MINERALS & MINERALS LIMITED

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

CIN NO. U26990JH1970PLC000875

Date-25.11.2024

Ref.: M&M/LHD/ENV/MoEF/1016

To,

The Dy.Director General of Forest (C)

Ministry of Environment, Forests and Climate Changes

2nd Floor, Headquarter-Jharkhand State Housing Board

Harmu Chowk, Ranchi, Jharkhand-834002

Sub: Compliance Report of EC conditions for Pakhar (15.58 ha) Bauxite Mining project of M/s Minerals & Minerals Limited located in Lohardaga, Jharkhand for the period April'24 to September'24.

Ref: Environmental Clearance letter no J-11015/123/2006-IA II (M) dated 24thJanuary 2007 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** located in Lohardaga, Jharkhand for the period April'24 to September'24.

The lease detail is as 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 Sincerely

FOR Minerals Limited

(Basudev Gangopadhyay)

AVP (Planning, Environment & Compliance)

Enclosure: - As Above

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

: Pakhar Bauxite Mine (15.58 ha) Name of the Project

M/s Minerals & Minerals Ltd

Environment Clearance No. & date : J-11015/123/2006-IA.II(M), dated 24.01.2007

Period of compliance Report : From 1st April'24 to 30th Sept'24

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 (20 m max) 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 the mined-out 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 and plantation are 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. Nos of sapling planted till date is 13504 nos. In addition to this agricultural activity is going on reclaimed land. The 6.67 ha areas have been planted till date.



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: - Spring water near Pakhar village is being monitored. Analysis report is attached as **Annexure 2**.

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 **Annexure 1 & 2**. Now, Regional office of MoEF&CC is in Ranchi.

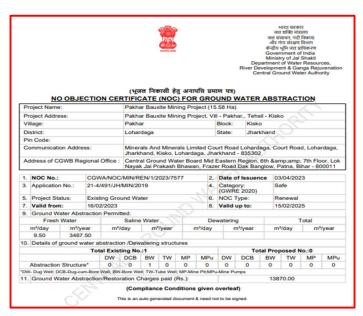


Piezometer

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 in the mine premises. 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 and photographs of Rainwater harvesting ponds are attached below.



NOC for Ground Water

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 Vehicle.

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

Reply: - Wet drilling is in practice.



Wet Drilling

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.

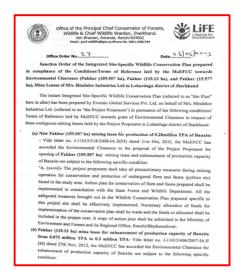
Furthermore, the quality of this treated water is being monitored regularly and the monitoring report is attached herewith as **Annexure 2**.

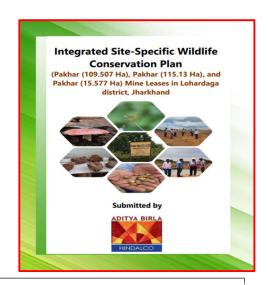
Condition xix: - The project proponent should take all precautionary measures during mining operation for conservation and protection of endangered fauna such as Indian Python etc. Spotted in the study area. Action plan for conservation of flora and fauna shall be prepared and implemented in consultation 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.





Integrated Site-specific Wildlife Conservation 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 (MoEFCC).

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 report attached as **Annexure 4.**

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, SO₂, 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 **Annexure 2.**

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 **Annexure-2**. 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 sprinkling through 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 has been attached as **Annexure 2**

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 **Annexure 2**.

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 **Annexure 3.**

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 http://envfor.nic.in 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.

Pal	Pakhar Bauxite Mining Project (15.58 Ha)					
Piezometer Reading						
S No	S No Month Depth (meter)					
1	Apr-24	38.07				
2	May-24	38.95				
3	Jun-24	38.45				
4	Jul-24	38.78				
5	Aug-24	38.36				
6	Sep-24	37.81				

ENVIROCHECK

Lab: MIG, R-3 Housing Colony, Dhanbad, Pin-826001,
State- Jharkhand.

Pakhar (15.58) Bauxite Mine-Environmental Monitoring Report

April 2024





Test Report No.	: ENVJK/1207/APR/TR(W)24-25	Report Release Date	; 23.04.2024	
Work Order No.	: RP/MJB/MM/24/0088/00	Work Order Date	: 30.03.2024	

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ENVJK/2024/AA/1732 : Near Mine Office Pakhar (15.58 ha) Bauxite Mine
Address	: Lohardaga, Jharkhund-835302	Sampling Date Sample Received Date Type of Sample	: 13.04.2024 to 14.04.2024 : 15.04.2024 : Ambient Air
Mines Status	atus : Operational Sampling Procedure		: ELES/DOC/SMPL/02
Period of Analysis	: 15,04.2024 to 23.04.2024	Sampling Done By Sample Condition	± ELES Pvt. Ltd. ± Sealed & Preserved

MI	ETEOROLOGICAL INFOI	MATION			
1	Average Temperature (°C)	: 32	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	: 57	4	Weather Condition	: Clear

Discipline:	Chemical	Group: Atm	ospheric Poll	ution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m²	1S 5182 (Part 23): 2006	68	100 (24hrs)
Particulate Matter (PM2.5)	μg/m ³	USEPA 1997a,40 CFR Part 50, Appendix L: 2006	35	60 (24hrs)
Sulphur Dí-Oxide (SO ₂)	µg/m³	1S 5182 (Part 2): 2001	13.1	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	1S 5182 (Part 6): 2006	25.6	80 (24hrs)
Ozone (Q ₄)	μg/m ³	1S 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Anumonia (NH ₃)	μg/m ⁷	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/m³	IS 5182 (Part- 22): 2019	0.011	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	USEPA Method – IO-3.5 (ICP-MS Method)	<2.0	06 (Annual)
Benzene (C ₆ H ₆)	μg/m³	USEPA Method - TO-3 (GC-MS Method)	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m²	USEPA Method – TO-3A (GC-MS Method)	<0.5	01(Annual)

Reviewed by :

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(Saswata Burman Roy, Dy. Quality Manager)

Authorised Signatory:

(Bapan Das, Dy. Technical Manager)

Page 1 of 1

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TEST REPORT

Test Report No.	: ENVJK/1208/APR/TR(W)24-25	Report Release Date	: 23.04.2024	
Work Order No.	: RP/MJB/MM/24/0088/00	Work Order Date	: 30.03.2024	

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ENVJK/2024/AA/1733 : Near Weigh Bridge Pakhar (15.58 ha) Bauxite Mine
Address	Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 13.04.2024 to 14.04.2024 : 15.04.2024
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 15.04.2024 to 23.04.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

MI	ETEOROLOGICAL INFOR	RMATION				
1	Average Temperature (°C)	: 32	2	Barometric Pressure (mmH	g) : 738	
3	Relative Humidity (%)	: 57	4	Weather Condition	: Clear	

Discipline:	Chemical	Group: Atm	ospheric Poll	ution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m ³	IS 5182 (Part 23): 2006	79	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	USEPA 1997a,40 CFR Part 50, Appendix L; 2006	46	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m³	IS 5182 (Part 2); 2001	12,3	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	jug/m³	IS 5182 (Part 6): 2006	26.8	80 (24hrs)
Ozone (O ₁)	μg/m³	1S 3182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m³	1S 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m*	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	μg/m³	IS 5182 (Part- 22): 2019	0.012	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	USEPA Method – IO-3.5 (ICP-MS Method)	<2.0	06 (Annual)
Benzene (C ₆ H ₆)	μg/m³	USEPA Method - TO-3 (GC-MS Method)	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m³	USEPA Method - TO-3A (GC-MS Method)	< 0.5	01(Annual)

Reviewed by :

(Saswata Burman Roy, Dy. Quality Manager)

Authorised Signatory:

(Bapan Das, Dy. Technical Manager)

Page 1 of 1

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TEST REPORT

Test Report No.	; ENVJK/1209/APR/TR(W)24-25	Report Release Date	: 23.04.2024	
Work Order No.	: RP/MJB/MM/24/0088/00	Work Order Date	: 30.03.2024	

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ENVJK/2024/AA/1734 : Near Mine Quarry No- M1 Pakhar (15.58 ha) Bauxite Mine
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 13.04.2024 to 14.04.2024 : 15.04.2024 : Ambient Air
Mines Status	Operational	Sampling Procedure	: ELES/DOC/SMPL/02
Period of Analysis	: 15.04.2024 to 23.04.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

MI	ETEOROLOGICAL INFORMATION				
1	Average Temperature (°C) = 32	2	Barometric Pressure (mml-	lg) : 738	
3	Relative Humidity (%) : 57	4	Weather Condition	; Clear	

Discipline:	Chemical	Group: Atm	ospheric Poll	ution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m ³	IS 5182 (Part 23): 2006	62	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	USEPA 1997a,40 CFR Part 50, Appendix L; 2006	35	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m³	18 5182 (Part 2): 2001	12.7	80 (24hrs)
Nitrogen Di-Oxide (NO ₇)	µg/m³	15-5182 (Part 6): 2006	21.9	80 (24hrs)
Ozone (O ₃)	µg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₁)	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 (Ph)	μg/m³	IS 5182 (Part- 22): 2019	0.012	1 (24hrs)
Nickel (Ni)	ng/m²	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	USEPA Method – IO-3.5 (ICP-MS Method)	<2.0	06 (Annual)
Benzene (C6H6)	µg/m³	USEPA Method - TO-3 (GC-MS Method)	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m³	USEPA Method – TO-3A (GC-MS Method)	<0.5	01(Annual)

Reviewed by :

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(Saswata Burman Roy, Dy. Quality Manager)

Authorised Signatory:

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(Bapan Das, Dy. Technical Manager)

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Test Report No.	: ENVJK/1210/APR/TR(W)24-25	Report Release Date	: 23.04.2024	
Work Order No.	: RP/MJB/MM/24/0088/00	Work Order Date	: 30.03.2024	

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ENVJK/2024/AA/1735 : 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	: 13.04,2024 to 14.04.2024 : 15.04,2024 : Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 15.04.2024 to 23.04.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

METEOROLOGICAL INFORMATION				
1	Average Temperature (°C) : 33	1 2	Barometric Pressure (mmH	g) = 738
3	Relative Humidity (%) : 58	4	Weather Condition	; Clear

Discipline:	Chemical	Group: Atm	ospheric Poll	ution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part 23): 2006	72	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	USEPA 1997a,40 CFR Part 50, Appendix L; 2006	-44	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m³	1S 5182 (Part 2): 2001	13.5	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m³	15 5182 (Part 6): 2006	20.2	80 (24hrs)
Ozone (O ₃)	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₁)	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 (Ph)	μg/m ³	IS 5182 (Part- 22): 2019	0.016	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	USEPA Method – IO-3,5 (ICP-MS Method)	<2.0	06 (Annual)
Benzene (CaHa)	µg/m³	USEPA Method – TO-3 (GC-MS Method)	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m³	USEPA Method – TO-3A (GC-MS Method)	< 0.5	01(Annual)

Reviewed by :

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(Saswata Burman Roy, Dy. Quality Manager)

Authorised Signatory:

- Servi

(Bapan Das, Dy. Technical Manager)

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Test Roport No.	ENVJK/1169/APR/TR(W)24-25	Report Release Date	: 23,04.2024
Work Order No.	: 13012312113	Work Order Date	: 28.03.2024
CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	tHindules Industries Limited	Sample Ref. No. Location	: ENVJK/2024/AA/1694 : New Bunglaper: Village Paktar Bauxite Mine
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 12.64.2024 to 13.04.2024 - 15.04.2024 Ambiem Air
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES PVL Ltd.
Period of Analysis	± 15,04,2024 to 23,04,2024	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 32	2	Barometric Pressure (inml-	(g) = 734
3	Relative Humidity (%) : 61	4	Weather Condition	: Clear

	Discipli	ne: ChemicalGroup: Atmospheric Polls	rtion	
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m³	IS 5182 (Part 23); 2006	56	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	USEPA 1997a,40 CFR Part 50, Appendix L: 2006	32	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m³	1S 5182 (Part 2): 2001	7.0	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m ²	IS 5182 (Part 6): 2006	19,4	80 (24hrs)
Ozone (O ₃)	µg/m²	15 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)	ing/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	μg/m³·	IS 5182 (Part- 22): 2019	< 0.002	1 (24hrs)
Nickel (Ni)	ng/m	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ug/m ¹	USEPA Method – IO-3.5 (ICP-MS Method)	<2.0	06 (Annual)
Benzene (C ₆ H ₆)	µg/m³	USEPA Method TO-3 (GC-MS Method)	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m²	USEPA Method – TO-3A (GC-MS Method)	< 0.5	01(Annual)

Reviewed by z

(Kawata Burman Roy, Dy. Quality Manager)

Authorised Signmory :

(Bapan Das, Dy Technical Manager).

Page I of I

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Test Report No.	: ENVJR/1170/APR/TR(W)24-25	Report Release Date	1 23,04.2024	
Work Order No.	: 13612312113	Work Order Date	± 28.03.2024	

CUSTOMER DET/	MI.S	SAMPLE DETAILS	
Customer Name	:Hindalco Industries Limited	Sample Ref. No. Location	: ENVIK/2024/AA/1695 Vatri Shed (Near K-10) Pakhar Bauxite Mine
Address	; Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	12.04.2024 to 13.04.2024 15.04.2024 Amblent Air : ELES/DOC/SMPL/02
Mines Sterus	: Operational	Sampling Done By	: ELES Pvt. Lid:
Period of Analysis	: \5.04.2024 to 23.03.2024	Sample Condition	Sealed & Preserved

ME	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 32	2	Barometric Pressure (mmHg)	: 734
3.	Relative Humidity (%) : 61	-4	Weather Condition	: Clear

	Disciplin	net ChemicalGroup: Atmospheric Pollu	tlon	
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part 23): 2006	60	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	USEPA 1997a;40 CFR Part 50, Appendix L; 2006	35	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m ³	IS 5182 (Part 2): 2001	8.7	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m [±]	IS 5182 (Part 6): 2006	22.1	80 (24hrs)
Ozone (O ₃)	µg/m²	IS 5182 (Purt- 9): 2019	<20.0	100 (Stirs)
Ammonia (NH ₂)	µg/m	IS 5182 (Part- 25); 2018	<10.0	400 (24hrs)
Carlson Monoxide (CO)	mg/m1	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8tirs)
Lead (Pb)	μg/m³	15 5182 (Part- 22): 2019	< 0.002	1 (24hrs)
Nickel (Ni)	ng/m²	IS 5182 (Part- 26): 2020	<6.0	20 (Amuai)
Arsenic (As)	ng/m ¹	USEPA Method - IO-3.5 (ICP-MS Method)	<2.0	D6 (Annual)
Benzene (Calla)	μ <u>α</u> /m³	USEPA Method – TO-3 (GC-MS Method)	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m²	LISEPA Method – TO-3A (GC-MS- Method)	<0.5	01(Annual)

Hevlowed by :

****End of Report***

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(Saswers Burman Roy, Dy. Quality Manager)

(Bapan Das. Dy. Technical Manager)

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Work Order No.	: 13612512113	Work Order Date	: 28.03,2024
CUSTOMER DET	AILS	SAMPLE DETAIL	8
Costomer Name	:Hindelen Industries Limited	Sample Ref. No. Location	: ENVJR/2024/AA/1697 : Near UntermitRajkiyaPrestmik VidyalayaDumraperi Village PakharBaukite Muse

Address	: Lohardaga, Jaarkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	= 12.04.2024 to 13.04.2024 = 15.04.2024 : Ambient Air ELES/DOC/SMPL/02
Mines Status	: Operational	Sampling Done By	ELES Pyt, Lid.
Period of Analysis	: 15.04.2024 to 23.04.2024	Sample Condition	: Sealed & Preserved

MB	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) = 32	2	Barometric Pressure (mm)	Ha) : 734
3	Relative Humidity (%) - 61	4	Weather Condition	: Clear

Parameter:	Unit	Test Protocol	Result	Regulatory Limb
Particulate Matter (PM10)	µц/m ³	IS 5187 (Part 23): 2006	59	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	USEPA 1997a;40 CFR Part 50, Appendix L; 2006	33	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m²	IS 5182 (Part 2): 2001	7.1	80 (I4hrs)
Nitrogen Di-Oxide (NOz)	µg/m³	IS 5182 (Part 6): 2006	22.7	80 (24hrs)
Ozone (O ₂)	µg/m³	IS 5182 (Part- 9): 2019	<20.	100 (Shrs)
Ammonia (NH ₃)).tg/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)	jig/m1	IS 5182 (Part- 22): 2019	0.005	1 (24hrs)
Nickel (Ni)	itg/m ⁻¹	IS 5182 (Part- 26): 2020	< 5.0	20 (Annual)
Arsenic (As)	ng/m*	USEPA Method – IO-3.5 (ICP-MS Method)	<2.0	06 (Annual)
Benzene (C ₆ H ₆)	μg/m ³	USEPA Method – TO-3 (GC-MS Method)	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m	LISEPA Method – TO-3A (GC-MS- Method)	< 0.5	Ol(Annual)

Reviewed by 2

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(Saswata Berman Roy, Dy. Quality Manager)

Authorized Signatory :

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(Bapan Day, Dy. Yeconical Manager)

Page I of I



Test Report No.	: ENVJK/117L/APB/TB(W)24-25	Report Release Date	: 23.04.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2014
CUSTOMER DETA	AILS	SAMPLE DETAILS	
Costomer Name	Hindalco Industries, Limited	Sample Ref. No.	ENVIK/2024/AA/1696 Near WkermirRajkiyaFrattinile VloyalayaBunglapan Village PakhurBauxlte Mine
Address	Lohardaga, Jimrahami-855302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	12.04.2024 to 13.04.2024 13.04.2024 Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Operational	Sampling Done By	: ELES Pyr. Ltd.
Period of Analysis	=15.04.2024 to 23:04.2024	Sample Condition	Sealed & Preserved

MI	ETEOROLOGICAL INFORMATION			
1	Average Temperature (%C) = 32	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%) : 61	4	Weather Condition	: Cicar

	Discip	line: ChemicalGroup: Atmospheric Poll	lution	
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m ³	IS:5182 (Part 23): 2006	59	100 (24hrs)
Particulate Matter (PM2.5)	μg/m ³	USEPA 1997a,40 CFR Part 50, Appendix L: 2006	34	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m³	IS 51B2 (Part 2): 2001	8.2	80 (24hrs)
Nitrogen Di-Oxide (NO ₁)	μg/m ³	IS 5182 (Part 6): 2006	24.5	80 (24hrs)
Ozone (O ₁)	µg/m ¹	(S 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₂)	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	hft,tu _y	IS 5182 (Part- 22); 2019	< 0.002	(24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ¹	USEPA Method – IO-3.5 (ICP-MS Method)	<2.0	06 (Annual)
Benzene (C ₆ H ₆)	µg/m²	USEPA Method – TO-3 (GC-MS Method)	<2,5	05(Annual)
Велго-(а)-Ругене	ng/m²	USEPA Method - TO-3A (GC-MS Method)	<0.5	01(Annual)

Reviewed by :

The same

(Saswara Burman Roy, Dy. Quality Manager)

Authorised Signatory:

The said

(Bapan Das, Dy. Technical Minager)

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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

May 2024





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

ENGINEERING SERVICES PVT. LTD

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



TEST REPORT

Test Report No.	; ELES/RNC/2024/2700	Report Release Date	20.05.2024
Work Order No.	: RP/MJB/MM/24/0088/00	Work Order Date	: 30.03.2024
ULR No.	: TC135872400000669F		

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/3006 : Near Mine Office Pakhar (15.58 ha) Bauxite Mine	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 12.05.2024 to 13.05.2024 : 15.05.2024	
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 15.05.2024 to 20.05.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

MI	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 33	2	Barometric Pressure (mmHg)	: 742
3	Relative Humidity (%) : 60.	4	Weather Condition	; Clear

Discipline: (Chemical	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2022	62	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m ⁵	IS 5182 (Part- 24): 2019	33	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part- II/Sec- 1): 2023	12.5	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m ³	IS 5182 (Part- 6): 2022	24.9	80 (24lus)	
Ozone (O ₃)	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH ₁)	µg/m ⁵	(S 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	1S 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	µg/m³	IS 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 ³	ELES/AIR/SOP/01: 2021	<2.0	96 (Annual)	

Page 1 of 2

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Work Order No.

ENVIRONMENTAL LABORATORIES &

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

: RP/MJB/MM/24/0088/00

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

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TEST REPORT

: ELES/RNC/2024/2700 Report Release Date : 20.05,2024 Test Report No. Work Order Date : 30.03.2024

ULR No. : TC135872400000669F

ELES PVT LTD

Discipline: Chemical		Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
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)

Quality Manager

****End of Report****

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

ELES Pvt. Ltd. Technical Manager.

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (IHARKHAND) GST NO JOAAECE9713D174

WOINEERING SERVICES PVT. LTD.

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



TC-CHIEF

TEST REPORT

Test Report No.	: ELES/RNC/2024/2701	Report Release Date	: 20.05.2024	
Work Order No.	: RP/MJB/MM/24/0088/00	Work Order Date	: 30.03.2024	
ULR No.	: TC135872400000670F			

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/3007 : Near Weigh Bridge Pakhar (15.58 ha) Bauxite Mine
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 12.05.2024 to 13.05.2024 : 15.05.2024 : Ambient Air
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02
Period of Analysis	: 15.05.2024 to 20.05.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

MI	ETEOROLOGICAL INFOR	RMATION			
L	Average Temperature (°C)	: 33	2	Barometric Pressure (mmHg)	: 742
3	Relative Humidity (%)	: 60	4	Weather Condition	: Clear

Discipline: 0	Chemical	Group: Atm	ospheric Pollu	rtion
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m³	IS 5182 (Part- 23): 2022	74	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	43	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m ³	IS 5182 (Part- II/Sec- 1): 2023	11.8	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m ¹	IS 5182 (Part- 6): 2022	25,5	80 (24hrs)
Ozone (O ₁)	μg/m³	15 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/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	μg/m ²	15 5182 (Part- 22): 2019	0.015	1 (24hrs)
Nickel (Ni)	ng/m ¹	IS 5182 (Part- 26); 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m"	+ ELES/AIR/SOP/01; 2021	<2.0	06 (Annual)

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

ENGINEERING SERVICES PVT. LTD.

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TC-11907

TEST REPORT

Test Report No.	: ELES/RNC/2024/2701	Report Release Date	: 20.05.2024	
Work Order No.	: RP/MJB/MM/24/0088/00	Work Order Date	: 30.03.2024	
III P No.	· TC135872400000670F			

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₄ 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)	

AKASH KUMAR Quality Managar ELES PVT LTD

****End of Report****

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

Page 2 of 2

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) 6ST ND:- 20A4ECE9713D124

ENGINEERING SERVICET PVT. LTD.

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



TEST REPORT

Test Report No.	: ELES/RNC/2024/2702	Report Release Date	: 20,05.2024	
Work Order No.	; RP/MJB/MM/24/0088/00	Work Order Date	: 30.03.2024	
ULR No.	: TC135872400000671F			

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	; Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/3008 : Near Mine Quarry No- M1 Pakhar (15.58 ha) Bauxite Mine
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 12.05,2024 to 13.05,2024 : 15.05,2024
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 15.05.2024 to 20.05.2024	Sampling Done By Sample Condition	ELES Pvt. Ltd. Sealed & Preserved

M	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 33	2	Barometric Pressure (mml	fg) = 742
3	Relative Humidity (%) : 50	4	Weather Condition	; Clear

Discipline: 0	Chemical	Group: Atm	ospheric Polls	ition
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23); 2022	67	100 (24hrs)
Particulate Matter (PM2.5)	μg/m ³	IS 5182 (Part- 24); 2019	39	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m³	IS 5182 (Part- II/Sec- 1): 2023	13.1	80 (24hrs)
Nitrogen Di-Oxide (NOz)	µg/m³	IS 5182 (Part- 6): 2022	22.5	80 (24hrs)
Ozone (O ₅)	ug/m³	1S 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/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	μg/m³	IS 5182 (Part- 22): 2019	0.012	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)

Page I of 2

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

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



TEST REPORT

Test Report No.	: ELES/RNC/2024/2702	Report Release Date	: 20.05.2024	
Work Order No.	: RP/MJB/MM/24/0088/00	Work Order Date	: 30.03.2024	

ULR No. : TC135872400000671F

Discipline: Chemical		Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
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)		

AKASH KUMAR Quality Managur ELES PVT. LTD.

****End of Report****

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

Page 2 of 2

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (IHARKHAND). G5T NO:-20AAECE9713D124

ENGINEERING SERVICES PVT. LTB.

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TEST REPORT

Test Report No.	: ELES/RNC/2024/2703	Report Release Date	: 20.05.2024
Work Order No.	; RP/MJB/MM/24/0088/00	Work Order Date	: 30.03.2024
ULR No.	: TC135872400000672F		

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/3009 : Near Mine Quarry No-M4 Pakhar (15.58 ha) Bauxite Mine	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 12.05.2024 to 13.05.2024 : 15.05.2024 : Ambient Air	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02	
Period of Analysis	: 15.05,2024 to 20,05.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

MI	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 33	2	Barometric Pressure (mmHg)	: 742
3	Relative Humidity (%) : 60	4	Weather Condition	: Clear

Discipline: Chemical		Group: Atm	ospheric Pollu	ition
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23); 2022	69	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	42	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part- II/Sec- 1); 2023	13.1	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m ³	IS 5182 (Part- 6): 2022	22.7	80 (24hrs)
Ozone (O ₃)	μg/m ¹	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₁)	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m³	15 5182 (Part- 22): 2019	0.012	1 (24hrs)
Nickel (NI)	ng/m³	IS 5182 (Part- 26); 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)

Page 1 of 2

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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/2024/2703	Report Release Date	: 20.05.2024	
Work Order No.	; RP/MJB/MM/24/0088/00	Work Order Date	: 30.03.2024	

ULR No.	: TC135872400000672F

Discipline: Chemical		Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
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)		

AKASHKUMAR Quality Manager ELES PVT LTD

****End of Report****

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

Page 2 of 2

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO-30AAECES7130124



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TEST REPORT

Test Report No.	: ELES/RNC/2024/2672	Report Release Date	: 18.05.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400000641F		

CUSTOMER DET	AIL5	SAMPLE DETAILS		
Customer Name	: Hindaico Industries Limited	Sample Ref. No. Location	+ FLES/RNC/2024/AA/2963 Near Bunglapart Village Pakhar Bauxite Mine	
Address	Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 10.05.2024 to 11.05.2024 : 13.05.2024 : Ambient Air : ELES/DOC/SMPL/02	
Mines Status	: Operational	Sampling Done By	# ELES Pvt. Ltd.	
Period of Analysis	: 13.05.2024 to 18.05,2024	Sample Condition	: Sealed & Preserved	

ME	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	33	2	Barometric Pressure (mmHg)	: 742
3	Relative Humidity (%)	159	A	Weather Condition	: Clear

Discipline: (Chemical	Group: Atm	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit			
Particulate Matter (PM10)	µg/m³	IS 5182 (Part- 23): 2022	63	100 (24hrs)			
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	36	60 (24hrs)			
Sulphur Di-Oxide (SO ₂)	µg/m ³	15 5182 (Part-11/Sec-1): 2023	9,1	80 (24hm)			
Nitrogen Di-Oxide (NO ₂)	µg/m ¹	IS 5182 (Part- 6): 2022	23.3	80 (24hm)			
Ozone (O ₂)	µg/m³	TS 5182 (Part- 9); 2019	<20.0	100 (Shrs)			
Ammonta (NH ₂)	hā/mj	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)			
Carbon Monoxide (CO)	mg/m³	1S 5182 (Part- 10): 2019 (NDER Method)	<1,0	2 (8hrs)			
Lead (Pb)	µg/m³	IS 5182 (Part-22): 2019	<0.001	1 (24hrs)			
Nickel (NF)	nu/m	IS 5182 (Part- 26): 2020	< 5.0	30 (Annual)			
Arsenic (As)	ng/m ³	ELES AIR/SOP/01: 2021	<2.0	06 (Annual)			

Page 1 of 2

One florentiest water at Tast Report at most by the Laboratory ander General Terms and Conditions, only on Company latter hand in the approved format. The resolutions as the Tast Report trian to release only as the contract of the experiment of the Laboratory as the time of involvement only and within the family of classes a manufactor. The Judoc steep is company as the time of involvement only and within the family of classes a manufactor. The Judoc steep is company as the time of the information which a provided by the class. The Report cannot be reportant tracept as full and any part of the report as as taken on all contracts, without provided the information. The Report is full or or part shall not be published, absorbing, and to take part of the report of the Laboratory. Automition is drawn to the incomm of linkerly, compenses and jurisdiamon tensor. Any conditions has force accounted to the contract of the law All the complex are remained in Sudays from the Date of submitted or the Tast Report is an approximately of the law All the complex are remained in Sudays from the Date of submitted or the Tast Report to the Report of th



PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-934003 (JHARKHAND) 65T NO-30AARCEST13D124



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

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



TEST REPORT

 Test Report No.
 : ELES/RNC/2024/2672
 Report Release Date
 : 18.05.2024

 Work Order No.
 : 13612312113
 Work Order Date
 : 28.03.2024

ULR No. TC135872400000641F

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C _s H _d)	Hg/m*	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05: 2023	< 0.5	OI(Annual)	

Reviewed by AKASH KUMAR Quality Managur ELES PVT, LTD.

****End of Report***

Ph. D Environmental Fund.

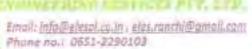
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Page 2 of 2

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PLOT NO-30, MANSAROVAR ENCLAVE TURUDANA HATIA, KANCHI-554003 (JHARKHAND) BST NO - 20AAECE97110124



Website: www.elespl.co.in

TEST REPORT

Test Report No.	: ELES/RNC/2024/2673	Report Release Date	: 18.05.2024
Work Order No.	: 13612312113	Work Order Date	: 28:03.2024
ULR No.	: TC135872400000642F		

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	Hindalco Industries Limited	Sample Ref. No. Location	ELES/RNC/2024/AA/2964 Yatri Shed (Near K-10) Pakhar Bauxite Mine
Address	Lohardagu, Harkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 10.05,2024 to 11.05,2024 : 13.05,2024 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Operational	Sampling Done By	: ELES Pvt. Ltd.
Period of Analysis	: 13.05,2024 to 18.05,2024	Sample Condition	: Sealed & Preserved

7/17	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (9C)	133	2	Barometric Pressure (mmHa)	: 742
3	Relative Humidity (%)	59	4	Weather Condition	: Clear

Discipline: Chemical		Group: Atm	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM (0)	ug/m¹	IS 5182 (Part- 23); 2022	68	100 (24hrs)		
Particulate Maner (PM2.5)	µg/m³	TS 5182 (Part- 24): 2019	36	60 (24hrs)		
Sulphur Di-Oxide (SO ₂)	µg/m³	18 5182 (Part- II/Sec- 1): 2023	11.9.	80 (24hrs)		
Nitrogen Di-Oxide (NO ₂)	µg/m ³	IS 5182 (Part- 6); 2022	25.1	80 (24hrs)		
Ozone (O ₃)	ug/m²	IS 5182 (Part- 9): 2019	<20.0	100 (Shrs)		
Ammonia (NH ₂)	ME/M ₃	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Curbon Monoxide (CO)	mg/m ³	(S 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (Shrs)		
Lead (Pb)	m/m;	IS 5182 (Part-22); 2019	0.005	1 (24hrs)		
Nickel (Ni)	ng/m	IS 5182 (Part- 26): 2020	<6.0	20 (Armual)		
Arsenic (As)	'ng/m"	ELES/AIR/SOI/01: 2021	<2.0	06 (Annual)		

Page I of 2

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



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TEST REPORT

Test Report No.	: ELES/RNC/2024/2673	Report Release Date	: 18.05.2024	
Work Order No.	: 13612312113	Work Order Date	28.03.2024	

ULR No.	TC1358724000000642F
6.3103.7.06	TALESCOTT MADORITOR AND

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (Calla)	ug/m*	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05: 2023	< 0.5	O1(Annual)	

AKASH KUMAR Quality Managur ELES PVT, LTD.

"""End of Report"""

Authorised Signatory

Dr. Deependra Kumar Sinkia Ph. D Environmenter Engli ELES Pvi. Ltd. Technical Marris

Page 2 of 2

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPLIDANA HAYLA, RANCHI-834003 (JHANKHAND) GST NO:- 2NAA6CE9713D124



Email: Info@elespl.co.in . eles.conthi@amoli.com Phone no.: 0551-2290103 Website : www.elespl.co.in



TEST REPORT

Test Report No.	= ELES/RNC/2024/2674	Report Release Date	: 18,05,2024	
Work Order No.	T 13612312113	Work Order Date	: 28.03.2024	
LLR No.	TC135872400000643F			

CUSTOMER DET	CUSTOMER DETAILS		
Customer Name	: Hindaico Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/2965 : Near Utkarmit Rajkiya Prathmit Vidyalaya Bunglapan Village Pakhar Bauxite Mine
Address	; Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 10.05.2024 to 11.05.2024 : 13.05.2024 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	; Operational	Sampling Done By	: ELES Pvt. Ltd.
Period of Analysis	: 13,05,2024 to 18,05,2024	Sample Condition	; Sealed & Preserved

MI	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) 33	2	Barometric Pressure (mmHg)	: 742
3	Relative Humidity (%) : 59	4	Weather Condition	: Clear

Discipline: 0	Chemical	Group: Atmospheric Pollution			
Parameter	1/nit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	ng/m	IS 5182 (Part-23): 2022	67	100 (24hrs)	
Particulate Matter (PM2,5)	µg/m ³	IS 5182 (Part- 24): 2019	34	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	µg/m ¹	IS-5182 (Part-11/Sec-1): 2023	- B.T	80 (24lus)	
Nitrogen Di-Oxide (NO ₂)	µg/m [±]	15-5182 (Part- 6): 2022	22.5	80 (24hrs)	
Oxone (O ₁)	μg/m ³	IS 5182 (Part- 9): 2019	<20.0	(00 (8hrs)	
Ammonia (NH ₃)	μ <u>α</u> /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	7.(8hrs)	
Lead (Pb)	ug/m³	IS 5182 (Part- 22): 2010	0.01	1 (24hrs)	
Nickel (Ni)	ng/m³	15 5182 (Part- 26): 2020	<5.0	20 (Annual)	
Arsonic (As)	ng/m	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	

Page | oF2

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPLIDANA HATIA, RANCHI-834003 (JHARKHAND) BST NO-20A4ECE9713D124



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TEST REPORT

 Test Report No.
 : ELES/RNC/2024/2674
 Report Release Date
 : 18.05.2024

 Work Order No.
 : 13612312113
 Work Order Date
 : 28.03.2024

LLR No. : TC135872400000643F

Discipline: Chemical		Group; Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (CuHa)	µg/m²	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	'ng/m"	ELES/GC/SOP/05: 2023	<0.5	OI(Amunl)	

AKASIA KUMAR Quality Managar

ELES PVT, LTD.

Base End of Report Base

Authorised Signatory

Dr. Deependra Kumai Silhija Ph. D Environmants (Frigs

ELES PVL Ltd. Technical Men.

Page 2 of 2

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TEST REPORT

Test Report No.	: ELES/RNC/2024/2675	Report Release Date	: 18.05.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400000644F		

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	ELES/RNC/2024/AA/2966 Near Utkarmit Rajkiya Prothonik Vidyalaya Dumroport Village Pakhar Booxite Mine
Address	: Lohardaga, Markhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 10.05.2024 to 11.05.2024 : 13.05.2024 : Ambient Air ! ELES/DOC/SMPL/02
Mines Status	: Operational	Sampling Done By	: ELES Pvt. Ltd.
Period of Analysis	= 13.05.2024 to 18.05,2024	Sample Condition	: Sealed & Preserved

M	ETEOROLOGICAL INFO	RMATION			
1	Average Temperature (°C)	: 33	2	Barometric Pressure (mmHg)	742
3	Relative Humidity (%)	: 59	4	Weather Condition	Clear

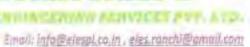
Discipline:	Chemical	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m³	IS 5182 (Part- 23): 2022	69	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m³	15 5182 (Part- 24); 2019	35	60 (24hrs)	
Sulphur Đĩ-Oxiđe (SO ₂)	ug/m ¹	15 5182 (Part-11/Sec-1): 2023	8.6	80 (24hrs)	
Nitrogen Di-Oxide (NO ₇)	hW/m3	IS 5182 (Part- 6): 2022	22,4	80 (24hrs)	
Disone (O ₂)	µg/m³	IS 5182 (Part- 9); 2019	<20.0	100 (8hrs)	
Ammonia (NH;)	μg/m¹	15 5182 (Part- 25): 201#	<10.0	400 (24hist)	
Carbon Monoxide (CO)	mg/m ⁰	IS 5182 (Part-10); 2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	µg/m ¹	15 5182 (Part- 22); 2019	0.009	1 (24hrs)	
Nickel (Ni)	ng/m1	15 5182 (Part- 26): 2020	<6.0	20 (Amual)	
Arsenic (As)	ng/m²	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	

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TEST REPORT

Tust Report No.	: ELES/RNC/2024/2675	Report Release Date	: 18.05.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	- TC135872400000644F		

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₄ H _c)	sig/m*	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m1	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

Reviewed by

AKASH KUMAR Quality Manager ELES PVT. LTD.

End of Report

Authorised Signatory

Dr. Deepandra Kuntar Sinna Ph D Environmental Eng. GLGS Pvt. Ltd. Technical Menor

Page 2 of 2

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TEST REPORT

Test Report No.	: ELES/RNC/2024/2894	Report Release Date	: 28.05.2024
Work Order No.	: RP/MJB/MM/24/0088/00	Work Order Date	: 30.03.2024
ULR No.	: TC135872400000854F		

CUSTOMER DET	TAILS	SAMPLE DETAILS	
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Sampling Date Sample Received Date	: ELES/RNC/2024/DW/3016 : 13.05.2024 : 15.05.2024
Address	: Lohardaga, Jharkhand-835302	Type of Sample Source/Location of Sample	: Drinking Water : Near Mine Office Pakhar (15.58 ha) Bauxite Mine Bauxite Mine
Mines Status	.: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/01 : ELES Pvt. Ltd.
Period of Analysis	: 15.05,2024 to 23.05.2024	Sample Condition	: Sealed & Preserved

Discipline : Chemical		Group :	Water		ory Limit 10500:2012
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
pH (at 25.5 °C)	6	APHA 24th Ed.2023, 4500-H	6.51	6.5-8.5	No Relaxation
Turbidity	NTU	APHA 24th Ed.2023, 2130 B	0.24	1.0	5.0
Taste		APHA 24 th Ed.2023, 2160 C	Agreeable	Agreeable	Agreeable
Odour	4.	IS 3025 (Part-5):2018	Agreeable	Agreeable	Agreeable
Colour	Hazen	APHA 24th Ed.2023, 2120B&D	1.0	5	15
Total Dissolved Solids (TDS)	mg/L	APHA 24th Ed.2023, 2540B,C&D	58	500	2000
Chloride (as Cl)	mg/L	APHA 24th Ed.2023, 4500 CLB	5.78	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 CaCO ₂)	mg/L	APHA 24th Ed.2023, 2320 B	10.3	200	600
Total Hardness (as CaCO ₂)	mg/L	APHA 24th Ed.2023, 2340 C	22.5	200	600
Sulphate (as SO ₄)	mg/L	APHA 24 th Ed.2023, 4500 SO ₁ ⁻³ -E	BDL (DL; 1.0)	200	400

Page 1 of 4

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TEST REPORT

Test Report No. : ELES/RNC/2024/2894 Report Release Date : 28.05.2024

Work Order No. : RP/MJB/MM/24/0088/00 Work Order Date : 30.03.2024

ULR No. : TC135872400000854F

Discipline : Chemic	al	Grou	ip : Water		ory Limit
Starthauer comme	1		F. 1	The second secon	Permissible
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Limit
Nitrate (as NO ₃)	mg/L	APHA 24 th Ed.2023, 4500 NO ₅ -B	BDL (DL: 0.5)	45	No Relaxation
Phenolic Compound (as C ₆ H ₅ OH)	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	1.0
Calcium (as Ca)	mg/L	APHA 24th Ed.2023, 3500 Ca B	6.0	75	200
Anionic Surfactants (as MBAS)	mg/L	APHA 24 th Ed.2023, 5540-C	BDL (DL: 0.025)	0.2	1.0
Discipline : Chemie	cal	Gre	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	IS 3025 (Part-37): 2022	BDL (DL: 0.005)	0.01	No Relaxation
Boron (ás B)	mg/L	IS 3025 (Part-57) : 2021	BDL (DL: 0.2)	0.5	2:4
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 24th Ed.2023; 3111B	BDL (DL: 0.03)	0.05	No Relaxation
Copper (as Cu)	mg/L	APHA 24th 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 24th Ed.2023; 3111B	0.081	1.0	1.0
Lead (as Pb)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL: 0.01)	0.01	No Relaxation
Manganese (as Mn)	mg/L	APHA 24th 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

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TC-13587

TEST REPORT

: 28.05.2024 Test Report No. : ELES/RNC/2024/2894 Report Release Date : 30.03.2024 Work Order Date Work Order No. : RP/MJB/MM/24/0088/00 : TC135872400000854F ULR No.

Discipline: Chemical		Group: Resid	ues in Water		ory Limit 10500:2012
Parameter	Unit	Test Protocol	Result	Acceptable	Permissible Limit
Selenium (as Se)	mg/L	IS 3025 (Part-56): 2019	BDL (DL: 0.01)	0.01	No Relaxation
Zinc (as Zn)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL: 0.1)	5	15
Polynuclear Aromatic Hydrocarbons (PAH)	μg/L	ELES/GC/SOP/04: 2023	BDL (DL: 0.05)	0.1	No Relaxation
Polychlorinated hiphenyls (PCB)	μg/L	ELES/GC/SOP/03: 2023	BDI. (DL: 0.1)	0.5	No Relaxation
Pesticides				Li	mit
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)		.0
Butachlor	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	1	25
Chlorpyriphos	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)		30
Ethion	ρg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)		.0
Malathion	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	1	90
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)	- 3	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

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TEST REPORT

Test Report No. : ELES/RNC/2024/2894 Report Release Date : 28.05.2024

Work Order No. : RP/MJB/MM/24/0088/00 Work Order Date : 30.03.2024

ULR No. : TC135872400000854F

Pesticides				
Parameter	Unit	Test Protocol	Result	Limit
Alpha HCH	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.006)	0.01
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,DDEand DDD)	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.05)	1.0
Discipline : Biological		Group	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	Shari not be detected

Remarks: L. pH and RFC done at Lab.

AKASHIRUMAR Quality Managar ELES PVT. LTD

****End of Report****

Authorised Signatory

Ph. D Environmental Engg.

ELES Pvt. Ltd. Technical Manage

Page 4 of 4

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TEST REPORT

Test Report No.	: ELES/RNC/2024/2894	Report Release Date	: 28.05.2024	
Work Order No.	: RP/MJB/MM/24/0088/00	Work Order Date	: 30.03.2024	

CUSTOMER DET	TAILS	SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Sampling Date Sample Received Date Type of Sample	: ELES/RNC/2024/DW/3016 : 13.05.2024 : 15.05.2024 : Drinking Water	
Address	: Lohardaga, Jharkhand-835302	Source/Location of Sample	Near Mine Office Pakhar (15.58 ha) Bauxite Mine Bauxite Mine	
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/01 : ELES Pvt. Ltd.	
Period of Analysis	: 15.05.2024 to 23.05.2024	Sample Condition	: Sealed & Preserved	

Discipline : Chemical		Group : Water		Regulatory Limit as per 18 10500;2012	
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
Mineral Oil*	mg/L	CL-6, IS: 3025 (P-39)	BDL (DL: 0.1)	1.0	No Relaxation

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

Reviewed by AKASH KUMAR Quality Managur ELES PVT. LTD

****End of Report****

Authorised Signatory

Dr. Deependra Kurnar Sinha Ph. D Environmental Engg ELES Pvt. Ltd. Technical Manar

Page | of 1

the Document stated as Text Report, is stated by the Laboratory under General Terms and Conditions, only on Company letter hand in pre-approved forms. The results shown in the Text Report reflects the findings done by the Laboratory at the time of involvement only and within the limits of client's instructions. The Laboratory is responsible for all the information or data provided on the report, except the information which is provided by the client. The Report cannot be reproduced except in ball and any part of the report is not taken out of context, without prior written approved of the Laboratory. The Report is full or in part shall not be published, advertise, used for any legal actions unless prior permission has been secured from the Management of the Laboratory. Attention is drawn to the lamitation of liability compensation and jurisdiction issues. Any unauthorized alteration & falsification of the content or appearance of the Text Report is unlawful and offenders may be prosecuted to the fullest extent of the law. All the samples are retained for 30 days from the Date of peleasecusies of the Text Report. The samples from Regulatory bales are in be retained as specified. Any type of Observations or Complaints regarding the Reports shall be done within 15 days from the Date of Text Report is in 24 hours format. Abbreviation used: N/A (Not Applicable); BDL (Below Detection Limit), LDL (Lower Detection Limit).

ENVIRONMENTAL LABORATORIES & ENGINEERING . SERVICES PVT.LTD.

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

Pakhar (15.58) Bauxite Mine-Environmental Monitoring Report

June 2024





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

ENGINEERING SERVICES PYT. LTD.

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

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



TEST REPORT

Test Report No.	; ELES/RNC/2024/3265	Report Release Date	: 19.06.2024	
Work Order No.	; RP/MJB/MM/24/0088/00	Work Order Date	: 30.03,2024	
ULR No.	: TC135872400001217F			

CUSTOMER DET	CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/3624 : Near Mine Office Pakhar (15.58 ha) Bauxite Mine		
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 13.06.2024 to 14.06.2024 : 15.06.2024		
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02		
Period of Analysis	: 15.06.2024 to 19.06.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved		

MI	ETEOROLOGICAL INFORMA	ATION		
1	Average Temperature (°C) : 3	38 2	Barometric Pressure (mmHg)	: 742
3	Relative Humidity (%) : 5	59 4	Weather Condition	: Clear

Discipline: 0	Chemical	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	59	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	30	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-11/Sec- 1): 2023	10.2	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part- 6): 2022	24.5	80 (24hrs)	
Ozone (O ₁)	μg/m³	1S 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 ²	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	μg/m³	IS 5182 (Part- 22): 2019	0.008	1 (24hrs)	
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	

Page 1 of 2

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Benzo-(a)-Pyrene

ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 200AECE9713D124

ng/m²

ENGINEERING SERVICES PVT. LTD.

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OI(Annual)

TEST REPORT

Test Report No. : ELES/RNC/2024/3265 Report Release Date : 19.06.2024

Work Order No. : RP/MJB/MM/24/0088/00 Work Order Date : 30.03,2024

ULR No. : TC135872400001217F

Discipline: Chemical		Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (C ₆ H ₆)	μg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)

ELES/GC/SOP/05: 2023

AKASH KUMAR Quality Manager ELES PVT. LTD.

****End of Report****

Authorised Signatory

Dr. Deependra Kumar Sinha

Ph. D Environmental Engg.

< 0.5

ELES Pvt. Ltd. Technical Manager

Page 2 of 2

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

NOINEENING SERVICES PYT. LTD.

Email: info@elespl.co.in , eles.ranchi@amail.com **TC/13587**

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

TEST REPORT

Test Report No.	: ELES/RNC/2024/3266	Report Release Date	: 19.06.2024	
Work Order No.	: RP/MJB/MM/24/0088/00	Work Order Date	: 30.03.2024	
ULR No.	: TC135872400001218F			

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	ELES/RNC/2024/AA/3625 Near Weigh Bridge Pakhar (15.58 ha) Bauxite Mine	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 13.06.2024 to 14.06.2024 : 15.06.2024	
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 15.06.2024 to 19.06.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 38	2	Barometric Pressure (mmHg)	: 742
3.	Relative Humidity (%)	: 59	4	Weather Condition	: Clear

Discipline: Chemical		Group: Atm	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23); 2022	70	100 (24hrs)		
Particulate Matter (PM2.5)	μg/m ³	IS 5182 (Part- 24): 2019	41	60 (24hrs)		
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part- II/Sec- 1): 2023	12.5	80 (24hrs)		
Nitrogen Di-Oxide (NO ₂)	μg/m³	1S 5182 (Part- 6): 2022	24.9	80 (24hrs)		
Ozone (O ₃)	µg/m¹	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)		
Ammonia (NH ₃)	μg/m ¹	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/m³	IS 5182 (Part- 22): 2019	0.013	(24hrs)		
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)		

Page 1 of 2

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

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TEST REPORT

 Test Report No.
 : ELES/RNC/2024/3266
 Report Release Date
 : 19.06.2024

 Work Order No.
 : RP/MJB/MM/24/0088/00
 Work Order Date
 : 30.03.2024

ULR No. : TC135872400001218F

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
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)	

Reviewed by AKASH KUMAR Quality Manager ELES PVT, LTD.

****End of Report***

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

Page 2 of 2

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

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TEST REPORT

Test Report No.	: ELES/RNC/2024/3267	Report Release Date	: 19.06,2024	
Work Order No.	: RP/MJB/MM/24/0088/00	Work Order Date	: 30.03.2024	
ULR No.	: TC135872400001219F			

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	; Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/3626 : Near Mine Quarry No- M1 Pakhar (15.58 ha) Bauxite Mine	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 13.06.2024 to 14.06.2024 : 15.06.2024 : Ambient Air	
Mines Status	: Operational			
Period of Analysis	: 15.06.2024 to 19.06.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

MI	ETEOROLOGICAL INFORMATIO)N		
1	Average Temperature (°C) : 38	2	Barometric Pressure (mml	ig) : 742
3	Relative Humidity (%) : 59	4	Weather Condition	: Clear

Discipline: Chemical		Group: Atm	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	61	100 (24hrs)		
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	37	60 (24hrs)		
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part- II/Sec- 1): 2023	12.4	80 (24hrs)		
Nitrogen Di-Oxide (NO ₂)	μg/m³	TS 5182 (Part- 6): 2022	23.1	80 (24hrs)		
Ozone (O ₃)	μg/m³	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/m³	IS 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/m³	1S 5182 (Part- 26): 2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)		

Page 1 of 2

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

ENGINEERING SERVICES PVT. LTD

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TC-1988

TEST REPORT

Test Report No.	: ELES/RNC/2024/3267	Report Release Date	: 19.06.2024	
Work Order No.	; RP/MJB/MM/24/0088/00	Work Order Date	: 30.03.2024	

ULR No.	: TC135872400001219F

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₆ H ₆)	μg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m ¹	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

AKASH KUMAR Quality Manager ELES PVT, LTD.

****End of Report***

Dr. Deependra Kurnar Sinha
Ph. D Environmental Engg.

ELES Pvt. Ltd. Technical Manager

Page 2 of 2

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

ENGINEERING SERVICES PTT, LTD.

TC-13M2

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/2024/3268	Report Release Date	: 19.06.2024
Work Order No.	: RP/MJB/MM/24/0088/00	Work Order Date	: 30.03.2024
ULR No.	; TC135872400001220F		

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/3627 : Near Mine Quarry No-M4 Pakhar (15.58 ha) Bauxite Mine	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 13.06,2024 to 14.06,2024 : 15.06,2024	
Mines Status	: Operational Sampling Procedure		: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 15.06.2024 to 19.06.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

MI	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 38	2	Barometric Pressure (mm	Hg) : 742
3	Relative Humidity (%) : 59	4	Weather Condition	: Clear

Discipline: 0	Chemical	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	64	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	40	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m³	1S 5182 (Part-11/Sec- 1): 2023	12.7	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m³	IS 5182 (Part- 6): 2022	22.3	80 (24hrs)	
Ozone (O ₃)	µg/m³	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/m³	1S 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	μg/m³	15 5182 (Part- 22): 2019	0.01	1 (24hrs)	
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	

Page 1 of 2

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

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



TEST REPORT

Test Report No.	: ELES/RNC/2024/3268	Report Release Date	: 19.06.2024	
Work Order No.	: RP/MJB/MM/24/0088/00	Work Order Date	: 30,03,2024	
ULR No.	: TC135872400001220F			

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
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)	

AKASH KUMAR Quality Manager ELES PVT, LTD.

****End of Report****

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

Page 2 of 2

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



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TEST REPORT

Test Report No.	: ELES/RNC/2024/3343	Report Release Date	: 22.06.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400001295F		

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2024/AA/3700
		Location	Near Bunglapart Village Pakhar Bauxite Mine
		Sampling Date	: 15.06.2024 to 16.06,2024
Address	: Lohardaga, Jharkhand-835302	Sample Received Date	: 17.06.2024
		Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
Mines Status	2 Operational	Sampling Done By	: ELES Pvt. Ltd.
Period of Analysis	:: 17.06.2024 to 22.06.2024	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFORMATION				
1	Average Temperature (°C) : 39	2	Barometric Pressure (mm	Hg) : 742	
3	Relative Humidity (%) : 57	4	Weather Condition	: Clear	

Discipline:	Chemical	Group: Atm	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	µg/m³	IS 5182 (Part- 23): 2022	56	(00 (24hrs)		
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part- 24); 2019	31	60 (24hrs)		
Sulphur Di-Oxide (SO ₅)	µg/m³	IS 5182 (Part-II/Sec-1); 2023	11.5	80 (24hrs)		
Nitrogen Di-Oxide (NO ₂)	µg/m³	IS 5182 (Part- 6): 2022	19,1	80 (24hrs)		
Ozone (O ₃)	µg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)		
Ammonia (NH ₁)	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m ¹	1S 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (Shrs)		
Lead (Pb)	µg/m1	IS 5182 (Part- 22): 2019	0.007	I (24hrs)		
Nickel (Ni)	ng/m	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	D6 (Annual)		

Page 1 of 2

The Document stated as Test Report of its and the Laboratory under General Terms and Constitutes, only or Comming latter hand or pre-approved format. The results shown in the Test Report reflects the findings done by the Laboratory of the time of involvement only and within the limits of client's instructions. The Laboratory is responsible for all the information or data provided on the report, except the information which is provided by the client. The Report cannot be reproduced except in full and any part of the report is not taken out of convext, without prior varieties approval of the Laboratory. The Report in full or us part shall not be published, divertise, used for any legal actions unless grint permission has been secured from the Kanangerian of the Laboratory American is drawn to the limitations of liability, compensation and jurisdocion issues. Any simultaneous altered in the falsification of the consist or appropriate of the Test Report is actively and offenders may be prosecuted to the false extent of the law. All the samples are retained for Sidnys from the Date of release/some of the Test Report. The samples from Regulatory before are to be retained as specified. Any type of Observations or Compliants pignating the Report shall be done within 15 days from the Date of Test Report released/some. After the time period stated before, we constitute will be accepted. The rather Time schuldly mentioned in Test Report to a Manual Period.



PLOT NO-30, MANSAROVAR ENCLAVE, TUPLIDANA HATIA, RANCHI-234003 (JHARKHAND) BST NO:- 20AAECE97130124



Emali: Into Selespi, cn.in , eles, canchi Sgmail com Phone no. 1 0651-2290103 Website : www.elespi.co.in



TEST REPORT

Test Report No.	: ELES/RNC/2024/3343	Report Release Date	: 22.06.2024	
Work Order No.	: 13612312113	Work Order Date	; 28,03,2024	

ULR No. : TC135872400001295F

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C _t 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)	

Reviewed by AKASH KUMAR Quality Manager ELES PVT, LTD.

**** End of Report****

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

Page 2 of 2

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FLOT NO 30, MANSAROVAR ENCLAVE, TUPLIDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 20A45C697130174



Te-lotar

Email <u>info@erespl.sq.in</u> , <u>eres.ronchl@gmail.com</u> Plrane no.: 0651-2290103 Website i www.elespl.co.in

TEST REPORT

Test Report No.	: ELES/RNC/2024/3344	Report Release Date	: 22.06.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400001296F		

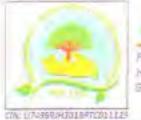
CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/3701 : Yatri Shed (Near K-10) Pakhar Bauxite Mine
Address	± Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 15.06.2024 to 16.06,2024 : 17.06.2024 : Ambient Air
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 17.06.2024 to 22.06.2024	Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C) :	39	2	Barometric Pressure (mmHg)	: 742
3	Relative Humidity (%)	57	4	Weather Condition	Clear

Discipline:	Chemical	Group: Atm	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit			
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	62	100 (24hrs)			
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	31	60 (24hrs)			
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-11/Sec-1): 2023	13.3	80 (24hrs)			
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part- 6): 2022	22.7	80 (24lus)			
Ozone (O ₃).	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)			
Ammonia (NH ₃)	μg/m²	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)			
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)			
Lead (Pb)	µg/m³	IS-5182 (Part- 22): 2019	0.005	1 (24hrs)			
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.8	20 (Annual)			
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)			

Page 1 of 2

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PLOT NO-30, MANSAROVAN ENCLAVE, TUPUDANA HATIA HANCHI 834003 (HARKHAND) GST ND:- 20AASCE9713D174

ERING SERVICES PVT. 170

Website: www.elespt.co.in

Email: Info@elesal.co.ln , eles.ranchl@amail.com Phone no.: 0651-2290103



TEAMER

TEST REPORT

Test Report No.	: ELES/RNC/2024/3344	Report Release Date	: 22.06.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400001296F			

Discipline; Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C _s H _s)	μg/m³	ELES/GC/SOP/06; 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m²	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

AKASH KUMAR Quality Manager ELES PVT. LTD.

End of Report***

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

Page 2 of 2

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GSTWO:- 20AAEGEST130124



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

TEST REPORT

Test Report No.	: ELES/RNC/2024/3345	Report Release Date	: 22,06,2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400001297F		

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/3702 : Near Utkarmit Rajkiya Prathmik Vidyalaya Bunglapart Village Pakhar Bauxite Mine	
Address	; Lobardaga, Iharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 15.06.2024 to 16.06.2024 : 17.06.2024 : Ambient Air : ELES/DOC/SMPL/02	
Mines Status	: Operational	Sampling Done By	: ELES Pvt. Ltd.	
Period of Analysis	: 17.06.2024 to 22.06.2024	Sample Condition	: Sealed & Preserved	

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 39	2	Barometric Pressure (mmH	lg) : 742
3	Relative Humidity (%)	: 57	4	Weather Condition	: Clear

Discipline: Chemical		Group: Atm	ospheric Pollu	tion
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	60	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	29	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m³	15 5182 (Part-11/Sec- 1): 2023	7.8	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	15 5182 (Part- 6): 2022	17.2	80 (24turs)
Ozone (O ₃)	μg/m³	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/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	pg/m³	IS 5182 (Part- 22): 2019	0.01	1 (24hrs)
Nickel (Ni)	ng/m³	15 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)

Page 1 of 2

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PLOT NO-30, MANSARDVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARNHAND) BST NO:-2011AECE8713D124



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TEST REPORT

Test Report No.	; ELES/RNC/2024/3345	Report Release Date	: 22.06.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400001297F			

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₆ H ₆)	µg/m¹	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05; 2023	< 0.5	01(Annual)	

Reviewed by AKASH KUMAR Quality Manager ELES PVT, LTD

****End of Report****

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

Page 2 of 2

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHANO) 637 NO:- 10AAECE9713D114



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TEST REPORT

Test Report No.	: ELES/RNC/2024/3346	Report Release Date	: 22.06.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400001298F		

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	Hindalco Industries Limited	Sample Ref. No. Location	ELES/RNC/2024/AA/3703 Near Utkarmit Rajkiya Prathmik Vidyalaya Dumrapart Village Pakhar Bauxite Mine
Address	: Lobardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 15.06.2024 to 16.06.2024 : 17.06.2024 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Operational	Sampling Done By	: ELES Pvt. Ltd.
Period of Analysis	: 17.06.2024 to 22.06.2024	Sample Condition	: Sealed & Preserved

Mi	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 39	2	Barometric Pressure (mmHg)	: 742
3	Relative Humidity (%)	:57	4	Weather Condition	: Clear

Discipline: (Chemical	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	64	100 (24hrs)	
Particulate Matter (PM2,5)	μg/m ¹	IS 5182 (Part- 24): 2019	29	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part- II/Sec- 1): 2023	10.5	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	μg/m³	IS 5182 (Part- 6): 2022	18.1	80 (24lars)	
Ozone (O ₃)	µg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonía (NH ₁)	µg/m¹	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/m²	IS 5182 (Part- 22): 2019	0.011	1 (24hrs)	
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	

Page 1 of 2

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-634003 (JHARKHAND) GST NO:- 20AAECE9713D124

ENGINEERING SERVICES PVT. LTD.

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

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



TEST REPORT

Test Report No.	: ELES/RNC/2024/3346	Report Release Date	: 22.06.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
- Charles and				

ULR No. : TC135872400001298F

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₆ H ₆)	дg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05; 2023	<0.5	01(Annual)	

AKASHIKUMAR Quality Manager FLES PVT. LTD.

****End of Report****

Authorised Signatory
Dr. Deependra Kumar Sinha

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

Page 2 of 2

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ENVIRONMENTAL LABORATORIES & ENGINEERING SERVICES PVT.LTD.

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

Pakhar (15.58) Bauxite Mine-Environmental Monitoring Report

July 2024



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

ENGINEERING SERVICES PVT. LTD.

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



TEST REPORT

Test Report No.	: ELES/RNC/2024/4067	Report Release Date	: 22.07.2024	
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024	
ULR No.	: TC135872400002002F			

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/4662 : Near Mine Office Pakhar (15.58 ha) Bauxite Mine
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 12.07,2024 to 13.07.2024 : 15.07.2024
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	± 15.07.2024 to 22.07.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

MI	METEOROLOGICAL INFORMATION					
1	Average Temperature (°C) : 30	2	Barometric Pressure (mmH	g) : 743		
3	Relative Humidity (%) : 66	4	Weather Condition	: Partly Cloudy		

Discipline: (Chemical	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m ³	IS 5182 (Part- 23): 2022	59	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	30	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part- II/Sec- 1): 2023	9.5	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part- 6): 2022	22.8	80 (24hrs)	
Ozone (O ₃)	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH ₁)	μg/m³	IS 5182 (Part- 25); 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10); 2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	μg/m²	IS 5182 (Part- 22): 2019	0.008	1 (24hrs)	
Nickel (Ni)	ng/m ³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	

Page 1 of 2

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

ENGINEERING SERVICES PVT. LTD

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16-140

TEST REPORT

Test Report No.	: ELES/RNC/2024/4067	Report Release Date	: 22.07.2024
Work Order No.	; RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024
ULR No.	: TC135872400002002F	-	

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
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)	

Reviewed by

Quality Manager ELES PVT, LTD. ****End of Report****

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

Page 2 of 2

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

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TEST REPORT

Test Report No.	: ELES/RNC/2024/4068	Report Release Date	: 22.07,2024	
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024	
ULR No.	: TC135872400002003F			

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/4663 : Near Weigh Bridge Pakhar (15.58 ha) Bauxite Mine
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 12.07.2024 to 13.07.2024 : 15.07.2024
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 15.07.2024 to 22.07.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. ; Sealed & Preserved

MI	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 30	2	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%)	: 66	4	Weather Condition	: Partly Cloudy

Discipline: 0	Chemical	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	64	100 (24hrs)		
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	39	60 (24hrs)		
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part- II/Sec- 1); 2023	11.1	80 (24hrs)		
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part- 6): 2022	24,5	80 (24hrs)		
Ozone (O ₃)	μg/m³	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/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)		
Lead (Pb)	μg/m³	1S 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/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)		

Page 1 of 2

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

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TEST REPORT

Test Report No. : ELES/RNC/2024/4068 Report Release Date : 22.07.2024

Work Order No. : RP/MJB/MM/24/0088/01 Work Order Date : 30.03.2024

ULR No. : TC135872400002003F

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C _t H _t)	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)	

Reviewed by

AKASH KUMAR Quality Manager ELES PVT. LTD. ****End of Report****

Authorised Signatory

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

Page 2 of 2

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:-28AAECE9713D1Z4

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TEST REPORT

Test Report No.	: ELES/RNC/2024/4069	Report Release Date	: 22.07.2024	
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024	
ULR No.	: TC135872400002004F			

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/4664 : Near Mine Quarry No- M1 Pakhar (15.58 ha) Bauxite Mine
Address	; Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 12.07.2024 to 13.07.2024 : 15.07.2024
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 15.07.2024 to 22.07.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

M	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 30	2	Barometric Pressure (mmH	g) : 743
3	Relative Humidity (%) : 66	4	Weather Condition	: Partly Cloudy

Discipline: 0	Chemical	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	55	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	26	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part- II/Sec- 1): 2023	6.1	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m³	1S 5182 (Part- 6): 2022	17.8	80 (24hrs)	
Ozone (O ₃)	μg/m³	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/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	µg/m³	IS 5182 (Part- 22): 2019	0.005	1 (24hrs)	
Nickel (Ni)	ng/m³	1S 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	

Page | of 2

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

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TEST REPORT

Test Report No.	: ELES/RNC/2024/4069	Report Release Date	: 22.07.2024	
Work Order No.	; RP/MJB/MM/24/0088/01	Work Order Date	; 30.03,2024	
ULR No.	: TC135872400002004F			

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
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)	

AKASH KUMAR Quality Manager ELES PVT LTD.

*End of Report****

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

Page 2 of 2

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

ENGINEERING SERVICES PVT. LTD.

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TEST REPORT

Test Report No.	: ELES/RNC/2024/4070	Report Release Date	; 22.07.2024	
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024	
ULR No.	: TC135872400002005F			

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/4665 : Near Mine Quarry No-M4 Pakhar (15.58 ha) Bauxite Mine
Address	; Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 12.07.2024 to 13.07.2024 : 15.07.2024 : Ambient Air
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 15.07.2024 to 22.07.2024	Sampling Done By Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 30	2	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%) : 66	4	Weather Condition	: Partly Cloudy

Discipline: 0	Chemical	Group: Atm	ospheric Pollu	ition
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	59	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24); 2019	30	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m³	IS 5182 (Part- II/Sec- 1): 2023	9.5	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m³	IS 5182 (Part- 6): 2022	22.8	80 (24hrs)
Ozone (O ₃)	μg/m³	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 [†]	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	μg/m³	IS 5182 (Part- 22): 2019	0,008	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)

Page 1 of 2

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

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10-11587

TEST REPORT

Test Report No.	: ELES/RNC/2024/4070	Report Release Date	: 22.07.2024	
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024	
ULR No.	: TC135872400002005F			

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₄ H ₄)	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)	

Reviewed by AKASH KUMAR

Quality Managur ELES PVT LTD ****End of Report***

Dr. Deependra Kumar Sinha
Ph. D Environmental Engg.

ELES Pvt. Ltd. Technical Manager

Page 2 of 2

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PLOT NO 30, MANSAROVAR ENCLAVE, TURUDANA HISTIA, RANCHI-934003 (HARKHAND) ESTING - 200480597120124

ENDINEERING SERVICES FYT, STD.

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TEST REPORT

Test Report No.	: ELES/RNC/2024/4086	Report Release Date	: 22.07.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400002021F		

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/4681 : Near Bunglapart Village Pakhar Bauxite Mine
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 14,07.2024 to 15.07.2024 : 17,07.2024 : Ambient Air
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 17.07.2024 to 22.07.2024	Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C) : 30	2	Barometric Pressure (mmHg)	: 742	
3	Relative Humidity (%) 63	4	Weather Condition	: Partly Cloudy	

Discipline:	Chemical	Group: Atmospheric Pollution		
Paramete:	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m ³	IS 5182 (Part- 23); 2022	52	100 (24hrs)
Particulate Matter (PM2,5)	µg/m³	IS 5182 (Part- 24): 2019	27	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m³	IS 5182 (Part- II/Sec- 1): 2023	8,9	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part- 6): 2022	17.5	80 (24hrs)
Ozone (O ₁)	μg/m ¹	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₃))Tā/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lend (Pb)	щg/m³	IS 5182 (Part- 22); 2019	0.009	I (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)

Page 1 of 2

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) SST NO: 2CAAECE97130124

KERING SERVICES PVT. LTD.

Email: Info@elesal.co.lin , eles ranchi@amail.com Phone no.: 0651-2290103

Website: www.elespi.co.in



TEST REPORT

Test Report No.	: ELES/RNC/2024/4086	Report Release Date	: 22.07.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	

: TC135872400002021F ULR No.

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C _s 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)	

AKASH KUMAR Quality Manager ELES PVT. LTD

End of Report***

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

Page 2 of 2

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ROOT NO-30, MANSARDVAR ENCLAVE, TUPUDANA HATIA, RANCHI-E34003 (JHARKHAND) GST NO:- 20A4ECES713D1Z4

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Phone na.: 0551-2290103 Website: www.elespl.co.in



TEST REPORT

Test Report No.	; ELES/RNC/2024/4087	Report Release Date	: 22.07.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400002022F		

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/4682 : Yatri Shed (Near K-10) Pakhar Bauxite Mine
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 14.07.2024 to 15.07.2024 : 17.07.2024 : Ambient Air
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 17.07.2024 to 22.07.2024	Sample Condition	: Sealed & Preserved

ľ	Average Temperature (°C) : 30	2	Barometric Pressure (mmHs	g) : 742
-	Relative Humidity (%) : 63	4	Weather Condition	: Partly Cloudy

Discipline:	Chemical	Group: Atm	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	57	100 (24hrs)		
Particulate Matter (PM2.5)	μg/m ¹	IS 5182 (Part- 24); 2019	26	60 (24hrs)		
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part- II/Sec- 1): 2023	8.9	80 (24hrs)		
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part- 6): 2022	20.1	80 (24hrs)		
Ozone (O ₃)	ug/m ³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)		
Ammonia (NH ₃)	μg/m³	IS 5182 (Part- 25): 2018	<10,0	400 (24hrs)		
Curbon Monoxide (CO)	mg/m ¹	IS 5182 (Part- 10): 2019 (NDIR Method)	<1,0	2 (8hrs)		
Lead (Pb)	µg/m³	IS 5182 (Part- 22): 2019	< 0.002	1 (24hrs)		
Nickel (Ni)	ng/m³	IS 5182 (Part-26); 2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)		

Page | of 2

The Document stand as Test Report refer or relates only to the Jaboratory under General Terms and Conditions, only or Company letter head in pre-approved format. The results shown in the Jest Report refer or relates only to the Job/analysis done by the Laboratory only. The information stated on the Test Report reflects the findings done by the Laboratory at the time of involvement only and within the limits of client's instructions. The Laboratory is responsible for all the information or data plovided in the report, except the information which is provided by the client. The Report cannot be reproduced except in full and any part of the report is not taken out of context, without prior written approval of the Laboratory. The Report in full or in part shall not be published, advertise, used for any legal actions unless prior permission that been secured from the Management of the Laboratory. Attention is drawn to the limitation of liability, compensation and jurisdiction issues. Any unauthorized alternation & Editionation of the contemporaries of the Test Report is unlawful and offenders may be protecuted to the fullest extent of the law. All the samples are retained for Malays from the Date of the Bale of Test Report the angularity bedone seem to be retained as specified. Any type of Observations or Complainty regarding the Reports thall be done northy in Salays from the Date of Test Report released should be forced in the Malays from the Date of Test Report is an Advertised advertised. BEM, (Below Discourse Limit), LDL (Lower Detection Limit).



PLOT NO-30, MANSAROVAR ENCLAVE, TURLIDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO-20AAECE9723D114

ENGINEERING SERVICES PVT. LTD.

Emaili Info@elesal.ca in , eles ranchi@gmail.com Phane no.; 0651-2290103 Website : www.elesal.co.in



TEST REPORT

Test Report No.	; ELES/RNC/2024/4087	Report Release Date	: 22.07.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	

ULR No. : TC135872400002022F

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₆ H ₈)	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)	

Reviewed by AKASH KUMAR Quality Managur ELES PVT LTD

****End of Report****

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

Page 2 of 2

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PLOT NO-10, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-83-1003 (IHARKHAND) EST NO:-104AECEST13D1ZA

ENGINEERING SERVICES PVI. LTD

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



TEST REPORT

Test Report No.	: ELES/RNC/2024/4088	Report Release Date	: 22.07,2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400002023F		

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/4683 : Near Utkarmit Rajkiya Prethmik Vidyalaya Bunglapart Village	
Address	; Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	Pakhar Bauxite Mine : 14.07.2024 to 15.07.2024 : 17.07.2024 : Ambient Air	
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	; 17.07.2024 to 22.07.2024	Sample Condition	: Sealed & Preserved	

M	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 30	2	Barometric Pressure (mmHg)	: 742
3	Relative Humidity (%) : 63	4	Weather Condition	: Partly Cloudy

Discipline:	Chemical	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m ¹	IS 5182 (Part- 23): 2022	55	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24); 2019	24	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m ³	(\$ 5182 (Part- II/Sec- 1); 2023	6.9	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	µg/m ¹	TS 5182 (Part- 6): 2022	18.4	80 (24hrs)	
Ozone (O ₃)	μg/m³	1S 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH ₃)	µg/m'	IS 5182 (Part- 25); 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	μg/m ³	TS 5182 (Part-22): 2019	0.007	1 (24lus)	
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01; 2021	55	06 (Annual)	

Page 1 of 2

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) ISIT NO.-30AAECEE7130124



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TEST REPORT

Test Report No.	: ELES/RNC/2024/4088	Report Release Date	: 22.07.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400002023F			

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₄ 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	Ol(Annual)	

AKASH KUMAR Quality Managur ELES PVT LTD

****End of Report****

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

Page 2 of 2

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) 05T NO-704AFFE97130124

ENGINEERING SERVICES PTT. LED.

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

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TEST REPORT

Test Report No.	: ELES/RNC/2024/4089	Report Release Date	: 22.07.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400002024F		

CUSTOMER DET	CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/4684 : Near Utkarmit Rajkiya Prathmik Vidyalaya Dumrapart Village		
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	Pakhar Bauxite Mine : 14.07.2024 to 15.07.2024 : 17.07.2024 : Ambient Air		
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.		
Period of Analysis	: 17.07.2024 to 22.07.2024	Sample Condition	: Sealed & Preserved		

MI	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 30	2	Barometric Pressure (mmH)	g) : 742
3	Relative Humidity (%) : 63	4	Weather Condition	: Partly Cloudy

Discipline: (Chemical	Group: Atm	ospheric Polle	tion
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	1S 5182 (Part- 23); 2022	57	100 (24hrs)
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part-24); 2019	25	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-11/Sec- 1); 2023	7.2	80 (24hrs)
Nitrogen Di-Oxide (NOz)	µg/m³	IS 5182 (Part- 6): 2022	16.8	80 (24hrs)
Ozone (O ₃)	μg/m³	1S 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₁)	µg/m³	IS-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)	μg/m³·	1S 5182 (Part- 22): 2019	0.015	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part-26): 2020	<6,0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)

Page 1 of 2

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (IMARKHAND) GIT NO:- 20A45CE9713D124

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Phone no.: 0651-229010s Website : www.elespl.co.in



TEST REPORT

Test Report No.	: ELES/RNC/2024/4089	Report Release Date	: 22.07.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400002024F		

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
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)	

Reviewed by AKASH KUMAR Quality Managur ELES PVT LTD

****End of Report****

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

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

August 2024





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

ENGINEERING SERVICES PVT. LTD.

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

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



TEST REPORT

Test Report No.	: ELES/RNC/2024/4595	Report Release Date	: 16.08.2024	
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024	
ULR No.	: TC135872400002520F			

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/5274 : Near Mine Office Pakhar (15.58 ha) Bauxite Mine	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 05.08.2024 to 06.08.2024 : 09.08.2024	
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 09.08.2024 to 16.08.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

MI	ETEOROLOGICAL INFO	RMATION			
1	Average Temperature (°C)	: 27	2	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%)	: 68	4	Weather Condition	: Cloudy

Discipline: (Chemical	Group: Atm	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	66	100 (24hrs)		
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24); 2019	34	60 (24hrs)		
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-11/Sec- 1): 2023	11.8	80 (24hrs)		
Nitrogen Di-Oxide (NO ₂)	μg/m³	1S 5182 (Part- 6): 2022	23.5	80 (24hrs)		
Ozone (O ₃)	μg/m³	1S 5182 (Part- 9): 2019	<20.0	100 (8hrs)		
Ammonia (NH ₁)	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10); 2019 (NDIR Method)	<1.0	2 (8hrs)		
1.ead (Pb)	μg/m¹	IS 5182 (Part- 22): 2019	0.009	1 (24hrs)		
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)		

Page 1 of 2

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

ENGINEERING SERVICES PVT. LTD.

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

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



TEST REPORT

Test Report No. : ELES/RNC/2024/4595 Report Release Date : 16.08.2024

Work Order No. : RP/MJB/MM/24/0088/01 Work Order Date : 30.03.2024

ULR No. : TC135872400002520F

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
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)	

AKASHIKUMAR Quality Manager

ELES PVT. LTD

****End of Report****

Authorised Signatory

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

Page 2 of 2

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 20/AECE9713D1Z4

ENGINEERING SERVICES PVT. LYD.

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

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



TEST REPORT

Test Report No.	: ELES/RNC/2024/4596	Report Release Date	: 16.08.2024
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024
ULR No.	: TC135872400002521F		

CUSTOMER DET	CUSTOMER DETAILS		E. July W. My H.
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/5275 : Near Weigh Bridge Pakhar (15.58 ha) Bauxite Mine
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 05.08.2024 to 06.08.2024 : 09.08.2024
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 09.08,2024 to 16.08.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 27	2	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%)	: 68	4	Weather Condition	: Cloudy

Discipline:	Chemical	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	75	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part- 24): 2019	44	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	µg/m³	IS 5182 (Part- II/Sec- 1): 2023	12.1	80 (24hrs)	
Nitrogen Di-Oxide (NO _i)	μg/m³	IS 5182 (Part-6): 2022	25,5	80 (24hrs)	
Ozone (O ₃)	µg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH ₁)	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m*	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	µg/m³	IS 5182 (Part- 22): 2019	0.011	1 (24hrs)	
Nickel (Ni)	ng/m	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01; 2021	<2.0	06 (Annual)	

Page 1 of 2

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PLOT NO-30, MANSAROVAR ENCLAYE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 20A4ECE9713D1Z4

ENGINEERING SERVICES PVT. LTD.

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TEST REPORT

Test Report No. : ELES/RNC/2024/4596 Report Release Date : 16.08.2024

Work Order No. : RP/MJB/MM/24/0088/01 Work Order Date : 30.03.2024

ULR No. : TC135872400002521F

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₆ H ₈)	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)	

Reviewed by

AKASH KUMAR Quality Manager ELES PVT. LTD.

****End of Report****

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

ELES Pyt. Ltd. Technical Manager

Page 2 of 2

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

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IN SECTION AND PROPERTY.

TEST REPORT

Test Report No.	: ELES/RNC/2024/4597	Report Release Date	: 16.08.2024	
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024	
ULR No.	: TC135872400002522F			

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/5276 : Near Mine Quarry No- M1 Pakhar (15.58 ha) Bauxite Mine
Address	Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 05.08.2024 to 06.08,2024 : 09.08.2024
Mines Status : Operational		Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 09.08.2024 to 16.08.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

MI	METEOROLOGICAL INFORMATION				
1	Average Temperature (°C) : 27	2 1	Barometric Pressure (mmH	g) : 743	
3	Relative Humidity (%) : 68	4 1	Weather Condition	: Cloudy	

Discipline: 0	Chemical	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m ¹	IS 5182 (Part- 23): 2022	65	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m³	1S 5182 (Part- 24); 2019	38	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part- II/Sec- 1): 2023	11.5	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m ³	IS 5182 (Part- 6); 2022	21.2	80 (24hrs)	
Ozone (O ₃)	μg/m³	IS 5182 (Part- 9); 2019	<20.0	100 (8hrs)	
Ammonia (NH ₁)	μg/m ²	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/m³	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/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	

Page 1 of 2

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

: RP/MJB/MM/24/0088/01

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

: 30.03.2024

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



TEST REPORT

Work Order Date

Test Report No. : ELES/RNC/2024/4597 Report Release Date : 16.08.2024 Work Order No.

ULR No. : TC135872400002522F

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
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)	

AKASH KUMAR Quality Manager ELES PVT LTD.

End of Report*

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

Page 2 of 2

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

ENGINEERING SERVICES PVT. LTD.

33

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/2024/4598	Report Release Date	: 16.08.2024
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024
ULR No.	: TC135872400002523F		

CUSTOMER DET	CUSTOMER DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/5277 : Near Mine Quarry No-M4 Pakhar (15.58 ha) Bauxite Mine
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 05.08.2024 to 06.08.2024 : 09.08.2024 : Ambient Air
Mines Status	: Operational	Type of Sample Sampling Procedure	: ELES/DOC/SMPL/02
Period of Analysis	: 09.08.2024 to 16.08.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

MI	ETEOROLOGICAL INFO	RMATION			
1	Average Temperature (°C)	227	2	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%)	; 68	4	Weather Condition	: Cloudy

Discipline: 0	Chemical	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	66	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	34	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part- II/Sec- 1): 2023	11.8	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m³	1S 5182 (Part- 6): 2022	23.5	80 (24hrs)	
Ozone (O ₃)	µg/m³	IS 5182 (Part- 9); 2019	<20.0	100 (8hrs)	
Ammonia (NH ₁)	μg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	μg/m³	1S 5182 (Part- 22): 2019	0.009	1 (24hrs)	
Niekel (Ni)	ng/m²	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	

Page 1 of 2

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

ENGINEERING SERVICES PVT. LTD.

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TC-1356T

TEST REPORT

Test Report No.	: ELES/RNC/2024/4598	Report Release Date	: 16.08.2024	
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024	

ULR No.	: TC135872400002523F

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
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)	

AKASIT KUMAR Quality Manager ELES PVT. LTD.

****End of Report****

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

Page 2 of 2

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

Website: www.elespi.co.in

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



TEST REPORT

Test Report No.	: ELES/RNC/2024/4613	Report Release Date	: 16.08.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400002538F		

CUSTOMER DET	CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/5292 : Near Bunglapart Village Pakhar Bauxite Mine		
Address	: Lohardago, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 07.08.2024 to 08.08.2024 : 09.08,2024 : Ambient Air : ELES/DOC/SMPL/02		
Mines Status	; Operational	Sampling Done By	: ELES Pvt. Ltd.		
Period of Analysis	: 09.08.2024 to 16.08.2024	Sample Condition	: Sealed & Preserved		

Mi	TEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 28	2	Barometric Pressure (mmHg)	: 742
3	Relative Humidity (%)	: 67	4	Weather Condition	: Cloudy

Discipline: (Chemical	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m³	IS 5182 (Part- 23): 2022	46	100 (24hrs)	
Particulate Matter (PM2,5)	μg/m ¹	IS 5182 (Part- 24); 2019	22	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	µg/m ³	IS 5182 (Part- II/Sec- 1); 2023	6.3	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	jig/m ¹	IS 5182 (Part- 5); 2022.	15.8	80 (24hrs)	
Ozone (O ₁)	µg/m ³	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)	<1.0	2 (8hrs)	
Lend (Pb)	µg/m²	TS 5182 (Part- 22): 2019	0.005	1 (24hrs)	
Nickel (NI)	ng/m¹	15 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m)	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	

Page 1 of 2

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

ENGINEERING SERVICES PET, LTG

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TEST REPORT

Test Report No. : ELES/RNC/2024/4613 Report Release Date : 16.08.2024

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC135872400002538F

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzetie (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)	

Reviewed by AKASH KUMAR Quality Managor ELES PVT, LTD.

****End of Report****

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

Page 2 of 2

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HÁTIA, RANCHI-834003 (JHARKHAND) GST NO:- 20AAECEST 13D12A



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Website : www.elgspl.co.in



TEST REPORT

Test Report No.	: ELES/RNC/2024/4614	Report Release Date	: 16.08,2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400002539F			

CUSTOMER DET	CUSTOMER DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/5293 : Vatri Shed (Near K-10) Pakhar Bauxite Mine
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 07.08.2024 to 08.08.2024 : 09.08.2024 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Operational	Sampling Done By	: ELES Pvt Ltd.
Period of Analysis	: 09.08.2024 to 16.08.2024	Sample Condition	: Sealed & Preserved

M	ETEOROLOGICAL INFOR	RMATION			
1	Average Temperature ("C)	: 28	2	Barometric Pressure (mmHg)	:742
3	Relative Humidity (%)	: 67	4	Weather Condition	: Cloudy

Discipline: (Chemical	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limi		
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	53	100 (24hrs)		
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	20	60 (24hrs)		
Sulphur Di-Oxide (SO ₂)	μg/m ¹	IS 5182 (Part- II/Sec- 1): 2023	6,4	80 (24hrs)		
Nitrogen Di-Oxide (NO ₁)	μg/m ³	IS 5182 (Part- 6): 2022	17,5	80 (24hrs)		
Ozone (O ₃)	µg/m³	1S 5182 (Part- 9): 2019	<20.0	100 (Shrs)		
Ammonia (NH ₃).	HB/W _x	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Cerbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)		
Lead (Pb)	μ <u>η</u> /m³	IS 5182 (Part- 22): 2019	< 0.002	I (24hrs)		
Nickel (NI)	ng/m	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	05 (Annual)		

Page 1 of 2

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Website: www.elespi.co.in to-case



TEST REPORT

Test Report No.	: ELES/RNC/2024/4614	Report Release Date	: 16.08.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	· TC135872400002539F		

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₆ H ₆)	µg/m³	ELES/GC/SQP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05: 2023	< 0.5	01(Annual)	

AKASH KUMAR Quality Managar ELES PVT LTD

****End of Report***

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

Page 2 of 2

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PLOT NO-30, MANSAROVAR ENCLAVE TUPUDANA HATIA, RANCHI-834003 (IHARKHAND) GST NOT- 20AMECEST19DIZA

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TEST REPORT

Test Report No.	: ELES/RNC/2024/4615	Report Release Date	: 16.08,2024
Work Order No.	: 13612312113	Work Order Date	; 28.03,2024
LLR No.	: TC135872400002540F		

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/5294 : Near Utkarmit Rajkiya Prathmik Vidyalaya Bunglapart Village Pakhar Bauxite Mine
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 07.08.2024 to 08.08.2024 : 09.08.2024 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Operational	Sampling Done By	: ELES Pvt. Ltd.
Period of Analysis	: 09.08.2024 to 16.08.2024	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 28	2	Barometric Pressure (mm)	Hg) : 742
3.	Relative Humidity (%) : 67	- 4	Weather Condition	; Cloudy

Discipline: 0	Chemical	Group; Atm	ospheric Pollu	noin
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m³	IS 5182 (Part- 23): 2022	48	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	21	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-11/Sec- 1): 2023	5.5	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	15 5182 (Part- 6): 2022	16.1	80 (24hrs)
Ozone (O ₁)	ug/m ³	1S 5182 (Pari- 9): 2019	<20.0	100 (3hrs)
Ammonia (NH ₃)	ng/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS \$182 (Part-10); 2019 (NDIR Method)	<1.0	2 (8hrs)
Lend (Pb)	μg/m³	IS 5182 (Purt- 22): 2019	0.009	1 (24hrs)
Nickel (Ni)	ng/m³	15 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 202)	<2.0	06 (Annual)

Page 1 of 2

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TEST REPORT

Test Report No. : ELES/RNC/2024/4615 Report Release Date : 16.08,2024

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC135872400002540F

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
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)	

AKASH KUMAR Quality Manager ELES PVT. LTD.

****End of Report****

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

Page 2 of 2

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TEST REPORT

Test Report No.	: ELES/RNC/2024/4616	Report Release Date	: 16.08.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400002541F			

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref, No. Location	: ELES/RNC/2024/AA/5295 : Near Utkarmit Rajkiya Prathunik Vidyalaya Dumrapart Village Pakhar Bauxite Mine
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 07.08.2024 to 08.08.2024 : 09.08.2024 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Operational	Sampling Done By	- ELES Pvl. Ltd.
Period of Analysis	: 09.08.2024 to 16.08.2024	Sample Condition	: Sealed & Preserved

M	TEOROLOGICAL INFORM	ATION			
1	Average Temperature (°C) :	28	2	Barometric Pressure (mmHg)	=742
3	Relative Humidity (%)	57	4	Weather Condition	: Cloudy

Discipline:	Chemical	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	µg/m³	1S 5182 (Part- 23): 2022	46	100 (24hrs)		
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part- 24): 2019	20	60 (24hrs)		
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part- Il/Sec- 1): 2023	6,7	80 (24hrs)		
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part- 6): 2022	15,3	80 (24hrs)		
Oxime (O ₃)	μg/m [*]	IS 5182 (Part- 9): 2019	<20.0	100 (Shrs)		
Ammonia (NH ₅))rg/m²	1S-5182 (Part- 25): 2018.	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10); 2019 (NDIR Method)	<j.0< td=""><td>2 (8hrs)</td></j.0<>	2 (8hrs)		
Lead (Pb)	µg/m³	IS \$182 (Part- 22); 2019	0.010	1 (24hrs).		
Nickel (Ni)	ng/m³	IS 5182 (Part- 25): 2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m³	ELES/AIR/SOP/01; 2021	<2.0	06 (Annual)		

Page 1 of 2

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

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Website: www.elespl.ca.le



TEST REPORT

Test Report No. : ELES/RNC/2024/4616 Report Release Date : 16.08.2024 Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC135872400002541F

Discipline: Chemical		Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (C ₆ H ₈)	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)

Reviewed by AKASH KUMAR Quality Manager ELES PVT LTD.

*** End of Report ***

Authorised Signatory

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

Page 2 of 2

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ENGINEERING SERVICES PVT. LTD.

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TC-1358T

TEST REPORT

Test Report No.	: ELES/RNC/2024/4740	Report Release Date	: 22.08.2024	
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024	
ULR No.	: TC135872400002659F			

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Sampling Date Sample Received Date	: ELES/RNC/2024/DW/5298 : 06.08.2024 : 09.08.2024	
Address	: Lohardaga, Jharkhand-835302	Type of Sample Source of Sample Location of Sample	: Drinking Water : Tap Water : Office Area	
Mines Status	, Operational	Sampling Procedure	Pakhar Bauxite Mine (15.58 ha) : ELES/DOC/SMPL/01	
Period of Analysis	: 09.08.2024 to 17.08.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

Discipline : Chemical		Group:	Water	the state of the s	ory Limit
Parameter Unit		Test Protocol	Result	Acceptable Limit	Permissible Limit
pH (at 24.8°C)	7	APHA 24th Ed.2023, 4500-H	6.63	6.5-8.5	No Relaxation
Turbidity	NTU	APHA 24th Ed.2023, 2130 B	0.68	1.0	5.0
Taste	-	APHA 24th Ed.2023, 2160 C	Agreeable	Agrecable	Agreeable
Odour	4	IS 3025 (Part-5) :2018	Agreeable	Agrecable	Agreeable
Colour	Hazen	APHA 24th Ed.2023, 2120B&D	1.0	5.0	15
Total Dissolved Solids (TDS)	mg/L	APHA 24th Ed.2023, 2540B,C&D	73	500	2000
Chloride (as CI)	mg/L	APHA 24th Ed.2023, 4500 Cl B	14.3	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 CaCO ₃)	mg/L	APHA 24th Ed.2023, 2320 B	19.9	200	600
Total Hardness (as CaCO ₃)	mg/L	APHA 24th Ed.2023, 2340 C	29.0	200	600
Sulphate (as SO ₄)	mg/L	APHA 24th Ed.2023, 4500 SO ₄ -2-E	2.40	200	400
Nitrate (as NO ₃)	mg/L	APHA 24th Ed.2023, 4500 NO ₃ -B	0.98	45	No Relaxation

Page 1 of 4

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CIN: U749991H2018FTC011125

ENVIRONMENTAL LABORATORIES &

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

ENGINEERING SERVICES PVT. LTD

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TC-12587

TEST REPORT

 Test Report No.
 : ELES/RNC/2024/4740
 Report Release Date
 : 22.08.2024

 Work Order No.
 : RP/MJB/MM/24/0088/01
 Work Order Date
 : 30.03.2024

ULR No. : TC135872400002659F

Discipline : Chemica	al	Grou	p: Water	and the second s	ory Limit 0500:2012
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
Phenolic Compound (as C ₆ H ₅ OH)	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	0.35	0,2(Min)	1.0(Min)
Calcium (as Ca)	mg/L	APHA 24th Ed.2023, 3500 Ca B	7,7	75	200
Anionic Surfactants (as MBAS)	mg/L	APHA 24th Ed.2023, 5540-C	BDL (DL: 0.025)	0.2	0.1
Discipline : Chemic	al	Gre	up: 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	IS 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 24 ^{ss} Ed.2023; 3111B	BDL (DL: 0.003)	0.003	No Relaxation
Total Chromium (as Cr)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL: 0.03)	0.05	No Relaxation
Copper (as Cu)	mg/L	APHA 24th 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	0.077	1.0	No Relaxation
Lead (as Pb)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL: 0.01)	0.01	No Relaxation
Manganese (as Mn)	mg/L	APHA 24th 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, MANSARDVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:-20AAECE9713D124

ENGINEERING SERVICES PVT. LTD.

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

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



TEST REPORT

 Test Report No.
 : ELES/RNC/2024/4740
 Report Release Date
 : 22.08.2024

 Work Order No.
 : RP/MJB/MM/24/0088/01
 Work Order Date
 : 30.03.2024

ULR No. : TC135872400002659F

Discipline : Chemical		Group: Resid	ues in Water		ory Limit 10500:2012
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
esticides				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	.0
Butachlor	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	- 4	25
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)	A	
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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TEST REPORT

Test Report No. : ELES/RNC/2024/4740 Report Release Date : 22.08.2024

Work Order No. : RP/MJB/MM/24/0088/01 Work Order Date : 30.03.2024

ULR No. : TC135872400002659F

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) (o,p DDE and p,p DDD)	µg/L	ELES/GC/SOP/02: 2923	BDL (DL: 0.05)	1.0
Discipline : Biological		Group	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	Stian not be detected

Remarks: 1, pH and RFC done at Lab.

Reviewed by AKASH KUMAR Quality Managar

ELES PVT LTD

****End of Report****

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

Page 4 of 4

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HÀTIA, RANCHI-834003 (JHARKHAND) 65T NO:-20AAECE9713D1Z4 ENGINEERING SERVICES PVT. LTD.

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TEST REPORT

Test Report No.	: ELES/RNC/2024/4740	Report Release Date	: 22.08.2024	
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024	

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Sampling Date Sample Received Date	: ELES/RNC/2024/DW/5298 : 06.08.2024 : 09.08.2024	
Address	Lohardaga, Jharkhand-835302	Type of Sample Source of Sample Location of Sample	: Drinking Water : Tap Water : Office Area Pakhar Bauxite Mine (15.58 ha	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/01	
Period of Analysis	: 09.08.2024 to 22.08.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

Discipline : Chemical		Group: Wa	ter	Regulatory Li as per IS 10500;	
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.

AKASH KUMAR Quality Managor ELES PVT LTD

****End of Report****

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

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

September 2024





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

ENGINEERING SERVICES PVT. LTD.

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TC-13501

TEST REPORT

Test Report No.	: ELES/RNC/2024/5376	Report Release Date	: 23.09.2024	
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024	
ULR No.	: TC135872400003289F			

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/6210 : Near Mine Office Pakhar (15.58 ha) Bauxite Mine	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 13.09.2024 to 14.09.2024 : 16.09.2024	
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 16.09.2024 to 23.09.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Scaled & Preserved	

MI	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 26	2	Barometric Pressure (mmHg)	£742
3	Relative Humidity (%)	: 72	4	Weather Condition	Rainy

Discipline: Chemic	al	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	1S 5182 (Part- 23): 2022	39	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	18	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	µg/m³	IS 5182 (Part- 2/Sec1); 2023	<5.0	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part- 6): 2022	16.3	80 (24hrs)	
Ozone (O ₃)	μg/m ³	1S 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/m³	IS 5182 (Part- 10); 2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	μg/m³	IS 5182 (Part- 22): 2019	< 0.002	1 (24hrs)	
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m¹	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)	

Reviewed by
Akash Kumar

****End of Report****

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

Page 1 of 1 Technical Manager

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ENGINEERING SERVICES PVT. LTD.

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TC-(358)

TEST REPORT

Test Report No.	: ELES/RNC/2024/5377	Report Release Date	: 23.09.2024	
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024	
ULR No.	: TC135872400003290F			

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/6211 : Near Weigh Bridge Pakhar (15.58 ha) Bauxite Mine
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 13.09.2024 to 14.09.2024 : 16.09.2024
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 16.09.2024 to 23.09.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

MI	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 26	2	Barometric Pressure (mmHg)	: 742
3	Relative Humidity (%)	: 72	4	Weather Condition	: Rainy

Discipline : Chemic	al	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m ³	IS 5182 (Part- 23): 2022	49	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	21	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part- 2/Sec1); 2023	6.7	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	μg/m³	IS 5182 (Part- 6): 2022	20.2	80 (24hrs)	
Ozone (O ₃)	μg/m³	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/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	µg/m³	IS 5182 (Part- 22): 2019	0.018	1 (24hrs)	
Nickel (Ni)	ng/m³	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/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)	
	-				

Reviewed by

Quality Manage

****End of Report****

Ph. D. Environmental Engg.

Technical Manager

Page 1 of 1

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TEST REPORT

Test Report No.	: ELES/RNC/2024/5378	Report Release Date	; 23.09.2024	
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024	
ULR No.	: TC135872400003291F			

AILS	SAMPLE DETAILS	
: Minerals & Minerals Limited	Sample Ref. No.	: ELES/RNC/2024/AA/6212
	Location	: Near Mine Quarry No- M1 Pakhar (15.58 ha) Bauxite Mine
: Lohardaga, Jharkhand-835302	Sampling Date	: 13.09.2024 to 14.09.2024
	Sample Received Date	: 16.09.2024
	Type of Sample	: Ambient Air
: Operational	Sampling Procedure	: ELES/DOC/SMPL/02
: 16.09.2024 to 23.09.2024		: ELES Pvt. Ltd. : Sealed & Preserved
	: Lohardaga, Jharkhand-835302 : Operational	: Minerals & Minerals Limited : Lohardaga, Jharkhand-835302 : Lohardaga, Jharkhand-835302 : Operational Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure Sampling Done By

METEOROLOGICAL	INFORMATION
PIETEOROLOGICAL	THE CONCLUSION RECOLD

1743	ETECHOLOGICAL INFOR	CIVAL FACTO				
1	Average Temperature (°C)	: 26	2	Barometric Pressure (mmHg)	; 742	
3	Relative Humidity (%)	: 72	4	Weather Condition	; Rainy	

Discipline: Chemic	al	Group:	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	38	100 (24hrs)		
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	20	60 (24hrs)		
Sulphur Di-Oxide (SO ₂)	µg/m³	IS 5182 (Part- 2/Sec1): 2023	5.2	80 (24hrs)		
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part- 6): 2022	14.5	80 (24hrs)		
Ozone (O ₁)	μg/m ³	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/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)		
Lead (Pb)	µg/m³	IS 5182 (Part- 22): 2019	<0.002	1 (24hrs)		
Nickel (Ni)	ng/m³	1S 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	ELES/GC/SOP/06: 2023	<2.5	05(Annual)		
Benzo-(a)-Pyrene	ng/m ^a	ELES/GC/SOP/05: 2023	<0.5	01(Annual)		

Reviewed by Akash Kumar Quality Manager

****End of Report****

Dr. Weependrikumar Sinha Ph. D. Environmental Engg.

Technical Manager

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TG-13587

TEST REPORT

Test Report No.	: ELES/RNC/2024/5379	Report Release Date	: 23.09.2024	
Work Order No.	; RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024	
ULR No.	: TC135872400003292F			

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Minerals & Minerals Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/6213 : Near Mine Quarry No-M4 Pakhar (15.58 ha) Bauxite Mine
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 13,09,2024 to 14,09,2024 : 16,09,2024
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 16.09.2024 to 23.09.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

MI	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 26	2	Barometric Pressure (mmHg)	: 742
3	Relative Humidity (%)	472	4	Weather Condition	: Rainy

Discipline : Chemic	al	Group:	Atmospheric !	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	1S 5182 (Part- 23): 2022	38	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	22	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m³	IS 5182 (Part- 2/Sec1): 2023	5.2	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part- 6): 2022	18.3	80 (24hrs)
Ozone (O ₃)	μg/m²	1S 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₅)	µg/m³	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 ³	IS 5182 (Part- 22); 2019	0.010	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)

Reviewed by

Akash Kumar

****End of Report****

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

Page 1 of 1

Technical Manager

The Decament ented as I'est Report, is second by the Laboratory ender General Terms and Combinues, only on Company latter band in pre-approved formin. The results theorem in the Text Report reflects that findings done by the Laboratory in the laboratory only. The information stated on the Text Report reflects that findings done by the Laboratory in the time of involvement only and soften the time of client's instructions. The Laboratory is responsible for all the information or data provided on the report, except the information which is provided by the client. The Report clients to suproduced except in full and any part of the report is not taken out of current, without prior written approval of the Laboratory. The Report in full or in part shall not be published, advantage, used for very legal actions unless prior permissions has been seniored from the Management of the Laboratory. The Report in full or in part shall not be published, advantage, used for very legal actions unless prior permissions has been seniored from the Management of the Laboratory. Actions in drawn to the limitation of liability, compressions and purisdays and softendary may be provided with fully secure of the tree. All the samples are retained for 30 days from the Data of retractions of the Text Report to sumplies from Repulatory bodies are to be retained as specified. Any type of Observations in Compliants regarding the Report shall be done within (Sdays from the Data of Text Report released/intend. After the time, period stated before, no compliants will be accepted. The united Time schedule mentioned in Text Report is a 24 form Limit.



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TEST REPORT

Test Report No.	: ELES/RNC/2024/5339	Report Release Date	: 23.09.2024
Work Order No.	:13612312113	Work Order Date	: 28,03,2024
ULR No.	: TC135872400003252F		

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	; Hindalco industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/6173 : Near Burgiapart Village Pakhar Bsuxite Mine
Address	: Lobardaga; Thurkhand-835302	Sampling Date Sample Received Date Type of Sample	: 12.09.2024 to 13.09.2024 : 16.09.2024 Ambient Air
Mines Status	: Operational	Sampling Procedure	ELES/DOC/SMPL/02
Period of Analysis	: 16.09.2024 to 23.09.2024	Sampling Done By Sample Condition	ELES Pvt. Ltd. Sealed & Preserved

MI	METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	26	2	Barometric Pressure (nunHg)	= 740	
3	Relative Humidity (%)	: 72	-4	Weather Condition	: Rainy	

Discipline: Chemic	tir	Group:	Atmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Pen- 23); 2022	42	100 (24hrs)
Particulate Matter (PM2,5)	μg/m³	IS 5182 (Part- 24): 2019	19	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part- 2/Sec1): 2023	5.5	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part- 6); 2022	16.3	80 (24hrs)
Ozone (O ₃)	µg/m²	IS 5182 (Part- 9); 2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	μg/m²	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	μg/m²	IS 5182 (Part- 22): 2019	< 0.002	1 (24hrs)
Nickel (Ni)	ng/m	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/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05: 2023	< 0.5	01(Annual)

Reviewed by Agash Kumar Quality Manager

****End of Report****

Dr. Deepektra Kettler Sinha Ph. D. Environmental Engg.

Technical Manager

Page 1 of 1



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Email: Info@elespl.co.in , cles.ranchi@mmoll.com Phone no.: 3681-2190103 (Wester) www.chapl.co.'s



TEST REPORT

Test Report No.	: ELES/RNC/2024/5340	Report Release Date	; 23.09.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.93.2024	
ULR No.	: TC135872400003253F			

CUSTOMER DET	ALLS	SAMPLE DETAILS	
Customer Name	: Hindulco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/6174 : Yatri Shed (Near K-10) Pakhar Bauxite Mine
Address	; Lobardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 12.09.2024 to 13.09.2024 : 16.09.2024 : Ambient Air
Mines Status	: Operational	Sampling Procedure	ELES/DOC/SMPL/02
Period of Analysis	: 18.09.2024 to 23.09.2024	Sampling Done By Sample Condition	ELES Pvi, Ltd.

MI	TEOROLOGICAL INFO	RMATION				
1	Average Temperature (9C)	: 26	2	Barometric Pressure (mmHg)	: 740	
3	Relative Humidity (%)	: 72	4	Weather Condition	: Rainy	

Discipline: Chemic	enl .	Group:	Atmospheric l	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	15 5182 (Part- 23): 2022	43	100 (24hrs)
Particulate Matter (PM2.5)	µg/m³	1S 5182 (Part- 24): 2019	20	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part- 2/Sec1); 2023	<5.0	80 (24firs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part- 6): 2022	14.8	80 (24hrs)
Ozone (O ₃)	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	ug/m³	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/m³	IS 5182 (Part-22): 2019	< 0.002	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)
Benzene (C ₆ H ₆)	µg/m³	ELES/GC/SOP/06: 2023	<2,5	05(Annual)
Benzo-(a)-Pyréne	ng/m³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

Reviewed by Akash Kumar Quality Mammer

End of Report****

Authorised Signatory Dr. Deependra Kumar Sinha

Ph. D. Environmental Engg. Technical Manager

Page 1 of 1

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TEST REPORT

Test Report No.	: ELES/RNC/2024/5341	Report Release Date	: 23.09,2024
Work Order No.	: 13612312113	Work Order Date	: 28:03.2024
ULR No.	: TC135872400003254F		

CUSTOMER DETAILS		SAMPLE DETAILS		
Dustomer Name	: Hindalco industries Limited	Sample Ref. No. Location	:ELES/RNC/2024/AA/6175 :Near Utkarmit Rajkiya Prathmik Vidyalaya Burtglapart Village Pakhar Baukite Mine	
Address	: Lahardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 12,09,3024 to 13,09,2024 16,09,2024 : Ambient Air : ELES/DOC/SMPL/02	
Mines Status	: Operational	Sampling Done By	: ELES Pvt. Ltd. : Sealed & Preserved	
Period of Analysis	: 16.09,2024 to 23:09,2024	Sample Condition		

M	ETEOROLOGICAL INFOR	MATION				
1	Average Temperature (°C)	:26	2	Barometric Pressure (mmHg)	: 740	
3	Relative Humidity (%)	; 72	4	Weather Condition	: Rainy	

Discipline: Chemic	al la	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM16)	μg/m ³	IS 5182 (Part- 23): 2022	40	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	18	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m ³	IS 5182 (Part- 2/Sec1); 2023	5,1	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part- 6): 2022	14.5	80 (24hrs)	
Ozone (O ₃)	µg/m³	JS 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH _y)	μg/m²	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/m³	IS 5182 (Part- 22); 2019	< 0.002	1 (24hrs)	
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	
Benzene (C6H6)	µg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Вепло-(а)-Рутепе	ng/m³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

Reviewed by

****End of Report****

Dr. Deependra Kumar Sinha

Ph. D. Environmental Engg.

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Page 1 of 1

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TEST REPORT

Test Report No.	: ELES/RNC/2024/5342	Report Release Date	: 13.09.2024
Work Order No.	: 13612312113	Work Order Date	1 29.03.2024
ULR No.	: TC135872400003255F		

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	2 Hindalco Industries Limited	Sample Re£ No. Location	: ELES/RNC/2024/AA/6176 : Near Utkarmit Rajkiya Prathmik Vidyalaya Dumrapart Village Pakhar Bauxite Mine
Address Mines Status	Enhardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 12.09.2024 to 13.09.2024 : 16.09.2024 : Ambient All : ELES/DOC/SMP1./02
Period of Analysis	= 16,09,2024 to 23,09,2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

MI	TEOROLOGICAL INFOR	RMATION			
1	Average Temperature (°C)	126	2	Barometric Pressure (mmHg)	740
3	Relative Humidity (%)	± 72	.4	Weather Condition	; Rainy

Discipline : Chemle	al	Group:	Atmospheric l	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m³	IS 5182 (Part- 23): 2022	44	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	20	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m³	IS 5182 (Part- 2/Sec1): 2023	5.3	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m³	IS 5182 (Part- 6): 2022	13.9	80 (24hrs)
Ozone (O ₃)	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₂)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10); 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	hā/m,	JS 5182 (Part- 22): 2019	0.005	1 (24hrs)
Nickel (Ni)	ng/m³	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/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

Reviewed by

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****End of Report****

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

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



TEST REPORT

Test Report No.	: ELES/RNC/2024/5385	Report Release Date	: 23.09.2024	
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03,2024	
ULR No.	: TC135872400003298F			

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	: 13.09,2024 to 14.09,2024 : 16.09,2024 : Ambient Noise : ELES/DOC/SMPL/03 : ELES Pvt, Ltd.
Mines Status	: Operational	Period of Analysis	: 16.09.2024 to 23.09.2024

M	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 26	2	Barometric Pressure (mmHg)	: 742
3	Relative Humidity (%)	: 72	-4	Weather Condition	: Rainy

Discipline : Chemical Group : Atmospheric					Pollution	
Location	Unit	Test Protocol	Resu	ilt	Regulatory Limit (Industrial Zone)	
x = 0.0 - 0.7 - 0.7			Time	L_{eq}		
Near Mine Office Pakhar Bauxite Mine (15.58 ha)	dB(A)	dB(A)	1S 9989: 2020	Day Time	61	75 dB(A) Day Time
Sample ID: ELES/RNC/2024/AN/6219	un(i)	15 9989; 2020	Night Time	47	70 dB(A) Night Time	



****End of Report****

Authorised Signatory

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

Page 1 of 1

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ENGINEERING SERVICES PVT. LTD.

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



TEST REPORT

Test Report No.	: ELES/RNC/2024/5388	Report Release Date	: 23.09.2024
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024
ULR No.	: TC135872400003301F		

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	: 14.09,2024 : 16.09,2024 : Workzone Noise : ELES/DOC/SMPL/03 : ELES Pvt. Ltd.	
Mines Status	: Operational	Period of Analysis	: 16.09.2024 to 23.09.2024	

M	ETEOROLOGICAL INFORMATION			
I	Average Temperature (°C) : 26	2	Barometric Pressure (mmH	g) : 742
3	Relative Humidity (%) : 70	4	Weather Condition	: Rainy

Location	Unit	Test Protocol	Res	ult	Regulatory Limit (Industrial Zone)
Nass Weigh Bridge			Time	L_{eq}	
Near Weigh Bridge – Pakhar Bauxite Mine (15.58 ha)	dB(A)	IS 4758: 2017	Day Time	71	90 dB (A)
Sample ID: ELES/RNC/2024/WN/6222					



****End of Report***

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

Page 1 of 1

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TEST REPORT

Test Report No.	: ELES/RNC/2024/5371	Report Release Date	: 23.09.2024	
Work Order No.	: RP/MJB/MM/24/0088/01	Work Order Date	: 30.03.2024	
ULR No.	: TC135872400003284F			

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/2024/SW/6205 : 13.09.2024 : 16.09.2024 : 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	= 16.09,2024 to 23.09,2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved		

Discipline : Chemical		G	roup: Water	Tolerance Limits
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	6.70	6.5-8.5
Colour	Hazen	15 3025 (Part -4): 2021	6.0	300
Odour	-	1S 3025 (Part-5): 2018	Unobjectionable	-
Turbidity	NTU	IS 3025 (Part-10): 2023	0.62	-
Total Dissolved Solids (TDS)	mg/L	IS 3025 (Part-16): 2023	73	1500
Total Alkalinity (as CaCO ₃)	mg/L	IS 3025 (Part-23): 2023	17.3	**
Total Hardness (as CaCO ₃)	mg/L	1S 3025 (Part-21): 2019	31,1	-
Sulphate (as SO ₄)	mg/L	1S 3025 (Part-24/Sec1): 2022	8.62	400
Chloride (as CI)	mg/L	IS 3025 (Part-32): 2019	8.7	600
Fluoride (as F)	mg/L	IS 3025 (Part-60): 2019	BDL (DL: 0.1)	1.5
Nitrate (as NO ₃)	mg/L	APHA 24th Ed.2023, 4500 NO ₃ -B	3.08	50

Page 1 of 4

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



TEST REPORT

Test Report No. : ELES/RNC/2024/5371 Report Release Date : 23.09.2024

Work Order No. : RP/MJB/MM/24/0088/01 Work Order Date : 30.03.2024

ULR No. : TC135872400003284F

Discipline : Chemical		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	15 3025 (Part-26) : 2021	BDL (DL: 0.1)	14	
Phenols Compounds (as C ₀ H ₄ OH)	mg/L	1S 3025 (Part-43/Sec1): 2022	BDL (DL: 0.001)	0.005	
Calcium (as Ca)	mg/L	1S 3025 (Part-40): 2019	3.11		
Discipline : Chen	nical	Gre	oup : Residues	in Water	
Aluminum (as Al)	mg/L	IS 3025 (Part-55): 2003;RA2019	BDL (DL: 0.02)		
Arsenic (as As)	mg/L	IS 3025 (Part 37):2022	BDL (DL: 0.005)	0.2	
Boron (as B)	mg/L	IS 3025 (Part-57): 2021	BDL (DL: 0.2)	÷	
Cadmium (as Cd)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL: 0.003)	0.01	
Total Chromium (as Cr)	mg/L	APHA 24 th Ed.2023; 3111B	BDL (DL: 0.03)	0.05	
Copper (as Cu)	mg/L	APHA 24 th Ed,2023; 3111B	BDL (DL; 0.03)	1,5	
Iron (as Fe)	mg/L.	APHA 24th Ed.2023; 3111B	0.119	50	
Lead (as Pb)	mg/L	APHA 24th Ed,2023; 3111B	BDL (DL: 0.01)	0.1	
Manganese (as Mn)	mg/L	APHA 24 th Ed.2023; 3111B	BDL (DL: 0.05)	lan	
Mercury (as Hg)	mg/L	IS 3025(Part-48): 1994; RA2019	BDL (DL: 0.001))**	
Selenium (as Se)	mg/L	IS 3025(Part-56): 2019	BDL (DL: 0.01)	0.05	
Zinc (as Zn)	mg/L	APHA 24th Ed,2023; 3111B	BDL (DL: 0.1)	1.5	

Page 2 of 4

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

ENGINEERING SERVICES PVT. LTD.

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TEST REPORT

 Test Report No.
 : ELES/RNC/2024/5371
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 : 30.03.2024

ULR No. : TC135872400003284F

Discipline : Cher	mical	Group: Res	Tolerance Limits		
Parameter	Unit	Test Protocol	Result	as per IS 2296-1992 Class C (Inland Surface Water	
Cyanide (as CN) mg/L		APHA 24th 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)	4	
Atrazine	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)		
Butachlor µg/L		ELES/GC/SOP/01: 2023 BDL (DL: 0.5)		*	
Chlorpyriphos	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)		
Ethion	μg/L	ELES/GC/SOP/01: 2023	ELES/GC/SOP/01: 2023 BDL (DL: 0.5)		
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)) min.	
Phorate Sulphone	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	4	
Dieldrin	μg/L	ELES/GC/SOP/02; 2023	BDL (DL; 0.01)	-	

Page 3 of 4

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TEST REPORT

Test Report No. : ELES/RNC/2024/5371 Report Release Date : 23.09.2024

Work Order No. : RP/MJB/MM/24/0088/01 Work Order Date : 30.03.2024

ULR No. : TC135872400003284F

Pesticides				Tolerance Limits
Parameter	Unit	Test Protocol	Result	as per 1S 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)	C++
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(o,p and p.p-isomers of DDT) (DDE and DDD)	μg/L	ELES/GC/SOP/02; 2023	BDL (DL: 0.05)	- 4
Discipline: Biolo	ogical	Group: Water		
Total Coliform	CFU/100 mL	IS 15185; 2021	8.90×10 ²	
Escherichia coli	CFU/100 mL	IS 15185: 2021	1,90×10 ²	/44

Remarks: pH & RFC done at Lab.

es & En

Reviewed by

****End of Report****

Ph. D. Environmental Engg. Technical Manager

Page 4 of 4

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

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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/2024/5371	Report Release Date	: 23.09.2024	
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/2024/SW/6205 : 13.09.2024 : 16.09.2024 : Surface Water : Spring Water : Chapakona (Bunglapart Village)		
Mines Status	: Operational	Sampling Procedure	Pakhar Bauxite Mine (15.58 ha) : ELES/DOC/SMPL/01		
Period of Analysis	: 16.09.2024 to 23.09.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved		

Discipline : Chemic	al	Gro	up: Water	Tolerance Limits
Parameter	Unit	Test Protocol	Result	as per IS 2296-1992 Class C (Inland Surface Water)
Taste	100	APHA 24th Ed.2023, 2160C	N/A	**
Anionic Surfactants (as MBAS)	mg/I.	APHA 24th Ed.2023, 5540-C	BDL (DL: 0.025)	1.0
Mineral Oil*	mg/L	1S 3025 (Part-39):2021 (Clause 6 Infrared Spectroscopic Method)	BDL (DL: 0.01)	

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

Reviewed by

****End of Report***

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

Page 1 of 1

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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 - 22.11.2024

Office Order

Environmental Cell has been re-constituted at Pakhar Bauxite Mine (Area 15.58 ha) comprising below mentioned team members. The team will ensure compliance of Environment Act, Regulation & Rule in respect of the said mines of Minerals & Minerals Limited.

- 1. Mr. Suraj Kumar Mahato (Coordinator)
- 2. Mr. Sayantan Das (Geologist)
- 3. Ms. Abhilasha Singh- Environment Engineer
- 4. Mr. Anand Prakash Tiwari Environment Engineer

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

Basudev Gangopadhyay

AVP (Planning, Environment & Compliance)

Annexure 4

	Production, Mined Out, Back Filled and Over Burden removal from April'24 to September'24										
S No	Name of the Mines	Mining lease area (ha)	Production Capacity (MT)*	Lease Period*	Production (MT)	Mined out area (ha)	Back filled area (ha)	Over burden (Cu.M)			
1	Bagru Bauxite Mine	75.41	85000	22.01.1974 to 31.03.2030	NIL	NIL	NIL	NIL			
2	Bhusar Bauxite Mine	65.31	280000	11.07.1981 to 31.03.2030	82481	0.25	0.57	191521.65			
3	Hisri (New) Bauxite Mine	14.55	100000	19.07.1981 to 31.03.2030	63197	0.45	0.35	26905.95			
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	96744	4.29	8.89	365249.34			
7	Sherangdag-A Bauxite Mine	155.81	260000	16.10.1974 to 31.03.2030	6200	0.23	0.2	10200.00			
8	Serangdag-B Bauxite Mine	77.89	100000	04.10.1978 to 31.03.2030	49850	0.96	0.85	104303.82			
9	Jalim & Sanai Bauxite Mine	12.14	50000	16.10.1974 to 31.03.2030	12450	0.14	0.12	13050.63			
10	Gurdari Bauxite Mine	584.19	325000	23.03.1985 to 22.03.2035	96115	4.69	2.46	185023.98			
11	Kujam - I Bauxite Mine	80.87	150000	13.03.2006 to 12.03.2056	7175	0.97	0.43	21377.24			
12	Kujam - II Bauxite Mine	157.38	300000	24.03.2006 to 23.03.2056	49120	5.28	3.56	137098.55			
13	Amtipani Bauxite Mine	190.95	150000	13.03.2006 to 12.03.2056	87109	2.153	0.987	225462.85			

	Minerals & Minerals Limited									
14	Pakhar (109.507) Bauxite Mine	109.507	280000	26.07.2008 to 25.07.2058	147714.95	2.06	2.60	160334.49		
15	Pakhar (15.58) Bauxite Mine	15.58	60000	28.04.1965 to 31.03.2030	NIL	NIL	NIL	NIL		
16	Bimarla Bauxite Mine	134.526	300000	18.07.2009 to 17.07.2059	78750	4.44	7.35	116233.81		
17	Amtipani Chirodih Bauxite Mine	130.01	450000	11.01.2017 to 10.01.2067	140900	4.25	1.50	235195.494		

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

Basudev Cangopadhyay
AVP (Planning, Environment and Compliance)

BREAK UP THE COST OF ENVIRONMENTAL MEASURES DURING THE YEAR 2024-25

The composite cost during the year 2023-24 for environmental protection & pollution control by Jharkhand Mines division of M/s Hindalco Industries Ltd & M/s Minerals & Minerals Ltd for implementation of the suggested measures in EC at our all the operating mines in the state of Jharkhand-namely Bagru (75.41 ha), Hisri New (14.55 ha), Bhusar (65.31 ha), Pakhar (115.13 ha), 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 Apr'24 to Sep'24)	Actual (in Rupees) FY 2024-25 (From Apr'24 to Sep'24)
1	Pollution Control & Environment monitoring	61,35,000.00	53,47,442.83
2	Reclamation/ Back filing & Rehabilitation**	5,62,80,000.00	5,60,24,564.93
3	Green belt, Plantation & Water sprinkling arrangement	73,42,000.00	69,41,114.17
4	Rural Development	2,75,00,000.00	2,05,55,592.67

^{**}Part of OB removed cost.

Basudev Gangopadhyay AVP (Planning, Environment & Compliance)