS 5182 (Part-2): 2001; RA2022	7.1	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m <sup>3</sup>	IS 5182 (Part-6): 2006; RA2022	15.2	80 (24hrs)
Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (Shrs)
Ammonia (NH3)	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (Shrs)
Lead (Pb)	µg/m <sup>3</sup>	IS 5182 (Part-22): 2004; RA2019	<0.002	1 (24hrs)
Nickel (Ni)	ng/m <sup>2</sup>	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01	<2.0	(Annual)

山西田 D' di Reviewt -

Authorised Signatory Dr. Deependra Kumer Sinha - Ph. O. Environmental Enga, ECEO FVI. Cid. Technical Manager

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Page 1 of 1 The Document stated in Test Report, is instead by the Laboratory order General Terms and Conditions, only on Company letter head in pre-approved format. The results shown in the Test Report refer or relates only to the jobtatalysis dure by the Laboratory only. The information stated on the Test Report refers the findings door by the Laboratory at the time of involvement only and within the limits of client's instrumients. 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 may part of the report is not taken out of current, without prior written approval of the Laboratory. The Report in full or in part shall not be published, advertise, used far any legal sections unless prior permission has been neurod from the Management of the Laboratory. Attantion is drawn to the limitation of liability, compensation and jurisdiction tissues. Any annuthrated alteration & the Staty from the Date context or appearance of the Test Report is unlawful and offenders may be projected to the fullest extent of the law. All the samples are retained for Statys from the Date of relations unless from the Date of Test Report releasediatory holies are to be ratined in specified. Any type of Onservations will be agreepted. The entire Time schedule remainment in Test Report is in 34hours format. Abbreviation and NA period stated before, no complaints will be agreepted. The entire Time schedule remainment in Test Report is in 34hours format. Abbreviation and NA periodicable), BDL (Below Detection Limity, LDL (Lower Detection Limity).

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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

	TI	IST REPORT		
Test Report No.	: ELES/RNC/2023/2951	Report Release Date	: 08.08.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	_

CUSTOMER DETA	CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/2622 : Yatri Shed (Near K-10) Pakhar Bauxite Mine		
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 21.07.2023 to 22.07.2023 : 25.07.2023 : Ambient Air : ELES/DOC/SMPL/02		
Mines Status	: Operational	Sample Drawn By	: ELES Pvt. Ltd.		
Period of Analysis	: 25.07,2023 to 02.08.2023	Sample Condition	: Sealed & Preserved		

METEOROLOGICAL INFORMATION			
1 Average Temperature (PC) : 27	2	Barometric Pressure (mm	Hg) : 737
3 Relative Humidity (%) : 65	4	Weather Condition	: Partly Cloudy

Discipline : Chemical		Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene*	ug/m <sup>3</sup>	IS:5182 (Part-11): 2006;RA2017	<1.0	05(Annual)
Benzo (a) Pyrene*	ng/m <sup>3</sup>	IS:5182 (Part-12): 2004;RA2019	<0.5	01(Annual)

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



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Dr. delevelsel Sigurter Sinha 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-20AAECE9713D124

### ENGINEERING SERVICES PVT. LTD.

Email: <u>info@elespi.co.in</u> , eles.ranchi@amail.com Phone no.: 0651-2290103 Websitz : www.elespi.co.in



NP	CONTRACTOR AND AND AND AND A DATA AND AND AND AND AND AND AND AND AND AN	ST REPORT	: 08.08.2023
Test Report No.	: ELES/RNC/2023/2952	Report Release Date Work Order Date	: 21.04.2023
Work Order No.	: 13612310218	WORK OFficer Date	1 21.09.2023
ULR No.	: TC883923000001799F		

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample	: ELES/RNC/2023/AA/2623 : Near Utkarmit Rajkiya Prathmil Vidyalaya Bunglapart Village Pakhar Bauxite Mine : 20.07.2023 to 21.07.2023 : 25.07.2023 : Ambient Air	
Mines Status	: Operational Sampling Procedure		: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 25.07.2023 to 02.08.2023	Sample Drawn By Sample Condition	: Sealed & Preserved	

Average Temperature (°C) : 28	2	Barometric Pressure (mmHg)	; 738
Relative Humidity (%) : 64	4	Weather Condition	: Partly Cloudy

NABL Accredited	Pro 1 1		Aturamhant	o Dollation
Discipline :	Chemical		Atmospheri	
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part-23): 2006; RA2022	46	100 (24hrs)
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	20	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m <sup>3</sup>	IS 5182 (Part-2): 2001; RA2022	5.4	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m <sup>3</sup>	IS 5182 (Part-6): 2006; RA2022	15.1	80 (24lirs)
Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH3)	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoside (CO)	mg/m <sup>3</sup>	18 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m <sup>1</sup>	IS 5182 (Part-22): 2004; RA2019	< 0.002	1 (24lurs)
Niekel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m1	ELES/AIR/SOP/01	<2.0	06 (Annual)

Reviewed by

Authorised Signatory

Dr. Deependra Kumar Sinha

Ph. D. Environmental Engg

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\*\*\*\*End of Report\*\*\*\*



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

# ENGINEERING SERVICES PVT. LTD.

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

TEST REPORT				
Test Report No.	: ELES/RNC/2023/2952	Report Release Date	: 08.08.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/2623 : Near Utkarmit Rajkiya Prathmik Vidyalaya Bunglapart Village Pakhar Bauxite Mine	
Address Mines Status	: Lohardaga, Jharkhand-835302	Sampling Date Somple Received Date Type of Sample Sampling Procedure Sample Drawn By	: 20.07.2023 to 21.07.2023 : 25.07.2023 : Ambient Air : ELES/DOC/SMPL/02	
			: ELES Pvt. Ltd.	
Period of Analysis : 25.07.2023 to 02.08,2023		Sample Condition	: Sealed & Preserved	

MB	TEOROLOGICAL INFORMATION	1.1.4.4.4.4		
1	Average Temperature (°C) : 28	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%) : 64	4	Weather Condition	: Partly Cloudy

Discipline	t Chemical	Group : Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Benzene*	µg/m <sup>2</sup>	IS:5182 (Part-11): 2006;RA2017	<1.0	05(Annual)		
Benzo (a) Pyrene*	ng/m <sup>3</sup>	IS:5182 (Part-12): 2004;RA2019	< 0.5	01(Annual)		

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



\*\*\*\*End of Report\*\*\*\*

Anthorised Signatory Dr. Deependra Kumar Sinha Ph. D. Environmental Engl. ELES Pvt. Ud. Technical Manager

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### ave Environment, Save Future"



PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (IHARKHAND) GST NO-26AAECE9713D124

### ENGINEERING SERVICES PVT. LTD.



Email: <u>info@elespl.co.in</u>, <u>eles.ranchi@amail.som</u> Phane no.: 0651-2290103 Website : www.elespl.co.in

Test Report No.	: ELES/RNC/2023/2953	Report Release Date	: 08.08.2023	
Work Order No.	: 13612310218	Work Order Date	; 21.04.2023	
ULR No.	: TC883923000001800F			

CUSTOMER DET/	AILS	SAMPLE DETAILS	11000	
ddress : Lohardaga, Jharkhand-835302		Sample Ref. No. Location Sampling Date	: ELES/RNC/2023/AA/2624 : Near Utkarmit Rajkiya Prathmi Vidyalaya Dumrapart Village Pakhar Bauxite Mine : 21.07.2023 to 22.07.2023	
Mines Status Period of Analysis	: Operational : 25.07.2023 to 02.08.2023	Sample Drawn By	: 25.07.2023 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd. : Sealed & Preserved	

1.1811	LI LOROLOOTATAL BUT DISTRICT AND I			the second se
1	Average Temperature (%C) : 27	2	Barometric Pressure (mmHg	) : 737
3	Relative Humidity (%) : 65	4	Weather Condition	: Partly Cloudy

NABL Accredited				
Discipline :	Group	: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part-23): 2006; RA2022	51	100 (24hrs)
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	1S 5182 (Part- 24): 2019	27	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m <sup>3</sup>	IS 5182 (Part-2): 2001; RA2022	6.2	80 (24hrs)
Nitrogen Di-Oxide (NO1)	µg/m <sup>3</sup>	IS 5182 (Part-6): 2006; RA2022	8.8	80 (24hrs)
Ozone (O3)	µg/m <sup>3</sup>	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH3)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part-10); 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m <sup>3</sup>	1S 5182 (Part-22): 2004; RA2019	<0.002	1 (24hrs)
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part-26):2020	<5.0	20 (Annual)
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01	<2.0	06 (Annual)

Reviewed by

Authorised Signatory

\*\*\*\*End of Report\*\*\*\*

Dr. Deependre Kumer Sinha

The Document stated as Test Report, is issued by the Laboratory under General Terms and Conditions, only <u>performance</u> of the Test Report reflects the Indiags done by the Laboratory only. The information stated on the Test Report reflects the Indiags done by the Laboratory at the time of involvement only and within the limits of elient'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 contrast, without price or interactions in the limits of alient'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 permission has been secured from the Namagement of the Laboratory. The Report in full or in part shall not be published, advertine, used for my legal actines unless provided from the Namagement of the Laboratory. Attention is drawn in the limitation of liability, compensation and president in issues. Any unadherized alternities & fulls fleation of the cument or appearance of the Test Report is unlawful and offenders may be preserved to the fullest extent of the law. All the samples are rotating for 30days from the Date of Test Report is shall be done within 15days from the Date of Test Report released instant. After the time period stated before, no complaints will be accepted. The entire Time schedule montioned is Test Report is at 24bowrs format. Abbreviation used. N/A (Not Agelicable), BDS, (Below Detector Limit), LDC, *Cower Detection Limit*).



PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-B34003 (IHARKHAND) GST NO:- 20AAECE9713D124

### 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/2023/2953	Report Release Date	: 08.08.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/2624 : Near Utkarmit Rajkiya Prathmik Vidyalaya Dumrapart Village Pakhar Bauxite Mine	
Address Mines Status	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 21.07.2023 to 22.07.2023 : 25.07.2023 : Ambient Air : ELES/DOC/SMPL/02	
Mines Status Toperational	Sample Drawn By	: ELES Pvt. Ltd.		
Period of Analysis	: 25.07.2023 to 02.08.2023	Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFORMATION			
1	Average Temperature (%C) : 27	2	Barometric Pressure (mmHg)	: 737
3	Relative Humidity (%) : 65	4	Weather Condition	: Partly Cloudy

Discipline : Chemical		Group : Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene®	µg/m³	IS:5182 (Part-11): 2006;RA2017	<1.0	05(Annual)	
Benzo (a) Pyrene*	ng/m <sup>3</sup>	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 Engo 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:- 20AAECE97130124

#### SWEENING VERVICES FVC. LTD

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

TEST REPORT					
Test Report No.	: ELES/RNC/2023/3401	Report Release Date	: 09.09.2023		
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023		
ULR No.	: TC883923000002169F				

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	<ul> <li>ELES/RNC/2023/AA/3025</li> <li>Near Mine Quarty No-K7 Pakhar (109,507 ha) Bauxite Mine</li> </ul>	
Address Mines Status	: Lohardaga, Jharkhand-835302 : Operational : 26.08.2023 to 08.09.2023	Sampling Date Sample Received Date Type of Sample	: 20.08.2023 to 21.08.2023 : 26.08.2023 : Ambient Air	
		Sampling Procedure Sample Drawn By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis		Sample Condition	: Sealed & Preserved	

1	Average Temperature (°C)	: 25	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%)	: 64	4	Weather Condition	: Partly Cloudy
	Longitude	: 84°36'43.86"E	6	Latitude	: 23°33'29.12"N

ABL Accredited Discipline : Chemical Group : Atmospheric Pollution					
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part-23): 2006; RA2022	46	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	19	60 (24hrs)	
Sulphur Di-Oxide (SO2)	µg/m <sup>3</sup>	IS 5182 (Part-2): 2001; RA2022	5.5	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m <sup>3</sup>	IS 5182 (Part-6): 2006; RA2022	14.9	80 (24hrs)	
Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	1S 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH <sub>3</sub> )	µg/m <sup>1</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24firs)	
Carbon Monoxide (CO)	mg/m <sup>3</sup>	15 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	µg/m <sup>1</sup>	IS 5182 (Part-22): 2004; RA2019	0.007	1 (24hrs)	
Nickel (Ni)	ng/m <sup>3</sup>	1S 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01	<2.0	06 (Annual)	

Reviewed by

Dr. Deependra Kumar Sinha

\*\*\*\*End of Report\*\*\*\*

ELES Pvt. Ltd. Technical Manager

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

### 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/2023/3401	Report Release Date : 09.09.2023		
Work Order No.	: M&M/23-24/01	Work Order Date : 31,03.2023		

CUSTOMER DET/	CUSTOMER DETAILS			
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/3025 : Near Mine Quarry No-K7 Pakhar (109.507 ha) Bauxite Mine	
Address	: Lohardaga, Jharkhand-835302 : Operational : 26.08.2023 to 08.09.2023	Sampling Date Sample Received Date Type of Sample	: 20.08.2023 to 21.08.2023 : 26.08.2023 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Mines Status		Sampling Procedure Sample Drawn By		
Period of Analysis		Sample Condition	: Sealed & Preserved	

MI	TEOROLOGICAL INFOR	MATION	-		
1	Average Temperature (°C)	: 25	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%)	: 64	4	Weather Condition	: Partly Cloudy
5	Longitude	: 84°36'43.86"E	6	Latitude	: 23°33'29.12"N

Discipline	: Chemical	Group	Group : Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit			
Benzene*	µg/m	1S:5182 (Part-11): 2006;RA2017	<1.0	05(Annual)			
Benzo (a) Pyrene*	ng/m <sup>3</sup>	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 Engo. 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

#### G LEWITCES PUE LTI

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

	TE	ST REPORT
Test Report No.	: ELES/RNC/2023/3402	Report Release Date : 09.09.2023
Work Order No.	: M&M/23-24/01	Work Order Date : 31.03.2023
ULR No.	: TC883923000002170F	

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name Address	: Minerals & Minerals Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure	: ELES/RNC/2023/AA/3026 : Near Mine Quarry No-K9 Pakhar (109,507 ha) Bauxite Mine : 20.08.2023 to 21.08.2023 : 26.08.2023 : Ambient Air : ELES/DOC/SMPL/02	
Mines Status	: Operational : 26.08.2023 to 08.09.2023	Sample Drawn By	: ELES Pvt. Ltd.	
Period of Analysis		Sample Condition	: Sealed & Preserved	

I	Average Temperature (°C)	; 25	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%)	: 64	4	Weather Condition	: Partly Cloudy
_	Longitude	: 84°37'7.83"E	6	Latitude	: 23°33'30.72"N

Chemical	Group	Group : Atmospheric Pollution		
Unit	Test Protocol	Result	<b>Regulatory Limit</b>	
µg/m²	IS 5182 (Part-23): 2006; RA2022	51	100 (24hrs)	
µg/m³	IS 5182 (Part- 24): 2019	20	60 (24hrs)	
µg/m <sup>3</sup>	IS 5182 (Part-2): 2001; RA2022	5.7	80 (24hrs)	
µg/m <sup>3</sup>	1S 5182 (Part-6): 2006; RA2022	14.4	80 (24hrs)	
µg/m <sup>3</sup>	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
µg/m <sup>3</sup>	1S 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
mg/m <sup>3</sup>	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
µg/m <sup>3</sup>	IS 5182 (Part-22): 2004; RA2019	<0.002	1 (24hrs)	
ng/m <sup>3</sup>	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)	
	μg/m <sup>3</sup> μg/m <sup>3</sup> μg/m <sup>3</sup> μg/m <sup>3</sup> μg/m <sup>3</sup> μg/m <sup>3</sup> mg/m <sup>3</sup> ng/m <sup>3</sup>	Unit         Test Protocol           μg/m³         IS 5182 (Part-23): 2006; RA2022           μg/m³         IS 5182 (Part-24): 2019           μg/m³         IS 5182 (Part-24): 2019           μg/m³         IS 5182 (Part-2): 2001; RA2022           μg/m³         IS 5182 (Part-6): 2006; RA2022           μg/m³         IS 5182 (Part-6): 2006; RA2022           μg/m³         IS 5182 (Part-9): 1974; RA2019           μg/m³         IS 5182 (Part-25): 2018           mg/m³         IS 5182 (Part-10): 1999; RA2019           μg/m³         IS 5182 (Part-22): 2004; RA2019	Unit         Test Protocol         Result           μg/m³         IS 5182 (Part-23): 2006; RA2022         51           μg/m³         IS 5182 (Part-24): 2019         20           μg/m³         IS 5182 (Part-2): 2001; RA2022         5.7           μg/m³         IS 5182 (Part-2): 2006; RA2022         14.4           μg/m³         IS 5182 (Part-6): 2006; RA2019         <20.0	



Authorised Signatory Dr. Deependra Kumar Sinha

\*\*\*\*End of Report\*\*\*\*

Page 1 of 1 ELES Pvt Ltd. Technical Manager The Document stated as Test Report, is based by the Laboratory under General Terms and Conditions, only on Company letter head in pre-approved format. The results shown in the Text Report refer or relates only 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 contest, without prior written approval of the Laboratory. The Report in full or in part shall not be published, advertise, used for any legal actions onless 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/assue of the Test Report. The samples from Regulatory budies 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/assued. After the time period stated before, no complaints will be accepted. The entire Time schedule mentioned in Test Report is in 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

## VGINEERING SERVICES PVT. LTD.

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

	TI	ST REPORT
Test Report No.	: ELES/RNC/2023/3402	Report Release Date z 09.09.2023
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/3026 : Near Mine Quarry No-K9 Pakhar (109.507 ha) Bauxite Mine	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 20.08.2023 to 21.08.2023 : 26.08.2023 : Ambient Air	
Mines Status	: Operational	Sampling Procedure Sample Drawn By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 26.08,2023 to 08.09.2023	Sample Condition	: Sealed & Preserved	

MI	TEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 25	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%)	: 64	4	Weather Condition	: Partly Cloudy
5	Longitude	: 84°37'7.83"E	6	Latitude	: 23°33'30.72"N

Discipline	Group	Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	<b>Regulatory Limit</b>
Benzene*	µg/m <sup>3</sup>	IS:5182 (Part-11): 2006;RA2017	<1,0	05(Annual)
Benzo (a) Pyrene*	ng/m <sup>3</sup>	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 Manager

#### Page 1 of 1

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO: 20AAECE9733D124

### CINEENING LEAVINES PUT, LTD

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

	TE	ST REPORT
Test Report No.	: ELES/RNC/2023/3403	Report Release Date : 09.09.2023
Work Order No.	: M&M/23-24/01	Work Order Date : 31.03.2023
ULR No.	: TC883923000002171F	

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/3027 : Near Mine Quarry No-K5 Pakhar (109.507 ha) Bauxite Mine	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 20.08.2023 to 21.08.2023 : 26.08.2023 : Ambient Air	
Mines Status	Operational	Sampling Procedure Sample Drawn By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd. : Sealed & Preserved	
Period of Analysis	: 26.08.2023 to 08.09.2023	Sample Condition		

1	Average Temperature (°C)	: 25	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%)	: 64	4	Weather Condition	: Partly Cloudy
5	Longitude	: 84°37'21.94"E	6	Latitude	: 23°33'14.59"N

NABL Accredited Discipline :	Chemical	Group	Atmospheri	e Pollution		
Parameter	Unit	Test Protocol	Group : Atmospheric Pollution Test Protocol Result Regulato			
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part-23): 2006; RA2022	43	100 (24hrs)		
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	1S 5182 (Part- 24): 2019	20	60 (24hrs)		
Sulphur Di-Oxide (SO2)	µg/m <sup>3</sup>	IS 5182 (Part-2): 2001; RA2022	5.4	80 (24hrs)		
Nitrogen Di-Oxide (NO2)	µg/m <sup>3</sup>	IS 5182 (Part-6): 2006; RA2022	17.3	80 (24hrs)		
Ozone (O3)	µg/m <sup>3</sup>	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (Shrs)		
Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part-25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)		
Lead (Pb)	µg/m <sup>7</sup>	IS 5182 (Part-22): 2004; RA2019	0.005	1 (24hrs)		
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part-26):2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01	<2.0	06 (Annual)		



Dr. Deependra Kumar Sinha

\*\*\*\*End of Report\*\*\*\*

ELES Pvt. Ltd. Technical Manager

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

### NGINEERING SERVICES PVT. LTD.

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

	TI	EST REPORT	
Test Report No.	: ELES/RNC/2023/3403	Report Release Date	: 09.09.2023
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/3027 : Near Mine Quarry No-K5 Pakhar (109.507 ha) Bauxite Mine	
Address : Lohardaga, Jharkhand-835		Sampling Date Sample Received Date Type of Sample	: 20.08.2023 to 21.08.2023 : 26.08.2023 : Ambient Air	
Mines Status	: Operational	Sampling Procedure Sample Drawn By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 26.08.2023 to 08.09.2023	Sample Condition	: Sealed & Preserved	

MI	TEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 25	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%)	: 64	4	Weather Condition	: Partly Cloudy
5	Longitude	: 84°37'21.94"E	6	Latitude	: 23°33'14.59"N

Discipline	: Chemical	Group	Group : Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit			
Benzene*	µg/m <sup>3</sup>	IS:5182 (Part-11): 2006;RA2017	<1.0	05(Annual)			
Benzo (a) Pyrene*	ng/m <sup>3</sup>	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 Manager

#### Page 1 of 1

The Document stated as Test Report, is issued by the Laboratory under General Terms and Conditions, only on Company letter head in pre-approved format. The results shown in the Test Report refer or relates only 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 fall and any part of the report is not taken out of context, 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 unlessful and offenders 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 will be accepted. The entire Time schedule mentioned in Test Report is in 24hours format. Abbreviation used 'N/A (Not Applicable), BDL (Below Detection Limit), LDL (Lower Detection Limit).

#### Sales Incole comments, Sales Fullying



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

#### EWEERING SERVICES PTT. L

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



	TE	ST REPORT	
Test Report No.	: ELES/RNC/2023/3404	Report Release Date : 09.09.2023	
Work Order No.	: M&M/23-24/01	Work Order Date : 31.03.2023	
ULR No.	: TC883923000002172F		

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/3028 : Pakhar Loading Area Pakhar (109.507 ha) Bauxite Mine	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 20.08.2023 to 21.08.2023 : 26.08.2023 : Ambient Air	
Mines Status	: Operational	Sampling Procedure Sample Drawn By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 26.08.2023 to 08.09.2023	Sample Condition	: Sealed & Preserved	

1	Average Temperature (°C)	: 25	2	Barometric Pressure (mm)	Hg) : 734
3	Relative Humidity (%)	: 64	4	Weather Condition	: Partly Cloudy
5	Longitude	: 84º36'53.77"E	6	Latitude	: 23°33'15.01"N

### NABL Accredited

Discipline : Chemical		Group :	Group : Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part-23): 2006; RA2022	60	100 (24hrs)		
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	35	60 (24hrs)		
Sulphur Di-Oxide (SO2)	µg/m <sup>3</sup>	IS 5182 (Part-2): 2001; RA2022	10.8	80 (24hrs)		
Nitrogen Di-Oxide (NO2)	µg/m <sup>3</sup>	IS 5182 (Part-6): 2006; RA2022	19.5	80 (24hrs)		
Ozone (O3)	µg/m <sup>3</sup>	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)		
Ammonia (NH <sub>3</sub> )	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)		
Lead (Pb)	µg/m <sup>3</sup>	IS 5182 (Part-22): 2004; RA2019	0.008	1 (24hrs)		
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part-26):2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01	<2.0	06 (Annual)		

Reviewed by

Dr. Deependra Rumar Sinha

\*\*\*\*End of Report\*\*\*\*

Ph. D. Environmental Free 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

# ENGINEERING SERVICES PVT. LTD.

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

	TE	ST REPORT	
Test Report No.	: ELES/RNC/2023/3404	Report Release Date	: 09.09.2023
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/2023/AA/3028 : Pakhar Loading Area Pakhar (109.507 ha) Bauxite Mine		
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 20.08.2023 to 21.08.2023 : 26.08.2023		
Mines Status	: Operational	Type of Sample Sampling Procedure Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.		
Period of Analysis	: 26.08.2023 to 08.09.2023 Sample Orawn By		: Sealed & Preserved		

M	ETEOROLOGICAL INFOR	RMATION			
1	Average Temperature (°C)	: 25	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%)	: 64	4	Weather Condition	: Partly Cloudy
5	Longitude	: 84°36'53.77"E	6	Latitude	: 23°33'15.01"N

Discipline	: Chemical	Group	Group : Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit			
Benzene*	µg/m <sup>3</sup>	IS:5182 (Part-11): 2006;RA2017	<1.0	05(Annual)			
Benzo (a) Pyrene*	ng/m <sup>2</sup>	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. Ud. Technical Manager

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Test Report No.	: ELES/RNC/2023/3405	Report Release Date	: 09.09,2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
ULR No.	: TC883923000002173F	1,		

CUSTOMER DET/	AILS	SAMPLE DETAILS		
Customer Name	; Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/3029 : Near Bunglapart Village Pakhar Bauxite Mine	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 18.08.2023 to 19.08.2023 : 26.08.2023 : Ambient Air : ELES/DOC/SMPL/02	
Mines Status	: Operational	Sample Drawn By	: ELES Pvt. Ltd.	
Period of Analysis	: 26,08.2023 to 08.09.2023	Sample Condition	: Sealed & Preserved	

T.	Average Temperature (°C) : 26	2	Barometric Pressure (mm	iHg) ;736
3	Relative Humidity (%) :65	4	Weather Condition	: Partly Cloudy

NABL Accredited					
Discipline :	Chemical	Group	Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part-23): 2006; RA2022	48	100 (24hrs)	
Particulate Matter (PM2,5)	µg/m³	IS 5182 (Part- 24): 2019	2.5	60 (24hrs)	
Sulphur Di-Oxide (SO2)	µg/m <sup>3</sup>	IS 5182 (Part-2): 2001; RA2022	5.8	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m <sup>3</sup>	IS 5182 (Part-6): 2006; RA2022	14.2	80 (24hrs)	
Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (Shrs)	
Ammonia (NH3)	µg/m²	IS 5182 (Part-25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	µg/m	IS 5182 (Part-22): 2004; RA2019	<0.002	1 (24hrs)	
Nickel (Ni)	ng/m <sup>3</sup>	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

\*\*\*\* End of Report\*\*\*\*

ELES PVI. Ltc. Technical Manager

Dr. Deepartitie Kumar Sinhe

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PLOT NO-30, MANSARO VAR ENGLAVE TURUGAVA HITAL RANCH HE 1003 (JHARNHAND) BST NO- MARECETISOISI

Ematli (afoj@elesel.co.ln., eles.parico(@amai).com Rhone.no.: 0651-1290103 Website i www.elespi.co.in

GENEERING SERVICES PVT\_LTD

	TEST	REPORT	
Test Report No.	: ELES/RNC/2023/3405	Report Release Date	: 09.09.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
CUSTOMER DET/	AILS	SAMPLE DETAILS	
Customer Name Address Mines Status	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302 : Operational	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure Sample Drawn By	: ELES/RNC/2023/AA/3029 : Near Bunglapart Village Pakhar Bauxite Mine : 18.08.2023 to 19.08.2023 : 26.08.2023 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 26.08.2023 to 08.09.2023	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 26	2	Barometric Pressure (mn	nHg) : 736
3	Relative Humidity (%) = 65	4	Weather Condition	: Partly Cloudy

Discipline : Chemical G			roup : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene*	µg/m <sup>3</sup>	IS:5182 (Part-11); 2006;RA2017	<1.0	05(Annual)	
Benzo (a) Pyrene*	ng/m <sup>3</sup>	TS:5182 (Part-12): 2004;RA2019	< 0.5	01(Annual)	

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



End of Report\*\*\*\*

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#### Page 1 of 1

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Test Report No.	: ELES/RNC/2023/3406	Report Release Date	: 09.09.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
ULR No.	: TC883923000002174F			

CUSTOMER DET/	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/3030 : Yatri Shed (Near K-10) Pakhar Bauxite Mine
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: Yatri Shed (Near K-10)
Mines Status	: Operational	Sample Drawn By	
Period of Analysis	: 26.08.2023 to 08.09.2023	Sample Condition	Sealed & Preserved

1 Average Temperature (%	C) :24	2	Barometric Pressure (mm	iHg) : 735
3 Relative Humidity (%)	: 66	4	Weather Condition	: Partly Cloudy

NABL Accredited					
Discipline :	Chemical	Group : Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μgim	15 1132 (Par-23): 2005, RA2022	1.00 1911	1/10 (2:11-3)	
Particulate Matter (PM2,5)	µg/m <sup>1</sup>	1S 5182 (Part- 24): 2019	23	60 (24hrs)	
Sulphur Di-Oxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	1S 5182 (Part-2): 2001; RA2022	6.5	80 (24hrs)	
Nitrogen Di-Oxide (NOz)	µg/m <sup>1</sup>	1S 5182 (Part-6): 2006; RA2022	18.5	80 (24hrs)	
Ozone (O3)	µg/m <sup>3</sup>	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH <sub>3</sub> )	pg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	µg/m <sup>3</sup>	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 <sup>1</sup>	ELES/AIR/SOP/01	<2.0	06 (Annual)	

Reviewell by

Authorised Signatory

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# Page 1 of 1

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#### TEST REPORT

Test Report No.	: ELES/RNC/2023/3406	Report Release Date	: 09.09.2023
Work Order No.	± 13612310218	Work Order Date	± 21.04.2023

CUSTOMER DET.	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/3030 : Yatri Shed (Near K-10) Pakhar Bauxite Mine
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 19.08.2023 to 20.08.2023 : 26.08.2023 : Ambient Air
Mines Status	: Operational	Sampling Procedure Sample Drawn By	: ELES/DOC/SMPL/02 : ELES Pvt, Ltd.
Period of Analysis	: 26.08.2023 to 08.09.2023	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	:24	2	Barometric Pressure (mm	Hg) : 735
3	Relative Humidity (%)	: 66	4	Weather Condition	: Partly Cloudy

Discipline	: Chemical	Group	e Pollution	
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene*	µg/m³	IS:5182 (Part-11): 2006;RA2017	<1.0	05(Annual)
Benzo (a) Pyrene*	ng/m <sup>3</sup>	IS:5182 (Part-12): 2004;RA2019	<0.5	01(Annual)

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

Reviewed by

---- End of Report\*\*\*\*

Authorised Signatory

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Test Report No.	1 ELES/RNC/2023/3407	Report Release Date	: 09.09.2023	
Work Order No.	± 13612310218	Work Order Date	: 21.04.2023	
ULR No.	± TC883923000002175F			

CUSTOMER DETAILS		SAMPLE DETAILS		
Costomer Name	1 Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/3031 : Near Utkarmit Rajkiya Prathmik Vidyalaya Bunglapart Village Pakhar Bauxite Mine	
Address Mines Status	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 18.08.2023 to 19.08.2023 : 26.08.2023 : Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 26.08.2023 to 08.09.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

Average Temperature (°C)	: 26	2	Barometric Pressure (mmHg)	: 736
Relative Humidity (%)	: 65	4	Weather Condition	: Partly Cloudy

NABL Accredited				
Discipline :	Chemical	Group	: Atmospheri	e Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part-23): 2006; RA2022	42	100 (24hrs)
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	24	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m <sup>3</sup>	15 5182 (Part-2): 2001; RA2022	<5.0	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m <sup>1</sup>	IS 5182 (Part-6): 2006; RA2022	13,6	80 (24hrs)
Ozone (O3)	µg/m <sup>3</sup>	1S 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>2</sup>	1S 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m <sup>3</sup>	IS-5182 (Part-22): 2004; RA2019	<0.002	1 (24hrs)
Nickel (Ni)	ng/m <sup>2</sup>	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01	<2,0	06 (Annual)

Reviewed by

Authorised Signatory Dr. Daependra Kumar Sinna

\*\*\*\*End of Report\*\*\*\*

EUES Pyr. Ltd. Technical Managet

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	TR	EST REFORT		
Test Report No.	: ELES/RNC/2023/3407	Report Release Date	: 09.09.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	; Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/3031 : Near Utkarmit Rajkiya Prathmik Vidyalaya Bunglapart Village Pakhar Bauxite Mine	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 18.08.2023 to 19.08.2023 : 26.08.2023 : Ambient Air : ELES/DOC/SMPL/02	
Mines Status	: Operational			
Period of Analysis	: 26.08.2023 to 08.09.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

MI	ETEOROLOGICAL INFORMATION		the second s	
T	Average Temperature (°C) : 26	2	Barometric Pressure (mm	iHg) : 736
3	Relative Humidity (%) : 65	4	Weather Condition	: Partly Cloudy

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

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

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\*\*\*\*End of Report\*\*\*\*

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#### Page 1 of 1

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	TE	ST REPORT	
Test Report No.	: ELES/RNC/2023/3408	Report Release Date	: 09.09.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	TC883923000002176F		

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/3032 : Near Utkannit Rajkiya Prathmik Vidyalaya Dumrapart Village Pakhar Bauxite Mine	
Address Mines Status	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 19.08.2023 to 20.08.2023 : 26.08.2023 : Ambient Air : ELES/DOC/SMPL/02	
		Sample Drawn By	: ELES Pvt. Ltd. : Sealed & Preserved	
Period of Analysis	: 26.08.2023 to 08.09.2023	Sample Condition		

M	ETEOROLOGICAL INFORMATION			
1	Average Temperature (%C) : 24	2	Barometric Pressure (mm)	Hg) :735
3	Relative Humidity (%) : 66	4	Weather Condition	: Partly Cloudy

NABL Accredited				
Discipline :	Chemical	Group	: Atmospheri	e Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 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 (SO2)	µg/m <sup>3</sup>	IS 5182 (Part-2): 2001; RA2022	5.5	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m <sup>3</sup>	IS 5182 (Part-6): 2006; RA2022	9.2	80 (24hrs)
Ozone (O3)	µg/m <sup>3</sup>	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m <sup>3</sup>	IS 5182 (Part-22): 2004; RA2019	< 0.002	1 (24hrs)
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01	<2.0	06 (Annual)

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Page 1 of 1

BLES Pro Las Tachy bill Marisger The Document stated as Test Report, is issued by the Laboratory under General Terms and Conditions, only on Company letter head in prevapproved format. The results shown in the Test Report refer or relates only to the job/analysis done by the Laboratory only. The information stated on the Test Report reflects the findings done by the Laboralory of the tone of involvement only and within the limits of chere's instructions. The Laboratory is responsible for all the information or data provided on the report, execut the tradematase which is provided by the client. The Report climnol be reproduced except in full and any part of the report is not taken out of context, without prior written approval of the Laboratory. The Report in fall 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 formation of liability, compensation and jurisdiction itsues. Any organises red alteration & falsification of the customs or appearance of the Tast Report is unlowful and offenders may be prosecuted to the fullest extent of the task. All the samples are retained for 30days from the Date or release/ssue of the Test Report. The samples than Regulating bodies are to be tetained 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 compliance will be accepted. The antior Time schedular non-Loned in Tim Redold on a 240 user format Abbreviation used. N/A (Me) Applicable), BDL (Below Description Long), COL (Lower Description Long).

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	TESI	REPORT	
Test Report No.	: ELES/RNC/2023/3408	Report Release Date	: 09.09.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
CUSTOMER DET.	AILS	SAMPLE DETAILS	
Customer Name	.: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/3032 : Near Utkarmit Rajkiya Prathmik Vidyalaya Dumrapart Village
Address	: Lohardaga, Jharkhand-835302	Sampling Date	Pakhar Bauxite Mine : 19.08.2023 to 20.08.2023

Mines Status	: Operational	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 19.08.2023 to 20.08.2023 : 26.08.2023 : Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 26.08.2023 to 08.09.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

M	ETEOROLOGICAL INFOR	MATION			
I	Average Temperature (°C)	: 24	2	Barometric Pressure (mmHg)	: 735
3	Relative Humidity (%)	: 66	4	Weather Condition	: Partly Cloudy

Discipline : Chemical		Group	: Atmospheri	e Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene <sup>w</sup>	µg/m <sup>3</sup>	IS:5182 (Part-11): 2006;RA2017	<1.0	05(Annual)
Benzo (a) Pyrene*	ng/m²	1S:5182 (Part-12): 2004;RA2019	<0.5	01(Annual)

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

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

### NOINCERING SCHUICES 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/2023/1731 Report Release Date : 10.09.2023 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. Sampling Date Sample Received Date	: ELES/RAN/2023/DW/1618 : 16.08.2023 : 28.08.2023
Address	: Lohardaga, Jharkhand-835302	Type of Sample Source/Location of Sample	: Drinking Water : Near Mine Quarry No-K7 Pakhar(109.507 ha)Bauxite Mine
Mines Status	: Operational	Sampling Procedure Sample Collected By	: ELES/DOC/SMPL/01 : ELES Pvt. Ltd.
Period of Analysis	: 28.08.2023 to 09.09.2023	Sample Condition	: Sealed & Preserved

Discipline : Chemical		Group : Water	•	Regulatory Limit as per IS 10500:2012	
Parameter	Unit	Test Protocol	Result	Acceptable	Permissible Limit
pH (at 24.8 °C)	8	APHA 23 <sup>rd</sup> Ed.2017, 4500-H	6.78	6.5-8.5	No Relaxation
Turbidity	NTU	APHA 23rd Ed.2017, 2130 B	0.38	1.0	5.0
Taste		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 23rd Ed.2017, 2540B,C&D	268	500	2000
Chloride (as Cl)	mg/L	APHA 23rd Ed.2017, 4500 CI B	45.8	250	1000
Fluoride (as F)	mg/L	APHA 23 <sup>rd</sup> Ed.2017, 4500 F-D	BDL (DL: 0.1)	1.0	1.5
Total Alkalinity (as CaCO3)	mg/L	APHA 23 <sup>rd</sup> Ed.2017, 2320 B	75.6	200	600
Total Hardness (as CaCO3)	mg/L	APHA 23rd Ed.2017, 2340 C	115	200	600
Sulphate (as SO4)	mg/L	APHA 23 <sup>rd</sup> Ed.2017, 4500 SO4 <sup>-2</sup> -E	28.6	200	400
Nitrate (as NO <sub>3</sub> )	mg/L	APHA 23 <sup>rd</sup> Ed.2017, 4500 NO <sub>3</sub> -B	2.48	45	No Relaxation
Phenolic Compound (as C <sub>6</sub> H <sub>5</sub> OH)	mg/L	IS 3025 (Part-43):1992;RA2019	BDL (DL: 0.0005)	0.001	0.002

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PLDT ND-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST ND-20AAECE9713D124

### NGEVEERING SERVICES PVT. LTB.

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

CW: U74995/H2018PTC011125

<u>TEST REPORT</u>			
Test Report No.	: ELES/RAN/2023/1731	Report Release Date	: 10.09.2023
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023

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Discipl	Discipline : Chemical Group : Wat		Vater		tory Limit 10500:2012
Parameter	Unit	Test Protocol	Result	Acceptable	Permissible
Cyanide (as CN)	mg/L	APHA 23rd 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 23td Ed.2017, 3500 Ca B	30.4	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 <sup>rd</sup> Ed.2017, 3111B	BDL (DL: 0.003)	0.003	No Relaxation
Total Chromium (as Cr)	mg/L	APHA 2318 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	0.248	1.0	1.0
Lead (as Pb)	mg/L	APHA 23 <sup>24</sup> 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	1S 3025 (Part-48): 1994; RA2019	BDL (DL: 0.001)	0.001	No Relaxation
Selemium (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 <sup>rd</sup> Ed.2017, 3111B	BDL (DL: 0.1)	5	15

Remarks: 1. pH & RFC done at Lab.

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) G3T NO:- 204AECE9713D124

### NGINEERING SERVICES PVT. LTD.

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

	TE	ST REPORT		_
Test Report No.	: ELES/RAN/2023/1731	Report Release Date	: 10.09.2023	
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023	- L

Discipline : Che	mical		Group: Water	
Parameter	Unit	Test Protocol	Result	Regulatory Limit as per IS 10500:2012
Pesticides				
Alachlor*	µg/L	АРНА	BDL (DL: 1.0)	20
Atrazine*	μg/L	АРНА	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	АРНА	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	АРНА	BDL (DL: 0.5)	)
Endosulfan (alpha, beta, and sulphate)*	μg/L	АРНА	BDL (DL: 0.1)	0.4
Ethion*	µg/L	АРНА	BDL (DL: 0.5)	3.
Gamma HCH (Lindane)*	µg/L	АРНА	BDL (DL: 0.5)	2
Isoproturon*	µg/L	АРНА	BDL (DL: 0.5)	9

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

### NGINEERING SCHVICES PVT. LTD.

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

	TE	ST REPORT		
Test Report No.	: ELES/RAN/2023/1731	Report Release Date	: 10.09.2023	
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023	1

Discipline : Bi	Discipline : Biological Group : Water		Discipline : Biological		Water	the second secon	ory Limit 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 detected		
Escherichia Coli (E. Coli)	Per 100 mL	IS 15185:2016; RA 2021	Not Detected	Shall hot	be detected		
Discipline :	Chemical	Group :	Water		ory Limit 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 <sup>rd</sup> Edition	BDL (DL: 0.0001)	0.0001	No relaxation		
Polychlorinated Biphenyls (PCB)*	mg/L	APHA 23 <sup>rd</sup> Edition	BDL (DL: 0.0005)	0.0005	No relaxation		

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



\*\*\*\*End of Report\*\*\*\*

Rekha Saxena B. Sc. M. Sc. (Botany) Director ELES Pvt. Ltd.

Page 4 of 4

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### Save Environment, Save Potney



PLOT NO-30, MANSARDVAR ENCLAVE, TUPUDANA HATIA, RANCHI-E34003 (JHARKHAND) GST NO:- 20AAECE97130124

### CINEERENG SERVICES PVT\_LTD.

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

Test Report No.	: ELES/RNC/2023/4009	Report Release Date	: 28.10.2023
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023

CUSTOMER DET.	AILS	SAMPLE DETAILS	the entropy of the state of the
Customer Name	: Minerals & Minerals Limited	Sample Ref. No.	: ELES/RNC/2023/AA/3426
	A CONTRACTOR OF CONTRACTOR	Location	: Near Mine Quarry No-K7
		and a second sec	Pakhar (109.507 ha) Bauxite Mine
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 16.09.2023 to 17.09.2023
		Sample Received Date	: 29.09.2023
		Type of Sample	: Ambient Air
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02
Period of Analysis	: 29.09.2023 to 10.10.2023	Sample Drawn By	: ELES Pyt. Ltd.
recine of runnings		Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFO	RMATION			
t	Average Temperature (°C)	: 24	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%)	: 66	4	Weather Condition	: Partly Cloudy
5	Longitude	: 84°36'43.86"E	6	Latitude	: 23°33'29.12"N

Discipline : Chemica	d.	Group : A	Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part-23): 2006; RA2022	42	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	25	60 (24hrs)	
Sulphur Di-Oxide (SO2)	µg/m <sup>3</sup>	IS 5182 (Part-2): 2001; RA2022	5.1	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m <sup>3</sup>	15 5182 (Part-6): 2006; RA2022	17.6	80 (24hrs)	
Ozone (O3)	µg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH3)	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part-10); 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	µg/m³	IS 5182 (Part-22): 2004; RA2019	0.005	1 (24hrs)	
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m <sup>3</sup>	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:- 20AAECE9713D124

### 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/2023/4009	Report Release Date	: 28.10.2023	
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023	

Discipline : Chemical		Group : Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Benzene (C6H6)*	µg/m <sup>3</sup>	IS 5182 (Part-11)2006;RA2017	<1.0	05(Annual)		
Benzo-(a)-Pyrene*	ng/m <sup>3</sup>	IS 5182 (Part-12)2004;RA2019	<0.5	01(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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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 20AAECE9713D124

### ENGINEERING SERVICES PVT. LTD.

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

TEST REPORT			
Test Report No.	: ELES/RNC/2023/4010	Report Release Date	: 28.10.2023
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/3427 : Near Mine Quarry No-K9 Pakhar (109.507 ha) Bauxite Mine	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 16.09.2023 to 17.09.2023 : 29.09.2023	
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 29.09.2023 to 10.10.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Scaled & Preserved	

M	ETEOROLOGICAL INFOI	RMATION			
1	Average Temperature (°C)	: 24	2	Barometric Pressure (mmHg)	: 734
_	Relative Humidity (%)	: 66	4	Weather Condition	: Partly Cloudy
5	Longitude	: 84°37'7.83"E	6	Latitude	±23°33'30.72"N

Discipline : Chemics	al	Group : /	Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part-23): 2006; RA2022	46	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	19	60 (24hrs)	
Sulphur Di-Oxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	IS 5182 (Part-2): 2001; RA2022	5.2	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m <sup>‡</sup>	IS 5182 (Part-6): 2006; RA2022	18.1	80 (24hrs)	
Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH3)	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	µg/m <sup>3</sup>	IS 5182 (Part-22): 2004; RA2019	0.010	1 (24hrs)	
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (Às)	ng/m <sup>3</sup>	ELES/AIR/SOP/01	<2.0	06 (Annual)	

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### ENGINEERING SERVICES PVT. LTD.

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

	TI	ST REPORT		
Test Report No.	: ELES/RNC/2023/4010	Report Release Date	: 28.10.2023	
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 (C6H6)*	µg/m <sup>3</sup>	IS 5182 (Part-11)2006;RA2017	<1.0	05(Annual)		
Benzo-(a)-Pyrene*	ng/m <sup>3</sup>	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

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

### ENGINEERING SERVICES FVT. LTD.

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Test Report No.	: ELES/RNC/2023/4011	Report Release Date	: 28.10.2023
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.	: ELES/RNC/2023/AA/3428	
		Location	: Near Mine Quarry No-K5 Pakhar (109,507 ha) Bauxite Mine : 16.09.2023 to 17.09.2023	
Address	: Lohardaga, Jharkhand-835302	Sampling Date		
		Sample Received Date	: 29.09.2023	
		Type of Sample	: Ambient Air	
Mines Status : Operational		Sampling Procedure	: ELES/DOC/SMPL/02	
Period of Analysis	: 29.09.2023 to 10.10.2023	Sample Drawn By	: ELES Pvt: Ltd. : Sealed & Preserved	
renou in Anarysis	. 29.09.2023 10 10.10.2023	Sample Condition		

M	ETEOROLOGICAL INFO	RMATION			
1	Average Temperature (°C)	24	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%)	: 66	4	Weather Condition	: Partly Cloudy
5	Longitude	: 84°37'21.94"E	6	Latitude	: 23°33'14.59"N

Discipline : Chemics	al	Group : Atmospheric Pollution				
Parameter Unit		Test Protocol	Result	Regulatory Limit		
Particulate Matter (PMI0)	µg/m <sup>3</sup>	IS 5182 (Part-23): 2006; RA2022	39	100 (24hrs)		
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24); 2019	22	60 (24hrs)		
Sulphur Di-Oxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	IS 5182 (Part-2): 2001; RA2022	<5.0	80 (24hrs)		
Nitrogen Di-Oxide (NO2)	µg/m <sup>3</sup>	IS 5182 (Part-6): 2006; RA2022	19.7	80 (24hrs)		
Ozone (O3)	µg/m <sup>3</sup>	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)		
Ammonia (NH3)	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (Shrs)		
Lead (Pb)	µg/m <sup>3</sup>	IS 5182 (Part-22): 2004; RA2019	0.008	1 (24hrs)		
Nickel (Ni)	ng/m <sup>2</sup>	IS 5182 (Part-26):2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01	<2.0	06 (Annual)		

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

### **VOINEERING SERVICES PVT. LTD.**

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

Test Report No.	: ELES/RNC/2023/4011	Report Release Date	: 28.10.2023	
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 (CsHs)*	µg/m <sup>3</sup>	IS 5182 (Part-11)2006;RA2017	<1.0	05(Annual)		
Benzo-(a)-Pyrene*	ng/m <sup>3</sup>	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 2 of 2

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST ND:- 20A4ECE97130124

### ENGINEERING SERVICES PVT. LTD.

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

	TEST	REPORT			
Test Report No.	: ELES/RNC/2023/4012	Report Release Date	: 28.10.2023		
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 Type of Sample	: ELES/RNC/2023/AA/3429 : Pakhar Loading Area Pakhar (109,507 ha) Bauxite Mine : 16.09.2023 to 17.09,2023 : 29.09.2023 : Ambient Air		
Mines Status	: Operational	Sampling Procedure Sample Drawn By	: ELES/DOC/SMPL/02		
Period of Analysis	: 29.09.2023 to 10.10.2023	Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved		

	Average Temperature (°C)	: 24	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%)	: 66		Weather Condition	: Partly Cloudy
5.	Longitude	: 84°36'53.77"E	6	Latitude	: 23°33'15.01"N

Discipline : Chemics	al	Group: Atmospheric Pollution				
Parameter Unit		Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part-23): 2006; RA2022	63	100 (24hrs)		
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	38	60 (24hrs)		
Sulphur Di-Oxide (SO2)	µg/m <sup>1</sup>	IS 5182 (Part-2): 2001; RA2022	11.6	80 (24hrs)		
Nitrogen Di-Oxide (NO2)	µg/m <sup>1</sup>	IS 5182 (Part-6): 2006; RA2022	21.3	80 (24hrs)		
Ozone (O <sub>3</sub> )	µg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)		
Ammonia (NH3)	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)		
Lead (Pb)	µg/m²	IS 5182 (Part-22): 2004; RA2019	0.012	1 (24hrs)		
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part-26):2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01	<2.0	06 (Annual)		

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

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TEST REPORT					
: ELES/RNC/2023/4012	Report Release Date	: 28.10.2023			
: M&M/23-24/01	Work Order Date	: 31.03.2023			
	: ELES/RNC/2023/4012	: ELES/RNC/2023/4012 Report Release Date	: ELES/RNC/2023/4012 Report Release Date : 28.10.2023		

Discipline : Chemical		Chemical Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (C6H6)*	µg/m <sup>3</sup>	IS 5182 (Part-11)2006;RA2017	<1.0	05(Annual)
Benzo-(a)-Pyrene*	ng/m <sup>3</sup>	IS 5182 (Part-12)2004:RA2019	<0.5	01(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. Ud. Technical Manager

#### Page 2 of 2

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PLOT NC-30, MANSAROVAR ENCLAVE, TUPUDANA MATIA, RANCHI-834003 (JHARKHAND) GST NO-- 20AKECE97180124

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

HAC SERVICES FILL L

Website : www.elespl.co.in

	TEST	REPORT	
Test Report No.	: ELES/RNC/2023/4013	Report Release Date	: 28.10.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
CUSTOMER DET/	AILS	SAMPLE DETAILS	
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302 : Operational	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure	: ELES/RNC/2023/AA/3430 : Near Bunglapart Village Pakhar Bauxite Mine : 14.09.2023 to 15.09.2023 : 29.09.2023 : Ambient Air : ELES/DOC/SMPL/02
Mines Status		Sample Drawn By	: ELES Pvi, Ltd.
Period of Analysis	: 29,09,2023 to 10.10.2023	Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION		1	
1 Average Temperature (°C) : 25	2	Barometric Pressure (mm	(Hg) : 734
3 Relative Hamidity (%) : 66	4	Weather Condition	: Partly Cloudy

Discipline : Chemical Group :			tmospheric l	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part-23): 2006; RA2022	39	100 (24hrs)
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	17	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m <sup>3</sup>	IS 5182 (Part-2); 2001; RA2022	<5.0	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m <sup>3</sup>	IS 5182 (Part-6): 2006; RA2022	15.1	80 (24hrs)
Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH <sub>2</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10,0	400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m <sup>3</sup>	IS 5182 (Part-22): 2004; RA2019	<0.002	1 (24hrs)
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01	<2.0	06 (Annual)

#### Page 1 of 2

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### ENVIRONMENTAL LABORATORIES STREES PUT. LTD.

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

Email: Infa@elespl.co.in , eles.ranchi@gmail.com Phone no.: 0551-2290103 Website : www.elespl.co.in

	TE	ST REPORT		
Test Report No.	: ELES/RNC/2023/4013	Report Release Date	: 28.10.2023	_
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

Discipline : Chemical Group : Atmospheric Pol			Pollution	
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (C6H6)*	µg/m <sup>3</sup>	IS 5182 (Part-11)2006;RA2017	<1.0	05(Annual)
Benzo-(a)-Pyrene*	ng/m <sup>3</sup>	IS 5182 (Part-12)2004;RA2019	<0.5	01(Annual)

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

Reviewed by

\*\*\*\*End of Report\*\*\*\*

Authorised Signatory Or. Deependra Kumar Sinha Ph D Environmental Engg. ELES P.A. Ltd. Technical Manager

#### Page 2 of 2

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATLA, RANCHI-834003 (JNARKHAND) GST ND- 20AASCEST18D114

Email: info@elesul.co.in, eles.ranch/@nmall.com Phone no.: 0651-2290103 Website , www.elesol.co.in

NOTIONAL PROPERTY.

	TEST	REPORT	
Test Report No.	: ELES/RNC/2023/4014	Report Release Date	: 28.10.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
CUSTOMER DETA	alls	SAMPLE DETAILS	
Customer Name Address Mines Status	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302 : Operational	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure Sample Drawn By	: ELES/RNC/2023/AA/3431 : Yatri Shed (Near K-10) Pakhar Bauxite Mine : 14.09.2023 to 15.09.2023 : 29.09.2023 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 29.09.2023 to 10.10.2023	Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION	3	Barometric Pressure (mmHg) :	774
<ol> <li>Average Temperature (°C) : 25</li> </ol>	-	Barometric Pressure (mining)	/34
3 Relative Humidity (%) : 66	4	Weather Condition :1	Partly Cloudy

Discipline : Chemical Group :			tmospheric l	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part-23): 2006; RA2022	43	100 (24hrs)
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	1S 5182 (Part- 24): 2019	19	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m <sup>3</sup>	IS 5182 (Part-2): 2001; RA2022	5.2	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m <sup>3</sup>	IS 5182 (Part-6): 2006; RA2022	17.5	80 (24hrs)
Ozone (O <sub>3</sub> )	µg/m²	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	µg/m <sup>2</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m <sup>3</sup>	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 <sup>2</sup>	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:- 20448059713D124

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

10-012	 <b>T T T</b>	D.C.	10.7
TES	 14 P		1 <b>X</b> 1

Test Report No.	: ELES/RNC/2023/4014	Report Release Date	: 28.10.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

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

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

Reviewed by

\*\*\*\*End of Report\*\*\*\*

Authorised Signatory Dr. Deependra Kumar Sinha Ph. 0. Environmental Engg ELES P.4. Ltd. Technical Manager

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA NATIA, RANCHI-834003 (JHARKHAND) GST NO:- 20AAECE97110124

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

ALTOTAL ST. LTD.

	TEST	REPORT	
Test Report No.	: ELES/RNC/2023/4015	Report Release Date	: 28.10.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
CUSTOMER DET/	AILS	SAMPLE DETAILS	
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample	: ELES/RNC/2023/AA/3432 : Near Utkarmit Rajkiya Prathmik Vidyalaya Bunglapart Village Pakhar Bauxite Mine : 15.09.2023 to 16.09.2023 : 29.09.2023 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Operational	Sampling Procedure Sample Drawn By	ELES Pvt. Ltd.
Period of Analysis	: 29.09.2023 to 10.10.2023	Sample Condition	: Sealed & Preserved

M	ETEOROLOGICAL INFORMATION			
	Average Temperature (°C) : 24	2	Barometric Pressure (mmH	g) : 738
_	Relative Humidity (%) : 68	4	Weather Condition	; Cloudy

Discipline : Chemica	il	Group : Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part-23): 2006; RA2022	35	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	16	60 (24hrs)	
Sulphur Di-Oxide (SO2)	µg/m <sup>3</sup>	IS 5182 (Part-2): 2001; RA2022	<5.0	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m <sup>3</sup>	15 5182 (Part-6): 2006; RA2022	15.9	80 (24hrs)	
Ozone (O3)	µg/m <sup>2</sup>	1S 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH3)	µg/m <sup>7</sup>	1S 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	µg/m <sup>2</sup>	1S 5182 (Part-22): 2004; RA2019	<0.002	1 (24hrs)	
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOF/01	<2.0	06 (Annual)	

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PLOT NO 30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) 65T NO:- 20AAECE97130124 Email: <u>info@elespl.co.in</u> , eles.ranchi@gmail.com

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

Test Report No.	: ELES/RNC/2023/4015	Report Release Date	: 28.10.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

Discipline : Chemical		Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (C6H6)*	µg/m <sup>3</sup>	IS 5182 (Part-11)2006;RA2017	<1.0	05(Annual)
Benzo-(a)-Pyrene*	ng/m <sup>3</sup>	IS 5182 (Part-12)2004;RA2019	<0.5	01(Annual)

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

Reviewed by

\*\*\*\*End of Report\*\*\*\*

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

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PLOT NO-30, MANSAROVAR ENCLAVE, TUFUDAJU HATIA, RANCHI-834003 (JHARKHAND) GST NO- 70AA80297330124

### NGINEENING SEM WLEE PHT. 2021 Email: Injo@elesol.co.in , eles.ranchi@gmail.com

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

	TEST	REPORT	
Test Report No.	: ELES/RNC/2023/4016	Report Release Date	: 28.10.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
CUSTOMER DET/	AILS	SAMPLE DETAILS	
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample	: ELES/RNC/2023/AA/3433 : Near Utkarnit Rajkiya Prathinik Vidyalaya Dumrapart Village Pakhar Bauxite Mine : 15.09.2023 to 16.09.2023 : 29.09.2023 : Ambient Air
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02
Period of Analysis	: 29.09.2023 to 10.10.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

M	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 24	2	Barometric Pressure (mm	Hg) : 738
3	Relative Humidity (%) : 68	4	Weather Condition	: Cloudy

Discipline : Chemica	il	Group : Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part-23): 2006; RA2022	41	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	1S 5182 (Part- 24): 2019	17	60 (24hrs)	
Sulphur Di-Oxide (SO2)	µg/m <sup>3</sup>	IS 5182 (Part-2): 2001; RA2022	<5.0	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m <sup>3</sup>	IŞ 5182 (Part-6): 2006; RA2022	7.3	80 (24hrs)	
Ozone (O <sub>2</sub> )	µg/m <sup>3</sup>	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH3)	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m <sup>3</sup>	1S 5182 (Part-10): 1999; RA2019	<1.0	2 (Shrs)	
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 <sup>2</sup>	ELES/AIR/SOP/01	<2.0	06 (Annual)	

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (IHARKHAND) GST NO:- 258A6ECE9713D124 MOINEENINO SCHPICIT PTT, LEV. Email: Info@elespl.ca.in , eles.ranchi@amail.cam

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

TEST R	D)	1.0	10	

Test Report No.	: ELES/RNC/2023/4016	Report Release Date	: 28,10,2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

Discipline : Chemi	cal	Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (C <sub>6</sub> H <sub>6</sub> )*	µg/m <sup>3</sup>	1S 5182 (Part-11)2006;RA2017	<1.0	05(Annual)
Benzo-(a)-Pyrene*	ng/m <sup>3</sup>	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 Deependra Kumar Sinha Ph. D. Environmental Engg. ELES Pvr. Ltd. Technical Manager

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

### ENGINEERING SERVICES PVT. LTD.

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

	T	EST REPORT		
Test Report No.	: ELES/RNC/2023/4146	Report Release Date	: 31.10.2023	
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 Sample Drawn By	: 16.09.2023 to 17.09.2023 : 30.09.2023 : Ambient Noise : ELES/DOC/SMPL/03 : ELES Pvt. Ltd.
Mines Status	: Operational	Period of Analysis	: 30.09.2023 to 10.10.2023

M	ETEOROLOGICAL INFO	RMATION			
1	Average Temperature (°C)	: 24	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%)	: 66	4	Weather Condition	: Partly Cloudy

Location	Unit	Test Protocol	Rest	ilt	Regulatory Limit (Industrial Zone)
		-	Time	Leq	-
Near Mine Quarry No-K7 Pakhar Bauxite Mine (109,507 ha)	dB(A)	IS 9989:1981, RA 2020	Day Time	59	75 dB(A) Day Time &
Sample ID: ELES/RNC/2023/AN/3538			Night Time	47	70 dB(A) Night Time

144 1 23 Reviewed by

\*\*\*\*End of Report\*\*\*\*

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

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#### terre Bartistanount, Serie Calater



PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (IHARKHAND) 65T NO:- 20AAECE9713D124

### ENGINEERING SERVICES PVT. LTD

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

	<u>11</u>	EST REPORT		
Test Report No.	: ELES/RNC/2023/4167	Report Release Date	: 31.10.2023	
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023	

CUSTOMER DET	TAILS	SAMPLE DETAILS	
Customer Name Address	: Minerals & Minerals Limited : Lohardaga, Jharkhand-835302	Sampling Date Sampling Received Date Type of Sample Sampling procedure Sample Drawn By	: 16.09.2023 : 30.09.2023 : Workzone Noise : ELES/DOC/SMPL/03 : ELES Pvt. Ltd.
Mines Status	: Operational	Period of Analysis	: 30.09.2023 to 11.10.2023

# METEOROLOGICAL INFORMATION 1 Average Temperature (°C) : 26 2 Barometric Pressure (mmHg) : 738 3 Relative Humidity (%) : 65 4 Weather Condition : Partly Cloudy

Location	Unit	Test Protocol	Rest	ult	Regulatory Limit (Industrial Zone)
Loading Point Near Dumper -			Time	Leq	
Pakhar Bauxite Mines (109.507 ha.)	dB(A) IS 4758:1968; RA 2017	Durth		90 dB (A)	
Sample ID: ELES/RNC/2023/WN/3559		101 2017	Day Time	76	

Reviewed by

\*\*\*\*End of Report\*\*\*\*

Authorised Signatory Ir. Deependra Kumar Sinha Ph. D. Environmental Engo. 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

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### TEST REPORT

Test Report No.	: ELES/RNC/2023/4110	Report Release Date	: 31.10.2023
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023
CUSTOMER DET	TAILS	SAMPLE DETAILS	
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Sampling Date Sample Received Date	: ELES/RNC/2023/SW/3502 : 16.09.2023 : 29.09.2023

		Type of Sample	: Surface Water
Address	: Lohardaga, Jharkhand-835302	Source of Sample	: Spring Water
		Location of Sample	: Pakhar Bauxite Mine (109.507 ha)
		Sampling Procedure	: ELES/DOC/SMPL/01
Mines Status	: Operational	Sample Collected By	: ELES Pvt. Ltd.
Period of Analysis	: 29.09.2023 to 17.10.2023	Sample Condition	: Sealed & Preserved

Discipline : Chemic	cal	Group	: Water	Tolerance Limits
Parameter	Unit	Test Protocol	Result	as per IS 2296-1992 Class C (Inland Surface Water)
pH (at 24.7 °C)		IS 3025 (Part 11) : 2022	6.63	6.5-8.5
Colour	Hazen	1S 3025 (Part -4) : 2021	5.0	300
Odour	- ÷.	IS 3025 (Part-5) : 2018	Unobjectionable	14
Taste	- ÷ -	APHA 23rd Ed.2017, 2160 C	N/A	*
Turbidity	mg/L	IS 3025 (Part-10) :1984;RA2017	0.82	
Total Dissolved Solids (TDS)	mg/L	IS 3025 (Part 16):1984; RA2017	198	1500
Total Alkalinity (as CaCO3)	mg/L	IS 3025 (Part-23) :1986; RA2019	75.4	
Total Hardness (as CaCO3)	mg/L	1S 3025 (Part-21) : 2009; RA2019	106.7	
Sulphate (as SO4)	mg/L	1S 3025 (Part 24) : 1986; RA2019	4.0	400
Nitrate (as NO <sub>3</sub> )	mg/L	APHA 23rd Ed.2017, 4500 NO1-B	1.64	50
Chloride (as Cl)	mg/L	IS 3025 (Part-32) :1988; RA2019	11.4	600
Fluoride (as F)	mg/L	IS 3025 (Part-60) :2008; RA2019	0.148	1,5
Cyanide (as CN)	mg/L	APHA 23 <sup>rd</sup> Ed.2017, 4500 CN-E	BDL (DL: 0.012)	0.05
Phenols Compounds (as C4H4OH)	mg/L	IS 3025 (Part-43): 1992;RA2019	BDL (DL: 0.0005)	0.005

#### Page 1 of 3

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

### NOINEERING SERVICES PVT. LTD.

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TEST REPORT					
Test Report No.	: ELES/RNC/2023/4110	Report Release Date	: 31.10.2023		
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023		

Discipline: C	hemical	Group: Wate	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	28,4	and the second	
Free Residual Chlorine (RFC)	mg/L	IS 3025 (Part-26) :2021	BDL (DL: 0.1)	4	
Discipline: Ch	iemical	Group: Residue	the second se		
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	(S 3025 (Part-57) :2021	BDL (DL: 0.2)	+	
Cadmium (as Cd)	mg/L	APHA23 <sup>rd</sup> Ed.2017; 3111B	BDL (DL: 0.003)	0.01	
Total Chromium (as Cr)	mg/L	APHA 23 <sup>nd</sup> Ed.2017; 3111B	BDL (DL: 0.03)	~	
Copper (as Cu)	mg/L	APHA 23 <sup>rd</sup> Ed.2017; 3111B	BDL (DL: 0.03)	1.5	
Iron (as Fe)	mg/L	APHA 23rd Ed.2017; 3111B	0.306	50	
Lead (as Pb)	mg/L	APHA 23 <sup>rd</sup> Ed.2017, 3111 B	BDL (DL: 0.01)	0.1	
Manganese (as Mn)	mg/L	APHA 23 <sup>rd</sup> 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 <sup>nd</sup> Ed.2017, 3111 B	BDL (DL: 0.1)	15	
Discipline: Bi	ological	Group: Wat	er	-	
Total Coliform	CFU/100 mL	IS 15185: 2016, RA2021	3.45×10 <sup>2</sup>	5000	
Escherichia Coli	CFU/100 mL	IS 15185:2016; RA2021	36		

Remarks: 1. pH & RFC done at Lab.

#### Page 2 of 3

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

Discipline: Che	mical	Group: Water		
Parameter	Unit	Test Protocol	Result	
Anionic Surfactants (as MBAS)*	mg/L	1S 3025 Part 68	<0.1	
Mineral Oil*	mg/L	CL-6, 1S: 3025 (P-39)	<0.1	
Polynuclear Aromatic Hydrocarbons (PAH)*	mg/L	APHA 23 <sup>rd</sup> Edition	<0.0001	
Pesticides				
Alachlor*	µg/L	APHA	<1.0	
Atrazine*	µg/L	APHA	<1.0	
Aldrin/Dieldrin*	µg/L	APHA	<0.01	
Alpha HCH*	µg/L	APHA	<0.001	
Beta HCH*	µg/L	АРНА	<0.01	
Butachlor*	µg/L	APHA	<10	
Chlorpyriphos*	µg/L	APHA	<10	
Delta HCH*	μg/L	APHA	<0.01	
2,4 dichlorophenoxyacetic acid*	µg/L	АРНА	<10	
DDT(o,p and p,p-isomers of DDT,DDE and DDD)*	µg/L	АРНА	<0.5	
Endosulfan (alpha, beta, and sulphate)*	µg/L	АРНА	<0.1	
Ethion*	µg/L	APHA	<0.5	
Gamma HCH (Lindane)*	µg/L	АРНА	<0.5	
Isoproturon*	µg/L	АРНА	<0.5	

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

10 Reviewed by

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

### Page 3 of 3

\*\*\*\*End of Report\*\*\*\*

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# **MINERALS & MINERALS LIMITED**

Regd. Office- Court Road, P.O. & Distt.-Lohardaga, Jharkhand-835302 Tel.-06526-223163 CIN NO. U26990JH1970PLC000875

Date .....

Annexure 3

Date:- 28.10.2023

### **Office Order**

Environmental Cell has been re-constituted at Pakhar Bauxite Mine (Area 109.507 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 Limited.

- 1. Mr. Kiran Shankar Singh (Coordinator)
- 2. Mr. Tapas Kumar Gachhayat (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)

Ref. :

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	0	0	0.00	0.00
2	Bhusar Bauxite Mine	65.31	280000	11.07.1981 to 31.03.2030	148918	0.92	0.45	163157.26
3	Hisri (New) Bauxite Mine	14.55	100000	19.07.1981 to 31.03.2030	56738	0.4	0.49	27329.28
4	Kujam - I Bauxite Mine	80.87	150000	13.03.2006 to 12.03.2056	102270	2.1	1.61	157784.02
5	Kujam - II Bauxite Mine	157.38	300000	24.03.2006 to 23.03.2056	61110	3.02	1.21	134785.10
6	Amtipani Bauxite Mine	190.95	150000	13.03.2006 to 12.03.2056	100700	2.91	1.00	125875.50
7	Gurdari Bauxite Mine	584.19	325000	23.03.1985 to 22.03.2035	78106	3.07	2.38	242675.00
8	Shrengdag A Bauxite Mine	155.81	260000	16.10.1974 to 31.03.2030	14860	0.39	0.35	14280
9	Shrengdag B Bauxite Mine	140.07	100000	04.10.1978 to 31.03.2030	43320	1.12	1.15	77170
10	Jalim & Sanai Bauxite 'Mine	12.14	50000	16.10.1974 to 31.03.2030	26725	0.21	0.2	8750
11	Orsapat Bauxite Mine	196.36	200000	17.07.1986 to 16.07.2036	NIL	NIL	NIL	NIL
12	Chiro Kukud bauxite Mine	152.57	100000	29.01.1985 to 28.01.2035	NIL	NIL	NIL	NIL
13	Pakhar (8.09)	8.09	80000	16.05.1973 to 31.03.2030	NIL	NIL	NIL	NIL
14	Pakhar (35.12)	35.12	200000	17.04.1975 to 31.03.2030	NIL	NIL	NIL	NIL

### Annexure 4

15	Pakhar (115.13)			19.07.1996 to				
		115.13	300000	31.03.2030	147508.00	2.29	0.4	532571.87
				Miner	als & Minerals Li	mited		
16	Pakhar (15.58)	15.58	60000	28.04.1965 to 31.03.2030	80.00	0.00	0.00	0.00
17	Pakhar (109.507)	109.507	280000	26.07.2008 to 25.07.2058	97720.00	1.93	0.71	237280.85
18	Bimarla Bauxite Mine	134.37	300000	18.07.2009 to 17.07.2059	39550	2.21	0.8	64913.65
19	Amtipani Chirodih Bauxite Mines	130.01	450000	11.01.2017 to 10.01.2067	84678	3.96	1.15	98519.66

\*Static information about the mines included in the above table



Basudev Gangopadhyay AVP (Planning, Environment and Compliance)

### Annexure-5

#### **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 Pakhar (115,13 ha), Pakhar (15.58 ha), Pakhar (109.507 ha), Pakhar (8.09 ha), Pakhar (35.12 ha), Serengdag (140.06 ha), Serengdag (155.81 ha), Jalim & Sanai (12.14 ha), Gurdari (584.19 ha), Amtipani (190.95 ha), Kujam I (80.97 ha) Kujam II (157.38 ha), Bagru (75.41 ha), Hisri New (14.55 ha), Chiro kukud (152.57 ha), Orsa pat (196.36 ha), Bhusar (65.31 ha), Bimarla Bauxite Mines (134.52 ha) and Amtipani Chirodih (130.01 ha) Bauxite Mine.

S No	Description	Budget (in Rupees) FY 2023-24	Actual (in Rupees) FY 2023-24 (From April'23 to September'23)
1	Pollution Control & Environment monitoring	1,57,41,102.00	82,15,825.36
2	Reclamation/ Back filing & Rehabilitation**	1,36,62,095.00	6,66,42,814.70
3	Green belt, Plantation & Water sprinkling arrangement	67,45,898.00	19,34,590.20
4	Rural Development	6,19,33,534.00	1,83,73,453.27

\*\*Part of OB removed cost.

Basudev Gangopadhyay AVP (Planning, Environment & Compliance)