MINERALS & MINERALS LIMITED

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

Ref. :

Date

M&M/LHD/ENV/MoEF&CC/064

Date: 16th May 2025

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: Six Monthly EC Compliance Report for Pakhar (15.58 Ha) Bauxite Mining Project of M/s Minerals & Minerals Limited, Lohardaga Jharkhand for the period from October 2024 to March 2025.

Ref: Environmental Clearance Letter No. J-11015/123/2009-IA.II (M) dated 24th January 2007.

Dear Sir,

With reference to the above, we are submitting herewith the Compliance status report of EC conditions for **Pakhar (15.58 ha) Bauxite Mining Project of M/s Minerals & Minerals Limited**, Lohardaga Jharkhand for the period from **October 2024 to March 2025** for your kind perusal please.

The lease details are below:

Lease area (ha)	Production Capacity (MT)	Lease Period
15.58	60000	28.04.1965 to 31.03.2030

Hope you will find the same in order.

Thanking You

Yours faithfully, For **Minerals & Minerals Limited**

Basuaev 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 (15.58 ha) M/s Minerals & Minerals Limited
Environment Clearance No. & date	:	J-11015/123/2006-IA.II(M), dated 24.01.2007
Period of compliance Report	:	From 1 st October 2024 to 31 st March 2025

Specific Conditions: -

Condition i: - All the conditions stipulated by SPCB in their NOC shall be effectively implemented.

Reply: - Implementations of the stipulated conditions in NOC are fulfilled post which consent to operate has been obtained from time to time. Existing consent to operate is valid up to 31.03.2026. 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 non-agricultural use.

Reply: - Land acquisition is being done with the 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) after 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 the State Government.

Condition iii: -Mining shall not intersect groundwater. The mine working shall be restricted to ground water table. Prior approval of the Ministry of Environment & Forests and Central Ground Water Authority shall be obtained for mining below water table.

Reply: - The mining operation is confined within shallow depth and not intersected ground water. In future also, working zones will be restricted to above ground water table. 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 shall be obstructed due to any 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: - Topsoil shall be stacked properly with proper slope with adequate measures and should be used for reclamation and rehabilitation of mined out areas.

Reply: - Topsoil is being stacked properly with proper slope as and when required for its use for reclamation and rehabilitation. Sequential backfilling and reclamation of the mined-out area are being exercised during mining operation. The mining is being carried out as per the approved mining plan. Monitoring and management of rehabilitated areas is being done through effective supervision.



Reclamation of mined our area

Condition vi: - The waste generated shall be concurrently backfilled in the mined-out area. There shall be no external OB dump. Monitoring and management of rehabilitated areas should continue until the vegetation becomes self-sustaining. Compliance status should be submitted to the Ministry of Environment & Forest on six monthly basis.

Reply: - Overburden and waste rock from the mining pit are being used for concurrent backfilling. A very small quantity of OB is left out, which will be used for concurrent backfilling and reclamation with the progress of mining activity in due course of time. Thus, there will not be any external dump at the end of mine life.

Data pertaining to backfilling is enclosed as Annexure 4.

Condition vii: - Catch drains and siltation ponds of appropriate size should be constructed to arrest silt and sediment flows from mine working. 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 (size, gradient and length) shall be constructed for mine pit 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: - 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 Drain

Condition viii: - Plantation shall be raised in an area of 6.98 ha including a green belt of adequate width by planting the native species around the ML area, roads, reclaimed area etc. in consultation with the local DFO / Agriculture Department. The density of the trees should be around 1500 plants per ha.

Reply: - Plantation is being carried out around ML area with progress of mining. During FY 2024-25, a total of 1010 nos. of saplings have been planted within the mining lease. Cumulative 6.81 ha area have been planted till date. In addition to this agricultural activity is going on reclaimed land.



Plantation at Mines

Condition ix: - The project proponent shall ensure that there shall be no discharge from the mine.

Reply: - Ensured. There is no discharge from the mine.

Condition x: - The Project proponent shall carry out regular monitoring of spring discharge and its quality near Pakhar village on long term basis.

Reply: - Water Quality near Pakhar village is being monitored. Analysis report is attached as <u>Annexure 2</u>.

Condition xi: - 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: - A detailed rainwater harvesting plan to augment ground water has been prepared and suitable measures like water harvesting pond etc. are created for augmentation of ground water in our adjacent mine of Pakhar Plateau, in consultation with Central Ground Water Board



Rainwater Harvesting Pond

Condition xii: - 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 monitoring should be carried out four times in a year – pre-monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January) and the data thus collected may be sent regularly to MOEF, Central Ground water Authority and Regional Director Central Ground Water Board.

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



Piezometer

Condition xiii: - Prior permission from the competent authority should be obtained for drawl of water from the surface water bodies.

Reply: - We are not using any water from natural streams/ ground water for mining operation. Rainwater harvesting ponds with proper fencing have been already constructed water in our adjacent mine of Pakhar Plateau. Rainwater harvested during rainy season is being used for sprinkling on haul roads and raising plantation.

However, we have already obtained NOC for extraction of ground water from CGWA/ CGWB for drinking purpose only. The copy of same NOC is attached below.

মানে বহুকা অৱ কৰিয়ে নিয়ন্য কৰি দুৰ্দিয় কৰ মাৰ্থিকবল কৈছিল মূদি কৰ মাৰ্থিকবল GOVERMMENT OF INDIA MINISTRY OF JALS SHAKTI BEPARTIMENT OF WATER RESOURCES, RIVER DEVELOPMENT & GANGA REJUVENAN CENTRAL GROUND WATER AUTHORITY	rion सल	Ayn Ayn E O E D	
NO OBJECTION CERTI	ूजल निकासी ह FICATE (NO	हेतु अनापत्ति प्रमाण पत्र C) FOR GROUND WATER ABS	TRACTION
PROJECT NAME PAKHAR BAUXITE	MINING PR	ROJECT (15.58 HA)	
PROJECT ADDRESS PAKHAR BAU TEHSIL - KISKO	XITE MINING	G PROJECT VILL - PAKHAR,	PIN CODE 835302
STATE JHARKHAND	DISTRICT	LOHARDAGA	TOWN/BLOCK KISKO
COMMUNICATION ADDRESS COUL	RT ROAD		
ADDRESS OF CGWB REGIONAL OFF Road, Dak Banglow, Patna- 800011, I		7th Floor, Lok Nayak Jai Praka	ash Bhawan, Frazer
1. NOC NO. NOC/MIN/JH/2024/49/R-2/2		2. DATE OF ISSUANCE	13/02/2025
3. APPLICATION NO. MIN/JH/2024/49/R-2		4. APPLICATION TYPE Mining	
5. PROJECT STATUS Existing Proj	ect	6 NOC TYPE Renew	
7. VALID FROM 16/02/2025	3	8. VALID UP TO 15/02/2	2027
9. WATER QUALITY TYPE Fresh W	9. WATER QUALITY TYPE Fresh Water		RY Safe (GWRE-

Condition xiv: - Vehicular emissions should be kept under control and regularly monitored. Measures shall be taken for maintenance of vehicles used in mining operations and transportation of mineral. The vehicles should be covered with a tarpaulin and shall not be overloaded.

Reply: - To keep vehicular emissions under control, vehicles are periodically checked & repaired. All measures are being taken to control vehicular emission. All vehicles are covered with tarpaulins, and non-overloading guidelines are being followed during transportation of mineral.



Tarpaulin covered vehicles

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

Reply: - Wet drilling is in practice.



Condition xvi: - Blasting operation should be carried out only during the daytime. Controlled blasting should 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. We have control blasting permission. Controlled blasting method is in practice. Ground vibration study has been conducted periodically. Efforts and mitigative measures are being taken to mitigate the impact of the blast.

Condition xvii: - Consent to operate should be obtained from SPCB prior to start of enhanced production from the mine.

Reply: - We have already obtained the Consent to Operate for Bauxite Ore as per production capacity mentioned in EC.

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

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

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

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

Condition xix: - The project proponent should take all precautionary measures during mining operation for conservation and protection of endangered fauna such as Indian Python etc. Spotted in the study area. Action plan for conservation of flora and fauna shall be prepared and implemented in consultation with the State Forest and Wildlife Department. 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. Copy of action plan may be submitted to the Ministry and its Regional Office within 3 months.

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

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

We have also prepared Integrated Site-specific Wildlife Conservation in consultation with State Forest Department and obtained approval letter from Principal Chief Conservator of Forest, Wildlife & Chief Wildlife Warden, Jharkhand via Office Order No.27 dated 26.05.2023 for conservation and protection of flora and fauna in the core and buffer zone for Pakhar Group of Mines.



Condition xx: - 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: - The Final Mine Closure Plan (FMCP) has been approved by the Indian Bureau of Mines and subsequently submitted to the regional office of the Ministry of Environment, Forest and Climate Change (MoEF&CC).

General Conditions: -

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

Reply: - Noted.

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

Reply: - Calendar plan including excavation, quantum of mineral bauxite and waste is being done as per IBM approved mining scheme and in scientific manner. Data pertaining to excavation, quantum of mineral bauxite etc. are mentioned in the report attached as <u>Annexure 4</u>.

Condition iii: - Four ambient air quality-monitoring station should be established in the core zone as well as in the buffer zone for RPM, SPM, SO_2 , NO_X 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. Monitoring Report is attached as <u>Annexure 2</u>.

Condition iv: - Data on ambient air quality (RPM, SPM, SO₂, NO_x) 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: - Being adhered to. Monitoring Reports for the reporting period are attached as <u>Annexure-</u> <u>2.</u> Now, the Regional office of MoEF&CC is in Ranchi.

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: - Mobile water tanker with sprinkling facility has been provided along haul roads, at loading and unloading areas, and at transfer points to control dust emissions.



Water Tanker

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

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 19th May, 1993 and 31st December, 1993 or as amended from time to time. Oil and grease trap should be installed before discharge of workshop effluents.

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

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

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

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

Condition x: - The project authorities should inform to the Regional Office located at Bhubaneshwar 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: - The Final Mine Closure Plan (FMCP), along with the Financial Assurance, has been approved by the Indian Bureau of Mines and subsequently submitted to the Regional Office of the Ministry of Environment, Forest and Climate Change (MoEF&CC). The financial closure is planned for 31st March 2028. Now, the Regional office of MoEF&CC is in Ranchi.

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

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

Condition xii: - The 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: - Noted and Agreed. Now, the Regional Office of MoEF&CC is in Ranchi.

Condition xiii: - A copy of clearance letter will be marked to concerned Panchayat / local NGO, if any, from whom suggestion / representation has been received while processing the proposal.

Reply: - Complied. A copy of clearance letter has already been submitted.

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

Condition xv: - 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 Bhubneshwar.

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

Annexure-1

<u>Piezometer Monitoring Report</u>

Mine: Pakhar Bauxite Mine (15.58 Ha)

S No	Month	Ground Water Level (BGL) in meter
1	Oct-24	37.44
2	Nov-24	37.78
3	Dec-24	37.82
4	Jan-25	37.87
5	Feb-25	37.94
6	Mar-25	38.00

ENVIRONMENTAL LABORATORIES & ENGINEERING SERVICES PVT. LTD.

Plot No.30, Mansarovar Enclave, Tupudana, Hatia, Ranchi-834003, Jharkhand

Pakhar (15.58) Bauxite Mine-Environmental Monitoring Report

October 2024



CONTENT

-	Minerals & Minerals : Pakhar (15,58) Environmental Monitoring Report	October 2024
	Pakhar (15.58)	
	AMBIENT AIR QUALITY- CORE ZONE	
1	Near Mine Office	
2	Near Weigh Bridge	the second second
3	Near Mine Quarry No-M1	
4	Near Mine Quarry No-M4	
	AMBIENT AIR QUALITY- BUFFER ZONE	
1	Near Bunglapart Village	
2	Yatri Shed (Near K-10)	
3	Near Utkarmit Rajkiya Prathmik Vidyalaya Bunglapart Village	
4	Near Utkarmit Rajkiya Prathmik Vidyalaya Dumrapart Village	





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

NGINEERING SERVICES PVT, LTD.

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



Test Report No.	: ELES/RNC/2024/6309	Report Release Date	: 26.10.2024
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024
ULR No.	: TC135872400004192F		
CUSTOMER DET	AILS	SAMPLE DETAILS	
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 Sampling Done By	: ELES/RNC/2024/AA/7359 : Near Mine Office Pakhar (15.58 ha) Bauxite Mine : 17,10.2024 to 18.10.2024 : 21.10.2024 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 21.10.2024 to 26.10.2024	Sample Condition	: Sealed & Preserved

1	Average Temperature (°C)	:28	2	Barometric Pressure (mmHg)	: 742
-	Relative Humidity (%)	:61	4	Weather Condition	: Clear

Discipline : Chemic	al	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part- 23): 2022	67	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	31	60 (24hrs)	
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part- 2/Sec1): 2023	8.5	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	µg/m ³	IS 5182 (Part- 6): 2022	18.1	80 (24hrs)	
Ozone (O ₁)	µg/m ⁸	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH ₂)	ug/m ¹	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m ³	1S 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	μgim	IS 5182 (Part- 22): 2019	0.009	1 (24hrs)	
Nickel (Ni)	ng/m ³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m*	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	
Benzene (CsHe)	µg/m ³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m ³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

synch-Reviewed by Akash Kumar Quality Manager

**** End of Report****

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

Page 1 of 1

Technical Manager

The Document stand as Tost Report, is tonied by the Liberaropy onder Green's Terms and Conditions, only on Company letter hand in pre-opproved format. The results shown in the Test Report The Dociment statistics Tax Report, is toward by the Laboratory online General Terms and Conditions, only on Company letter head in pre-approval farmat. The results choice in the Test Report refer at values only in the jubications in the Laboratory andly. The information stated on the Test Report reflects the failings done by the Laboratory at the innu of involvement only and within the limits of client's institution. The Laboratory is responsible for all the information stated on the report, except the information which is previded by the related on the report of failings done by the Laboratory at the innu of involvement only and within the limits of client's institution. The Laboratory is responsible for all the information or data provided on the report, except the information which is previded by the relation of the inport is not using out of operation or data provided on the report, strengt in full and any part of the import is not using out of content, without previous approximation approximation of fail by a previous data provide on the Laboratory. Attention is drawn to the familiest competitional advective, and for any legisle actives entires prior previous has been accessed from the Nanogement of the Laboratory. Attention is drawn to the failed we will be address and prediction maters. Any suscentioned attention & faileform of the content is approximate of the Test Report is antiport in the failed and strengt by the Glaver to the failed and approximate of School and the failed and the failed attention of the laboratory and prediction maters. Any suscentioned attention & faileform of the content is approximate of the Test Report is and to failed any type of Observations in Completion suggesting testimed for Midney from the Date of Test Report reference instead. After the two period and before, to completion will be assigned. The active Tree schedule maniform is a faile of the failed of the tagent the two of the test of Test Report reference to the period and before, to completion will be assigned. The a



PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (IHARKHAND) GST NO- IDAAECE9713D124

ENGINEERING SERVICES PVT. LTD.

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



	TES	T REPORT	
Test Report No.	: ELES/RNC/2024/6310	Report Release Date	: 26.10.2024
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024
ULR No.	: TC135872400004193F		
CUSTOMER DET	AILS	SAMPLE DETAILS	
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 Sampling Done By	: ELES/RNC/2024/AA/7360 : Near Weigh Bridge Pakhar (15.58 ha) Bauxite Mine : 17.10.2024 to 18.10.2024 : 21.10.2024 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 21.10,2024 to 26.10,2024	Sample Condition	: Sealed & Preserved

-					
3	Relative Humidity (%)	:61	4	Weather Condition	: Clear
1	Average Temperature (°C)	: 28	(4)	Barometric Pressure (mmrig)	1.44

Discipline : Chemic	al	Group :	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part- 23): 2022	69	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part-24): 2019	34	60 (24hrs)	
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part- 2/Sec1): 2023	7.3	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part- 6); 2022	22.8	80 (24hrs)	
Ozone (O ₃)	µg/m ³	1S 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH2)	µg/m ³	IS 5182 (Part-25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m ³	1S 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	µg/m ²	15 5182 (Part- 22): 2019	0.022	1 (24hrs)	
Nickel (Ni)	ng/m²	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	
Benzene (C ₄ H ₆)	µg/m ³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m ²	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	
			~		

Reviewed by Akash Kumar

****End of Report****

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

Page 1 of 1

Technical Manager

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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



	TES	T REPORT	
Test Report No.	: ELES/RNC/2024/6311	Report Release Date	: 26.10.2024
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024
ULR No.	: TC135872400004194F		
CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name Address Mines Status	: Minerals & Minerals Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure	: ELES/RNC/2024/AA/736) : Near Mine Quarry No- M1 Pakhar (15.58 ha) Bauxite Mine : 17.10.2024 to 18.10.2024 : 21.10.2024 : Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 21.10.2024 to 26.10.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Scaled & Preserved

1	Average Temperature (%)	:28	2	Barometric Pressure (mmHg)	: 742
3	Relative Humidity (%)	1.61	4	Weather Condition	; Clear

Discipline : Chemic	al	Group	Group : Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PMI0)	µg/m ³	IS 5182 (Part-23): 2022	58	100 (24hrs)		
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	31	60 (24hrs)		
Sulphur Di-Oxide (SO ₂)	µg/m ³	IS 5182 (Part- 2/Sec1): 2023	7.5	80 (24hrs)		
Nitrogen Di-Oxide (NO2)	µg/m ³	1S 5182 (Part- 6): 2022	22.5	80 (24hrs)		
Ozone (O ₁)	µg/m ¹	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)		
Ammonia (NH3)	µg/m?	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)		
Lead (Pb)	µg/m	IS 5182 (Part- 22): 2019	0.012	1 (24hrs)		
Nickel (Ni)	ng/m	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m ²	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)		
Benzene (C _s H ₆)	'µg/m'	ELES/GC/SOP/06: 2023	<2.5	05(Annual)		
Benzo-(a)-Pyrene	ng/m ³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)		

Reviewed by Akash Kumar Quality Manager

**** End of Report****

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

Page 1 of 1

Technical Manager

Page 1 of 1 recritical Manager The Determined as Teat Report, is sound by the Laboratory wells: Central Terms and Conditions, may an Company term hand in per-approved formar. The random score in the Teat Report terms of the laboratory at the interactive above the Laboratory wells. The information attual or the Teat Report reflects the findings done by the Laboratory at the time of involvement only and within the laboratory is the laboratory is responsible like all the antimations attual or the Teat Report reflects the findings done by the Laboratory at the time of involvement only and within the laboratory is full and any part of the report is tun taken out of control, withink prot written approval of the Laboratory. The Report is full and any part of the report is tun taken out of control, withink prot written approval of the Laboratory. The Report is full and any part of the report is tun taken out of control, withink prot written approval of the Laboratory. The Report is full and any part of the report is tun taken out of control, withink prot written approval of the Laboratory. The Report is full and any part of the report is tun taken out of control, withink prot written approval in the Laboratory. The Report is full and any part of the respect or appearance of the Teat Report is attack and off-decations of the first entrol of the teat and an objecter in the teat and an objecter in the first entrol of the like. All the context is appearance of the Data of Teat Report is the time provide balance, how complex are setting to the related as operial to the fifture entror of the like. All the context is appearance of the Data of Teat Report relevant to the time provide and setting and officed respective. Any type of Observations or Complexine are reported as a Solares form to Observation and NA Observation. After the time provide taken there are the times will be accepted. The entire Time schedule mentioned in Teat Reports shall be like a Solare format. After the time, Detection Lineit, LDL (Laborator).



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



	TES	T REPORT		
Fest Report No.	: ELES/RNC/2024/6312	Report Release Date	: 26.10.2024	
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024	
ULR No.	: TC135872400004195F			
CUSTOMER DET	AILS	SAMPLE DETAILS		
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 Sampling Done By	: ELES/RNC/2024/AA/7362 : Near Mine Quarry No-M4 Pakhar (15.58 ha) Bauxite Mine : 17.10.2024 to 18.10.2024 : 21.10.2024 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd. : Sealed & Preserved	
Period of Analysis	: 21.10.2024 to 26.10.2024	Sample Condition		

1.1	Average Temperature (°C)	: 28		Barometric Pressure (mmHg)	: 742
3	Relative Humidity (%)	:61	4	Weather Condition	: Clear

Discipline : Chemic	al	Group :	Group : Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part- 23): 2022	61	100 (24hrs)		
Particulate Matter (PM2.5)	µg/m ¹	IS 5182 (Part-24): 2019	34	60 (24hrs)		
Sulphur Di-Oxide (SO ₂)	µg/m ³	IS 5182 (Part- 2/Sec1): 2023	7.6	80 (24hrs)		
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part- 6): 2022	21.5	80 (24hrs)		
Ozone (O ₂)	µg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)		
Ammonia (NH ₃)	µg/m ³	1S 5182 (Part-25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m ¹	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)		
Lead (Pb)	ug/m ³	1S 5182 (Parts 22): 2019	0.013	1 (24hrs)		
Nickel (Ni)	ng/m³	IS 5182 (Part-26): 2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m ⁴	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)		
Benzene (C ₆ H ₄)	µg/m ³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)		
Benzo-(a)-Pyrene	ng/m ³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)		

Reviewed by Akash Kumar Quality Mane

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****End of Report****

Dr. Deependra Kumar Sinha

Page 1 of 1

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FLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (IHARKHAND) GIT ND-20445037130124 ENGINEERING SERVICES PVT. LTD. Engli Info@eletal.ca.in., elet.roech@orrdit.com

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

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			TEST	REPORT			
Test Report No.	: ELES/R	NC/2024/6301	1	Report Release Date : 26.10.2024			
Work Order No.	: 13612312	113		Work Order Date : 28.03.2024			
ULR No.	: TC13587	2400004184F	7				
CUSTOMER DET	to get all reactions are reactioned in the local state of the second state of the seco			SAMPLE DETAILS			
Customer Name Address Mines Status			Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure	: ELES/RNC/2024/AA/7351 : Near Bunglapart Village Pakhar Bauxite Mine : 19.10.2024 to 20.10.2024 : 21.10.2024 : Ambient Air : ELES/DOC/SMPL/02			
	the second second			Sampling Done By	: ELES Pvt. Ltd.		
Period of Analysis 21.10.2024 to 26.10.2024			24	Sample Condition	: Sealed & Preserved		
METEOROLOGI	والمراجع الإخرار المتراد المراجع والمراجع	Charles of the second second					
1 Average Temperature (°C) : 29				2 Barometric Pressure (mmHg) : 740 4 Weather Condition : Clear			
3 Relative Humidity (%) : 58							
Discipline	e: Chemical			Group :	Atmospheric I		
Paramet	e7	Unit	Test Protocol		Result	Regulatory Limi	
Particulate Matter (I	PM10)	µg/m*	1S 3	182 (Part- 23): 2022	55	100 (24hrs)	
Particulate Matter (J	PM2.5)	µg'm'	15:5	182 (Part+ 24): 2019	27	60 (24hts)	
Sulphur Di-Oxide (S	SO ₂)	µg/m ³	LS 5182 (Part-2/Sec1): 2023		8.1	80 (24hrs)	
Nitrogen Di-Oxide ((ND))	µg/m?	IS 5382 (Part- 6): 2022		19.7	80 (24hus)	
Ozone (O ₂)		ugim ⁱ	IS 5182 (Part-9); 2019		<20,0	100 (8hrs)	
Anunonia (NH ₁)		ugim ³	15 5182 (Part- 25): 2018		<10.0	400 (24hrs)	
		mgim ³	15.5	182 (Part-10): 2019 (NDR Method)	<\$.0	2 (8hrs)	
Part Adder to Anno 111111	Lead (Pb) µgim ³ IS 5		(82 (Part- 22); 2019	0.011	1 (24(us)		
		和影加	1000,000				
Lead (Pb)		man iman	1,000,000	182 (Part- 26): 2020	<6.0	20 (Annual)	
Lead (Pb) Nickel (Ni)			15-5	182 (Part- 26): 2020 5/ATR/SOP/01: 2021	<6.0 <2.0	20 (Annual) 06 (Annual)	
Lead (Pb) Nickel (Ni) Arsenic (As) Benzene (C ₂ H ₆)		¹ m/go	18-5 ELE		-		

Reviewed by Akash Kumar

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Authorized Signatury Dr. Deependra Kumar Sinha

ph. D. Environmental Engg.

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Technical Manager

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	THE REPORT OF A DESCRIPTION OF A DESCRIP	T REP			
Test Report No.	: ELES/RNC/2024/6302	Rep	port Release Date	: 26.10.2024	
Wark Order Na	: 13612312113	Wo	rk Order Date	: 28.03.2024	
ULR No.	: TC135872400004185F				
CUSTOMER DET	AILS	SA	MPLE DETAILS		
Customer Name Address Mines Status	: Hindaloo Industries Limited : Lohandaga, Jharkhand-835302 : Operational	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure Sampling Done By Sample Condition		: ELES/RNC/2024/AA/7352 : Yatri Shed (Near K-10) Pakhar Bassite Mine : 19.10.2024 to 20.10.2024 : 21.10.2024 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd. : Sealed & Preserved	
Period of Analysis	± 21,10.2024 to 26.10.2024				
METEOROLOGI	CAL INFORMATION				
1 Average Temp	and any state of the provided state of the s	2 Barometric Pressure (mmHg) : 740			
3 Relative Humid		4	Weather Condition	: Clear	
Dissipling	: Chemical		Group :	Atmospheric Pullution	

Discipline : Chemic	100	Group :	Group : Atmospheric Pullution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	µg/m ³	IS 5182 (Pmt-23): 2022	59	100 (24hrs)		
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part-24): 2019	28	60 (24brs)		
Sulphur Di-Oxide (SO ₂)	µg/m ³	IS 5182 (Part- 2/Sec1): 2023	7.4	80 (24hrs)		
Nitrogen Di-Oxide (NO ₁)	µg/m ³	1S 5182 (Part-6): 2022	19.1	80 (24hrs)		
Ozone (Oj)	jug/m ³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)		
Ammonia (NH3)	R#Jm	15 51#2 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mgim ¹	15 5182 (Part- 10): 2019 (NDR Method)	<1.0	2 (8hrs)		
Load (Pb)	"maim"	IS 5182 (Part- 22): 2019	<0.002	1 (24hrs)		
Nickel (Ni)	ng/m ²	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)		
Arsonic (As)	ogźm ²	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)		
Benzene (C ₁ H ₄)	pigim ³	ELES/0C/SOP/06: 2023	<2.5	05(Annual)		
Benzin-(a)-Pyreite	ngim	ELES/GC/SOP/65: 2023	<0.5	(fanna)		
hourse (a) a hour	1000000					

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

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FLOT NO-30, MANSAROWAR ENCLAVE, TURUDANA HATIA, RANCHI-884009 (HEARIHAND) GST NO: 304AECF971E0121

ENGINEERING SERVICES PVT. LTD.

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Test Repart No.	: ELES/RNC/2024/6303		Report Release Date : 26.10.2024			£	
Work Order No.	: 1361231	2113		-	ork Order Date	: 28.03.2024	
ULR No.	: TC1358	72400004186	F				
CUSTOMER DET	AILS			- SA	MPLE DETAILS		
ddress : Lohardaga, Jharkhand-835302		Sample Ref. No. Location		: ELES/RNC/2024/AA/7353 : Near Utkarmit Rajkiya Prathmi Vidyalaya Bunglapart Village Pakhar Bauxite Mine			
Mines Status	: Operational		Sampling Date Sample Received Date Type of Sample Sampling Procedure		: 19.10.2024 to 20.10.2024 : 21.10.2024 : Ambient Air : ELES/DOC/SMPL/02		
Period of Analysis	: 21.10.20	24 to 26.10.20	UNPLA.		Sampling Done By Sample Condition	ELES Pvt. Ltd. Sealed & Preserved.	
METEOROLOGI	CAL INFO	RMATION					
1 Average Tempe	ecatur∉ (°°C)	: 29		2	Barametric Pressure	(mmHg) :7	40
3 Relative Humidity (%) : 58				4 Weather Condition Clear			
Discipline	: Chemica	d			Group :	Atmospheric I	Pollution
Faramet	11	Unit		Test	Protocol	Result	Regulatory Limi
Particulate Matter (F	M10)	µg/m ¹	IS 5182 (Part-23); 2022		52	100 (24hrs)	
Particulate Matter (B	(M2.5)	µg/m ³	IS 5182 (Part- 24); 2019		31	60 (24hrs)	
Sulphur Di-Oxide (S	01)	µg/m ³	15.5182 (Part- 2/Sec1): 2023		7.3	80 (24hrs)	
Nitrogen Di-Oidde (NO ₂)	µg/m ³	IS 5182 (Part- 6): 2022		18.7	80 (24hrs)	
Orone (Q ₁)		µg/m ³	IS 5182 (Part- 9): 2019		<20.0	100 (8hrs)	
Annminia (NH ₂)		upin ¹	IS 5182 (Part- 25): 2018		<10.0	400 (24hrs)	
Curbon Monavide (O	20)	itt@/m ⁸	IS 5182 (Part- 10): 2019 (NDIR Method)		<1.0	2 (8hrs)	
Lead (Pb)		(42/m)	1S 5		ari- 22): 2019	9,001	1 (24hrs)
Nickel (Nii)		rup/co ³	18:5	182 (1	Part-26): 2020	<6,0	20 (Annual)
Arsenie (As)		ng/m ¹	ELE	SAIR	SOP/01: 2021	<1,0	(Isonoal)
Bennette (C. H.)		- µg/m³	ELS	200	SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrane		nates*	ELE	SIGC/	SOP/05: 2023	<0.5	Q1(Aemial)

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Dr. Deebellora Kulmar Sinha

Ph.D. Environmental Engge

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PLOT NO-30: MARSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-234003 (IHARNHAND) GET NO:- 25444CEST280124

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	TES	STREPORT
Test Report No.	: ELES/RNC/2024/6304	Report Release Date : 26.10.2024
Work Order No.	: 13612312113	Work Order Date : 28.03.2024
ULR No.	: TC135872400004187F	
CUSTOMER DET	TAILS	SAMPLE DETAILS
Customér Name Address Mínes Status	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302 : Operational	Sample Ref. No. Location : ELES/RNC/2024/AA/7354 : Near Utkarmlt Rajkiya Prathmil Vidyalaya Dumrapart Village Pakhar Bauxite Mine : 19,10,2024 to 20,10,2024 Sample Received Date : 21,10,2024 Type of Sample : Ambient Air : ELES/DOC/SMPL/02 : Sampling Date : ULES Proceedure
Period of Analysis	: 21.10.2024 to 26.10.2024	Sampling Done By ELES Pvt. Ltd. Sample Condition Sealed & Preserved
METEOROLOGI	CAL INFORMATION	
1 Average Temp	enature (°C) : 29	2 Barometric Pressure (mmHg) : 740
3 Relative Humis	dity (%) : 58	4 Weather Condition Clear
Disciplini	e: Chemicul	Group : Atmospheric Pollution

Discipline : Chemi	eul	Group : Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	μg/m ²	IS 5182 (Part-23): 2022	57	100 (24hrs)		
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part-24): 2019	29	60 (24hm)		
Sulphur Di-Oxide (SO ₂)	µg-m ³	15 5182 (Part- 2/Sec1): 2023	6.8	80 (34hrs)		
Nitrogen Di-Oxide (NO ₂)	µg/m ⁸	IS 5182 (Part- 6): 2022	18.2	#0 (24hrs)		
Ozone (O ₁)	µg/m	1S 5182 (Part- 9): 2019	<20.0	100 (Shrs)		
Ammonia (NHz)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hm)		
Carison Monoxide (CD)	mgim ³	IS 5182 (Purt- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)		
(\underline{a}^{q}) tends (\underline{b}^{p})	pig/m ¹	1S 5182 (Part- 22); 2019	0.032	1 (24hrs)		
Nickel (Nii)	ng/m ¹	IS 5182 (Part- 26): 2020	<6,8	20 (Annual)		
Arsenic (Ag)	172/tH ²	ELES/AJR/SOP/01: 2021	<1.0	05 (Annual)		
Bonzone (CaHa)	µg/m ³	ELES/GC/SOP/05: 2023	<1.5	05(Annuni)		
Benzo-(a)-Pjorene	sta/m ²	ELES/GC/SOP/05: 2023	<0.5	01(Annual)		
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Dr. Deependra Kumar Sinha The D. Environmental Engo.

Page 1 of 1
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ENVIRONMENTAL LABORATORIES & ENGINEERING SERVICES PVT. LTD.

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Plot No.30, Mansarovar Enclave, Tupudana, Hatia, Ranchi-834003, Jharkhand

Pakhar (15.58) Bauxite Mine-Environmental Monitoring Report

November 2024



Minerals & Minerals : Pakhar (15.58) Environmental Monitoring Report November 2024 Pakhar (15.58) AMBIENT AIR QUALITY- CORE ZONE Near Mine Office 1 2 Near Weigh Bridge Near Mine Quarry No-M1 3 4 Near Mine Quarry No-M4 AMBIENT AIR QUALITY- BUFFER ZONE Ł Near Bunglapart Village Yatri Shed (Near K-10) 2 Near Utkarmit Rajkiya Prathmik Vidyalaya Bunglapart Village 3 4 Near Utkarmit Rajkiya Prathmik Vidyalaya Dumrapart Village alles & Englis **Drinking Water**







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

ENGINEERING SERVICES PVT. LTD.

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



Test Report No.	: ELES/RNC/2024/7157	Report Release Date	: 04.12.2024	
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024	
ULR No. : TC135872400005023F				
CUSTOMER DET	TAILS	SAMPLE DETAILS		
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	: ELES/RNC/2024/AA/8292 : Near Mine Office Pakhar (15.58 ha) Bauxite Min : 25.11.2024 to 26.11.2024 : 28.11.2024 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd. : Sealed & Preserved	
Period of Analysis	: 28.11.2024 to 04.12.2024	Sampling Done By Sample Condition		

1	Average Temperature (°C)	: 22	2	Barometric Pressure (mmHg)	: 740
3	Relative Humidity (%)	:48	4	Weather Condition	: Clear

Discipline : Chemic	al	Group :	Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part- 23): 2022	74	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	45	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	µg/m ¹	IS 5182 (Part- 2/Sec1): 2023	13.7	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m³	IS 5182 (Part- 6): 2022	29.2	80 (24hrs)	
Ozone (O ₂)	µg/m ³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH ₃)	µg/m ³	1S 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part- 10): 2019 (NDIR Method)	1.19	2 (8hrs)	
Lead (Pb)	µg/m ²	IS 5182 (Part- 22): 2019	0.018	1 (24hrs)	
Nickel (Ni)	ng/m ³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m*	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	
Benzene (CaHa)	µg/m ³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m ⁵	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

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Page 1 of 1

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATTA, 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



2024	Report Release Date	: ELES/RNC/2024/7158	Test Report No.
2024	Work Order Date	: RP/MJB/MM/24/0088/01	Work Order No.
		: TC135872400005024F	ULR No.
	SAMPLE DETAILS	AILS	CUSTOMER DET.
/RNC/2024/AA/8293 Weigh Bridge r (15.58 ha) Bauxite Min 2024 to 26.11.2024 2024 ent Air /DOC/SMPL/02	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure	: Minerals & Minerals Limited : Lohardaga, Jharkhand-835302	Customer Name Address
Pvt. Ltd.		: Operational	Mines Status
1 & Preserved	Sample Condition	: 28.11.2024 to 04.12.2024	Period of Analysis
	Sampling Done By Sample Condition	: 28.11.2024 to 04.12.2024	Period of Analysis METEOROLOGIC

1	Average Temperature (%C) : 22	2	Barometric Pressure (mmHg)	: 740
3	Relative Humidity (%) :48	.4	Weather Condition	: Clear

Discipline : Chemic	al	Group :	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part- 23): 2022	82	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m³	1S 5182 (Part- 24): 2019	50	60 (24hrs)	
Suiphur Di-Oxide (SO ₂)	µg/m³	IS 5182 (Part- 2/Sec1): 2023	12.6	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part- 6): 2022	34.2	80 (24hrs)	
Ozone (O ₃)	µg/m ³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH ₂)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m ⁴	IS 5182 (Part- 10): 2019 (NDIR Method)	1.33	2 (8hrs)	
Lead (Pb)	µg/m ²	IS 5182 (Part- 22): 2019	0.035	1 (24hrs)	
Nickel (Ni)	ng/m [†]	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	
Benzene (C ₆ H ₆)	µg/m ³	ELES/GC/SOP/06; 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05: 2023	<0.5	Q1(Annual)	

Authorised Signatory

Akash Kumar

Page 1 of 1

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

ENGINEERING SERVICES PVT. LTD.

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



	TES	<u>r report</u>		
Test Report No.	: ELES/RNC/2024/7159	Report Release Date : 04.	12.2024	
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date : 30.	03.2024	
ULR No.	: TC135872400005025F			
CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name Address Mines Status	: Minerals & Minerals Limited : Lohardaga, Jharkhand-835302 : Operational	Location : New Pak Sampling Date : 25. Sample Received Date : 28. Type of Sample : Am Sampling Procedure : ELI	ES/RNC/2024/AA/8294 ar Mine Quarry No- M1 har (15.58 ha) Bauxite Mine 11.2024 to 26.11.2024 11.2024 ibient Air ES/DOC/SMPL/02	
Period of Analysis	: 28.11.2024 to 04.12.2024		: ELES Pvt. Ltd. : Sealed & Preserved	
METEOROLOGI	CAL INFORMATION			
1 Average Temp	erature (°C) : 22	2 Barometric Pressure (mmH	g) : 740	
3 Relative Humin		4 Weather Condition	: Clear	

Discipline : Chemic	cal .	Group :	Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part- 23): 2022	74	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	38	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	µg/m³	IS 5182 (Part- 2/Sec1): 2023	9.1	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part- 6): 2022	25.6	80 (24hrs)	
Ozone (O ₁)	µg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH ₃)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	µg/m²	IS 5182 (Part- 22): 2019	0.023	1 (24hrs)	
Nickel (Ni)	ng/m ³	1S 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	
Benzene (C ₆ H ₆)	µg/m ³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m ³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

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-Authorised Signatory Akash Kumar Gentlity Manaper

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teffs or ordered only to the problem of the control terms of the control Terms and Controls on the feet of the terms of the control terms of the intervation stated on the feet of the terms of the control terms of the returned for 30 days from the Date of release issue of the Test Report. The samples from Regulatory bodies are to be retrieved as specified. Any type of Observations or Completely regarding for Reports shall be done within Efdays from the Date of Test Report released visual. After the time period stand before, or completely will be accepted. The other Time schedule monitored at Test Reports in 3 Works from the Marculator soul. WA (Not Applicable), BDL (Balsor Direction Limit), LDC (Lower Direction Limit).



TEST REPORT

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



Test Report No.	: ELES/RNC/2024/7160	Report Release Date	: 04.12.2024
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024
ULR No.	: TC135872400005026F	direction and the second second	
CUSTOMER DET	AILS	SAMPLE DETAILS	
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	: ELES/RNC/2024/AA/8295 : Near Mine Quarry No-M4 Pakhar (15.58 ha) Bauxite Mine : 25.11.2024 to 26.11.2024 : 28.11.2024 : Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 28.11.2024 to 04.12.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

1	Average Temperature (°C)	: 22	2	Barometric Pressure (mmHg)	; 740
3	Relative Humidity (%)	: 48	4	Weather Condition	; Clear

Discipline : Chemic	al	Group :	Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part- 23): 2022	77	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m ³	15 5182 (Part- 24): 2019	42	60 (24hrs)	
Sulphur Di-Oxide (SO2)	µg/m ¹	IS 5182 (Part- 2/Sec1): 2023	12.9	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m ³	1S 5182 (Part- 6): 2022	31.3	80 (24hrs)	
Ozone (O ₂)	µg/m³	IS 5182 (Part-9); 2019	<20.0	100 (Shrs)	
Ammonia (NH3)	µg/m ¹	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part- 10): 2019 (NDIR Method)	1.27	2 (8hrs)	
Lead (Pb)	µg≠m³	1S 5182 (Part- 22): 2019	0.019	1 (24hrs)	
Nickel (Ni)	ng/m ³	1S 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01: 2021	<2.0	(fannual)	
Benzene (C _s H ₆)	µg/m ³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m ⁰	ELES/GC/SOP/05: 2023	<0,5	01(Annual)	

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Authorised Signatory Quality Manager

****End of Report****

Page 1 of 1
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PLOT NO-90, MANERSOVAR ENCLAVE, TUPUCANA HATLA, RANCHI-\$34005 (JHARKHANO) 657 MON-20AAECEE7380124

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



	TES	TREPORT	
Test Report No.	: ELES/RNC/2024/7041	Report Release Date	: 02.12.2024
Work Order No.	: 13612312113	Work Order Data	: 38.03.2024
ULR No.	: TC135872400004910F		
CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name Address Mines Status	: Hindalco Industries Limited : Lohandaga, Jharkhund-835302 : Operational	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure	: ELES/RNC/2024/AA/8247 : Near Bunglapart Village Pakhar Bauxite Mine : 23.11.2024 to 24.11.2024 : 25.11.2024 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	125.11.2024 to 02.12.2024	Sampling Done By Sample Condition	; Sealed & Preserved

ML	STEOROLOGICAL INFOR	N3/6.1102/N			
1	Average Temperature (PC)	: 25	2	Barometric Pressure (mmHg)	: 740
3	Relative Humidity (%)	: 48	4	Weather Condition	: Clear

Discipline : Chemic	al .	Group :	Group : Atmospheric Pollution		
Parameter	Uolt	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PS(10)	µg/m	15 5182 (7mt-25): 2022	οŪ	2007(2+005)	
Particulate Matter (PM2.5)	µg/m ²	IS 5182 (Part- 24): 2019	. 32	60 (24hrs)	
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part- 2/Sec1): 2023	11.4	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m ^k	IS 5182 (Part- 6): 2022	22.8	80 (24hrs)	
Ozone (O ₄)	µg/m ³	1S 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH3)	ug/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part- 10); 2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	µg/m	1S 5182 (Part- 22): 2019	0.016	1 (24hrs)	
Nickel (Ni)	ng/m ³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	
Benzene (C ₄ H ₄)	µg/m ³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m ³	ELES/GC/SOP/05: 2023	<8.5	01(Annual)	

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Present. Authorised Signatory Akash Kumar Chuelity Mensionr

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PEDT NO-30, MANSARDWAR ENCLARE, FUPUEANA HATIA, NANCHI-834003 (INARIOTAND) GT1K0-2044EEE7130524

RVICES PVT. LTD.

Email: hfo@eleast.co.in . eles.ranchi@amail.com Phone no.: 0651-2299103 Website : www.elespi.co.in



Test Report No.	: ELES/RNC/2024/7042	Report Release Date	: 02.12.2824	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400004911F			
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	: ELES/RNC/2024/AA/8248 : Yatri Shed (Near K-10) Pakhar Baaxite Mine : 23.11.2024 to 24.11.2024 : 25.11.2024 : Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis : 25.11.2024 to 02.12.2024		Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

L.	Average Temperature (°C) : 25	2	Barometric Pressure (mmHg)	: 740
3	Relative Humidity (%) : 48	4	Weather Condition	: Clear

Discipline : Chemic	al	Group :	Atmospheric I	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Numer (PM10)	µg/m	iS 5162 (Pun-25): 2022	04	100 (2403)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	32	_ 60 (24brs)
Sulphur Di-Oxide (SO2)	µg/m ²	IS 5182 (Part- 2/Sec1): 2023	10.8	80 (24hrs)
Nitrogen Di-Oxlde (NO1)	µg/m ³	1S 5182 (Pan- 6): 2022	22.2	80 (24hrs)
Ozone (O ₂)	µg/m ³	IS 5182 (Part-9); 2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part- 10); 2019 (NDIR Method)	1.08	2 (8hrs)
Lead (Pb)	µg/m	IS 5182 (Part- 22): 2019	<0.062	1 (24hrs)
Nickel (Ni)	rig/m ³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ⁸	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)
Benzene (C ₄ H ₄)	µg/m ³	ELES/GC/SOP/06: 2023	<2.5 .	05(Annual)
Benzo-(a)-Pyrene	ngrim ³	ELES/GC/SOP/05: 2023	<0.5	01(Annial)

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Authorised Signatory Akosh Kumar

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Page 1 of 1 The Decement model is a second to be presented to be presented former from the Company latter hild in pre-approved former. The results doesn in the Tart Sepon order to address or the finite of electric correct or the Company latter hild in pre-approved former. The results doesn in the Tart Sepon order to address of the second to be presented by the Company latter hild in pre-approved former. The results doesn in the Tart Sepon order to address of the second to be presented by the Company of the tenter of incoherence only and order to approve of the second to pre-approved former of the presented by the Company in the tente of incoherence only and order to approve of the second to pre-approved former of the tente conset to approve of the Company is the tente of the tente order to approve of the Company is the tente of advertise, used for any logit access address poor permission bit. Inter-secured East, the Mesupercent of the Laboratory, Atlantics is drawn to the Internation of Melidity, compensation and particularity Annet. Any wavefunction alteration de laboration of the content of apparents of the Test Espart is subwild and offenders may be presented to the follow estate of the law. All the tamping an ericled for Oblays here the Data of inferences of the Test Espart is subwild and offenders may be prioritied. Any type of Observation on Complexity regions and the follow extended for Oblays here the Data of inferences of the Test Espart is subwild and offenders may be prioritied. Any type of Observation on Complexity regions and the follow extended for the Espart is allowed before as complexity will be manyful. The same of the Test Espart is allowed before as complexity will be manyful. The same Time attached continued to Test Report is in Observation and the test Espart is allowed before as complexity will be manyful. The same Time attached continued to Test Report is in Observation and the test Espart is in Observation will be manyful. The same Time attached continued to Test Report is in Observation and the test test.



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PLOT NO-38, MANSAROVAR ENGLAVE, TUPUGANA HATIA, KANCHI-834003 (SHAROCHANO) 657 NO-26AA2CE87120123

Email: info@elaspl.co.ity, eles.rmchi@amail.com Phone no.: 0551-2290103 Webalte : www.elespl.co.ht



Test Report No.	; ELES/RNC/2024/7043		Re	port Release Date	: 02.12.2024		
Work Order No.	1 1361231	: 13612312113		We	ork Order Date	: 28.03.2024	
ULR No.	: TC135872400064912F						
CUSTOMER DET	AILS			SA	MPLE DETAILS		
Customer Name		: Hindalco Industries Limited		Sample Ref. No.		: ELES/RNC/2024/AA/8249 : Near Utkarmit Rajkiya Prathmil Vidyalaya Bunglapari Village Pakhar Bauxite Mine	
Mines Status	: Operatio		Sample Received Type of Sample		nple Received Date pe of Sample npling Procedure	: 23.11.2024 to 24.11.2024 : 25.11.2024 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 25.11.20	5.11.2024 to 02.12.2024			nple Condition	Sealed & Pr	
METEOROLOGI	CAL INFO	RMATION					
1 Average Temp	erature (°C)	: 25		12	Barometric Pressure	(mmHg) :7	40
3 Relative Humidity (%) : 48		4 Weather Condition : Clear		Slear			
Discipline	: Chemica	ıl.			Group :	Atmospheric I	Pollution
Paramet	2.40 #4	Unit		Test	Pratocol	10la	Regulatory Limb
Particulate Matter (I	PM10)	µg/m ³	1S 5	182 (Part- 23): 2022	63	100 (24hrs)
Particulate Matter (I	PM2.5)	μg/m ³	18.5	182 (Part- 24): 2019	35	60 (24hrs)
Sulphur Di-Oxide (S	5O ₂)	µg/m ¹	15 518	2 (Pa	rt- 2/Sec1): 2023	9.7	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m ³	IS :	182 (Part- 6): 2022	22.1	80 (24hrs)
Ozane (O ₃)		pg/m ³	15 5	182 (Part- 9): 2019	<20.0	100 (Shrs)
Ammonia (NH ₂)		µy/m ⁹	1S 5	182 (3	Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ⁹		1	Part- 10); 2019 R Method)	<1.0	2 (8hrs)
Lead (Pb)		µg/m*			Part- 22); 2019	0.008	1 (24hrs)
Nickel (Ni)		ng/m ¹	IS 5	182 (Part- 26): 2020	~6.0	20 (Annual)
Arsenic (As)		ng/m	ELE	S/AIF	USOP/01: 2021	<2.0	06 (Annual)
Benzene (CsH4)		μµ/m ³	ELE	S/GC	/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene		ng/m³	FLE	sige	SOP/05: 2023	<0.5	01(Annual)

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**** End of Report****

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FLOT NO-30, MANSAROVAR ENCLAVE, TUPUCANA HATIA, RANCHI-834003 (IHARIHAND) 557 NO-200 AECERTISD124

Email: Info@elespl.co.in . eles.ranchi@amail.com Phace no.: 0651-2290108 Websitz : www.elaspl.cn.in



	TES	TREPORT	
Test Report No.	: ELES/RNC/2024/7044	Report Release Date	2.02.12.2024
Wark Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400064913F		
CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name Address Mines Status	: Hindulco Industries Limited : Lohardaga, Jharkhand-835302 : Operational	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure Sampling Done By	: ELES/RNC/2024/AA/8250 : Near Utkarmit Rajkiya Prathmil Vidyalaya Dumrapart Village Pakhar Bauxite Mine : 23.11.2024 to 24.11.2024 : 25.11.2024 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 25.11.2024 to 02.12.2024	Sample Condition	: Sealed & Preserved

1.	Average Temperature (°C)	: 25	2 Barometric Pressure (mmHg)	: 740
3	Relative Humidity (%)	: 48	4 Weather Condition	: Clear

Discipline : Chemic	la.	Group :	Atmospheric	Pollution
Parameter	Talt	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS-5182 (Part- 23): 2022	66	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ^k	IS 5182 (Part- 24): 2019	38	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m ³	IS 5182 (Part- 2/Sec1): 2023	9.7	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m ³	1S 5182 (Part- 6): 2022	20.2	80 (24hrs)
Ozone (O ₃)	µg/m ³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH3)	µg/m ³	IS 5182 (Part+25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	1S 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part- 22): 2019	0.009	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m"	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)
Benzene (C ₆ H ₆)	µg/m ³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m ³	ELES/GC/SOP/05: 2023	< 9.5	01(Annual)

Authorised Signatory

****End of Report****

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Reviewed by

Akanh Kumar

 Page 1 of 1
 Outsite Manager

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST ND:- 20AAECE9713D124 NGINEERING 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/2024/7176	Report Release Date	: 05.12.2024	
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024	
ULR No.	: TC135872400005040F			

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No.	: ELES/RNC/2024/DW/8301	
		Sampling Date	: 26.11.2024	
		Sample Received Date	: 28.11.2024	
		Type of Sample	: Drinking Water	
Address	: Lohardaga, Jharkhand-835302	Source of Sample	: Tap Water	
		Location of Sample	: Office Area	
		Locald Advantages and Lotates	Pakhar Bauxite Mine (15.58 ha)	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/01	
n the call the	2811 2024 - 8412 2024	Sampling Done By	: ELES Pvt. Ltd.	
Period of Analysis	: 28.11.2024 to 04.12.2024	Sample Condition	Scaled & 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)	ě	APHA 24 th Ed.2023, 4500-H	6.72	6.5-8.5	No Relaxation
Turbidity	NTU	APHA 24th Ed.2023, 2130 B	0.54	1.0	5.0
Taste	-	APHA 24th Ed.2023, 2160 C	Agreeable	Agreeable	Agreeable
Odour	•	IS 3025 (Part-5) :2018	Agreeable	Agreeable	Agreeable
Colour	Hazen	APHA 24th Ed.2023, 2120B&D	1.3	5.0	15
Total Dissolved Solids (TDS)	mg/L	APHA 24th Ed.2023, 2540B,C&D	54.4	500	2000
Chloride (as Cl)	mg/L	APHA 24th Ed.2023, 4500 CI B	16.1	250	1000
Fluoride (as F)	mg/L	APHA 24 th Ed.2023, 4500 F-D	BDL (DL: 0.1)	1.0	1.5
Total Alkalinity (as CaCO3)	mg/L	APHA 24th Ed.2023, 2320 B	12.3	200	600
Total Hardness (as CaCO ₃)	mg/L	APHA 24th Ed.2023, 2340 C	17.0	200	600
Sulphate (as SO4)	mg/L	APHA 24th Ed.2023, 4500 SO42-E	3.76	200	400
Nitrate (as NO ₃)	mg/L	APHA 24 th Ed.2023, 4500 NO ₃ -B	1.18	45	No Relaxation

Page 1 of 4

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



TEST REPORT

Test Report No.	: ELES/RNC/2024/7176	Report Release Date	: 05.12.2024
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024
ULR No.	: TC135872400005040F		

Discipline : Chemical Group : Water				Regulatory Limit as per IS10500:2012	
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible
Phenolic Compound (as C ₄ H ₃ OH)	mg/L	IS 3025 (Part 43/Sec1): 2022	BDL (DL: 0.001)	0.001	0.002
Free Residual Chlorine (RFC)	mg/L	1S 3025 (Part-26): 2021	BDL (DL: 0.1)	0.2(Min)	1.0(Min)
Calcium (as Ca)	mg/L	APHA 24th Ed.2023, 3500 Ca B	4.6	75	200
Anionic Surfactants (as MBAS)	mg/L	APHA 24 th Ed.2023, 5540-C	BDL (DL: 0.025)	0.2	1.0
Discipline : Chemic	cal	Gro	oup : Residues i	n Water	
Aluminum (as Al)	mg/L	18 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	1S 3025 (Part-57) : 2021	BDL (DL: 0.2)	0.5	1.0
Cadmium (as Cd)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL: 0.003)	0.003	No Relaxation
Total Chromium (as Cr)	mg/L	APHA 24 th Ed.2023; 3111B	BDL (DL: 0.03)	0.05	No Relaxation
Copper (as Cu)	mg/L	APHA 24 th Ed.2023; 3111B	BDL (DL: 0.03)	0.05	1.5
Cyanide (as CN)	mg/L	APHA 24th Ed, 2023, 4500 CN-E	BDL (DL: 0.012)	0.05	No Relaxation
Iron (as Fe)	mg/L	APHA 24 th Ed.2023; 3111B	0.086	1.0	No Relaxation
Lead (as Pb)	mg/L	APHA 24 th Ed.2023; 3111B	BDL. (DL: 0.01)	0.01	No Relaxation
Manganese (as Mn)	mg/L	APHA 24 ⁸ Ed.2023; 3111B	BDL (DL: 0.05)	0.1	0,3
Mercury (as Hg)	mg/L	IS 3025 (Part-48): 2019	BDL (DL: 0.001)	0.001	No Relaxation
Selenium (as Se)	mg/L	IS 3025 (Part-56): 2019	BDL (DL: 0.01)	0.01	No Relaxation

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TEST REPORT

Test Report No.	: ELES/RNC/2024/7176	Report Release Date	: 05.12.2024
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024
ULR No.	: TC135872400005040F		

Discipline : Chemical Group : Residues in Water			Regulatory Limit as per IS10500:2012			
Parameter	Unit	Test Protocol	Result	Acceptable	Permissible	
Zinc (as Zn)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL: 0.1)	5.0	15	
Polynuclear Aromatic Hydrocarbons (PAH)	µg/L	ELES/GC/SOP/04: 2023	BDL (DL: 0.05)	0.1	No Relaxation	
Polychlorinated biphenyls (PCB)	μg/L	ELES/GC/SOP/03: 2023	BDL (DL: 0.1)	0.5	No Relaxation	
Pesticides					Limit	
Alachior	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	20		
Atrazine	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	2.0		
Butachlor	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	125		
Chlorpyriphos	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	30		
Ethion	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	3.0		
Malathion	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	190		
Methyl parathion	μg/L	ELES/GC/SOP/01: 2023	BDL, (DL: 0.1)	0.30		
Monocrotophos	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	1.0		
Phorate	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	2.0		
Phorate Sulphone	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	**		
Dieldrin	µg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.01)	0.03		
Alpha HCH	µg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.006)	0.01		
Beta HCH	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.02)	0,04		

Page 3 of 4

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TES	E 16	 	HC 1

Test Report No.	: ELES/RNC/2024/7176	Report Release Date	: 05.12.2024
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024
ULR No.	: TC135872400005040F		

Pesticides					
Parameter	Unit	Test Protocol	Result	Limit	
Delta HCH	µg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.02)	0.04	
Gamma HCH (Lindane)	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.02)	2.0	
Endosulfan (alpha, beta and sulphate)	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.05)	0.40	
DDT(o,p and p,p-isomers of DDT) (DDE and DDD)	µg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.05)	1.0	
Discipline : Biological		Group	o: Water		
Total Coliform (Qualitative)	Per 100 mL	IS 15185: 2021	Not Detected	Shall and he datast	
Escherichia coli (Qualitative)	Per 100 mL	IS 15185: 2021	Not Detected	Shall not be detected	

Reviewed by Akash Kuthar Quality Managar

End of Report*

Authorised Signatory Dr. Deependra Komer Sinha Ph. D. Environmental Engig-Technical Manager

Page 4 of 4

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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/2024/7176	Report Release Date	: 05.12.2024	
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024	

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Sampling Date Sample Received Date Type of Sample	: ELES/RNC/2024/DW/8301 : 26.11.2024 : 28.11.2024 : Drinking Water	
Address	: Lohardaga, Jharkhand-835302	Source of Sample Location of Sample	: Tap Water : Office Area Pakhar Bauxite Mine (15.58 ha)	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/01	
Period of Analysis	: 28.11.2024 to 05.12.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

Discipline : Chemical		Group : Wa	Group : Water		ory Limit 10500:2012
Parameter	Unit	Test Protocol	Result	Acceptable	Permissible Limit
Mineral Oil*	mg/L	IS 3025 (Part-39); 2021, Clause 6 Infrared Spectroscopic method.	BDL (DL: 0.01)	0.5	No Relaxation

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

Reviewed by Akash Kumar Qwality Managar

****End of Report****

Authorised Signatory Dr. Deependra Kumur Sinha Ph. D. Environmental Engly. Technical Manager

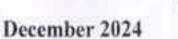
Page 1 of 1

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ENVIRONMENTAL LABORATORIES & ENGINEERING SERVICES PVT. LTD.

Plot No.30, Mansarovar Enclave, Tupudana, Hatia, Ranchi-834003, Jharkhand.

Pakhar (15.58) Bauxite Mine-Environmental Monitoring Report





CONTENT

	Minerals & Minerals : Pakhar (15.58) Environmental Monitoring Report December 2024
_	Pakhar (15.58)
	AMBIENT AIR QUALITY- CORE ZONE
1.	Near Mine Office
2	Near Weigh Bridge
3	Near Mine Quarry No-M1
4	Near Mine Quarry No-M4
	AMBIENT AIR QUALITY- BUFFER ZONE
1	Near Bunglapart Village
2	Yatri Shed (Near K-10)
3	Near Utkarmit Rajkiya Prathmik Vidyalaya Bunglapart Village
4	Near Utkarmit Rajkiya Prathmik Vidyalaya Dumrapart Village





TEST REPORT

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

ENGINEERING SERVICES PVT. LTD.

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



Test Report No.	: ELES/RNC/2024/7677	Report Release Date	: 25.12.2024
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024
ULR No.	: TC135872400005529F		
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/2024/AA/8995 : Near Mine Office Pakhar (15.58 ha) Bauxite Mine : 17.12.2024 to 18.12.2024 : 20.12.2024 : Ambient Air
Mines Status	; Operational	Sampling Procedure	: ELES/DOC/SMPL/02
Period of Analysis	: 20.12.2024 to 25.12.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

METEOROLOGICAL INFORMATION

Average Temperature (°C) : 19 1 3 Relative Humidity (%) :45 2 Barometric Pressure (mmHg) 4

Weather Condition : Clear

: 725

Discipline : Chemic	al	Group :	Atmospheric l	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part- 23): 2022	78	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	43	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m ³	IS 5182 (Part- 2/Sec1): 2023	12.3	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part- 6): 2022	30.5	80 (24hrs)
Ozone (O ₃)	µg/m ³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₂)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part- 10): 2019 (NDIR Method)	1,23	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part- 22): 2019	0.024	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m*	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)
Benzene (C ₅ H ₅)	µg/m	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m ³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

Reviewed by Akesh Kumar

Quality Menager

D Authorised Signatory Sinha Ph. D. Environmental Engg.

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Page 1 of 1 The Discission stand in Yest Nepurt, is issued by the Laboratory sucher General Terms and Conditions, only on Company labor band in pre-approved format. The result shown in the Test Report ratio or relates only to the solvanishes done by the Laboratory only. The origination random the Tart Report reflects the findings done by the Laboratory at the time of involvament only and within the limits of client's increasions. The Laboratory is responsible for all the information or data provided on the report, except the information which is provided by the alient. The Report centers be reproduced except in full and any part of the report is not taken part of concest, without prior written approval of the Laboratory. The Report is full and any part of the report is not taken part of concest, without prior written approval of the Laboratory. The Report is full and one part shall not be published, adverses, used for any legal actions unless prior permission has been sourced from the Management of the Laboratory. Amount in the limitation of liability, comparations and particulation many. Any seculiarized alteration & folicitation of the content or appearance of the Text Report is callewild and offenders may be prosecuted to the folicet extent of the law. All the complex are returned for 300ms from the Date of educerisons of the Yest Report. The complex from Regulatory lodics are to be retained as specified. Any type of Observations or Complexity transmission regarding the Reports shall be done within 15days from the Date of Two Report released sound. After the time period stand felline, no complaints will be accepted. The main: Time schedule mentioned in Test Report to in 2010/00 feeland. More frends. More required S/A (Not Applicable); BDL (Below Detection Limit)

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



Test Report No.	: ELES/RNC/2024/7678	Report Release Date	: 25.12.2024
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024
ULR No.	: TC135872400005530F		
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/2024/AA/8996 : Near Weigh Bridge Pakhar (15.58 ha) Bauxite Mine : 17.12.2024 to 18.12.2024 : 20.12.2024 : Ambient Air
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 20.12.2024 to 25.12.2024	Sampling Done By Sample Condition	: Sealed & Preserved

1	Average Temperature (°C)	: 19	2	Barometric Pressure (mmHg)	: 725
3	Relative Humidity (%)	:45	4	Weather Condition	: Clear

Discipline : Chemic	al	Group :	Atmospheric l	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part- 23): 2022	89	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part-24): 2019	53	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m³	IS 5182 (Part- 2/Sec1); 2023	15.7	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part- 6): 2022	35.2	80 (24hrs)
Ozone (O ₃)	µg/m ³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH3)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m [‡]	IS 5182 (Part- 10): 2019 (NDIR Method)	1.42	2 (8hrs)
Lead (Pb)	µg/m³	IS 5182 (Part- 22): 2019	0.037	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)
Benzene (C ₆ H ₆)	µg/m ³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m ³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

Reviewed by Akash Kumar Quality Manager

****End of Report****

Ph. D. Environmental Engg. Technical Manager

Dr. Offending Rumar Sinha

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA NATIA, 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



Test Report No.	: ELES/RNC/2024/7679	Report Release Date	: 25.12.2024
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024
ULR No.	: TC135872400005531F		
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/2024/AA/8997 : Near Mine Quarry No- M1 Pakhar (15.58 ha) Bauxite Mine : 17.12.2024 to 18.12.2024 : 20.12.2024 : Ambient Air
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02
Period of Analysis	: 20.12.2024 to 25.12.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

METEOROLOGICAL INFORMATION

1	Average Temperature (*C) : 19	2	Barometric Pressure (mmHg)	: 725
3	Relative Humidity (%) : 45	4	Weather Condition	: Clear

Discipline : Chemic	al	Group :	Atmospheric 1	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part- 23): 2022	79	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	42	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m³	IS 5182 (Part- 2/Sec1): 2023	11.7	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part- 6): 2022	28.3	80 (24hrs)
Ozone (O1)	µg/m ³	1S 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH3)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ²	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m ²	IS 5182 (Part- 22): 2019	0.025	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)
Benzene (CsHa)	µg/m ²	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m ³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

Reviewed by Akash Kumar Quality Manager

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****End of Report****

Dr. Authorised Signatory has Ph. D. Environmental Engg.

Page 1 of 1

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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



Test Report No.	: ELES/RNC/2024/7680	Report Release Date	: 25.12.2024
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024
ULR No.	: TC135872400005532F		
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/2024/AA/8998 : Near Mine Quarry No-M4 Pakhar (15.58 ha) Bauxite Mine : 17.12.2024 to 18.12.2024 : 20.12.2024 : Ambient Air
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02
Period of Analysis	: 20.12.2024 to 25.12.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

1	Average Temperature ("C)	:19	2	Barometric Pressure (mmHg)	: 725
3	Relative Humidity (%)	:45	4	Weather Condition	: Clear

Discipline : Chemic	al.	Group :	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part- 23): 2022	71	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m³	15 5182 (Part- 24): 2019	39	60 (24hrs)	
Sulphur Di-Oxide (SO2)	µg/m ³	15 5182 (Part- 2/Sec1): 2023	11.8	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part- 6): 2022	25.7	80 (24hrs)	
Ozone (O ₁)	µg/m²	1S 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH3)	µg/m [†]	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part- 10): 2019 (NDIR Method)	1.31	2 (8hrs)	
Lead (Pb)	µg/m ³	IS 5182 (Part- 22): 2019	0.018	1 (24hrs)	
Nickel (Ni)	ng/m ³	15 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	
Benzene (C ₆ H ₆)	µg/m ³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m ³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

Reviewed by Akash Kumar Wallhy Man

Authorised Signatory Dr. Deependra Kumar

Ph. D. Environmental Engl.

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Page 1 of 1

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Technical Manager

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATTA, RANCHI-834003 (JHARKHAND) EST ND:- 200AECE97130124

ENGINEERING SERVICES PVT. LTD.

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



Test Report No.	: ELES/RNC/2024/7626	Report Release Date	: 24.12.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400005478F		
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 Sampling Procedure	: ELES/RNC/2024/AA/8964 : Near Bunglapart Village Pakhar Bauxite Mine : 16.12.2024 to 17.12.2024 : 18.12.2024 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 18.12.2024 to 24.12.2024	Sampling Done By Sample Condition	: Sealed & Preserved

1	Average Temperature (°C)	: 20	2	Barometric Pressure (mmHg)	: 725	
3	Relative Humidity (%)	: 48	4	Weather Condition	; Clear	

Discipline : Chemic	al	Group :	Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part- 23): 2022	68	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m ³	1S 5182 (Part- 24): 2019	37	60 (24hrs)	
Sulphur Di-Oxide (SO2)	µg/m³	15 5182 (Part- 2/Sec1): 2023	12.7	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	µg/m ³	IS 5182 (Part- 6): 2022	24.2	80 (24hrs)	
Ozone (O1)	µg/m ⁸	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH3)	µg/m ¹	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m²	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	µg/m ³	IS 5182 (Part- 22): 2019	0.019	1 (24hrs)	
Nickel (Ni)	ng/m ³	IS 5182 (Part- 26); 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m3	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	
Benzene (C ₆ H ₆)	µg/m ³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m3	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

100 Reviewed by Akesh Kumar Quality Manager

Anthorised Signatory

Dr. Deependra Kumar Sinha

Ph. D. Environmental Econ

Page 1 of 1

**** End of Report****

Technical Manager

The Decrement stated as Teel, Report, is bound by the Laboratory under General Terms and Conditions, entry or Company letter band in pre-approved finites. The results shown in the Test Report tells or relates only in the jultimatives date by the Laboratory only. The information stated on the Test Report effects the findings date by the Laboratory at the time of involvement only and within the limits of clear's mathematics. The Laboratory only. The information stated on the Test Report effects the findings date by the Laboratory at the time of involvement only and within the limits of clear's mathematics. The Laboratory is responsible for all the miliematics or date provided on the report, except the information which is provided by the clear. The Report exercise to reproduced evenue is full and any part of the report is not taken out of comput, without peak writes approved of the Laboratory. The Report is full as is possible by the being second from the State are been to the State out taken out of a comput, without peak writes approved of the Laboratory. The Report is full as its possible being second from the Management of the Caboratory. Attention is shown to the limitation of Tability, compressions and periodication is also. Any isomethers of shown to the Date of relations of the State of the Test Report is value full and effective may be provided to the balance of Tability, compression and periodication remained for 30 Mays from the Date of relations of the Test Report for Regulatory bodies are to be national as specified. Any type of Charratores, or Complete control of the loss. All the control of Tability remains a specified to the testers from activities control of the loss. All the second remained as specified, and the second remained as specified. Second to the second remaining the Report shall be down within 15 Mays from the Date of Test Report relation. After the test period state period shall be second to a 20 May from the Date of the Active and the remotion of the testere of the testere from active



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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



Test Report No.	: ELES/RNC/2024/7627	Report Release Date	: 24.12.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400005479F		
CUSTOMER DET	TAILS	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	: ELES/RNC/2024/AA/8965 : Yatri Shed (Near K-10) Pakhar Bauxite Mine : 16.12.2024 to 17.12.2024 : 18.12.2024 : Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 18.12.2024 to 24.12.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

 Average Temperatu 	are (°C) : 20	2	Barometric Pressure (mmHg)	: 725
3 Relative Humidity ((%) :48	4	Weather Condition	: Clear

Discipline : Chemic	al l	Group :	Group : Atmospheric Pollation		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part- 23): 2022	71	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part- 24): 2019	38	60 (24hrs)	
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part- 2/Sec1): 2023	12.1	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part- 6): 2022	25.4	80 (24hrs)	
Ozone (O ₃)	µg/m ³	IS 5182 (Part- 9): 2019	<20.0	100 (Shrs)	
Ammonia (NH3)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part- 10): 2019 (NDIR Method)	1.18	2 (8hrs)	
Lead (Pb)	µg/m ³	IS 5182 (Part- 22): 2019	0.019	1 (24hrs)	
Nickel (Ni)	ng/m ³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	
Benzene (C ₆ H ₄)	µg/m ⁹	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m ⁵	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

~ T ** Reviewed by Aksen Kumar

Dr. Authorised Signatory

Cuslicy Manager

Ph. D. Environmental Engg

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 28AAECE97130124

ENGINEERING SERVICES PVT. LTD.

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



Test Report No.	: ELES/RNC/2024/7628	Report Release Date	: 24.12.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400005480F		
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 Sampling Done By	: ELES/RNC/2024/AA/8966 : Near Utkarmit Rajkiya Prathmik Vidyalaya Bunglapart Village Pakhar Bauxite Mine : 16.12.2024 to 17.12.2024 : 18.12.2024 : Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 18.12.2024 to 24.12.2024	Sample Condition	: ELES Pvt. Ltd. : Scaled & Preserved

I Average Temperature (°C) : 20 2 Barometric Pressure (mmHg) : 725 3 Relative Humidity (%) : 48 4 Weather Condition : Clear

Discipline : Chemic	:nl	Group :	Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2022	77	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part- 24): 2019	42	60 (24hrs)	
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part- 2/Sec1): 2023	11.3	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m³	IS 5182 (Part- 6): 2022	26.7	80 (24hrs)	
Ozone (O1)	µg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH ₃)	µg/m³	15 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m ¹	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	µg/m [®]	1S 5182 (Part- 22): 2019	0.013	1 (24hrs)	
Nickel (Ni)	ng/m ²	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	
Benzene (C6H6)	µg/m ¹	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m ³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

Reviewed by Akash Kumar

Quelity manage

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Authorised Signatory Dr. Deependra Kumar Sinha

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Page 1 of 1

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ENGINEERING SERVICES PVT. LTD.

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



	TES	T REPORT	
Test Report No.	: ELES/RNC/2024/7629	Report Release Date	: 24.12.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400005481F		
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	: ELES/RNC/2024/AA/8967 : Near Utkarmit Rajkiya Prathmil Vidyalaya Dumrapart Village Pakhar Bauxite Mine : 16.12.2024 to 17.12.2024 : 18.12.2024 : Ambient Air : ELES/DOC/SMPL/02 FUE Doc Lot
Period of Analysis	: 18.12.2024 to 24.12.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

METEOROLOGICAL INFORMATION

_	Average Temperature (%C)	: 20	2	Barometric Pressure (mmHg)	: 725
3	Relative Humidity (%)	:48	4	Weather Condition	: Clear

Discipline : Chemic	al	Group :	Atmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part- 23): 2022	69	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24); 2019	43	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m ³	1S 5182 (Part- 2/Sec1): 2023	12.7	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m ³	1S 5182 (Part- 6): 2022	20.2	80 (24hrs)
Ozone (O ₃)	µg/m ^t	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m*	1S 5182 (Part- 22): 2019	0.009	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ¹	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)
Benzene (C ₆ H ₆)	µg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

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Plot No.30, Mansarovar Enclave, Tupudana, Hatia, Ranchi-834003, Jharkhand

Pakhar (15.58) Bauxite Mine-Environmental Monitoring Report

January- 2025



CONTENT

	Minerals & Minerals : Pakhar (15.58) Environmental Monitoring Report	January 2025
	Pakhar (15.58)	
	AMBIENT AIR QUALITY- CORE ZONE	
1	Near Mine Office	
2	Near Weigh Bridge	
3	Near Mine Quarry No-MI	
4	Near Mine Quarry No-M4	
	AMBIENT AIR QUALITY- BUFFER ZONE	
1	Near Bunglapart Village	
2	Yatri Shed (Near K-10)	
3	Near Utkarmit Rajkiya Prathmik Vidyalaya Bunglapart Village	
4	Near Utkarmit Rajkiya Prathmik Vidyalaya Dumrapart Village	
	Surface Water	
	Soll	11





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ENGINEERING SERVICES PVT. LTD.

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Test Report No.	: ELES/RNC/2025/0410	Report Release Date	: 18.01.2025
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024
ULR No.	: TC1358725000000402F		
CUSTOMER DET	AILS	SAMPLE DETAILS	
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	: ELES/RNC/2025/AA/0243 : Near Mine Office Pakhar (15.58 ha) Bauxite Mine : 09.01.2025 to 10.01.2025 : 11.01.2025 : Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 11.01.2025 to 18.01.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

	Average Temperature (°C)	: 17	2	Barometric Pressure (mmHg)	: 725
3	Relative Humidity (%)	: 56	4	Weather Condition	: Clear

Discipline : Chemic	al	Group :	Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part- 23): 2022	87	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m ³	1S 5182 (Part- 24): 2019	50	60 (24hrs)	
Sulphur Di-Oxide (SO2)	µg/m ³	1S 5182 (Part- 2/Sec1): 2023	14.7	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part- 6): 2022	33.2	80 (24hrs)	
Ozone (O ₂)	µg/m³	1S 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH3)	µg/m ³	18 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part- 10): 2019 (NDIR Method)	1.33	2 (8hrs)	
Lead (Pb)	μg/m ³	IS 5182 (Part- 22): 2019	0.028	1 (24hrs)	
Nickel (Ni)	ng/m ³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	
Benzene (C ₆ H ₆)	µg/m ³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m ²	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

-----Reviewed by Akash Kumar Quality Managez

Authorised Signatory Dr. Deependra Rumar Sinha

Ph. D. Environmental Engg

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Technical Manager

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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



Test Report No.	: ELES/RNC/2025/0411	Report Release Date	: 18.01.2025
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024
ULR No.	: TC1358725000000403F		
CUSTOMER DET	AILS	SAMPLE DETAILS	
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	: ELES/RNC/2025/AA/0244 : Near Weigh Bridge Pakhar (15.58 ha) Bauxite Mine : 09.01.2025 to 10.01.2025 : 11.01.2025 : Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 11.01.2025 to 18.01.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

1	Average Temperature (°C)	:17	2	Barometric Pressure (mmHg)	: 725
3	Relative Humidity (%)	: 56	4	Weather Condition	: Clear

Discipline : Chemic	al	Group :	Atmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part- 23): 2022	93	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	55	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part- 2/Sec1): 2023	13.3	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part- 6): 2022	29.8	80 (24hrs)
Ozone (O ₃)	µg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH3)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ²	IS 5182 (Part- 10): 2019 (NDIR Method)	1.37	2 (8hrs)
Lead (Pb)	µg/m ¹	1S 5182 (Part- 22): 2019	0.031	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m"	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)
Benzene (C ₄ H ₄)	μg/m ³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m ⁸	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

eres Reviewed by Akash Kumar Quality Manager

Dr. Officiarised Signatory

Ph. D. Environmental Engg.

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TEST DEPORT

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



Test Report No.	: ELES/RNC/2025/0412	Report Release Date	: 18.01.2025
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024
ULR No.	: TC1358725000000404F	11.00.000110.000.000.000	
CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name Address	: Minerals & Minerals Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Location Sampling Date	: ELES/RNC/2025/AA/0245 : Near Mine Quarry No- M1 Pakhar (15.58 ha) Bauxite Mine : 09.01.2025 to 10.01.2025
Mines Status	: Operational	Sample Received Date Type of Sample Sampling Procedure	: 11.01.2025 : Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 11.01.2025 to 18.01.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Scaled & Preserved

1	Average Temperature (°C)	:17	2	Barometric Pressure (mmHg)	: 725
3	Relative Humidity (%)	: 56	.4	Weather Condition	: Clear

Discipline : Chemic	-al	Group :	Atmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part- 23): 2022	84	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	47	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m³	IS 5182 (Part- 2/Sec1): 2023	13.3	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part- 6): 2022	31.8	80 (24hrs)
Ozone (O ₃)	µg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH3)	µg/m*	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m'	IS 5182 (Part- 22): 2019	0.031	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ¹	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)
Benzene (C ₄ H ₄)	µg/m [#]	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m ³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

1.0m2 Reviewed by Akash Kumar Quality Manager

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Dr. Deependra Kümar Sinha Ph. D. Environmental Enco

Technical Manager

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Test Report No.	: ELES/RNC/2025/0413	Report Release Date	: 18.01.2025	
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024	
ULR No.	: TC1358725000000405F			
CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name Address Mines Status	: Minerals & Minerals Limited : Lohardago, Jharkhand-835302	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure	: ELES/RNC/2025/AA/0246 : Near Mine Quarry No-M4 Pakhar (15.58 ha) Bauxite Mine : 09.01.2025 to 10.01.2025 : 11.01.2025 : Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: Operational : 11.01.2025 to 18.01.2025	Sampling Done By Sample Condition	: ELES Pvt, Ltd. : Sealed & Preserved	

1	Average Temperature (°C) : 17	2	Barometric Pressure (mmHg	: 725	
3	Relative Humidity (%) : 56	4	Weather Condition	: Clear	

Discipline : Chemic	nal .	Group :	Group : Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	µg/m ³	1S 5182 (Part- 23): 2022	76	100 (24hrs)		
Particulate Matter (PM2.5)	µg/m³	1S 5182 (Part- 24): 2019	35	60 (24hrs)		
Sulphur Di-Oxide (SO2)	µg/m ¹	IS 5182 (Part- 2/Sec1): 2023	13.2	80 (24hrs)		
Nitrogen Di-Oxide (NO ₂)	µg/m ³	IS 5182 (Part- 6); 2022	27,4	80 (24hrs)		
Ozone (O ₃)	µg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)		
Ammonia (NH ₂)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part- 10): 2019 (NDIR Method)	1.26	2 (8hrs)		
Lead (Pb)	µg/m³	IS 5182 (Part- 22): 2019	0.022	1 (24hrs)		
Nickel (Ni)	ng/m ³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m ²	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)		
Benzene (CsHa)	µg/m ³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)		
Benzo-(a)-Pyrene	ag/m ³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)		

tru Reviewed by Akash Kumar Quality Manage/

Authorised Signatory

****End of Report****

Dr. Deependra Kumar Sinha

Page 1 of 1
The Decement stated to Tair Report, is usual by the Laboratory and a Greard Terror and Conditions, only as Company later head in pre-approved former. The results of shown in the Lest Bapart reflet or relates only to the job/analysis done by the Laborancy only. The information stated on the Text Report reflects the findings done by the Laborancy at the time of productment only and within the linears of client's manifestory. The Laborancey is responsible for all the information or data provided on the report, escopi the information which is provided by the client. The Report canon be uproduced except to full and any part of the report want taken pair of centers, welfood proc written approval of the Laborancy. The Report in full or in part shall not be published. advertise, used for any legal network makes prior permission has been secured from the Management of the Laboratory. Attention is drawn in the invitation of finishity, compensation and jarisduction noise. Any ourselement alternation & file/function of the commit or appearance of the Tom Report is unlawful and offenders may be protocated to the follow research the law. All the samples are national for Mileys from the Date of educations of the Test Report. The samples from Regulatory budies are to be retained to specified. Any type of Observations or Compliants inganing the Report shall be done within 15days from the Date of Test Report relevant instant. After the interpreted starti before, no compliance will be associated. The entry Tree schedule momentum in Test Report is in 2016 our former. Altheorization used: N/A (Nor Applicable), BDL (Below Detection Lond), LDI, (Lower Detection Limit)



PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (IHARKHAND) GST NO-20AAECE9715D108

NGINEERING SERVICES PVT. LTD.

Emoil: <u>info@elesol.co.in</u>, <u>eles.ranchi#amail.com</u> Phone no.: 0652-2290103 Website : www.elespl.co.in



Test Report No.	: ELES/RNC/2025/0451	Report Release Date	: 20.01.2025
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC1358725000000443F		
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	: ELES/RNC/2025/AA/0270 : Neur Bunglapart Village Pakhar Bauxite Mine : 11.01.2025 to 12.01.2025 : 13.01.2025 : Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 13.01.2025 to 20.01.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

TEST REPORT

1910	TEOROLOGICAL INFO	RNIALION			
1	Average Temperature (%C)	:19	2	Barometric Pressure (nimHg)	: 725
3	Relative Humidity (%)	: 50	.4	Weather Condition	: Clear

Discipline : Chemic	al l	Group :	Group : Atmospheric Pollution			
Parameter Unit		Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	µg/m³	IS 5182 (Part- 23): 2022	73	100 (24hrs)		
Particulate Matter (PM2.5)	pg/m ³	IS 5182 (Part- 24); 2019	42	60 (24hrs)		
Sulphur Di-Oxide (SO2)	µg/m ³	1\$ 5182 (Part- 2/Sec1): 2023	13.4	80 (24hrs)		
Nitrogen Di-Oxide (NO1)	µg/m ³	IS 5182 (Part- 6): 2022	26.1	80 (24hrs)		
Ozone (O ₁)	µg/m ³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)		
Ammonia (NH ₂)	µy/m²	15 5182 (Part- 25); 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m²	1S 5182 (Part-10): 2019 (NDIR Method)	<1.0	2 (8hrs)		
Lead (Pb)	μ <u>ψ</u> /m ³	1S 5182 (Part- 22): 2019	0.022	1 (24hrs)		
Nickel (Ni)	ng/m ³	15 5182 (Part- 26): 2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m²	ELES/AIR/SOP/01; 2021	<2.0	06 (Annual)		
Benzene (C ₄ H ₄)	µg/m*	ELES/GC/SOP/06: 2023	<2.5	05(Annual)		
Benzo-(a)-Pyrene	ng/m ¹	ELES/GC/SOP/05: 2023	<0.5	01(Annual)		

As Reviewed by Quality Menager

Authorised Signatory Dr. Deependra Kumar Sinha

Ph. D. Environmental Engg.

Page 1 of 1

****End of Report****

Technical Manayar

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATTA, RANCHI-834003 (JHARKHAND) GST-NO> 20AAECERTEBUILT

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/2025/0452	Report Release Date	: 20.01.2025		
Work Order No.	: 13612312113	Work Order Date : 28.03.2024			
ULR No.	: TC1358725000000444F				
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	: ELES/RNC/2025/AA/0271 : Yatri Shed (Near K-10) Pakhar Bauxite Mine : 11.01.2025 to 12.01.2025 : 13.01.2025 : Ambient Air : ELES/DOC/SMPL/02 - ELES/DOC/SMPL/02		
Period of Analysis	: 13.01.2025 to 20.01.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved		

1	Average Temperature (%C) : 19	2	Barometric Pressure (mmHg)	: 725	
3	Relative Humidity (%) : 50	4	Weather Condition	: Ciear	

Discipline : Chemic	cu i	Group : Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part- 23): 2022	76	100 (24hrs)		
Particulate Matter (PM2.5)	μg/m ³	IS 5182 (Part-24): 2019	43	60 (24hrs)		
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part-2/Sec1): 2023	13.7	80 (24hrs)		
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part- 6): 2022	28.1	80 (24hrs)		
Ozone (O ₃)	µg/m ³	IS \$182 (Part- 9): 2019	<20.0	100 (8hrs)		
Ammonia (NH2)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part- 10): 2019 (NDIR Method)	1.23	2 (8hrs)		
Lend (Pb)	µg/m	1S 5182 (Part- 22): 2019	0.024	1 (24hrs)		
Nickel (Ni)	ng/m³	(\$ 5182 (Part- 26): 2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m*	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)		
Benzene (C ₆ H ₆)	µg/m ³	ELES/GC/SOP/06: 2023	<1.5	05(Amuni)		
Benzo-(a)-Pyrene	ng/m"	ELES/GC/SOP/05: 2023	<0.5	01(Annuml)		

24 Reviewed by Akadh Kumar Deality Menager

144 Authorised Signatory

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

Technical Manager

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST ND- 35MAECER130124

ENGINEERING SERVICES PVT. LTD.

Email: <u>info@elespl.ca.in</u>, <u>eles.ranchi@amail.com</u> Phone na.: 0651-2290303 Webalte : wnnw.elespl.co.in



				TEST	REP	ORT		
Te	est Report No.	port No. : ELES/RNC/2025/0453			Re	port Release Date	: 20.01.2025	k.
W	ork Order No.	: 1361231	2113		We	ork Order Date	: 28.03.2024	
U	LR No.	; TC1358	725000000445	F				
C	USTOMER DET	AILS			SA	MPLE DETAILS		
Customer Name : Address :		: Hindalco Industries Limited : Lohardaga, Jharkhand-835302		Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure		: ELES/RNC/2025/AA/0272 : Near Utkarmit Rajkiya Prathmik Vidyalaya Bunglapart Village Pakhar Bauxite Mine : 11.01.2025 to 12.01.2025 : 13.01.2025 : Ambient Air : ELES/DOC/SMPL/02		
Pe	riod of Analysis	: 13.01.2025 to 20.01.2025		Sampling Done By Sample Condition		the second se	: ELES Pvt. Ltd. : Scaled & Preserved	
M	ETEOROLOGI	CAL INFO	RMATION					
1	Average Temp	erature (°C)	: 19		2 Barometric Pressure (mmHg) : 725			725
3.	Relative Humidity (%) : 50			4	Weather Condition	1 11	Clear	
	Discipline	: Chemica	ıl			Group	: Atmospheric	Pollution
	Paramet	ér	Unit		Test Protocol		Result	Regulatory Limit
Pa	rticulate Matter (I	PM10)	µg/m ³	IS 51	IS 5182 (Part- 23): 2022		72	100 (24hrs)
_								

Unit	Test Protocol	Result	Regulatory Limit
µg/m ⁸	IS 5182 (Part- 23): 2022	72	100 (24hrs)
µg/m ³	IS 5182 (Part- 24): 2019	35	60 (24hrs)
µg/m³	IS 5182 (Part- 2/Sec1): 2023	13.1	80 (24hrs)
µg/m ³	15 5182 (Part- 6); 2022	28.1	80 (24hrst)
µg/m ³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
mµ/m*	IS 5182 (Part- 10): 2019 (NDIR Method)	<1,0	2 (8hrs)
µg/m ¹	IS 5182 (Part- 22): 2019	0.015	1 (24hrs)
ng/m ¹	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
ng/m ²	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)
µg/m ⁸	ELES/GC/SOP/06: 2023	<2.5	05(Annuil)
ng/m ³	ELES/GC/SOP/05: 2023	<0.5	(iaumA)10
	μg/m ³ μg/m ³ μg/m ³ μg/m ³ μg/m ³ μg/m ⁵ μg/m ⁵ ηg/m ¹ ng/m ¹ ng/m ³	μg/m³ IS 5182 (Part- 23): 2022 μg/m³ IS 5182 (Part- 24): 2019 μg/m³ IS 5182 (Part- 2/Sec1): 2023 μg/m³ IS 5182 (Part- 2/Sec1): 2023 μg/m³ IS 5182 (Part- 6): 2022 μg/m³ IS 5182 (Part- 6): 2022 μg/m³ IS 5182 (Part- 9): 2019 μg/m³ IS 5182 (Part- 25): 2018 μg/m³ IS 5182 (Part- 10): 2019 μg/m³ IS 5182 (Part- 25): 2018 mg/m³ IS 5182 (Part- 25): 2018 mg/m³ IS 5182 (Part- 25): 2019 ng/m³ IS 5182 (Part- 25): 2019 ng/m³ IS 5182 (Part- 26): 2020 μg/m³ IS 5182 (Part- 26): 2021 μg/m³ IS 5182 (Part- 26): 2023	μg/m³ IS 5182 (Part- 23): 2022 72 μg/m³ IS 5182 (Part- 24): 2019 35 μg/m³ IS 5182 (Part- 24): 2023 13.1 μg/m³ IS 5182 (Part- 2/Sec1): 2023 13.1 μg/m³ IS 5182 (Part- 6): 2022 28.1 μg/m³ IS 5182 (Part- 6): 2022 28.1 μg/m³ IS 5182 (Part- 9): 2019 <20.0

Reviewed by Aizan Kumar Notice Manager

****End of Report**** Page 1 of 1 Authorised Signatory Dr. Deependra Kumar Sinha

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NGINEERING SERVICES PVT. LTD.

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



Test Report No.	: ELES/RNC/2025/0454		Re	port Release Date	: 20.01.2025			
Work Order No.	: 13612312113				ork Order Date	: 28.03.2024		
ULR No.		725000000446	F	1				
CUSTOMER DET	AILS	12222222222	12	163	MPLE DETAILS			
Customer Name	and the second se	o Industries Lin	nited		mple Ref. No.	ELES/RNC	2/2025/AA/0273	
Address Mines Status	ress : Lohardaga, Jharkhand-835302		Location Sampling Date Sample Received Date Type of Sample Sampling Procedure		: Near Utkarmit Rajkiya Prathmi Vidyalaya Dumrapart Village Pakhar Baucite Mine : 11.01.2025 to 12.01.2025 : 13.01.2025 : Ambient Air : ELES/DOC/SMPL/02			
Period of Analysis	: 13.01.20	: 13.01.2025 to 20.01.2025			mpling Done By mple Condition	: ELES Pvt. Ltd. : Sealed & Preserved		
METEOROLOGI	CAL INFO	RMATION						
1 Average Tempe		: 19		2				
3 Relative Humid	fity (%)	: 50	_	4	Weather Condition	: Clear		
Discipline	: Chemica	Ц			Group :	Atmospheric	Pollution	
Paramete	er	Unit		Test Protocol		Result	Regulatory Limi	
Particulate Matter (P	PM10)	µg/m ³	IS 5	182 (Part- 23): 2022		72	100 (24hrs)	
Particulate Matter (F	M2.5)	µg/m ³	IS 5	5182 (Part- 24): 2019		46	60 (24hrs)	
Sulphur Di-Oxide (S	iO;)	µg/m ²	IS 518	82 (Part- 2/Sec1): 2023		14.1	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	µg/m ²	IS 5	5182 (Part- 6): 2022		24.8	80 (24hrs)	
Ozone (O ₃)		µg/m ³	18.5	18 5182 (Part- 9): 2019		<20.0	100 (8hrs)	
Ammonia (NH3)		µg/m³	1S 5	18 5182 (Part- 25): 2018		<10.0	400 (24hrs)	
Carbon Monoxide (O	10)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)		ALL CARACTERISTICS AND	1.23	2 (8hrs)	
Lead (Pb)		µg/m ³	IS 5182 (Part- 22): 2019		0.015	1 (24hrs)		
Nickel (Ni)		ng/m ³	IS 5	182 (1	Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)		ng/m ³	ELES	S/AIR	/SOP/01: 2021	<2.0	06 (Annual)	
Banzene (C ₆ H ₅)		µg/m³	ELES	vgc.	SOP/06: 2023	<2.5	05(Annual)	
Imme (a) themes		miles I	212.214	100.00	NAD 005, 2005	-0. P	0101	

Reviewed by Aszeh Kumar Quality Manage

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Benzo-(a)-Pyrme

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

Authorised Signatory Dr. Deependra Kumar Sinha

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The Osciences wood as Test Report, is bound by the Laboratory under General Tames and Conditions, only not Company latter head in pEO/GRO ACAL MOD AGER down in the Test Report refer or relation only of the polyandry in draw by the Laboratory only. The information mated on the Test Report reflects do findings done by the Laboratory at the time of involvement only and within the information mated on the Test Report reflects do findings done by the Laboratory at the time of involvement only and within the boats of closel's instruction. The Laboratory is empowelle for all the information mated on the report reflects do findings done by the Laboratory at the time of involvement only and within the information of the information of the information of the report of the taboratory of the report of the rep control for 10 hyperform the Date of reflamations of the Test Report relevant from Regulatory Scillers are to be presided as appelled. Any type of Observations of Completion regarding the Report shall be done within 17 days from the Date of Test Report relevant/based. After the case period remaining being within a security of the states Treat schedule contained in Test Report is to Milerest Remain Althousian and N/S (Not Againstite), 2001, (Indoor Determine (Intel), 120, (Lower Determine Limit).

ELES/GC/SOP/05: 2023



PLOT NO-30, MANSAROVAR 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



TEST REPORT

Test Report No.	: ELES/RNC/2025/0427	Report Release Date	: 20.01.2025	_
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024	
ULR No.	: TC1358725000000419F			

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Sampling Date	: ELES/RNC/2025/SW/0235 : 10.01.2025	
		Sample Received Date	: 11.01.2025	
Address	: Lohardaga, Jharkhand-835302	Type of Sample	: Surface Water	
		Location of Sample	: Near Mine Quarry No- M1, Pakhar Bauxite Mine (15.58 ha	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/01	
Period of Analysis	: 11.01.2025 to 17.01.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

Discipline : Chemical		Group :	Water	Tolerance Limits
Parameter	Unit	Test Protocol	Result	as per 1S 2296-1992 Class C (Inland Surface Water)
pH (at 24.6 °C)	-	IS 3025 (Part-11) : 2022	6.62	6.5-8.5
Temperature	°C	IS 3025 (Part 9): 2023	18.0	-
Chemical Oxygen Demand (COD)	mg/L	IS 3025 (Part-58); 2023	5.2	-
Biochemical Oxygen Demand (BOD) (@ 20°C for 5 days)	mg/L	APHA 24th Ed.2023; 5210B	1.5	3.0
Total Dissolved Solids (TDS)	mg/I,	15 3025 (Part-16): 2023	78.0	1500
Total Suspended Solids (TSS)	mg/L	IS 3025 (Part-17): 2022	2.2	-
Oil & Grease	mg/L	IS 3025 (Part-39): 2021	BDL (DL: 0.1)	0.1
Calcium (as Ca)	mg/L	IS 3025 (Part-40): 2019	3.2	94 C

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/2025/0427	Report Release Date	: 20.01.2025	
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024	
ULR No.	: TC1358725000000419F			

Discipline : Chemical		Group : Residues in	Group : Residues in Water		
Parameter	Unit	Test Protocol	Result	as per 1S 2296-1992 Class C (Inland Surface Water)	
Aluminum (as AI)	mg/L	IS 3025 (Part-55) :2003; RA2019	BDL (DL: 0.02)	-	
Iron (as Fe)	mg/L	APHA 24th Ed.2023; 3111B	0.296	50	

Remarks: pH & Temperature done at site.

Reviewed by Akash Kumar Quality Manager

=End of Report*

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

Page 2 of 2

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-R34003 (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



TEST REPORT

Test Report No.	: ELES/RNC/2025/0430	Report Release Date	: 20.01.2025	
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024	
ULR No.	: TC1358725000000422F	10. 		

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Sampling Date Sample Received Date	: ELES/RNC/2025/SL/0238 : 10.01.2025 : 11.01.2025
Address	: Lohardaga, Jharkhand-835302	Type of Sample Location of Sample	: Soil : Near Mine Quarry No-M1, Pakhar Bauxite Mine(15.58 ha)
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/05
Period of Analysis	: 11.01.2025 to 17.01.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed

Discipline : Chemical		Group : Pollution &	Environment
Parameter	Unit	Test Protocol	Result
pH (1:2) at 24.5 °C		IS 2720 (Part-26); 2021	7.05
Conductivity (1:2) at 24.5 ℃	µS/cm	IS 14767: 2021	118
Total Organic Carbon (TOC)	%	Soil Testing in India: 2011 (Walkley & Black Method)	0.59
Available Phosphorus (as P)	kg/ha	Soil Testing in India; 2011	4.36
Potassium (as K)	mg/kg	IS 9497: 2020	350
Available Nitrogen	5%	Soil Testing in India; 2011	8.68
Chloride (as Cl) (1:2)	%	ELES/SOIL/SOP/01: 2021	0.003
Arsenic (as As)	mg/kg	ELES/SOIL/SOP/28: 2023	BDL (DL: 0.01)
Cadmium (as Cd)	mg/kg	US EPA 3050 A&B : 1996	BDL (DL: 0.1)
Lead (as Pb)	mg/kg	US EPA 3050 A&B : 1996	BDL (DL: 0.1)

Page 1 of 2

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TEST REPORT

Test Report No.	: ELES/RNC/2025/0430	Report Release Date	: 20.01.2025	
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024	
ULR No.	: TC1358725000000422F			

Discipline : Chemical		Group : Pollution & Environment		
Parameter	Unit	Test Protocol	Result	
Magnesium (as Mg)	mg/kg	Soil Testing in India; 2011	715	
Mercury (as Hg)	mg/kg	US EPA 7473 : 2007	BDL (DL: 0.01)	

Reviewed by Akash Kumar Quality Manager

****End of Report****

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

Page 2 of 2

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Test Report No.	: ELES/RNC/2025/0430	Report Release Date	: 20.01.2025	
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024	

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Sampling Date Sample Received Date	: ELES/RNC/2025/SL/0238 : 10.01.2025 : 11.01.2025
Address	: Lohardaga, Jharkhand-835302	Type of Sample Location of Sample	: Soil : Near Mine Quarry No-M1, Pakhar Bauxite Mine(15.58 ha
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/05
Period of Analysis	: 11.01.2025 to 17.01.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed

Discipline : Chemica	al	Group : Pollution &	Environment
Parameter	Unit	Test Protocol	Result
Selenium (as Se)	mg/kg	US EPA 3050 B : 1996	BDL (DL: 0.01)

Reviewed by Akash Kumar Quality Managor

*End of Report****

Authorised Signatory Dr. Deopendra Kumar Sinha Ph. D. Environmental Engg. Technical Manager

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ENVIRONMENTAL LABORATORIES & ENGINEERING SERVICES PVT. LTD.

Plot No.30, Mansarovar Enclave, Tupudana, Hatia, Ranchi-834003, Jharkhand

Pakhar (15.58) Bauxite Mine-Environmental Monitoring Report

February 2025



CONTENT

	Minerals & Minerals : Pakhar (15.58) Environmental Monitoring Report	February 2025
	Pakhar (15.58)	
	AMBIENT AIR QUALITY- CORE ZONE	
1	Near Mine Office	
2	Near Weigh Bridge	
3	Near Mine Quarry No-MI	
4	Near Mine Quarry No+M4	
	AMBIENT AIR QUALITY- BUFFER ZONE	
1	Near Bunglapart Village	
2	Yatri Shed (Near K-10)	
3	Near Utkarmit Rajkiya Prathmik Vidyalaya Bunglapart Village	
4	Near Utkarmit Rajkiya Prathmik Vidyalaya Dumrapart Village	
	Drinking Water	
	Stack	





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Test Report No.	: ELES/RNC/2025/1225	Report Release Date	: 25.02.2025
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024
ULR No.	: TC1358725000001196F		
CUSTOMER DET	AILS	SAMPLE DETAILS	
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	: ELES/RNC/2025/AA/1258 : Near Mine Office Pakhar (15.58 ha) Bauxite Mine : 17.02.2025 to 18.02.2025 : 19.02.2025 : Ambient Air : ELES/DOC/SMPL/02 : FLES D.4.144
Period of Analysis	: 19.02.2025 to 25.02.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

1	Average Temperature (*C)	: 22	2	Barometric Pressure (mmHg)	; 720
3	Relative Humidity (%)	: 59	4	Weather Condition	; Clear

Discipline : Chemic	al	Group :	Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part- 23): 2022	80	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m ³	1S 5182 (Part- 24): 2019	46	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	µg/m³	IS 5182 (Part- 2/Sec1): 2023	12.5	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m ³	15 5182 (Part- 6): 2022	30.8	80 (24hrs)	
Ozone (O1)	µg/m ³	1S 5182 (Part- 9): 2019	<20.0	100 (Shrs)	
Ammonia (NH ₃)	µg/m ¹	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part- 10): 2019 (NDIR Method)	1.25	2 (8hrs)	
Lead (Pb)	µg/m ³	IS 5182 (Part- 22): 2019	0.022	1 (24hrs)	
Nickel (Ni)	ng/m ³	1S 5182 (Part- 26); 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m ²	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	
Benzene (C ₆ H ₆)	µg/m ³	ELES/GC/SOP/06: 2023	<1.0	05(Annual)	
Benzo-(a)-Pyrene	ng/m ³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

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Quality Manager

****End of Report****

Page 1 of 1

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Test Report No.	: ELES/RNC/2025/1226	Report Release Date	: 25.02.2025
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024
ULR No.	: TC1358725000001197F		
CUSTOMER DET	AILS	SAMPLE DETAILS	
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	: ELES/RNC/2025/AA/1259 : Near Weigh Bridge Pakhar (15.58 ha) Bauxite Mine : 17.02.2025 to 18.02.2025 : 19.02.2025 : Ambient Air : ELES/DOC/SMPL/02
STOWNS STRUCT		Sampling Done By	: ELES Pvt. Ltd.
Period of Analysis	: 19.02.2025 to 25.02.2025	Sample Condition	1 Sealed & Preserved

TEST REPORT

1	Average Temperature (%C)	: 22	2	Barometric Pressure (mmHg)	: 720	
3	Relative Humidity (%)	: 59	4	Weather Condition	: Clear	

Discipline : Chemic	al	Group :	Atmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part- 23): 2022	97	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	58	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m ³	1S 5182 (Part- 2/Sec1): 2023	15.1	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part- 6): 2022	36.4	80 (24hrs)
Ozone (O ₃)	ug/m ³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₂)	µg/m³	1S 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part- 10): 2019 (NDIR Method)	1.41	2 (8hrs)
Lead (Pb)	µg/m³	1S 5182 (Part- 22): 2019	0.048	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)
Benzene (C ₄ H _a)	µg/m ³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m ³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

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Page 1 of 1

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Test Report No.	: ELES/RNC/2025/1227	Report Release Date	: 25.02.2025
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024
ULR No.	: TC1358725000001198F		
CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2025/AA/1260 : Near Mine Quarry No- M1 Pakhar (15.58 ha) Bauxite Mine
Address Mines Status	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 17.02.2025 to 18.02.2025 : 19.02.2025 : Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 19.02.2025 to 25.02.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

TEST DEDOUT

METEOROLOGICAL INFORMATION

1	Average Temperature (°C)	: 22	2	Barometric Pressure (mmHg)	: 720
3	Relative Humidity (%)	: 59	:40	Weather Condition	: Clear

Discipline : Chemic	al	Group :	Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part- 23): 2022	88	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24); 2019	51	60 (24hrs)	
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part- 2/Sec1): 2023	16.6	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part- 6): 2022	34.8	80 (24hrs)	
Ozone (O ₁)	µg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH ₂)	µg/m²	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part- 10): 2019 (NDIR Method)	1.25	2 (8hrs)	
Lead (Pb)	µg/m ³	IS 5182 (Part- 22): 2019	0.034	1 (24hrs)	
Nickel (Ni)	ng/m ³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	
Benzene (C ₆ H ₆)	µg/m ¹	ELES/GC/SOP/06: 2023	<1.0	05(Annual)	
Benzo-(a)-Pyrene	ng/m1	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

Ladad usma Reviewed by

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Page 1 of 1

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TEST DEPORT

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

ENGINEERING SERVICES PVT. LTD.

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Test Report No.	: ELES/RNC/2025/1228	Report Release Date	: 25.02.2025	
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024	
ULR No.	: TC1358725000001199F			
CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2025/AA/1261 : Near Mine Quarry No-M4 Pakhar (15.58 ha) Bauxite Mine	
Address Mines Status	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 17.02.2025 to 18.02.2025 : 19.02.2025 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd. : Sealed & Preserved	
Period of Analysis	: 19.02.2025 to 25.02.2025	Sampling Done By Sample Condition		

METEOROLOGICAL INFORMATION

1	Average Temperature (°C)	: 22	2	Barometric Pressure (mmHg)	: 720
3	Relative Humidity (%)	: 59	4	Weather Condition	; Clear

Discipline : Chemic	al	Group :	Group : Atmospheric Pollution			
Parameter Unit		Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part- 23): 2022	81	100 (24hrs)		
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part-24): 2019	53	60 (24hrs)		
Sulphur Di-Oxide (SO2)	µg/m ¹	1S 5182 (Part- 2/Sec1): 2023	11.8	80 (24hrs)		
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part- 6): 2022	30.3	80 (24hrs)		
Ozone (O ₃)	µg/m ³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)		
Ammonia (NH3)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part- 10): 2019 (NDIR Method)	1.30	2 (8hrs)		
Lead (Pb)	µg/m³	IS 5182 (Part- 22): 2019	0.027	1 (24hrs)		
Nickel (Ni)	ng/m ⁸	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)		
Benzene (C ₆ H ₆)	µg/m²	ELES/GC/SOP/06: 2023	<2.5	05(Annual)		
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05; 2023	<0.5	01(Annual)		

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Email: <u>info@elespi.co.in</u>, <u>eles.ranchi@amail.com</u> Pliane na.: 0651-2290103 Website : www.elespi.co.in



Test Report No.	: ELES/RNC/2025/1319	Report Release Date	: 28.02.2025		
Work Order No.	: 13612312113	Work Order Date : 28.03.2024			
ULR No.	: TC1358725000001290F				
CUSTOMER DET	AILS	SAMPLE DETAILS			
Customer Name Address Mines Status	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302 : Operational	Sample Ref. No. : ELES/RNC/2025/AA/ Location : Near Bunglapart Villa Pakhar Bauxite Mine : 19.02.2025 to 20.02.20 Sample Received Date : 21.02.2025 Type of Sample : Ambient Air Sampling Procedure : ELES/DOC/SMPL/02			
Period of Analysis	: 21.02.2025 to 28.02.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Scaled & Preserved		

1	Average Temperature (°C)	: 21	.2	Barometric Pressure (mmHg)	: 720	
3	Relative Humidity (%)	: 56	4	Weather Condition	: Clear	

Discipline : Chemic	al	Group :	Group : Atmospheric Pollution		
Parameter Unit		Unit Test Protocol		Regulatory Limit	
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part- 23): 2022	78	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	47	60 (24hrs)	
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part- 2/Sec1): 2023	12.8	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part- 6): 2022	27.5	80 (24hrs)	
Ozone (O ₂)	µg/m ³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH ₃)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m ¹	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	µg/m²	IS 5182 (Part- 22): 2019	0.015	1 (24hrs)	
Nickel (Ni)	ng/m ²	15 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	
Benzene (C _s H _s)	µg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m ³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

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Page 1 of 1

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IGINEERING SERVICES PVT. LTD.

Email: <u>info@elespl.co.in</u>, <u>eles.ronchi@pmail.com</u> Phone no.: 0651-2290103 Website : www.elespl.co.in



Test Report No.	: ELES/RNC/2025/1320	Report Release Date : 28.02.2025			
Work Order No. : 13612312113		Work Order Date	: 28.03.2024		
ULR No.	: TC1358725000001291F				
CUSTOMER DET	AILS	SAMPLE DETAILS			
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2025/AA/1350 : Yatri Shed (Near K-10) Pakhar Bauxite Mine		
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 19.02.2025 to 20.02.2025 : 21.02.2025 : Ambient Air		
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02		
Period of Analysis	: 21.02.2025 to 28.02.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved		

METEOROLOGICAL INFORMATION

 1
 Average Temperature (°C)
 : 21
 2
 Barometric Pressure (mmHg)
 : 725

 3
 Relative Humidity (%)
 : 56
 4
 Weather Condition
 : Clear

Discipline : Chemic	al	Group :	Group : Atmospheric Pollution			
Parameter Unit		Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part- 23): 2022	80	100 (24hrs)		
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	49	60 (24hrs)		
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part- 2/Sec1): 2023	12.3	80 (24hrs)		
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part- 6): 2022	31.7	80 (24hrs)		
Ozone (O ₂)	µg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (Shrs)		
Ammonia (NH ₃)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	1.25	2 (8hrs)		
Lead (Pb)	µg/m³	IS 5182 (Part- 22): 2019	0.029	1 (24hrs)		
Nickel (Ni)	ng/m ³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01: 2021	<2.6	06 (Annual)		
Benzene (C ₄ H ₄)	µg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)		
Benzo-(a)-Pyrene	ng/m ³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)		
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ING SERVICES P LTD Email: info@elesnl.co.in, eles.ranchi@amail.com

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



Test Report No.	: ELES/RNC/2025/1321	Report Release Date	: 28.02.2025	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC1358725000001292F			
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 Sampling Done By	: ELES/RNC/2025/AA/1351 : Near Utkarmit Rajkiya Prathmis Vidyalaya Bunglapart Village Pakhar Bauxite Mine : 19.02.2025 to 20.02.2025 : 21.02.2025 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 21.02.2025 to 28.02.2025	Sample Condition	: Sealed & Preserved	

1	Average Temperature (°C) : 21	2	Barometric Pressure (mmHg)	: 725
3	Relative Humidity (%) : 56	4	Weather Condition	: Clear

Discipline : Chemic	al	Group :	Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part- 23): 2022	76	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	42	60 (24hrs)	
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part- 2/Sec1): 2023	13.3	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part- 6): 2022	26.3	80 (24hrs)	
Ozone (O3)	µg/m ³	IS 5182 (Part- 9): 2019	<20.0	100 (Shrs)	
Ammonia (NH3)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m²	IS 5182 (Part- 10): 2019 (NDIR Method)	1.28	2 (8hrs)	
Lead (Pb)	hētu	IS 5182 (Part- 22): 2019	0.018	1 (24hrs)	
Nickel (Ni)	ng/m ³	IS 5182 (Part- 26): 2020	<5.0	20 (Annual)	
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	
Benzene (CeHa)	µg/m ⁹	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

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Ozone (O₃)

Ammonia (NH₂)

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ENGINEERING SERVICES PVT. LTD

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



			TEST	REF	ORT		
Test Report No.	: ELES/F	ENC/2025/1322	1	Report Release Date : 28.02.2025			
Work Order No.	: 1361231	2113		Work Order Date : 28.03.2024			
ULR No. : TC1358725000001293F							
CUSTOMER DET	AILS			SA	MPLE DETAILS		
CUSTOMER DETAILS Customer Name : Hindalco Industries Limited Address : Lohardaga, Jharkhand-835302 Mines Status : Operational Period of Analysis : 21.02.2025 to 28.02.2025			Sample Ref. No. : ELES/RNC/2025// Location : Near Utkarmit Raj Vidyalaya Dumrap Pakhar Bauxite Mi Sampling Date : 19.02.2025 to 20.0 Sample Received Date : 21.02.2025 Type of Sample : Ambient Air Sampling Done By : ELES/DOC/SMPL		mit Rajkiya Prathmik Dumrapart Village usite Mine to 20.02.2025 ir DSMPL/02 Ltd.		
				- ciu	nple Condition	; Sealed & P	reserven
METEOROLOGI 1 Average Temp		:21		2	Barometrin Presso	m (mmHa)	725
3 Relative Humi	and the second se	: 56		2 Barometric Pressure (mmHg) : 725 4 Weather Condition : Clear			
Disciplin	e : Chemica	al		-	Group	: Atmospheric	Pollution
Paramet	er	Unit	Test Protocol		Result	Regulatory Limit	
Particulate Matter ()	PM10)	µg/m ³	IS 51		Part- 23): 2022	72	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ¹	IS 5182 (Part- 24):		Part- 24): 2019	46	60 (24hrs)
Sulphur Di-Oxide (S	SO ₂)	µg/m ³	IS 518	2 (Pa	rt- 2/Sec1): 2023	14.1	80 (24hrs)
Nitrogen Di-Oxide	(NO ₂)	µg/m ³	IS 5	182 (Part- 6): 2022	24.8	80 (24hrs)
Contraction of the local data and the local data an				_			

IS 5182 (Part-9): 2019

IS 5182 (Part- 25): 2018

IS 5182 (Part-10): 2019

Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part- 10): 2019 (NDIR Method)
Lead (Pb)	µg/m³	IS 5182 (Part- 22): 2019
Nickel (Ni)	ng/m ³	IS 5182 (Part- 26): 2020
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01: 2021
Benzene (CeHa)	µg/m³	ELES/GC/SOP/06: 2023
Benzo-(a)-Pyrene	ng/m ³	ELES/GC/SOP/05: 2023
0	20	

ug/m

µg/m'

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<20.0

<10.0

1.23

0.015

<6.0

2.0

25

<0.5

100 (Shrs)

400 (24hrs)

2 (8hrs)

1 (24hrs)

20 (Annual)

06 (Annual)

05(Annual)

01(Annual)

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Page 1 of 1

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



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TEST	REPORT
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Test Report No.	: ELES/RNC/2025/1302	Report Release Date	: 28.02.2025	_
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024	
ULR No.	: TC1358725000001273F			

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Sampling Date Sample Received Date Type of Sample	: ELES/RNC/2025/DW/1256 : 16.02.2025 : 19.02.2025 : Drinking Water	
Address	: Lohardaga, Jharkhand-835302	Source of Sample Location of Sample	: Tap Water : Office Area Pakhar Bauxite Mine (15.58 ha	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/01	
Period of Analysis	: 19.02.2025 to 27.02.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Scaled & Preserved	

Discipline : Chemical	Discipline : Chemical Group				ory Limit 10500:2012
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
pH (at 24.8 °C)		APHA 24* Ed.2023, 4500-H*	6.90	6.5-8.5	No Relaxation
Turbidity	NTU	APHA 24th Ed.2023, 2130 B	0.27	1.0	5.0
Taste		APHA 24 th Ed.2023, 2160 C	Agreeable	Agreeable	Agreeable
Odour	-	IS 3025 (Part-5) :2018	Agreeable	Agreeable	Agreeable
Colour	Hazen	APHA 24 th Ed.2023, 2120B&D	1.0	5.0	15
Total Dissolved Solids (TDS)	mg/L	APHA 24th Ed.2023, 2540B,C&D	302	500	2000
Chloride (as Cl)	mg/L	APHA 24th Ed.2023, 4500 CI B	17.2	250	1000
Fluoride (as F)	mg/L	APHA 24th Ed.2023, 4500 F-D	BDL (DL: 0.1)	1.0	1.5
Total Alkalinity (as CaCO3)	mg/L	APHA 24th Ed.2023, 2320 B	126	200	600
Total Hardness (as CaCO ₃)	mg/L	APHA 24th Ed.2023, 2340 C	148	200	600
Sulphate (as SO4)	mg/L	APHA 24th Ed.2023, 4500 SO4-2-E	6.42	200	400
Nitrate (as NO ₃)	mg/L	APHA 24 th Ed.2023, 4500 NO ₃ -B	1.64	45	No Relaxation

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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/2025/1302	Report Release Date	: 28.02.2025
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30,03,2024
ULR No.	: TC1358725000001273F		

Discipline : Chemics	al	Grou	ip: Water		ory Limit 0500:2012
Parameter	Unit	Test Protocol	Result	Acceptable	Permissible Limit
Phenolic Compound (gs CcH1OH)	mg/L	IS 3025 (Part 43/Sec1): 2022	BDL (DL: 0.001)	0.001	0.002
Free Residual Chlorine (RFC)	mg/L	IS 3025 (Part-26): 2021	BDL (DL: 0.1)	0.2(Min)	1.0(Min)
Calcium (as Ca)	mg/L	APHA 24th Ed.2023, 3500 Ca B	39.1	75	200
Anionic Surfactants (as MBAS)	mg/L	APHA 24 th Ed.2023, 5540-C	BDL (DL: 0.025)	0.2	1.0
Discipline : Chemic	al	Gro	oup : Residues i	n 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) : 2021	BDL (DL: 0.2)	0.5	1.0
Cadmium (as Cd)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL: 0.003)	0.003	No Relaxation
Total Chromium (as Cr)	mg/L	APHA 24 th Ed.2023; 3111B	BDL (DL: 0.03)	0.05	No Relaxation
Copper (as Cu)	mg/L	1S 3025 (Part 42): 2019	BDL (DL: 0.03)	0.05	1.5
Cyanide (as CN)	mg/L	APHA 24th Ed 2023, 4500 CN-E	BDL (DL: 0.012)	0.05	No Relaxation
Iron (as Fe)	mg/L	APHA 24th Ed.2023; 3111B	0.054	1.0	No Relaxation
Lead (as Pb)	mg/L	APHA 24 th Ed.2023; 3111B	BDL (DL: 0.01)	0.01	No Relaxation
Manganese (as Mn)	mg/L	APHA 24 th Ed.2023; 3111B	BDL (DL: 0.05)	0.1	0.3
Mercury (as Hg)	mg/L	IS 3025 (Part-48): 2019	BDL (DL: 0.001)	0.001	No Relaxation
Selenium (as Se)	mg/L	IS 3025 (Part-56); 2019	BDL (DL: 0.01)	0.01	No Relaxation

Page 2 of 4

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO- 204AECE9713D124 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/2025/1302	Report Release Date	: 28.02.2025
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024
ULR No.	: TC1358725000001273F		

Discipline : Chemical		Group : Resid	ues in Water	Regulatory Limit as per 1S10500:2012	
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
Zinc (as Zn)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL: 0.1)	5.0	15
Polynuclear Aromatic Hydrocarbons (PAH)	µg/L	ELES/GC/SOP/04: 2023	BDL (DL: 0.05)	0.1	No Relaxation
Polychlorinated biphenyls (PCB)	µg/L	ELES/GC/SOP/03: 2023	BDL (DL: 0.1)	0.5	No Relaxation
Pesticides				Li	mit
Alachlor	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	3	20
Atrazine	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	2	2.0
Butachlor	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	125	
Chlorpyriphes	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	30	
Ethion	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	3.0	
Malathion	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	190	
Methyl parathion	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.1)	0.30	
Monocrotophos	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	1.0	
Phorate	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	1	2.0
Phorate Sulphone	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)		
Dieldrin	µg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.01)	0.03	
Alpha HCH	µg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.006)	0.01	
Beta HCH	µg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.02)	0	.04

Page 3 of 4

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

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TEST REPORT

Test Report No.	: ELES/RNC/2025/1302	Report Release Date	: 28.02.2025
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024
ULR No.	: TC1358725000001273F		

Pesticides				
Parameter	Unit	Test Protocol	Result	Limit
Delta HCH	µg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.02)	0.04
Gamma HCH (Lindane)	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.02)	2.0
Endosulfan (alpha, beta and sulphate)	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.05)	0.40
DDT(o,p and p,p-isomers of DDT) (DDE and DDD)	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.05)	1.0
Discipline : Biological		Grou	p: Water	
Total Coliform (Qualitative)	Per 100 mL	IS 15185; 2021	Not Detected	Shall not be detected
Escherichia coli (Qualitative)	Per 100 mL	IS 15185; 2021	Not Detected	Shan not be detected

Remarks: pH done at Site.

Reviewed by Akonh Kumar Durlike Monar

****End of Report****

Authorised Signatory Dr. Despendra Kurrar Elaha Ph. D. Environmental Engg. Technical Manager

Page 4 of 4

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ILSI KEI OKI					
Test Report No.	: ELES/RNC/2025/1302	Report Release Date	: 28.02.2025		
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024		
CUSTOMER DET	AILS	SAMPLE DETAILS			
Customer Name Address	: Minerals & Minerals Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Sampling Date Sample Received Date Type of Sample Source of Sample Location of Sample	: ELES/RNC/2025/DW/1256 : 16.02.2025 : 19.02.2025 : Drinking Water : Tap Water : Office Area		
Mines Status	: Operational	Sampling Procedure	Pakhar Bauxite Mine (15.58 ha) : ELES/DOC/SMPL/01		
Period of Analysis	: 19.02.2025 to 28.02.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved		

TEST REPORT

Discipline : Chemical Group :		Discipline : Chemical		Group : Wa	ter	The second secon	ory Limit 10500:2612
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit		
Mineral Oil*	mg/L	IS 3025 (Part-39): 2021, Clause 6 Infrared Spectroscopic method.	BDL (DL: 0.01)	0.5	No Relaxation		

Remarks: (*) Parameters are outsourced to other Lab

Reviewed by Akash Kumar Ounity Manne at

****End of Report****

Authorised Signatory Dr. Deependra Kunnar Sinha Fh. D. Environmental Engg. Technical Managar

Page 1 of 1

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TEST REPORT

Test Report No.	: ELES/RNC/2025/1224	Report Release Date	: 25.02.2025
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024
ULR No.	: TC1358725000001195F	i.	

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No.	: ELES/RNC/2025/SM/1257	
		Location	2 Pakhar (15.58) Bauxite Mine DG (45 KVA)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 17.02.2025	
		Sample Received Date	: 19.02.2025	
		Type of Sample	: Flue Gas	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02(A)	
Period of Analysis	: 19.02.2025 to 25.02.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed	

1	Particular of the Plant	: Bauxite Mines
2	Emission Due to	: Burning of HSD
3	Stack Connected to	: DG 45 KVA
4	Material of Construction of Stack	: MS
5	Stack Height from Ground Level (m)	: 4.2
6	Height of Sampling Port from Ground Level (m)	:4.2
7	Inner Diameter of Stack at Sampling Point (m)	: 0:102
8	Shape of the Stack	: Circular
9	Working Load of the Stack	: 45 KVA
10	Pollution Control System	: N/A
П	Ladder & Platform	: Temporary

FU	EL CHARACTERISTICS DETAILS		
1	Type of Fuel Used	: HSD	
2	Fuel Consumption	: N/A	
3	Calorific Value of Fuel (Kcal/Kg)	: N/A	

Page 1 of 2

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TEST REPORT

Test Report No.	: ELES/RNC/2025/1224	Report Release Date	: 25.02.2025
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024
ULR No.	: TC1358725000001195F		

Discipline : Cl	semical	Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Results	
Particulate Matter (PM)	mg/Nm ³	IS 11255(Part-1): 2023	32	
Sulphur Di-Oxide (SO2)	mg/Nm ³	USEPA 6C: 2017	14	
Oxides of Nitrogen (NO,)	mg/Nm ³	USEPA 7E: 2020	102	
Carbon Monoxide (CO)	mg/Nm ³	USEPA 10B: 2017	40	
Carbon Di- Oxide (CO2)	%	USEPA 3A: 2017	5,8	
Flue Gas Temperature	°C	IS 11255 (Part-3): 2018	154	
Barometric Pressure	mmHg	1S 11255 (Part-3): 2018	720	
Velocity of Flue Gas	m/sec	IS 11255 (Part-3): 2018	12.08	
Quantity of Gas Flow	Nm ³ /hr	IS 11255 (Part-3): 2018	236	

and Dusmo Reviewed by

****End of Report****

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Page 2 of 2

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ENVIRONMENTAL LABORATORIES & ENGINEERING SERVICES PVT. LTD.

Plot No.30, Mansarovar Enclave, Tupudana, Hatia, Ranchi-834003, Jharkhand.

Pakhar (15.58) Bauxite Mine-Environmental Monitoring Report

March 2025



CONTENT

_	Pakhar (15.58)
_	AMBIENT AIR QUALITY- CORE ZONE
<u>t:</u>	Near Mine Office
2	Near Weigh Bridge
3	Near Mine Quarry No-M1
4	Near Mine Quarty No-M4
	AMBIENT AIR QUALITY- BUFFER ZONE
1	Near Bunglapart Village
2	Yatri Shed (Near K-10)
3	Near Utkarmit Rajkiya Prathmik Vidyalaya Bunglapart Village
4	Near Utkarmit Rajkiya Prathmik Vidyalaya Dumrapart Village
	AMBIENT NOISE
	WORKZONE NOISE
	Spring Water
L	Chapa Kona 19



-8

ENVIRONMENTAL LABORATORIES &

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

ENGINEERING SERVICES PVT. LTD.

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	TES	T REPORT	
Test Report No.	: ELES/RNC/2025/1664	Report Release Date	: 17.03.2025
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024
ULR No.	: TC1358725000001628F		
CUSTOMER DET	AILS	SAMPLE DETAILS	
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	: ELES/RNC/2025/AA/1857 : Near Mine Office Pakhar (15.58 ha) Bauxite Mine : 06.03.2025 to 07.03.2025 : 10.03.2025 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 10.03.2025 to 17.03.2025	Sampling Done By Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION						
1	Average Temperature (°C) : 26	2	Barometric Pressure (mmHg)	: 720		
3	Relative Humidity (%) : 58	4	Weather Condition	: Clear		

Discipline : Chemic	ai	Group :	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part- 23): 2022	74	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m ³	1S 5182 (Part- 24): 2019	41	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	µg/m³	IS 5182 (Part- 2/Sec1): 2023	11.8	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part- 6): 2022	31.3	80 (24hrs)	
Ozone (O ₄)	µg/m ³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH ₂)	µg/m ³	1S 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part- 10): 2019 (NDIR Method)	1.36	2 (8hrs)	
Lead (Pb)	µg/m ³	IS 5182 (Part- 22): 2019	0.028	1 (24hrs)	
Nickel (Ni)	ng/m ³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	
Benzene (C ₅ H ₆)	µg/m³	ELES/GC/SOP/06: 2023	<1.0	05(Annual)	
Benzo-(a)-Pyrene	ng/m ³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

The Reviewed by Akash Kumar

****End of Report****

Quality Manager

Authorised Signatory Dr. Deependra Kumar Sinha

Ph. D. Environmental Engg.

Page 1 of 1

Technical Manager

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	TES	T REPORT	
Test Report No.	: ELES/RNC/2025/1665	Report Release Date	: 17.03.2025
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024
ULR No.	: TC1358725000001629F		
CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name Address	: Minerals & Minerals Limited	Sample Ref. No. Location Sampling Date Sample Received Date	: ELES/RNC/2025/AA/1858 : Near Weigh Bridge Pakhar (15:58 ha) Bauxite Mine : 06:03:2025 to 07:03:2025 : 10:03:2025
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 10.03.2025 to 17.03.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

METEOROLOGICAL INFORMATION

1	Average Temperature (°C)	: 26	2	Barometric Pressure (mmHg)	: 720
3	Relative Humidity (%)	: 58	4	Weather Condition	: Clear

Discipline : Chemic	al	Group :	Group : Atmospheric Pollution			
Parameter Unit		Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part- 23): 2022	90	100 (24hrs)		
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	54	60 (24hrs)		
Sulphur Di-Oxide (SO2)	µg/m ³	1S 5182 (Part- 2/Sec1): 2023	14.6	80 (24hrs)		
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part- 6): 2022	34.8	80 (24hrs)		
Ozone (O ₃)	µg/m³	1S 5182 (Part- 9): 2019	<20.0	100 (8brs)		
Ammonia (NH3)	µg/m³	TS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m ³	1S 5182 (Part- 10): 2019 (NDIR Method)	1.29	2 (8hrs)		
Lead (Pb)	µg/m ²	1S 5182 (Part- 22): 2019	0.036	1 (24hrs)		
Nickel (Ni)	ng/m*	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m ⁹	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)		
Benzene (C _n H ₆)	µg/m"	ELES/GC/SOP/06: 2023	<2,5	05(Annual)		
Benzo-(a)-Pyrene	ng/m ³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)		

CI PIC ment Reviewed by Akaab Kumar

****End of Report****

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

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Page 1 of 1

Technical Manager

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



	TES	T REPORT	
Test Report No.	: ELES/RNC/2025/1666	Report Release Date	: 17.03.2025
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024
ULR No.	: TC1358725000001630F		
CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2025/AA/1859 : Near Mine Quarry No- M1 Pakhar (15.58 ha) Bauxite Mine
Address Mines Status	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 06.03.2025 to 07.03.2025 : 10.03.2025 : Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 10.03.2025 to 17.03.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

METEOROLOGICAL INFORMATION

: 720 2 Barometric Pressure (mmHg) Average Temperature (°C) :26 1 4 Weather Condition : Clear : 58 3 Relative Humidity (%)

Discipline : Chemic	al	Group :	Group : Atmospheric Pollution				
Parameter Unit		Test Protocol	Result	Regulatory Limit			
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part- 23): 2022	82	100 (24hrs)			
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	49	60 (24hrs)			
Sulphur Di-Oxide (SO2)	µg/m ¹	IS 5182 (Part- 2/Sec1): 2023	12.8	80 (24hrs)			
Nitrogen Di-Oxide (NO2)	µg/m ¹	IS 5182 (Part- 6): 2022	30.3	80 (24hrs)			
Ozone (O ₃)	µg/m ³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)			
Ammonia (NH ₂)	µg/m ³	15 5182 (Part- 25): 2018	<10.0	400 (24hrs)			
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part- 10): 2019 (NDIR Method)	1.31	2 (8hrs)			
Lead (Pb)	µg/m ³	IS 5182 (Part- 22): 2019	0.026	1 (24hrs)			
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)			
Arsenic (As)	ng/m ⁵	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)			
Benzene (CnHs)	µg/m ³	ELES/GC/SOP/06: 2023	<1.0	05(Annual)			
Benzo-(a)-Pyrene	ng/m ³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)			

TTN DI Reviewed by Akash Kumar Quality Manacur

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****End of Report****

Authorised Signatory Dr. Deependra Kumar Sinha

Ph. D. Environmental Engg.

Page I of 1

Technical Manager

The Discument stand as Test Report, is intend by the Laboratory ander Osmital Terms and Conditions, why on Company letter head is pre-opproved listnat. The results shown in the Test Report rafer or relates will be the job/analysis done by the Laboratory only. The information stand on the Test Report reflects the findings done by the Laboratory at the tune of excelorment only and within the limits of altern's contractions. The Laboratory is responsible for all the information of data provided on the report, encapt the information which is provided by the climit. The Report cannot be reproduced energy in full and any part of the report is not taken our of centext, without price original of the Laboratory. The Report is full on the part shall on the particularly advantage of the Laboratory. Another is drawn to the function of fulfiller, compensation and particular or second from the Management of the Laboratory. Another is drawn to the function of fulfiller, compensation and particular or second from the Management of the Laboratory. Another way be presented to the fulfiller compensation and particular or second from the Management of the Laboratory and the particular or second from the Management of the Laboratory and particular or the fulfiller compensation of the complex or second from the Management of the Laboratory and particular or the fulfiller or the fulfi entered for Weave then the Date of related tone of the Text Report. The samples from Regulatory hodass are to be retained as specified. Any type of Observations or Complaints regarding the Report shall be done within 15 lays from the Date of Text Report related in Text Bet the time period stread before, as complaints will be accepted. The enter Tone schedule mentioned in Text Report is in 2016out format: Abbreviation and N/A (Not Applicable), BDL (Below Detection Limit), LDL (Lower Detection Limit)



TEST DEDODT

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

ENGINEERING SERVICES PVT. LTD.





Test Report No.	: ELES/RNC/2025/1667	Report Release Date	: 17.03.2025
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024
ULR No.	: TC1358725000001631F		
CUSTOMER DET	AILS	SAMPLE DETAILS	
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	: ELES/RNC/2025/AA/1860 : Near Mine Quarry No-M4 Pakhar (15.58 ha) Bauxite Mine : 06.03.2025 to 07.03.2025 : 10.03.2025 : Ambient Air : ELES/DOC/SMPL/02 ELES/DOC/SMPL/02
Period of Analysis	: 10.03.2025 to 17.03.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

METEOROLOGICAL	INFORMATION
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1	Average Temperature (°C)	: 26	2	Barometric Pressure (mmHg)	: 720
3	Relative Humidity (%)	: 58	4	Weather Condition	: Clear

Discipline : Chemic	al	Group :	Group : Atmospheric Pollution			
Parameter	ameter Unit Test		Result	Regulatory Limit		
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part- 23): 2022	85	100 (24hrs)		
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	48	60 (24hrs)		
Sulphur Di-Oxide (SO ₂)	µg/m ³	IS 5182 (Part- 2/Sec1): 2023	12.5	80 (24hrs)		
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part- 6): 2022	29.1	80 (24hrs)		
Ozone (O ₂)	µg/m ³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)		
Ammonia (NH3)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m ²	IS 5182 (Part- 10): 2019 (NDIR Method)	1.30	2 (8hrs)		
Lead (Pb)	µg/m³	1S 5182 (Part- 22): 2019	0.027	1 (24hrs)		
Nickel (Ni)	ng/m ³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)		
Benzene (C ₈ H ₄)	µg/m ³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)		
Benzo-(a)-Pyrene	ng/m ³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)		

Reviewed by Quality Manager

****End of Report****

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

Page 1 of 1

Technical Manager

The Document mend as Teel Report, is issued by the Laboratory multi-Derival Derival Deriva and Conditions, and sur Company Issue head in pro-approval format. The results shown in the Teel Report role or rolents only to the jobrandianic drop by the Laboratory only. The information stated on the Teel Report reflects the findings down by the Laboratory at the totic of involvement only and within the family of chercli enstructions. The Laboratory is responsible for all the information or data provided on the tepper, encapt the information which is provided by the client. The Report cannot be reproduced encapt in full and any part of the report is not taken out of context, without price of the Laboratory. The Report is full or in part shall not be polytished, advertise, used for any legal anterne unless price permissions has been assued from the Managorith of the Laboratory. Alternion is drawn in the limitation of laboratory is the sources of the Teel Report status. Any analterned inference is failed into a first structure or data provided and officiency may be presecuted to the limitation of laboratory of the sources and provide the Managorith of the Laboratory. The Report of failed in part shall not be polytished, advertise, used for any legal anterne unless price permissions has been assued from the Managorith of the Laboratory. Alternion is drawn in the limitation of laboratory of the sources of the Teel Report is unlikeful and officiency may be presecuted to the limitation of the law. All the complex are structured for Wiley from the Date of values listen of the sources of the Teel Report is unlikeful and officiency may be presecuted of the law. All the complex are returned for Wileys from the Date of the source of the fact Report allocation prival structure be excited before, we complexity with the accepted from the Base of Teel Report allocation are too be returned before, we complete within 15days from the Date of NA Usic Agplicable, HDL (Bator the use prival structure Description Linut).

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



			TEST	REF	ORT		
Test Report No.	: ELES/R	NC/2025/1648	5	Re	port Release Date	: 17.03.202	5
Work Order No.	: 1361231	2113		W	ork Order Date	: 28.03.202	14
ULR No.	: TC1358	725000001612	F				
CUSTOMER DET	AILS			SA	MPLE DETAILS		
Customer Name Address Mines Status	COMPARENT.	o Industries Limited 1ga, Jharkhand-835302 2nal		Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure		: ELES/RNC/2025/AA/1841 : Near Bunglapart Village Pakhar Bauxite Mine : 07.03.2025 to 08.03.2025 : 10.03.2025 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd. : Senled & Preserved	
Period of Analysis		25 to 17.03.202	25 Sampling Done By Sample Condition				
METEOROLOGI	CAL INFO	RMATION					
1 Average Temperature (*C) : 25			2 Barometric Pressure (mmHg) : 720				
3 Relative Humid	iity (%)	: 58		4 Weather Condition : Clear			
Discipline	e : Chemica	d.			Group :	Atmospheric .	Pollution
Paramet	er	Unit		Test	Protocol	Result	Regulatory Limit
Particolate Matter (I	PM10)	µg/m ³	18.5	182 (Part- 23); 2022	83	100 (24hrs)
Particulate Matter ()	PM2.5)	µg/m ³	IS 5182 (Par		Part- 24): 2019	51	60 (24hrs)
Sulphur Di-Oxide (S	SO ₃)	µg/m ³	15 5182 (Part-2		rt- 2/Sec1): 2023	13.6	80 (24hrs)
Nitrogen Di-Oxide ((NO ₂)	µg/m ³	IS 5182 (Part- 6): 2022		(Part- 6): 2022	29.2	80 (24hrs)
Ozone (O ₃)			IS 5	5182 (Part- 9): 2019		<20.0	100 (8hrs)
Ammonia (NH2)		µg/m ³	IS 51		IS 5182 (Part- 25); 2018		400 (24hrs)
Carbon Monoxide (CO)	mg/m ³			Part- 10): 2019 R Method)	<1.0	2 (Shrs)
Lead (Pb)		µg/m ³	1S 51	82 ()	Part- 22); 2019	0.020	1 (24hrs)
Nickel (Ni)		ing/m ⁸	IS 5	182 (Part- 26): 2020	<6.0	20 (Annual)

Concession in the Reviewed by Alcesh Kumar Organity Managerst

Arsenic (As)

Benzene (CeHa)

Benzo-(a)-Pyrene

ng/m

µg/m

nem

3

<2.0

<1.5

<0.5

****End of Report****

ELES/AIR/SOP/01: 2021

ELES/GC/SOP/06; 2023

ELES/GC/SOP/05: 2023

Authorised Signatory Dr. Deependra Kumar Sinha

Dr. Deej

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05(Annual)

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Page 1 of 1 The Description wood to Tast Report, is seening by the Laboratory and a General Testa and Consistence, and an Despression band on proopEcondmic additionation of the Laboratory at the time of modulation of the factority of the Laboratory and the internation and on the Test Report reflect the factority of the Laboratory and the test factority on the internation and on the Test Report reflect the international second by the Laboratory and the internation and on the Test Report reflect the international second by the Laboratory at the time of modulation of the laboratory at the time of modulation of the international second by the Laboratory at the time of modulation of the international second by the Laboratory at the time of modulation of the international second by the laboratory at the time of modulation of the international second by the intern



PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATTA, BANCHI-834003 (HARKHAND) 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	REF	PORT			
Test Report No.	: ELES/R	: ELES/RNC/2025/1649			port Release Date	: 17.03.202	5	
Work Order No.	: 1361231	: 13612312113			ork Order Date	: 28.03.202	4	
ULR No.	: TC1358	725000001613	F					
CUSTOMER DET	AILS			SA	MPLE DETAILS			
Customer Name Address Mines Status		Industries Lin a, Jharkhand-8 al	55302 Sampling Date Sample Received Date Type of Sample Sampling Procedure			: ELES/RNC/2025/AA/1842 : Yatri Shed (Near K-10) Pakhar Bauxite Mine : 07.03.2025 to 08.03.2025 : 10.03.2025 : Ambient Air : ELES/DOC/SMPL/02		
Period of Analysis	: 10.03.203	25 to 17.03.202	15	Sampling Done By Sample Condition		: ELES Pvt. Ltd. : Sealed & Preserved		
METEOROLOGI	and the second se							
1 Average Tempe	and the second se	: 25	_	2	Barometric Pressure	EH-	720	
3 Relative Humic	fity (%)	: 58		4	Weather Condition	70	Clear	
Discipline	e: Chemica	3			Group :	Atmospheric I	Pollution	
Paramet	er	Unit		Test	Protocol	Result	Regulatory Limit	
Particulate Matter ()	PM10)	µg/m ³	18 51	182 (Part-23): 2022	75	100 (24hrs)	
Particulate Matter ()	PM2.5)	µg/m ³	18 5	IS 5182 (Part- 24): 2019		43	60 (24hrs)	
Sulphur Di-Oxide (8	SO ₂)	µg/m ¹	IS 5182 (Part-2/Sec1): 2023		11.8	80 (24hrs)		
Nitrogen Di-Oxide (NO ₂)	µg/m ³	1S 5182 (Part- 6): 2022		29.3	80 (24hrs)		
Ozone (O ₂)		µg/m ³	IS 5182 (Part- 9): 2019		<20.0	100 (8lurs)		
Ammonia (NH ₃)		µg/m ^{il}	IS 51	82 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide ((0)	mg/m ¹			Part- 10): 2019 R Method)	1.31	2 (8hrs)	
Lead (Pb)		µg/m ¹	IS 51	82 ()	Part- 22); 2019	0.032	1 (24hrs)	
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Nickel (Ni)

Arsenic (As)

Benzene (C.H.)

Benzo-(a)-Pyrene

Page 1 of 1

****End of Report****

1S 5182 (Part- 26): 2020

ELES/AIR/SOP/01: 2021

ELES/GC/SOP/06: 2023

FLES/GC/SOP/05: 2023

Dr. Deependra Kumar Sinha Ph. D. Environmental Englis

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Authorised Signatory

<6.0

<2.0

<3.5

<0.5

20 (Annual)

06 (Annual)

05(Annual)

01(Annual)

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GINEERING SERVICES PVT. LTD.

Email: info@elesol.co.in. eles.ronchi@omail.com Phone no.: 0651-2290109 Website : www.elespl.co.in



		IES	T REF	ORT		
Test Report No.	: ELES/F	INC/2025/1650	R	port Release Date	; 17.03,2025	
Work Order No.	: 1361231	2113	W	ork Order Date	: 28.03.2024	
ULR No.	: TC1358	725000001614F				
CUSTOMER DET	AILS		SA	MPLE DETAILS		
Customer Name Address Mines Status		ndustries Limited ga, Jharkhand-835302 nal	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure Sampling Done By		: ELES/RNC/2025/AA/1843 : Near Utkarmit Rajkiya Prathmik Vidyalaya Bunglapart Village Pakhar Bauxite Mine : 07.03.2025 to 08.03.2025 : 10.03.2025 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 10,03,20	25 to 17.03.2025		uple Condition	1 Sealed & Preserved	
METEOROLOGH	CAL INFO	RMATION				
1 Average Temperature (°C) : 25 3 Relative Humidity (%) : 58		2 Barometric Pressure (mmHg) ± 720 4 Weather Condition ± Clear			20	
					llear	
Discipline	: Chemica	il		Group :	Atmospheric I	Pollution
Paramet	es:	Unit	Test	Protocol	Result	Regulatory Limit
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Parameter Unit		Test Protocol	Result	Regulatory Limi	
Particulate Matter (PM10)	µg/m³	IS 5182 (Part- 23): 2022	76	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part-24): 2019	37	60 (24hrs)	
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part- 2/Sec1): 2023	14.2	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part- 6): 2022	27.7	80 (24hrs)	
Ozone (O ₁)	µg/m ¹	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH2)	µ19/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)	
Load (Pb)	µg/m	IS 5182 (Part- 22): 2019	0.013	1 (24hrs)	
Nickel (Ni)	ng/m*	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01: 2021	<2,0	06 (Annual)	
Benzene (C ₄ H ₄)	'µg/m ³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m ³	ELES/GC/SOP/05: 2023	<0.5	(Innuni)	
and the second s			Adria	4	
Reviewed by Altaah Kumar		****End of Report****	Authorised Signatory Dr. Deependra Kumar Sinha		

****End of Report****

Dr. Deependra Kumor Sinha

Page 1 of 1

Ph. D. Environmental Child

This Demonstration at Tam Report, is sound by the Lakormory order Generit Tames and Conditions, only an Company letter hand in **Temple rist of MENDEROD** shows in the Tam Report relation of the polyander of the taken and mained for Mileys Burn the Deter of relation/server of the Test Report. This samples from Regulatory Position are to be recented as specified. Any type of Characteristics on Compliance expanding the Reports shall be deep within 19days from the Date of Test Report relation/analt. After the time period stated before, no compliance will be accepted. The entries Time satisfied monotories of Test Report a set Peloara Roman, Altereviatee and 3450 (Nat Applicable), 3001 (Refey Delastine Linus), LDL (Lewar Delastins Louid).



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

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



	115	T REPORT		
Test Report No.	: ELES/RNC/2025/1651	Report Release Date	: 17.03.2025	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC1358725000001615F			
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 Sampling Done By	: ELES/RNC/2025/AA/1844 : Near Utkarmit Rajkiya Prathmi Vidyalaya Dumrapart Village Pakhar Bauxite Mine : 07,03.2025 to 08.03.2025 : 10.03.2025 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 10.03.2025 to 17.03.2025	Sample Condition	: Sealed & Preserved	

1	Average Temperature (°C)	: 25	2	Barometric Pressure (mmHg)	: 720
3	Relative Humidity (%)	: 58	4	Weather Condition	: Clear

el.	Group: Atmospheric Pollution			
Unit	Test Protocol	Result	Regulatory Limit	
µg/m ³	IS 5182 (Part- 23): 2022	71	100 (24hrs)	
µg/m ³	IS 5182 (Part- 24): 2019	40	60 (24hrs)	
µg/m ³	15 5182 (Part- 2/Sec1): 2023	12.9	80 (24hrs)	
µg/m*	IS 5182 (Part- 6): 2022	29.1	80 (24hrs)	
µµ/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
µg/m ¹	IS 5182 (Part- 25); 2018	<10.0	400 (24hrs)	
mg/m ²	IS 5182 (Part- 10): 2019 (NDIR Method)	1.24	2 (8hrs)	
µg/m	1S 5182 (Part- 22): 2019	0.022	1 (24hrs)	
ng/m ²	IS 5182 (Part- 26): 2020	<5,0	20 (Annual)	
ng/m ³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	
µg/m	ELES/GC/SOP/06: 2023	<2,5	05(Annual)	
nut/m ¹	ELES/GC/SOP/05: 2023	<0.5	01(Arinual)	
	μg/m ³ μg/m ³ μg/m ³ μg/m ³ μg/m ³ μg/m ³ πg/m ³ ng/m ³ ηg/m ³	Unit Test Protocol μg/m³ IS 5182 (Part- 23): 2022 μg/m³ IS 5182 (Part- 24): 2019 μg/m³ IS 5182 (Part- 24): 2019 μg/m³ IS 5182 (Part- 2/Sec1): 2023 μg/m³ IS 5182 (Part- 6): 2022 μg/m³ IS 5182 (Part- 6): 2022 μg/m³ IS 5182 (Part- 6): 2019 μg/m³ IS 5182 (Part- 9): 2019 μg/m³ IS 5182 (Part- 10): 2019 (NDIR Method) μg/m³ IS 5182 (Part- 22): 2019 ng/m³ IS 5182 (Part- 22): 2019 ng/m³ IS 5182 (Part- 26): 2020 ng/m³ IS 5182 (Part- 26): 2020 μg/m³ IS 5182 (Part- 26): 2020 μg/m³ IS 5182 (Part- 26): 2020 ng/m³ IS 5182 (Part- 26): 2020 ng/m³ IS 5182 (Part- 26): 2020	Unit Test Protocol Result μg/m³ IS 5182 (Part- 23): 2022 71 μg/m³ IS 5182 (Part- 24): 2019 40 μg/m³ IS 5182 (Part- 2/Sec1): 2023 12.9 μg/m³ IS 5182 (Part- 2/Sec1): 2023 12.9 μg/m³ IS 5182 (Part- 6): 2022 29.1 μg/m³ IS 5182 (Part- 6): 2022 29.1 μg/m³ IS 5182 (Part- 9): 2019 <20.0	

-ite-i Reviewed by

Goelityvinertopida

****End of Report****

Page 1 of 1

Dr. Daapondra Kumar Sinha Ph. D. Environmental Engli.

Authorised Signatory

Figure 1 of 1 Phase 1 Ph



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

ENGINEERING SERVICES PVT. LTD.

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



	<u>11</u>	EST REPORT	
Test Report No.	: ELES/RNC/2025/1674	Report Release Date	: 17.03.2025
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024
ULR No.	: TC1358725000001638F		

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name Address	: Minerals & Minerals Limited : Lohardaga, Jharkhand-835302	Sampling Date Sampling Received Date Type of Sample Sampling procedure Sampling Done By	: 06.03.2025 to 07.03.2025 : 10.03.2025 : Ambient Noise : ELES/DOC/SMPL/03 : ELES Pvt. Ltd.	
Mines Status	: Operational	Period of Analysis	: 10.03.2025 to 13.03.2025	

M	ETEOROLOGICAL INFOI	RMATION			
1	Average Temperature (*C)	: 26	2	Barometric Pressure (mmHg)	: 720
3	Relative Humidity (%)	: 58	4	Weather Condition	: Clear

Discipline : Chemical			Group : Atn	nospheric l	Pollution
Location	Unit	Test Protocol	Resu	ılt	Regulatory Limit (Industrial Zone)
en centra unitari			Time	Log	
Near Mine Office, Pakhar Bauxite Mine (15.58 ha)	dB(A)	IS 9989: 2020	Day Time	65	75 dB(A) Day Time &
Sample ID: ELES/RNC/2025/AN/1867			Night Time	48	70 dB(A) Night Time

Reviewed by Akash Kumar Quality Managor

****End of Report****

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

Page 1 of 1

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	TE	ST REPORT	
Test Report No.	: ELES/RNC/2025/1672	Report Release Date	: 17.03.2025
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024
ULR No.	: TC1358725000001636F		

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name Address	: Minerals & Minerals Limited : Lohardaga, Jharkhand-835302	Sampling Date Sampling Received Date Type of Sample Sampling procedure Sample Drawn By	: 07.03.2025 : 10.03.2025 : Workzone Noise : ELES/DOC/SMPL/03 : ELES Pvt. Ltd.	
Mines Status	: Operational	Period of Analysis	: 10.03.2025 to 13.03.2025	

M	ETEOROLOGICAL INFORMATIC	DN .		
1	Average Temperature (°C) : 29	2	Barometric Pressure (mml	Hg) : 720
3	Relative Humidity (%) : 61	4	Weather Condition	: Clear

Location	Unit	Test Protocol	Res	ult	Regulatory Limit (Industrial Zone)
Near Weigh Bridge -			Time	Leq	
Pakhar Bauxite Mine (15,58 ha)	dB(A)	IS 4758: 2017	Day Time	74	90 dB(A)
Sample ID: ELES/RNC/2025/WN/1865					

Reviewed by Akash Kumar Quality Managor

****End of Report****

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

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TEST REPORT

Test Report No.	: ELES/RNC/2025/1752	Report Release Date	: 20.03.2025
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024
ULR No.	: TC1358725000001711F		

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Sampling Date Sample Received Date Type of Sample Source of Sample Location of Sample	: ELES/RNC/2025/SW/1869 : 07.03.2025 : 10.03.2025 : Surface Water : Spring Water : Chapakona (Bunglapart Village) Pakhar Bauxite Mine (15.58 ha)	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/01	
Period of Analysis	: 10.03.2025 to 17.03.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

Discipline : Chemical		Gr	Group : Water		
Parameter	Unit	Test Protocol	Result	as per IS 2296-1992 Class C (Inland Surface Water)	
pH (at 24.8 °C)	-	IS 3025 (Part-11): 2022	6.60	6.5-8.5	
Colour	Hazen	IS 3025 (Part -4) : 2021	4.2	300	
Odour		IS 3025 (Part-5) : 2018	Unobjectionable	+	
Turbidity	NTU	1S 3025 (Part-10): 2023	0.89		
Total Dissolved Solids (TDS)	mg/L	IS 3025 (Part-16): 2023	102	1500	
Total Alkalinity (as CaCO ₁)	mg/L	18 3025 (Part-23) : 2023	34.6		
Total Hardness (as CaCO3)	mg/L	IS 3025 (Part-21): 2019	29.4		
Sulphate (as SO4)	mg/L	IS 3025 (Part-24/Sec1): 2022	13.4	400	
Chloride (as Cl)	mg/L	IS 3025 (Part-32): 2019	11.6	600	
Fluoride (as F)	mg/L	IS 3025 (Part-60): 2019	0.118	1.5	
Nitrate (as NO ₂)	mg/L	APHA 24th Ed.2023, 4500 NO ₃ -B	2.12	50	

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TC-13567

TEST REPORT

Test Report No.	: ELES/RNC/2025/1752	Report Release Date	: 20.03.2025
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024
ULR No.	: TC1358725000001711F		

Discipline : Chemical	11	Group : Wa	Tolerance Limits	
Parameter	Unit	Test Protocol	Result	as per IS 2296-1992 Class C (Inland Surface Water)
Free Residual Chlorine (RFC)	mg/L	IS 3025 (Part-26) : 2021	BDL (DL: 0.1)	-
Phenols Compounds (as C ₄ H ₂ OH)	mg/L	IS 3025 (Part-43/Sec1): 2022	BDL (DL: 0.001)	0.005
Calcium (as Ca)	mg/L	IS 3025 (Part-40): 2019	8.6	
Discipline : Cher	nical	Gro	oup : Residues	in Water
Aluminum (as Al)	mg/L	IS 3025 (Part-55): 2003;RA2019	BDL (DL: 0.02)	38.
Arsenic (as As)	mg/L	IS 3025 (Part 37):2022	BDL (DL: 0.005)	0.2
Boron (as B)	mg/L	IS 3025 (Part-57): 2021	BDL (DL: 0.2)	
Cadmium (as Cd)	mg/L	APHA 24 th Ed.2023; 3111B	BDL (DL: 0.003)	0.01
Total Chromium (as Cr)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL: 0.03)	0.05
Copper (as Cu)	mg/L	1S 3025 (Part 42): 2019	BDL (DL: 0.03)	1.5
Iron (as Fé)	mg/L	APHA 24th Ed.2023; 3111B	0.124	50
Lead (as Pb)	mg/L	APHA 24 th Ed.2023; 3111B	BDL (DL: 0.01)	0.1
Manganesé (as Mn)	mg/L	APHA 24 th Ed 2023; 3111B	BDL (DL: 0.05)	
Mercury (as Hg)	mg/L	IS 3025 (Part-48): 2019	BDL (DL: 0.001)	
Selenium (as Se)	mg/L	IS 3025(Part-56): 2019	BDL (DL: 0.01)	0.05
Zine (as Zn)	mg/L	APHA 24 th Ed.2023; 3111B	BDL (DL: 0.1)	15

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TEST REPORT

Test Report No.	: ELES/RNC/2025/1752	Report Release Date	: 20.03.2025
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024
ULR No.	: TC1358725000001711F		

Discipline : Chemie	cal	Group : Residues	Tolerance Limits	
Parameter Unit		Test Protocol	Result	as per 1S 2296-1992 Class C (Inland Surface Water)
Cyanide (as CN)	mg/L	APHA 24 th Ed.2023, 4500 CN-E	BDL (DL: 0.012)	0.05
Polynuclear Aromatic Hydrocarbons (PAH)	µg/L	ELES/GC/SOP/04: 2023	BDL (DL: 0.05)	
Pesticides				
Alachlor	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	
Atrazîne	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	
Butachlor	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	
Chlorpyriphos	μ <u>g</u> /L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	
Ethion	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	7423
Malathion	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	
Methyl parathion	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.1)	
Monocrotophos	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	
Phorate µg/L		ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	**
Phorate Sulphone	μg/L.	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	
Dieldrin	µg/L	ELES/GC/SOP/02: 2023	BDL (DL; 0.01)	100

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TEST REPORT						
Test Report No.	: ELES/RNC/2025/1752	Report Release Date	: 20.03.2025			
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024			
ULR No.	: TC1358725000001711F					

Pesticides				Tolerance Limits
Parameter	Unit	Test Protocol	Result	as per IS 2296-1992 Class C (Inland Surface Water
Alpha HCH	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.006)	-
Beta HCH	µg/L.	ELES/GC/SOP/02: 2023	BDL (DL: 0.02)	
Delta HCH	µg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.02)	- ++-
Gamma HCH (Lindane)	µg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.02)	
Endosulfan (alpha, beta and sulphate)	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.05)	
DDT(0,p and p,p-isomers of DDT) (DDE and DDD)	µg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.05)	-
Discipline: Biolo	gical	Gre		
Total Coliform	CFU/100 mL	IS 15185: 2021	3.40×10 ²	5000
Escherichia coli	CFU/100 mL	IS 15185: 2021	BDL (DL: 1.0)	-

Remarks: pH & RFC done at site.

Reviewed by Akash Kumar Quality Managor

****End of Report****

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

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TEST REPORT

Test Report No.	: ELES/RNC/2025/1752	Report Release Date	: 20.03.2025	
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024	

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name Address	: Minerals & Minerals Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Sampling Date Sample Received Date Type of Sample Source of Sample Location of Sample	: ELES/RNC/2025/SW/1869 : 07.03.2025 : 10.03.2025 : Surface Water : Spring Water : Chapakona (Bunglapart Village) Pakhar Bauxite Mine (15.58 ha)	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/01	
Period of Analysis	: 10.03.2025 to 20.03.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

Discipline : Chemic	al	Gro	Tolerance Limits	
Parameter Unit		Test Protocol	Result	as per 1S 2296-1992 Class C (Inland Surface Water)
Taste	4	APHA 24" Ed.2023, 2160C	N/A	
Anionic Surfactants (as MBAS)	mg/L	APHA 24 th Ed.2023, 5540-C	BDL (DL: 0.025)	1.0
Mineral Oil*	mg/L	IS 3025 (Part-39):2021 (Clause 6 Infrared Spectroscopic Method)	BDL (DL: 0.05)	(##F)

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

Reviewed by Akash Kumar Quality Managar

****End of Report****

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

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MINERALS & MINERALS LIMITED

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

Ref. :

Date

Annexure 3

Date - 01.05.2025

Office Order

Environmental Cell has been re-constituted for Pakhar Group of Mines (Pakhar – 109.507 ha, Pakhar – 15.58 ha Bauxite Mines). This cell consists of the following team members who will ensure compliance with the Environment Acts, Rules & Regulations in respect of the said mines of Minerals & Minerals Limited.

- 1. Mr. Jitendra Kumar (Coordinator)
- 2. Mr. Chandan Kumar (Geologist)
- 3. Mr. Girija Tamrakar (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 acts, rules and regulations for the above mines.

Qu'

Basudev Gangopadhyay AVP (Planning, Environment & Compliance)

Annexure 4

	Product	tion, Mined Out	t, Back Filled an	d Over Burden ren	noval from Oc	tober'24 to	March'25	
S No	Name of the Mines	Mining lease area (ha)	Production Capacity (MT)*	Lease Period*	Production (MT)	Mined out area (ha)	Backfilled area (ha)	Over burden (Cu.M)
1	Bagru Bauxite Mine	75.41	85000	22.01.1974 to 31.03.2030	NIL	NIL	NIL	NIL
2	Bhusar Bauxite Mine	65.31	280000	11.07.1981 to 31.03.2030	86061	1.53	0.695	88218.66
3	Hisri (New) Bauxite Mine	14.55	100000	19.07.1981 to 31.03.2030	25362	0.345	0.10	30825.23
4	Pakhar (8.09) Bauxite Mine	8.09	80000	16.05.1973 to 31.03.2030	NIL	NIL	NIL	NIL
5	Pakhar (35.12) Bauxite Mine	35.12	200000	17.04.1975 to 31.03.2030	NIL	NIL	NIL	NIL
6	Pakhar (115.13) Bauxite Mine	115.13	300000	19.07.1996 to 31.03.2030	109753	2.12	7.6	332929.81
7	Sherangdag-A Bauxite Mine	155.81	260000	16.10.1974 to 31.03.2030	2989	0.02	0.02	2110.0
8	Serangdag-B Bauxite Mine	77.89	100000	04.10.1978 to 31.03.2030	35253	0.756	0.35	38119.67
9	Jalim & Sanai Bauxite Mine	12.14	50000	16.10.1974 to 31.03.2030	24760	0.13	0.08	12444.82
10	Gurdari Bauxite Mine	584.19	325000	23.03.1985 to 22.03.2035	105401	4.42	3.76	185747.47
11	Kujam - I Bauxite Mine	80.87	150000	13.03.2006 to 12.03.2056	NIL	NIL	2.54	NIL
12	Kujam - II Bauxite Mine	157.38	300000	24.03.2006 to 23.03.2056	61250	2.40	4.72	136798.61
13	Amtipani Bauxite Mine	190.95	150000	13.03.2006 to 12.03.2056	62240	4.047	6.423	255249.72

	Minerals & Minerals Limited								
14	Pakhar (109.507) Bauxite Mine	109.507	280000	26.07.2008 to 25.07.2058	112559	0.44	3.62	255124.1	
15	Pakhar (15.58) Bauxite Mine	15.58	60000	28.04.1965 to 31.03.2030	5015	0.26	0.42	11644.5	
16	Bimarla Bauxite Mine	134.526	300000	18.07.2009 to 17.07.2059	93500	3.956	5.37	156892.41	
17	Amtipani Chirodih Bauxite Mine	130.01	450000	11.01.2017 to 10.01.2067	114100	5.43	5.133	233823.46	

*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 2024-25

The composite cost during the year 2024-25 for environmental protection & pollution control by Jharkhand Mines division of M/s Hindalco Industries Ltd & M/s Minerals & Minerals Ltd for implementation of the suggested measures in EC at our all the operating mines in the state of Jharkhand-namely Bagru (75.41 ha), Hisri New (14.55 ha), Bhusar (65.31 ha), Pakhar (115.13 ha), Pakhars (109.507 ha), Pakhar (15.58 ha), Pakhar (8.09 ha), Pakhar (35.12 ha), Sherangdag (155.81 ha), Serangdag (77.89 ha), Jalim & Sanai (12.14 ha), Bimarla Bauxite Mines (134.526 ha), Gurdari (584.19 ha), Amtipani (190.95 ha), Kujam I (80.87 ha) Kujam II (157.38 ha), and Amtipani Chirodih (130.01 ha) Bauxite mines.

S.No	Description	Budget (in Rupees) FY 2024-25 (From Oct'24 to Mar'25)	Actual (in Rupees) FY 2024-25 (From Oct'24 to Mar'25)
1	Pollution Control and Environmental Monitoring	61,35,000.00	42,08,879.10
2	Reclamation/ Back filing & Rehabilitation**	5,62,80,000.00	5,32,33,879.71
3	Green belt, Plantation & Water sprinkling arrangement	73,42,000.00	43,51,560.28
4	Rural Development	2,75,00,000.00	3,13,06,810.81

**Part of OB removed cost

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