

HIL/LHD/ENV/MoEF/ 707

Date: 23.05.2024

To,

The Dy.Director General of Forest (C)
Ministry of Environment, Forests and Climate Changes
2<sup>nd</sup> Floor, Headquarter-Jharkhand State Housing Board
Harmu Chowk, Ranchi, Jharkhand-834002.

**Sub:** Compliance Report of EC conditions for Jalim & Sanai Bauxite Mining project of M/s Hindalco Industries Limited located in Gumla, Jharkhand for the period October'23 to March'24

Ref: Environmental Clearance letter no J-11015/138/2006-IA II (M) dated 10<sup>th</sup> April 2007

Sir,

With reference to the above, we are submitting herewith the Compliance status report of EC conditions for Jalim & Sanai Bauxite mining project of M/s Hindalco Industries Limited located in Gumla, Jharkhand for the period October'23 to March'24

The lease detail is as below.

Lease area (ha)	Production Capacity (MT)	Lease Period
12.14	50000	16.10.1974 to 31.03.2030

Hope you will find the same in order.

**Thanking You** 

Yours Sincerely FOR HINDALCO INDUSTRIES LIMITED

(Basudev Gangopadhyay)
AVP (Planning, Environment & Compliance)

Enclosure: - As Above

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

Name of the Project : Jalim Sanai Bauxite Mine (12.14 ha)

M/s Hindalco Industries Limited

Environment Clearance No. & date : J-11015/138/2006-IA.II(M), dated 10.04.2007

Period of compliance Report : From 1st October'23 to 31st March'2024

#### **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 after which Consent to Operate (CTO) has been obtained from time to time. The current CTO is valid up to 31/03/2027. Production of bauxites is 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:** - Since shallow depth mining is being carried out, hence there is no intersection with the groundwater table. 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 maintain in future also.

Moreover, we are regularly monitoring the groundwater table through the installation of a piezometer. A copy of the water level report is attached herewith as **Annexure-1**.

Condition iv: - The project proponent shall ensure that no natural watercourse shall be obstructed due to any mining operations.

**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. Data pertaining to backfilling is enclosed as **Annexure 4**.



Reclamation of the mined-out

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 month basis.

**Reply:** - Overburden and waste rock are being used for concurrent backfilling, and topsoil is being spread on the backfilled area for reclamation. Currently, there is no OB dump present in the mine lease area. Monitoring and management of rehabilitated areas is continuing until vegetation becomes self-sustaining through supervision. Data pertaining to backfilling is enclosed as **Annexure 4.** Compliance status is being submitted to MoEF&CC on six monthly basis.

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 a 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. Photographs of the same is attached below.



Garland drains & Siltation Pond

Condition viii: - Plantation shall be raised in an area of 10.58 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:** - Progressive plantation of native species is being carried out in consultation with local forest department within mining lease, reclaimed area etc. Total 1500 nos. saplings have been planted in FY 2023-24 within the lease. Total 4.53 ha areas have been planted till date.

Green belt development program is in progress with progress of mining activities in a phased manner.







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 Shrengdag village on long term basis.

**Reply:** - Spring water quality near Sherengdag 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 plan to augment groundwater has been prepared, and suitable measures like the creation of water harvesting ponds, etc., are being taken for the augmentation of groundwater in our adjacent mine at Sherengdag Plateau, in consultation with the 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**.

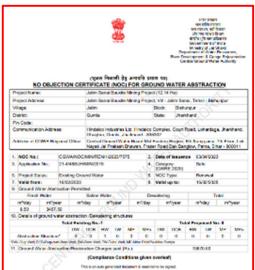


Piezometer

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 our adjacent mine of Sherengdag Plateau. Rainwater harvested during rainy season is being used for sprinkling on haul roads and raising plantation.

However, we have 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 reduce 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 plan 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 Sherengdag group of mines to treat this effluent. The treated water is in close circuit and being reused for washing of vehicle in the workshop.

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



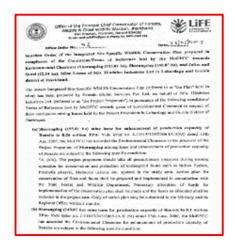
Washing Ramp and Oil and Grease Trap

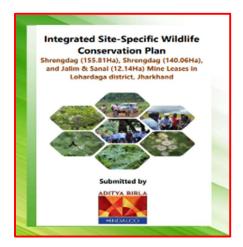
Condition xix: - The project proponent should take all precautionary measures during mining operation for conservation and protection of endangered fauna such as Indian Python, <u>Presbytis phayrei</u> etc. Spotted in the study area. Action plan for conservation of flora and fauna shall be prepared and 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.26 dated 26.05.2023 for conservation and protection of flora and fauna in the core and buffer zone for Sherengdag Group of Mines.





Integrated Site-specific Wildlife Conservation Plan for Sherengdag 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:** - Mining Plan along with progressive mine closure plan has been approved by Indian Bureau of Mines. Final Mine Closure Plan will be submitted in due time as per applicable guideline and timelines mentioned in MCDR/IBM guideline who are competent authority to approve the same. Based on present resource estimate and peak rated production capacity mentioned in EC, Mining operation is being carried out.

#### **GENERAL CONDITIONS: -**

Condition i: - No change in mining technology and scope of working should be made without prior approval of the Ministry of Environment & 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, SO<sub>2</sub>, NO<sub>x</sub> monitoring. Location of the stations should be decided based on the metrological data, topographical features and environmentally and ecologically sensitive targets and frequency of monitoring should be undertaken in consultation with the State Pollution Control Board.

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

Condition iv: - Data on ambient air quality (RPM, SPM, SO<sub>2</sub>, and NO<sub>x</sub>) should be regularly submitted to the Ministry including its Regional office located at Bhubneshwar and the State Pollution Control Board / Central pollution Control Board once in six months.

**Reply:** - 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 19<sup>th</sup> May, 1993 and 31<sup>st</sup> December,1993 or as amended from time to time. Oil and grease trap should be installed before discharge of workshop effluents.

Reply: - 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

Sherengdag group of mines to treat this effluent. The treated water is in close circuit and being reused for washing of vehicle in the workshop.

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



Washing Ramp and Oil and Grease Trap

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 Bhubneshwar regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.

**Reply:** - This is an operating mine and hence the provision related to financial closure is not applicable. 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: - The project proponent shall submit six monthly report on the status of the implementation of the stipulated environmental safeguards to the Ministry of Environment and Forests, its Regional Office, Lucknow, Central Pollution Control Board and State Pollution Control Board.

**Reply:** - Six monthly reports on status of implementation of the stipulated environmental safeguards as per EC conditions, including monitoring report are being submitted to the MoEFCC, Zonal office of CPCB & JSPCB, Ranchi and also uploaded on the website of the company. Now, the Regional Office of MoEF&CC is in Ranchi.

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

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

Condition xvi: - 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 <a href="http://envfor.nic.in">http://envfor.nic.in</a> and a copy of the same should be forwarded to the Regional Office of this Ministry located Bhubneshwar.

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

Annexure 1							
Piezome	Piezometer Reading - Jalim & Sanai (12.14)						
S No	Month	Depth (meter)					
1	Oct-23	36.15					
2	Nov-23	36.10					
3	Dec-23	36.20					
4	Jan-24	36.25					
5	Feb-24	36.30					
6	Mar-24	36.35					



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

### ENGINEERING SERVICES PVT. LTD.

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

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

#### TEST REPORT

Test Report No.	‡ ELES/RNC/2023/4397	Report Release Date	: 22.11.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Location	: ELES/RNC/2023/AA/3923 : Mine Pit Quarry No 2 Jalim & Sanai Bauxite Mine (12.J4ha)	
	. Lonarunga, markinano-833302	Sampling Date Sample Received Date	: 11.10.2023 to 12.10.2023 : 28.10.2023	
in the second	Laboratory and the same of the	Type of Sample	Ambient Air	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02	
Period of Analysis	: 28.10.2023 to 09.11.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

METEOROLOGICAL INFORMATION					
	Average Temperature (°C) : 26	2	Barometric Pressure (mm	Hg) : 736	
3	Relative Humidity (%) : 55	4	Weather Condition	: Clear	

Discipline : Chemic	al	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m <sup>3</sup>	IS 5182 (Part-23): 2006; RA2022	51	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24); 2019	23	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part-2); 2001; RA2022	5,2	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	IS 5182 (Part-6): 2006; RA2022	19.1	80 (24hrs)
Ozone (O <sub>1</sub> )	µg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH <sub>1</sub> )	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m³	IS 5182 (Part-22): 2004; RA2019	0.007	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m	ELES/AIR/SOP/01	<2.0	06 (Annual)

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

### VEERING SERVICES PVT. LTD.

Email: Info@elespl.co.in , eles.ranchl@amail.com

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

#### TEST REPORT

Test Report No. : ELES/RNC/2023/4397 Report Release Date : 22.11.2023 Work Order No. : 13612310218 Work Order Date : 21.04.2023

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

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

Reviewed by

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

Authorised Signatory

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

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:-20A46CE9713D124

### ENGINEERING SERVICES PVT. LTD.

Email: Info@elespl.ca.in , eles.ranchi@gmail.cam

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

#### TEST REPORT

Test Report No.	: ELES/RNC/2023/4398	Report Release Date	: 22.11.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET.	AILS	SAMPLE DETAILS		
Customer Name Address	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/3924 : Nava Prathmik Vidyalay (Dhanka Toli) Jalim & Sanai Bauxite Mine (12.14ha)	
1.5000 1004	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	11.10.2023 to 12.10.2023 28.10.2023	
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 28.10.2023 to 09.11,2023	Sample Drawn By Sample Condition	ELES Pvt. Ltd. Sealed & Preserved	

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C) ±26	2	Barometric Pressure (mmH	g) : 736	
3	Relative Humidity (%) : 55	4	Weather Condition	Clear	

Discipline : Chemic	al	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	47	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	26	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part-2): 2001; RA2022	6.1	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	IS 5182 (Part-6): 2006; RA2022	18.5	80 (24hrs)
Ozone (O <sub>3</sub> )	µg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	ng/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8firs)
Lead (Pb)	μg/m³	IS 5182 (Part-22); 2004; RA2019	<0.002	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m <sup>1</sup>	ELES/AIR/SOP/01	<2.0	06 (Annual)

Page 1 of 2

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

### ENGINEERING SERVICES PVT. LTD.

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

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

### TEST REPORT

Test Report No.	: ELES/RNC/2023/4398	Report Release Date	: 22,11,2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

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

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

Reviewed by

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

Authorised Signatory

Dr. Deependra Kumar Sinha Ph. D. Eneronmental Enga ELES Put List Technical Manager

Page 2 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/2023/4399	Report Release Date	: 22.11.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name Address	: Hindaico Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Location	: ELES/RNC/2023/AA/3925 : Mine Pit Quarry No 3 Jalim & Sanai Bauxite Mine (12.14ha)	
Mines Status	: Operational	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 11.10.2023 to 12.10.2023 : 28.10.2023 : Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 28.10.2023 to 09.11.2023	Sample Drawn By Sample Condition	: ELES Pvt, Ltd. : Sealed & Preserved	

M	ETEOROLOGICAL INFOR	MATION				
1	Average Temperature (°C)	; 26	2	Barometric Pressure (mm.	Hg) : 736	
3	Relative Humidity (%)	: 55	4	Weather Condition	: Clear	

Discipline: Chemic	al	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	51	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	27	60 (24hrs)	
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part-2): 2001; RA2022	6.1	80 (24hrs)	
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m <sup>3</sup>	IS 5182 (Part-6): 2006; RA2022	16.4	80 (24hrs)	
Ozone (O <sub>3</sub> )	μg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH <sub>3</sub> )	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	μg/m³	IS 5182 (Part-22): 2004; RA2019	0.007	1 (24hrs)	
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01	<2.0	06 (Annual)	

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

### TEST REPORT

Test Report No.	: ELES/RNC/2023/4399	Report Release Date	: 22.11,2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

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

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

Reviewed by

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

Authorised Signatory

Dr. Disependra Kumai binha Ph. D. Enimoniental Enod ELFB Put. Lid. Technical Manager

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### TEST REPORT

Test Report No.	: ELES/RNC/2023/4400	Report Release Date	: 22.11.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET.	AILS	SAMPLE DETAILS		
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Location	: ELES/RNC/2023/AA/3926 : Near Colony; Jalim & Sanai Bauxite Mine (12.14ha)	
	- Londinga, Statikishin-653302	Sampling Date Sample Received Date Type of Sample	: 11.10.2023 to 12.10.2023 : 28.10.2023 : Ambient Air	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02	
Period of Analysis	: 28.10.2023 to 09.11.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

MI	ETEOROLOGICAL INFORMATION				
1	Average Temperature (°C) : 26	2	Barometric Pressure (mn	iHg) 736	
3	Relative Humidity (%) : 55		Weather Condition	Clear	

Discipline : Chemica	al	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m <sup>3</sup>	JS 5182 (Part-23): 2006; RA2022	48	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	26	60 (24hrs)	
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part-2): 2001; RA2022	6.4	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	μg/m³	IS 5182 (Part-6): 2006; RA2022	18.1	80 (24hrs)	
Ozone (O <sub>x</sub> )	μg/m³	IS 5182 (Part-9); 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH <sub>3</sub> )	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m <sup>1</sup>	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	μg/m²	IS 5182 (Part-22); 2004; RA2019	< 0.002	1 (24hrs)	
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)	

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

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

#### TEST REPORT

Test Report No. : ELES/RNC/2023/4400 Report Release Date : 22.11.2023 Work Order No. : 13612310218 Work Order Date : 21.04.2023

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

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

Reviewed by

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

**Authorised Signatory** 

Dr. Despendra kumur sınha Ph. D. Environmental Engo ELES Pvt. Lld. Technical Manager

Page 2 of 2

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Email: Info@elespl.co.in , eles ranchi@amail.ram Phane no.: 0651-2290103 Websire : www.elespl.co.in

### TEST REPORT

Test Report No.	: ELES/RNC/2023/4393	Report Release Date	: 22.11.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name	: Hindaleo Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/3919 : Near Banjari Village Serengdag-A Bauxite Mines
Address	: Lobardaga, Jharkhand-835302	Sampling Date	(155.81fta) : 10.10,2023 to 11.10.2023
		Sample Received Date Type of Sample Sampling Procedure	: 28.10.2023 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Operational	Sample Drawn By	: ELES Pvt. Ltd.
Period of Analysis	: 28.10,2023 to 09.11.2023	Sample Condition	Sealed & Preserved

MI	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 26	2	Barometric Pressure (mm	Hg) : 736
3	Relative Humidity (%) : 55	4	Weather Condition	: Clear

Discipline: Chemica	al	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m³	IS 5182 (Part-23); 2006; RA2022	45	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part- 24): 2019	22	60 (24hrs)	
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Purt-2): 2001; RA2022	5.9	80 (24hrs)	
Nitrogen Di-Oxide (NO <sub>1</sub> )	μg/m³	IS 5182 (Part-6): 2006; RA2022	17.1	80 (24hrs)	
Ozone (O <sub>3</sub> )	µg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH <sub>3</sub> )	μg/m²	(S-5182 (Pert-25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	1S 5182 (Part-10); 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	Hg/m²	IS 5182 (Part-22): 2004; RA2019	< 0.002	1 (24hrs)	
Mickel (M)	ng/m²	15-5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenie (As)	ng/m²	ELES/AIR/SOP/01	<2.0	06 (Annual)	

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Email: info@elespl.co.in , eles.ronchi@amoll.com Phone no.: 0653-2290101 Website : www.elespl.co.in

#### TEST REPORT

Test Report No.	: ELES/RNC/2023/4393	Report Release Date	: 22.11.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

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

Romarks; (\*)-Parameters are outsourced to other Lab.

Reviewed by

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

Authorised Signatory

I Leapana/a Kumar amha Ek D. Environmanta Enga Er SS Pri Liú Tvelmical Menaya

Page 2 of 2

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA INITIA. RANCHI-534003 (IHARKHAND) IST NO-2044E057130154 ENGINEERING SERVICES PVT. LTH.

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

### TEST REPORT

Test Report No.	: ELES/RNC/2023/4394	Report Release Date	: 22.11.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04,2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/3920 : Near Pauri Village Serengdag-A Bauxite Mines
Address	: Lohardaga, Jharkhand-835302	Sampling Date	(155.81ha) : 10.10.2023 to 11.10.2023
		Sample Received Date Type of Sample Sampling Procedure	: 28:10:2023 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Operational	Sample Drawn By	: ELES Pvt. Ltd.
Period of Analysis	: 28.10.2023 to 09.11.2023	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 26.	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	155	.4	Weather Condition	: Clear

Discipline : Chemica	il	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	48	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	25	60 (24hrs)	
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part-2): 2001; RA2022	6.5	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	μg/m³	IS 5182 (Part-6); 2006; RA2022	16.3	80 (24hrs)	
Ozone (Oz)	μg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH <sub>2</sub> )	μg/m	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	ug/m³	JS 5182 (Part-22): 2004; RA2019	0.009	T (24hrs)	
Micket (Mi)	ng/m²	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	05 (Annual)	

#### Page 1 of 2

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO.- 20AAECE37130124 ENGINEERING STRVINGS PVT. LTD.

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

#### TEST REPORT

Test Report No.	: ELES/RNC/2023/4394	Report Release Date	: 22.11.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

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

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

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

Authorised Signatory

Deepandra Microsi curcos

Il Program Sel Eng

El Portura Technical Manager

Page 2 of 2

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PLOT NO 30, MANSAROVAN ENELAVE, TURLIDANA HATTA: BANCHU-834003 (MARKHAND) GST NO:-20446CE97130134

### ENGINEERING SERVICES PUT LYB.

Email: info@elespl.co.in , eles ranchi@amail.com Phone no : 0651-2250103

Website : www.elespi.co.in

#### TEST REPORT

Test Report No.	: ELES/RNC/2023/4395	Report Release Date	; 22.11.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET.	AILS	SAMPLE DETAILS	
Customer Name	; Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/3921 : Near Harup Village Serengdag-A Bauxite Mines
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	(155.81ha) : 10.10.2023 to 11.10.2023 : 28.10.2023
Mines Status	: Operational	Type of Sample Sampling Procedure Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt, Ltd.
Period of Analysis	: 28.10.2023 to 09.11.2023	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFORMATION			
Ī	Average Temperature (°C) : 26	2	Barometric Pressure (mm	Hg) : 736
3	Relative Humidity (%) ; 55	4	Weather Condition	; Clear

Discipline : Chemics	il	Group : Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	49	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	22	60 (24hrs)	
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part-2): 2001; RA2022	5.8	80 (24hrs)	
Nitrogen Di-Oxide (NO <sub>3</sub> )	µg/m³	IS 5182 (Part-6): 2006; RA2022	18,2	80 (24hrs)	
Ozone (O <sub>3</sub> )	μg/m²	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH <sub>3</sub> )	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (Shrs)	
Lead (Pb)	μg/m <sup>3</sup>	IS 5182 (Part-22); 2004; RA2019	<0.002	1 (24hrs)	
Nickel (Ni)	ng/m <sup>3</sup>	15.5182 (Pars-36):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)	

#### Page 1 of 2

The Continuous mated in Tain Report, a familiarly the Laboratory under General Terms and Contitions, only on Company letter head in pre-approved former. The results shown in the Test Report reflects only so the job/analysis none by the Laboratory only. The information plated on the Yeal Report reflects the findings done by the Laboratory at the time of involvement only and within the limits of closed's instructions. The Laboratory is responsible for all the information or data provided on the report, escape the information which is provided by the closer. The Report cannot be regardated except in full and any poin of the report is not taken out of context, without prior virition approval of the Laboratory. The Report in full or in part shall not be published, alwertise, used for any legal aminist unless prior permission has been secured from the Management of the Laboratory. Attention is drawn to the limitation of laboratory, compensation and jurisdiction issues. Any quantificated alteration & fixed-fixed-money of palaration of the Test Report is unflawful and offenders may be prosecuted in the fullies extend of the law. All the samples are retained for Todays from the Date of release/issue of the Test Report is unflawful and offenders may be prosecuted in the fullies extend of the law. All the samples are retained for Todays from the Date of release/issue of the Test Report is unflawful and offenders may be prosecuted in the fullies, extend of the law. All the samples are retained for Todays from the Date of release/issue of the Test Report is unflawful and offenders may be prosecuted in the fullies, extend of the law. All the samples are retained for Todays from the Date of release/issue of the law. All the samples are retained for Todays from the Date of release/issue of the law. All the samples are retained for Todays from the Date.



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

### TEST REPORT

Test Report No.	: ELES/RNC/2023/4395	Report Release Date	: 22,11,2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C <sub>6</sub> H <sub>6</sub> ) <sup>4</sup>	μg/m³	IS 5182 (Part-II)2006;RA2017	<1.0	05(Annual)	
Benzo-(a)-Pyrene*	ng/m³	IS 5182 (Part-12)2004;RA2019	<0,5	01(Annual)	

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

Reviewed by

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

Authorised Signatory

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Ph. D. Emironism of English

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Page 2 of 2

The Oncument stated as Test Report, is issued by the Laboratory under Octobal Terms and Conditions, only on Company letter head in pre-approved format. The results shown in the Test Report refer or relaxes only to the jobbinshysis done by the Laboratory only. The information stated on the Test Report reflects the findings done by the Laboratory at the time of involvement only and within the limits of client's instructions. The Laboratory is responsible for all the information or data provided on the report, except the information which is provided by the client. The Report cannot be reproduced except in tail and any part of the report is not biken any of connect, without part without approprial of the Laboratory. The Report is full or in part shall not be published, adventage, used for any legal actions unless price permission has been secured from the Management of the Laboratory. Attention is drawn to the limitation of liability, compensation and jurisdiction assets. Any unauthorized alteration & talistication of the content or appearance of the Test Report is in adventaged as a provided to the fallest orders of the list. All the samples are certained for 30days from the Date of referred/some of the Test Report. The samples from Regulatory bodies are to be retained as specified. Any type of Observation or Complaints regarding the Reports shall be done within 15days from the Date of Test Report released/some. After the time period stated hefore, no complaints will be accepted. The entire Time schedule manifemed in Test Report is in Jahonas format. Abservation used 1604 (Not Appliesble); BOL (Below Detection Limit). LDL (Lower Descript Limit)



PLOT NO-30; MANSAROVAR ENCLAVE, TUPUDANA HATUL RANCHI-934003 LIHUTUHANDI GST NO.- 2004ECS9713D124 ENGINEERING SERVICES PAY, LYS

Email: infa@elespi,co.in , elas.ranchi@gmail.com Fhane no.: 0651-2290103 Website Livyw.slespi.co.in

### TEST REPORT

Test Report No.	: ELES/RNC/2023/4396	Report Release Date	; 22.11.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name Address	Hindalco Industries Limited     Lohardaga, Jharkhand-835302	Sample Ref. No. Location	: ELES/RNC/2023/AA/3922 Near Paintoli Village Serengdag-A Bauxite Mines (155.81ha)
Mines Status	Operational	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 10.10.2023 to 11.10.2023 : 28.10.2023 : Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	28.10,2023 to 09   1.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

MI	ETEOROLOGICAL INFORMATION			
1	Average Temperature ("C) : 26	2	Barometric Pressure (mm	Hg) : 736
3	Relative Humidity (%) ::55	4	Weather Condition	: Clear

Discipline: Chemics	al .	Group: 4	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m <sup>1</sup>	IS 5182 (Part-23): 2006; RA2022	49	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	31	60 (24hrs)	
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	1S-5182 (Part-2): 2001; RA2022	5.7	80 (24hrs)	
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m <sup>3</sup>	(S 5182 (Part-6); 2006; RA2022	18.2	80 (24hrs)	
Ozone (O <sub>3</sub> )	μg/m³	18 5182 (Pan-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH <sub>3</sub> )	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m <sup>A</sup>	1S 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	µg/m³	IS 5182 (Part-22); 2004; RA2019	<0.002	1 (24hrs)	
Nickel (Nil)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Amual)	

#### Page 1 of 2

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Emall: Info@elespl.co.ln , eles.ranchi@gmail.com Plione no.. 0651-2290103 Website : unww.elespi.co.in

### TEST REPORT

Test Report No.	: ELES/RNC/2023/4396	Report Release Date	22.11.2023	
Work Order No.	1 13612310218	Work Order Date	: 21.04.2023	

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

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

Reviewed by

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

Authorised Signatory

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Page 2 of 2

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### ENGINEERING SERVICES PVT. LTD.

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

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



TC-8839

### TEST REPORT

Test Report No.	: ELES/RNC/2023/4740	Report Release Date	: 21.12.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4210 : Mine Pit Quarry No 2 Jalim & Sanai Bauxite Mine
Address	: Lobardaga, Jharkhand-835302	Sampling Date Sample Received Date	(12.14ha) : 09.11.2023 to 10.11.2023 : 24.11.2023
Mines Status	; Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 24.11.2023 to 08.12.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Scaled & Preserved

METEOROLOGICAL INFORMATION				
Average Temperature (°C) : 22	2	Barometric Pressure (mm	Hg) : 736	
3 Relative Humidity (%) : 53		Weather Condition	: Clear	

Discipline: Chemics	al	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	μg/m <sup>3</sup>	IS 5182 (Part-23): 2006; RA2022	57	100 (24hrs)		
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	29	60 (24hrs)		
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	1S 5182 (Part-2): 2001; RA2022	6.5	80 (24hrs)		
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m <sup>3</sup>	IS 5182 (Part-6); 2006; RA2022	22.6	80 (24hrs)		
Ozone (O <sub>1</sub> )	μg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)		
Ammonia (NH <sub>3</sub> )	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)		
Lead (Pb)	μg/m¹	IS 5182 (Part-22): 2004; RA2019	0.012	1 (24hrs)		
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01	<2.0	06 (Annual)		

Reviewed by

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

( Sinha

Dr. Deependra Kumar Sinha

Page 1 of 1 Ph. D Environmental Engg.

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

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

#### TEST REPORT

Test Report No.	: ELES/RNC/2023/4740	Report Release Date	: 21.12.2023	
Work Order No.	: 13612310218	Work Order Date	21.04.2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Location	: ELES/RNC/2023/AA/4210 : Mine Pit Quarry No 2 Jalim & Sanai Bauxite Mine (12.14ha)	
		Sampling Date Sample Received Date Type of Sample	: 09.11.2023 to 10.11.2023 : 24.11.2023 : Ambient Air	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02	
Period of Analysis	: 24.11.2023 to 08.12.2023	Sample Drawn By Sample Condition	ELES Pvt. Ltd. Sealed & Preserved	

METEOROLOGICAL INFORMATION				
L	Average Temperature (°C) = 22	2	Barometric Pressure (mn	nHg) : 736
3	Relative Humidity (%) : 53		Weather Condition	: Clear

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

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

Reviewed by

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

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

Page 1 of 1

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

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

Website: www.elespl.co.in



#### TEST REPORT

-	And the second second		
: ELES/RNC/2023/4741	Report Release Date	: 21.12.2023	
: 13612310218	Work Order Date	: 21.04.2023	
			- Participation of the second

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	= Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4211 : Nava Prathmik Vidyalay (Dhanka Toli) Jalim & Sanai	
Address	- Lohardaga, Jharkhand-835302	Sampling Date	Bauxite Mine (12.14ha) : 09.11.2023 to 10.11.2023	
Mines Status	: Operational	Sample Received Date Type of Sample Sampling Procedure	: 24.11.2023 : Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	= 24.11.2023 to 08.12.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

MI	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 22	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	: 53	4	Weather Condition	: Clear

Discipline : Chemica	d	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23); 2006; RA2022	52	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m <sup>1</sup>	IS 5182 (Part- 24): 2019	30	60 (24hrs)	
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part-2): 2001; RA2022	6.9	80 (24hrs)	
Nitrogen Di-Oxide (NO <sub>1</sub> )	μg/m³	1S 5182 (Part-6): 2006; RA2022	21.3	80 (24hrs)	
Ozone (O <sub>3</sub> )	μg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH <sub>3</sub> )	μg/m <sup>1</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Ph)	μg/m³	1S 5182 (Part-22): 2004; RA2019	0.006	1 (24hrs)	
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)	

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

Reviewed by

Authorised Signatory

Dr. Deependra K

Page 1 of 1

Ph. D Environmental Engagement. The results The Document smed as Too Report, is based by the Laboratory moter General Terms and Conditions, only on Congress, level head in pre-approved formal. The results shown in the Test Report reter or relates only to the jubinositysis done by the Laboratory unity. The information stated on the Test Report reter or relates only to the jubinositysis done by the Laboratory at the time of irrelyement only and within the limits of client's instructions. The Laboratory is responsible for all the information or data provided on the report, except the information which is provided by the client. The Report cannot be reproduced except in full and any part of the report is not taken out of context, without prior written approval of the Laboratory. The Report in full or in part shall not be published, advertise, used for any legal serious unless prior permission has been secured from the Almagement of the Laboratory. Attention is drawn to the limitation of liability, compensators and jurisdiction issues. Any unauthorized alternator & falsification of the content or appearance of the Test Report is unlawful and offenders may be prosecuted to the fullest extent of the law. All the samples are retained for 30days from the Date of release/essae of the Test Report. The samples from Regulatory bodies are to be retained as specified. Any type of Observations or Complaints regarding the Reports shall to done within 15days from the Date of Test Report released/issued. After the time period stated before, no complaints will be accepted. The entire Time schedule mentioned in Test Report is in 24hours format. Abbreviation used: N/A (Not Applicable), BDL (Below Descrion Limit). LDL (Linver Detection Limit).



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

VGINEERING SERVICES PVT. LTD.

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

Website: www.elespl.co.in

#### TEST REPORT

Test Report No.	: ELES/RNC/2023/4741	Report Release Date	: 21.12.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	; ELES/RNC/2023/AA/4211	
		Location	: Nava Prathmik Vidyalay	
	Annual Control		(Dhanka Toli) Jalim & Sanai	
Address	: Lohardaga, Jharkhand-835302		Bauxite Mine (12.14ha)	
		Sampling Date	: 09.11.2023 to 10.11.2023.	
		Sample Received Date	: 24.11.2023	
		Type of Sample	: Ambient Air	
Mines Status	; Operational	Sampling Procedure	: ELES/DOC/SMPL/02	
Period of Analysis	: 24.11.2023 to 08.12.2023	Sample Drawn By	: ELES Pvt. Ltd.	
r carroa or remaryata	THE TAX STREET OF THE PARTY OF	Sample Condition	: Sealed & Preserved	

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	; 22	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	: 53	- 8	Weather Condition	: Clear

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

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

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**Authorised Signatory** 

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

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### NGINEERING SERVICES PVT. LTD.

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

Website : www.elespl.co.in



#### TEST REPORT

Test Report No.	: ELES/RNC/2023/4742	Report Release Date	: 21.12.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Location Sampling Date	: ELES/RNC/2023/AA/4212 : Mine Pit Quarry No 3 Jalim & Sanai Bauxite Mine (12.14ha) : 09.11.2023 to 10.11.2023	
Mines Status Period of Analysis	: Operational : 24.11.2023 to 08.12.2023	Sample Received Date Type of Sample Sampling Procedure Sample Drawn By Sample Condition	: 24.11.2023 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd. : Sealed & Preserved	

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C) : 22	2	Barometric Pressure (mm	(Hg) : 736	
3	Relative Humidity (%) : 53	4	Weather Condition	: Clear	

Discipline : Chemica	il .	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23); 2006; RA2022	60	100 (24hrs)		
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part- 24); 2019	33	60 (24hrs)		
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part-2): 2001; RA2022	7.4	80 (24hrs)		
Nitrogen Di-Oxide (NO2)	µg/m³	15 5182 (Part-6): 2006; RA2022	19.7	80 (24hrs)		
Ozone (O <sub>3</sub> )	μg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)		
Ammonia (NH <sub>3</sub> )	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)		
Lead (Pb)	μg/m³	IS 5182 (Part-22): 2004; RA2019	0.010	1 (24hrs)		
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Armual)		

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Authorised Signatory Dr. Deependra Kumar Sinha

Ph. D Environmental Engg.

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

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

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

#### TEST REPORT

Test Report No.	: ELES/RNC/2023/4742	Report Release Date	: 21,12,2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref, No. Location	: ELES/RNC/2023/AA/4212 : Mine Pit Quarry No 3 Jalim & Sanai Bauxite Mine (12,14ha)	
Mines Status	; Conardaga, markhano-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 09.11.2023 to 10.11.2023 : 24.11.2023 : Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 24.11.2023 to 08.12.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 22	2	Barometric Pressure (mmHg)	: 736
3.	Relative Humidity (%)	: 53	A	Weather Condition	: Clear

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

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

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ELES Pvt. Ltd. Technical Manager

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

Website: www.elespl.ca.in



#### TEST REPORT

Test Report No.	: ELES/RNC/2023/4743	Report Release Date	: 21.12.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4213 : Near Colony; Jalim & Sanai Bauxite Mine	
Address	; Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	(12.14ha) : 09.11.2023 to 10.17.2023 : 24.11.2023	
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 24.11.2023 to 08.12.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

M	ETEOROLOGICAL INFORMATIO	V		
1	Average Temperature (°C) : 22	2	Barometric Pressure (mn	aHg) : 736
3	Relative Humidity (%) : 53	4	Weather Condition	2 Clear

Discipline : Chemica	al	Group: /	<b>Atmospheric</b>	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23); 2006; RA2022	56	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	29	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m <sup>3</sup>	IS 5182 (Part-2): 2001; RA2022	7.2	80 (24hrs)
Nitrogen Di-Oxide (NO2)	μg/m³	IS 5182 (Part-6): 2006; RA2022	21.5	80 (24hrs)
Ozone (O <sub>3</sub> )	μg/m <sup>3</sup>	JS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH <sub>1</sub> )	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	μg/m <sup>2</sup>	IS 5182 (Part-22): 2004; RA2019	0.008	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)

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Dr. Deependra Kumar Sinha

Ph. D Environmental Engg. Page 1 of 1

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

### ENGINEERING SERVICES PVT. LTD.

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

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

#### TEST REPORT

Test Report No.	: ELES/RNC/2023/4743	Report Release Date	: 21.12.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/4213	
		Location	: Near Colony;	
	77. 40 5.7 15.5		Jalim & Sanai Bauxite Mine	
Address	: Lohardaga, Jharkhand-835302		(12.14ha)	
	Marie Company of the	Sampling Date	: 09.11.2023 to 10.11.2023	
		Sample Received Date	: 24,11,2023	
		Type of Sample	: Ambient Air	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02	
Period of Analysis	: 24.11,2023 to 08.12,2023	Sample Drawn By	: ELES Pvt. Ltd.	
remount Analysis	- 27.11.5063 to 00.12.2023	Sample Condition	: Sealed & Preserved	

M	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 22	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	: 53	4	Weather Condition	: Clear

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

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

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

Authorised Signatory
Dr. Deependra Kurnar Sinha
Ph. D Environmental Engg.
ELES Pvt. Ltd. Technical Manage

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PLOT NO-30, MANSAROVAH ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) BST NO:- 20A46CE97130124 GINELBUNG SEMPICES PYT. LTD.

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

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



TEST REPORT

Test Report No.	; ELES/RNC/2023/4736	Report Release Date	: 21.12.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET.	CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Location	: ELES/RNC/2023/AA/4206 : Near Banjari Village Serengdag-A Bauxite Mines (155.81ha)		
Mines Status	: Operational	Sampling Date Sample Received Date Type of Sample Sampling Procedure Sample Drawn By	: 08.11.2023 to 09.11.2023 : 24.11.2023 : Ambient Air : ELES/DOC/SMPL/02 - ELES Pvt. Ltd.		
THE STREET		The Control of the Co	A COLUMN TO SERVICE AND ADDRESS OF THE PERSON ADDRESS OF THE PER		
Period of Analysis	: 24.11.2023 to 08.12.2023	Sample Condition	: Sealed & Preserved		

M	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 22	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	: 55	4	Weather Condition	: Clear

Discipline : Chemica	al	Group : Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	57	100 (24hrs)		
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	29	60 (24hrs)		
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part-2): 2001; RA2022	6.8	80 (24hrs)		
Nitrogen Di-Oxide (NO2)	µg/m³	15 5182 (Part-6): 2006; RA2022	22.6	80 (24hrs)		
Ozone (O <sub>3</sub> )	μg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)		
Ammonia (NH <sub>2</sub> )	ug/m³	IS 5182 (Part- 25); 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)		
Lead (Pb)	µg/m³	IS 5182 (Part-22): 2004; RA2019	< 0.002	1 (24hrs)		
Nickel (Ni)	ng/m³	IS 5182 (Pari-26):2020	<6.0	20 (Annual)		
Arsenic (As)	ing/m <sup>8</sup>	ELES/AIR/SOP/01	<2.0	06 (Annual)		

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""" End of Report""

Authorised Signatory

Dr. Deependra Kumar Sinha

Page I of I

Ph D Environmental Engg

The Discussed State of the Laboratory of the Laboratory under General Torms and Conductors, only on Compaign Deer hard Topological Magnetic States and the Laboratory only. The information stated on the Test Report reflects the tradegly done by the Laboratory is the time of avolvement 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 claim. The Report current be reported except in full and any part of the report is not taken out of context, without proper written approving of the Laboratory. The Report in flut or in part state for the published, advertise, used for any legis actions unless prior permission has feet secure from the Management of the Laboratory. Attention is drawn to the limitative of liability, compensation and junished in issues. Any annulumnessed alternation & falsification of the content of appearance of the Test Report is contained of material to the full of the samples are returned for Michael from the Date of released beautiful for the samples from the Date of released beautiful of the feet. Report is samples than Regulatory bodies are to be retained as specified. Any type of Observations or Complaints regarding the Reports while the dolor within 15 date from the Date of Test Report is a 2-though from the Content of the line of the results of the material period of the following of the Date of Test Report is a 2-though from the Content of the line of Date of Test Report is a 2-though from the Content of the line of Date of Test Report is a 2-though from the Content of the line of Date of Test Report is a 2-though from the Content of the line of Date of the Date of Test Report is a 2-though from the Content of the line of Date of the Date of Test Report is a 2-though from the Date of Test Report in a 2-though from the Date of Test Report is a 2-though from the Date of Test Report in the Date of Test Report in the Date of Test Report in the Date of Test Repo



PLOT NO-50, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (IHARKHAND) GST NO:- 2004ECE9723D124 ENGINEERING SERVICES PVT. LTD.

Email: Info@elespl.co.in , eles.ranchi@amail.com Phone no.: 0651-2230103 Website : www.elespl.co.in

### TEST REPORT

Test Report No.	: ELES/RNC/2023/4736	Report Release Date	: 21.12.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET.	AILS	SAMPLE DETAILS	
Castomer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4206 : Near Banjari Village Serengdag-A Bauxite Mines
Address	: Lohardaga, Jharkhand-835302	Sampling Date	(155.81ha) ; 08.11.2023 to 09.11.2023
Mines Status	: Operational	Sample Received Date Type of Sample Sampling Procedure	: 24.11.2023 : Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 24.11.2023 to 08.12.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

METEOROLOGICAL INFORMATION			
Average Temperature (°C) : 22	2	Barometric Pressure (mmH	ig) : 736
3 Relative Humidity (%) : 55	4	Weather Condition	: Clear

Discipline : Chemi	cal	Group:	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Benzene (C <sub>6</sub> H <sub>6</sub> ) <sup>6</sup>	μg/m <sup>2</sup>	IS 5182 (Part-11)2006;RA2017	<1.0	05(Annual)		
Benzo-(a)-Pyrene*	ng/m²	IS 5182 (Part-12)2004;RA2019	< 0.5	01(Annual)		

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

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

Authorised Signatory

Dr. Despendra Kurmar Sinha
Ph. D Environmental Enggi
ELES Pvi. Ltd. Technical Manur

Page 1 of 1

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUBANA HATIA, RANCHP834003 (JHARKHAND) GST NO:- 204A8CE97130124



Emall: info@elesal.co.in , eles.ranchi@amail.com

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



TEST REPORT

Test Report No.	: ELES/RNC/2023/4737	Report Release Date	: 21.12.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS	Variable Control of the Control of t
Customer Name Address	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4207 : Near Pauri Village Serengdag-A Bauxite Mines (155.81ha)
Mines Status	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure Sample Drawn By	: 08.11.2023 to 09.11.2023 : 24.11.2023 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 24.11.2023 to 08.12.2023	Sample Condition	Sealed & Preserved

MI	ETEOROLOGICAL INFORMATION				
T	Average Temperature (°C) : 22	2	Barometric Pressure (mm	Hg) : 736	
3	Relative Humidity (%) : 55	4	Weather Condition	: Clear	

Discipline: Chemica	al	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part-23): 2006; RA2022	54	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m²	IS 5182 (Part- 24): 2019	28	60 (24hrs)	
Sulphur Di-Oxide (SO <sub>2</sub> )	µg/m³	IS 5182 (Pan-2); 2001; RA2022	7.1	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	μg/m³	IS 5182 (Part-6): 2006; RA2022	19.8	80 (24hrs)	
Ozone (O <sub>3</sub> )	µg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH <sub>3</sub> )	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	µg/m³	IS 5182 (Part-22): 2004; RA2019	0.016	1 (24hrs)	
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)	
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Dr. Deependre Kilmer Sinha

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### ENGINEERING SERVICES PVT. LTD.

Email: Info@elespl.co.in , eles,ranchi@amail.com Phone no.: 0651-2290203

Website | www.elespi.co.in

TEST REPORT

Test Report No.	: ELES/RNC/2023/4737	Report Release Date	: 21.12.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindaico Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4207 : Near Pauri Village Screngdag-A Bauxite Mines
Address	: Lohardaga, Jharkhand-835302	Sampling Date	(155.81ha) : 08.11,2023 to 09.11,2023
		Sample Received Date Type of Sample	: 24.11,2023 : Ambient Air
Mines Status	: Operational	Sampling Procedure Sample Drawn By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 24.11.2023 to 08.12.2023	Sample Condition	: Sealed & Preserved

M	ETEOROLOGICAL INFORMATION				
1	Average Temperature (°C) : 22	2	Barometric Pressure (mml	Hg) :736	
3	Relative Humidity (%) : 55	4	Weather Condition	: Clear	

Discipline : Chemi	Discipline : Chemical		Group : Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Benzene (C <sub>5</sub> H <sub>6</sub> )*	µg/m	IS 5182 (Part-11)2006;RA2017	<1.0	05(Annual)		
Benzo-(a)-Pyrene*	ng/m²	IS 5182 (Part-12)2004;RA2019	<0.5	01(Annual)		

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

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

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Email: lafo@elesal.co in , eles ranchi@gmail.com

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



TEST REPORT

Test Report No.	: ELES/RNC/2023/4738	Report Release Date	: 21.12.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/4208
	Programme a person .	Location	: Near Harup Village
			Serengdag-A Bauxite Mines
Address	: Lohardaga, Jharkhand-835302		(155.81ha)
		Sampling Date	: 10.11.2023 to 11.11.2023
		Sample Received Date	: 24.11.2023
		Type of Sample	: Ambient Air
	The state of the s	Sampling Procedure	: ELES/DOC/SMPL/02
Mines Status	: Operational	Sample Drawn By	: ELES Pvt Ltd.
Period of Analysis	: 24.11.2023 to 08.12.2023	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 22	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	: 53	4.	Weather Condition	: Clear

Discipline: Chemica	ıl	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	μg/m <sup>3</sup>	IS 5182 (Part-23): 2006; RA2022	52	100 (24hrs)		
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	26	60 (24hrs)		
Sulphur Di-Oxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	IS 5182 (Part-2): 2001; RA2022	5.1	80 (24hrs)		
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	IS 5182 (Part-6): 2006; RA2022	20.5	80 (24hrs)		
Ozone (O <sub>3</sub> )	μg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)		
Ammonia (NH <sub>1</sub> )	µg/m²	IS-5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m <sup>1</sup>	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)		
Lead (Pb)	μg/m <sup>3</sup>	IS 5182 (Part-22): 2004; RA2019	< 0.002	1 (24hrs)		
Niekel (Ni)	rig/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m <sup>5</sup>	ELES/AIR/SOP/01	<2.0	06 (Annual)		
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Deependra Kumar Sinha

Page 1 of 1 Computer Mar

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

#### TEST REPORT

Test Report No.	: ELES/RNC/2023/4738	Report Release Date	: 21.12.2023	
Work Order No.	: 13612310218	Work Order Date	; 21.04.2023	

CUSTOMER DET.	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4208 : Near Harup Village Serengdag-A Bauxite Mines	
Address	Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	(155.81ha) : 10.11,2023 to 11.11,2023 : 24.11,2023	
Mines Status	: Operational	Type of Sample Sampling Procedure Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 24.11.2023 to 08.12.2023	Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 22	2	Barometric Pressure (mml	(g) : 736
3	Relative Humidity (%) : 53	4	Weather Condition	: Clear

Discipline : Chemi	cal	Group:	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C <sub>5</sub> H <sub>6</sub> )*	μg/m <sup>1</sup>	IS 5182 (Part-11)2006;RA2017	<1.0	05(Annual)	
Benzo-(a)-Pyrene*	ng/m³	IS 5182 (Part-12)2004;RA2019	<0.5	01(Annual)	

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

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Email: Info@elespl.co.In , eles.ranchi@amail.com

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



TEST REPORT

Test Report No.	: ELES/RNC/2023/4739	Report Release Date	: 21.12.2023	
			: 21.04.2023	
Work Order No.	: 13612310218	Work Order Date	: 41.04.4043	

CUSTOMER DET.	AILS	SAMPLE DETAILS	
Customer Name  Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Location	: ELES/RNC/2023/AA/4209 : Near Paintoli Village Serengdag-A Bauxite Mines (155.81ha)
Mînes Status	: Operational	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 10:11.2023 to 11:11.2023 : 24:11,2023 : Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	= 24.11.2023 to 08.12.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

MB	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 22	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	53	4	Weather Condition	; Clear

Discipline: Chemica	1	Group : Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part-23); 2006; RA2022	58	100 (24hrs)		
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	36	60 (24hrs)		
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part-2): 2001; RA2022	6.6	80 (24hrs)		
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	1S.5182 (Part-6); 2006; RA2022	20.8	80 (24hrs)		
Ozone (O <sub>3</sub> )	μg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)		
Ammonia (NH <sub>3</sub> )	$\mu g/m^2$	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)		
Lead (Pb)	μg/m³	IS 5182 (Part-22): 2004; RA2019	< 0.002	1 (24hrs)		
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)		

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Dr. Deependra Kumar Sinha

Page 1 of 1

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

TEST REPORT

Test Report No.	: ELES/RNC/2023/4739	Report Release Date	: 21.12.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET.	AILS	SAMPLE DETAILS		
Customer Name Address	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4209 : Near Paintoli Village Serengdag-A Bauxite Mines (155.81ha)	
Autres,	; Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 10.11.2023 to 11.11.2023 : 24.11.2023	
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	; 24.11.2023 to 08.12.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

MI	ETEOROLOGICAL INFORMAT	TON		
1	Average Temperature (°C) : 22	2	Barometric Pressure (mm	Hg) -736
3	Relative Humidity (%) : 53	4	Weather Condition	; Clear

Discipline : Chemi	cal	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C <sub>s</sub> H <sub>6</sub> )*	ug/m <sup>1</sup>	IS 5182 (Part-11)2006; RA2017	<1.0	05(Annual)	
Benzo-(a)-Pyrene*	ng/m³	IS 5182 (Part-12)2004;RA2019	<0,5	01(Annual)	

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

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Dr. Deependra Kumar Sinha Ph. D Environmental Engg. ES Pvt. Ltd. Technical Mena-

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### ENGINEERING SERVICES PVT. LTD.

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

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

### TEST REPORT

Test Report No.	; ELES/RAN/2023/3127	Report Release Date	: 21.12.2023	
Work Order No.	: 13612310218	Work Order Date	; 21.04.2023	

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Sampling Date	: ELES/RAN/2023/DW/3014 : 15.11.2023	
		Sample Received Date	: 24.11.2023	
Address	: Lohardaga, Jharkhand-835302	Type of Sample	: Drinking Water	
		Source/Location of Sample	: Jalim & Sanai (12.14ha) Bauxite Mine	
Mines Status	: Operational	Sampling Procedure Sample Collected By	: ELES/DOC/SMPL/01 : ELES Pvt. Ltd.	
Period of Analysis	: 24.11.2023 to 08.12.2023	Sample Condition	: Sealed & Preserved	

Discipline : Chem	ical	Group : Wate	r		ory Limit 10500:2012
Parameter Unit		Test Protocol	Result	Acceptable Limit	Permissible Limit
pH (at 24.8°C)		APHA 23 <sup>rd</sup> Ed.2017, 4500-H	6.86	6.5-8.5	No Relaxation
Turbidity	NTU	APHA 23 <sup>rd</sup> Ed.2017, 2130 B	0.78	1.0	5.0
Taste	+7	APHA 23th Ed.2017, 2160 C	Agreeable	Agreeable	Agreeable
Odour	-	IS 3025 (Part-5) :2018	Agrecable	Agreeable	Agreeable
Colour	Hazen	APHA 23 <sup>rd</sup> Ed.2017, 2120B&D	2.0	5	15
Total Dissolved Solids (TDS)	mg/L	APHA 23 <sup>rd</sup> Ed.2017, 2540B,C&D	182	500	2000
Chloride (as Cl)	mg/L	APHA 23 <sup>rd</sup> Ed.2017, 4500 CLB	18.6	250	1000
Fluoride (as F)	mg/L	APHA 23 <sup>rd</sup> Ed.2017, 4500 F-D	BDL (DL: 0.1)	1.0	1.5
Total Alkalinity (as CaCO <sub>3</sub> )	mg/L	APHA 23 <sup>rd</sup> Ed.2017, 2320 B	64.8	200	600
Total Hardness (as CaCO <sub>3</sub> )	mg/L	APHA 23rd Ed.2017, 2340 C	96.5	200	600
Sulphate (as SO <sub>4</sub> )	mg/L	APHA 23 <sup>rd</sup> Ed.2017, 4500 SO <sub>4</sub> -2-E	7.58	200	400
Nitrate (as NO <sub>3</sub> )	mg/L	ÀPHA 23 <sup>rd</sup> Ed.2017, 4500 NO <sub>3</sub> -B	2.68	45	No Relaxation
Phenolic Compound (as C <sub>6</sub> H <sub>5</sub> OH)	mg/L	IS 3025 (Part-43):1992;RA2019	BDL (DL: 0.0005)	0.003	0.002

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

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

Website: www.elespl.co.in

#### TEST REPORT

; ELES/RAN/2023/3127 : 21.12.2023 Report Release Date Test Report No. : 21.04.2023 : 13612310218 Work Order Date Work Order No.

Discipl	ine: Che	mical Group: V	Vater		ory Limit 10500:2012
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
Cyanide (as CN)	mg/L	APHA 23 <sup>rd</sup> Ed.2017, 4500 CN-E	BDL (DL: 0.012)	0.05	No Relaxation
Residual Free Chlorine (RFC)	mg/L	IS 3025 (Part-26):2021	BDL (DL: 0.1)	0.02	1.0
Calcium (as Ca)	mg/L	APHA 23 <sup>rd</sup> Ed.2017, 3500 Ca B	24.4	75	200
Discipl	ine : Che	mical Group	: Residues in	Water	
Aluminum (as Al)	mg/L	IS 3025 (Part-55); 2003; RA2019	BDL (DL: 0.02)	0.03	0.2
Arsenic (as As)	mg/L	IS 3025 (Part 37): 2022	BDL (DL: 0.005)	0.01	No Relaxation
Boron (as B)	mg/L	IS 3025(Part-57); 2005; RA2021	BDL (DL: 0.2)	0.5	1.0
Cadmium (as Cd)	mg/L	APHA 23 <sup>rd</sup> Ed.2017, 3111B	BDL (DL: 0.003)	0.003	No Relaxation
Total Chromium (as Cr)	mg/L	APHA 23™ Ed.2017, 3111B	BDL (DL: 0.03)	0.05	No Relaxation
Copper (as Cu)	mg/L	APHA 23 <sup>rd</sup> Ed.2017, 3111B	BDL (DL: 0.03)	0.05	1.5
Iron (as Fe)	mg/L	APHA 23 <sup>rd</sup> Ed.2017, 3111B	0.166	1.0	1.0
Lead (as Pb)	mg/L	APHA 23rd Ed.2017, 3111B	BDL (DL: 0.01)	0.01	No Relaxation
Manganese (as Mn)	mg/L	APHA 23rd Ed.2017, 3111B	BDL (DL: 0.05)	0,1	0.3
Mercury (as Hg)	mg/L	IS 3025 (Part-48): 1994; RA2019	BDL (DL: 0.001)	0.001	No Relaxation
Selenium (as Se)	mg/L	IS 3025 (Part-56): 2003; RA2019	BDL (DL: 0.01)	0.01	No Relaxation
Zinc (as Zn)	mg/L	APHA 23 <sup>rd</sup> Ed.2017, 3111B	BDL (DL: 0.1)	5	15

Remarks: 1. pH & RFC done at Lab.

Page 2 of 4

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

### ENGINEERING SERVICES PYT. LTD.

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

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

### TEST REPORT

 Test Report No.
 : ELES/RAN/2023/3127
 Report Release Date
 : 21.12.2023

 Work Order No.
 : 13612310218
 Work Order Date
 : 21.04.2023

Discipline: Che	mical		Group: Water	
Parameter	Unit	Test Protocol	Result	Regulatory Limit 2s per IS 10500:2012
Pesticides				
Alachlor*	μg/L	APHA	BDL (DL: 1.0)	20
Atrazine*	μg/L	APHA	BDL (DL: 1.0)	2
Aldrin/Dieldrin*	μg/L	APHA	BDL (DL: 0.01)	0.03
Alpha HCH*	μg/L	АРНА	BDL (DL: 0.001)	0.01
Beta HCH*	μg/L	АРНА	BDL (DL: 0.01)	0.04
Butachlor*	μg/L	АРНА	BDL (DL: 10)	125
Chlorpyriphos*	μg/L	АРНА	BDL (DL: 10)	30
Delta HCH*	μg/L	АРНА	BDL (DL; 0.01)	0.04
2,4 dichlorophenoxyacetic acid*	μg/L	APHA	BDL (DL; 10)	30
DDT(o,p and p,p-isomers of DDT,DDE and DDD)*	μg/L	АРНА	BDL (DL: 0.5)	1
Endosulfan (alpha, beta, and sulphate)*	μg/L	АРНА	BDL (DL: 0.1)	0.4
Ethion*	μg/L	APHA	BDL (DL: 0,5)	3
Gamma HCH (Lindane)*	μg/L	APHA	BDL (DL: 0.5)	2
lsoproturon*	μg/L.	APHA	BDL (DL; 0.5)	9

Page 3 of 4

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-B34003 (JHARKHAND) GST NO:- 26AAECE9713D124

### ENGINEERING SERVICES PVT. LTD.

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

Phane na.: 0651-2290103 Website: www.elespl.co.in

#### TEST REPORT

Test Report No.	: ELES/RAN/2023/3127	Report Release Date	: 21.12.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

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

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

Reviewed by

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

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

Page 4 of 4

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

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

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



#### TEST REPORT

Test Report No.	: ELES/RNC/2024/0199	Report Release Date	: 15.01.2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883924000000182F		

CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4798 : Mine Pit Quarry No 2 Jalim & Sanai Bauxite Mine (12.14ha)
Address Mines Status	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure Sampling Done By	: 14.12.2023 to 15.12.2023 : 26.12.2023 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	1 26,12,2023 to 08,01,2024	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFOR	RMATION			
1	Average Temperature (°C)	: 18	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	: 47	4	Weather Condition	Clear

Discipline : Chemica	al	Group ;	Atmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	61	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	33	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	1S 5182 (Part-2): 2001; RA2022	7,3	80 (24hrs)
Nitrogen Di-Oxide (NO2)	μg/m³	15 5182 (Part-6): 2006; RA2022	25.1	80 (24hrs)
Ozone (O <sub>3</sub> )	μg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH <sub>1</sub> )	μg/m³	IS 5182 (Part- 25); 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>a</sup>	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	μg/m³	IS 5182 (Part-22): 2004; RA2019	0.016	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m <sup>2</sup>	ELES/AIR/SOP/01	<2.0	06 (Annual)

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

Reviewed by

Driverse Sinha Sinha

Ph. D Environmental Enon

Page 1 of 1 ELES Pvt. Ltd. Technical Manager

the Document stated as The Botton, "Passant by the Laboratory under General Terms and Conditions, only an Company latter hand in pre-approved forms. The results shown in the Test Report rates in release 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 invalvement 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 carried except in full and any part of the report is not taken out of context, without prior written approval of the Laboratory. The Report in full or in part shall not be published, advertise, used for any legal actions unless prior permission has been secured from the Management of the Laboratory. Attention is drawn to the limitation of liability, compensation and jurisdiction issues. Any amorthorized alteration & falsification of the content or appearance of the Test Report is unlawful and offenders may be prosecuted to the fullest extent of the law. All the samples are retained for 30days from the Date of release/issue of the Test Report. The sumples from Regulatory bodies are in be retained as specified. Any type of Observations or Complaints regarding the Reports shall he done within 15days from the Date of Test Report released/essued. After the time period stated before, no complaints will be accepted. The entire Time schedule mentioned in Test Report is in 24hours formal. Abbreviation used: N/A (Not Applicable); BDL (Below Detection Limit); LDL (Lower Detection Limit)



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

### ENGINEERING SERVICES PVT. LTD.

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

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

#### TEST REPORT

Test Report No.	: ELES/RNC/2024/0199	Report Release Date	: 15.01,2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4798 : Mine Pit Quarry No 2 Jalim & Sanai Bauxite Mine (12.14ha)
Address Mines Status	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure Sampling Done By	: 14.12.2023 to 15.12,2023 : 26.12.2023 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 26.12.2023 to 08.01.2024	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	118	2	Barometric Pressure (mml	lg) 736
3	Relative Humidity (%)	: 47	4	Weather Condition	: Clear

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

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



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

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

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

### ENGINEERING SERVICES PVT. LTD.

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

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



TEST REPORT

Test Report No.	; ELES/RNC/2024/0200	Report Release Date	: 15.01.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
ULR No.	: TC883924000000183F			

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4799 : Nava Prathmik Vidyalay (Dhanka Toli) Jalim & Sanat Bauxite Mine (12.14ha)	
Address Mines Status	Lohardaga, Jharkhand-835302     Operational	Sampling Date Sample Received Date Type of Sample Sampling Procedure Sampling Done By	: 14.12.2023 to 15.12.2023 : 26.12.2023 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Willies Statts	1 Opermional			
Period of Analysis	: 26.12.2023 to 08.01.2024	Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFO	RMATION			
1	Average Temperature (°C)	:18	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	2.47	4	Weather Condition	: Clear

Discipline : Chemica	d	Group : A	Atmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	55	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	32	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m <sup>2</sup>	IS 5182 (Part-2): 2001; RA2022	7.3	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	15 5182 (Part-6): 2006; RA2022	23.5	80 (24hrs)
Ozone (O <sub>3</sub> )	μg/m <sup>1</sup>	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	μg/m³	IS 5182 (Part- 25); 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>1</sup>	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m³	IS 5182 (Part-22): 2004; RA2019	0.009	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01	<2.0	06 (Annual)

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

Reviewed by

Authorised Signatory Dr. Deependra Kumar Sinna

Fil. D Environmental Engg.

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

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

### ENGINEERING SERVICES PVT. LTD.

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

Phane na.: 0651-2290103 Website: www.elespl.co.in

#### TEST REPORT

Test Report No.	; ELES/RNC/2024/0200	Report Release Date	: 15.01.2024	
Work Order No.	; 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/4799	
		Location	: Nava Prathmik Vidyalay (Dhanka Toli) Jalim & Sanai	
			Bauxite Mine (12.14ha)	
Address	Lohardaga, Jharkhand-835302	Sampling Date	: 14.12.2023 to 15.12.2023	
		Sample Received Date	: 26.12.2023	
		Type of Sample	: Ambient Air	
		Sampling Procedure	: ELES/DOC/SMPL/02	
Mines Status	Operational	Sampling Done By	: ELES Pvt. Ltd.	
Period of Analysis	= 26.12.2023 to 08.01.2024	Sample Condition	: Sealed & Preserved	

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	18	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	47	4.	Weather Condition	: Clear

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

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



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

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

Page T of I

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

### ENGINEERING SERVICES PVT. LTD.

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

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



1C-983

#### TEST REPORT

Test Report No.	: ELES/RNC/2024/0201	Report Release Date	: 15.01.2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	; TC883924000000184F		

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4800 : Mine Pit Quarry No 3 Jalim & Sanai Bauxite Mine (12.14ha)	
Address Mines Status	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure Sampling Done By	: 14.12.2023 to 15.12.2023 : 26.12.2023 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 26.12,2023 to 08,01.2024	Sample Condition	: Sealed & Preserved	

MI	TEOROLOGICAL INFO	RMATION			
1	Average Temperature (°C)	: 18	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	: 47	4	Weather Condition	: Clear

Discipline : Chemica	il	Group:	tmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	64	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	35	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	μ <u>μ</u> /m³	IS 5182 (Part-2): 2001; RA2022	8.1	80 (24hrs)
Nitrogen Di-Oxide (NO2)	μg/m³	IS 5182 (Part-6): 2006; RA2022	23.1	80 (24hrs)
Ozone (O <sub>3</sub> )	μg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonīa (NH <sub>3</sub> )	µg/m³	IS 5182 (Part-25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	1S 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	μg/m³	IS 5182 (Part-22): 2004; RA2019	0.013	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m <sup>1</sup>	ELES/AIR/SOP/01	<2.0	06 (Annual)

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

Reviewed by

Authorised Signatory

Pr. Deependra Kurnar Sinha Pr. D Environmental Engg

Page 1 of 1

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

#### TEST REPORT

Test Report No.	: ELES/RNC/2024/0201	Report Release Date	: 15.01.2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	Hindalco Industries Limited	Sample Ref. No. Location	ELES/RNC/2023/AA/4800     Mine Pit Quarry No 3     Jalim & Sanai Bauxite Mine     (12.14ha)	
Address	† Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 14.12.2023 to 15.12.2023 : 26.12.2023 : Ambient Air : ELES/DOC/SMPL/02	
Mines Status	: Operational	Sampling Done By	: ELES Pvt. Ltd.	
Period of Analysis	26.12.2023 to 08.01.2024	Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 18	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	: 47	4	Weather Condition	: Clear

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

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



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

Authorised Signatory

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

Page 1 of 1

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

### ENGINEERING SERVICES PVT. LTD.

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

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



19,040

#### TEST REPORT

Test Report No.	: ELES/RNC/2024/0202	Report Release Date	: 15,01.2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883924000000185F		

CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4801 : Near Colony; Jalim & Sanai Bauxite Mine (12.14ha)
Address Mines Status	: Lohardaga, Jharkhand-835302 : Operational	Sampling Date Sample Received Date Type of Sample Sampling Procedure Sampling Done By	: 14.12.2023 to 15.12.2023 : 26.12.2023 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 26.12.2023 to 08.01.2024	Sample Condition	: Sealed & Preserved

M	ETEOROLOGICAL INFORMATION	(			
1	Average Temperature (°C) : 18	2	Barometric Pressure (mm.	Hg) : 736	
3	Relative Humidity (%) : 47	4	Weather Condition	Clear	

Discipline : Chemica	d-	Group: /	tmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m <sup>3</sup>	IS 5182 (Part-23): 2006; RA2022	59	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	33	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part-2): 2001; RA2022	8.8	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	IS 5182 (Part-6); 2006; RA2022	22.7	80 (24hrs)
Ozone (O <sub>3</sub> )	µg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>1</sup>	IS:5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	μg/m³	IS 5182 (Part-22): 2004; RA2019	0.012	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)

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

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mentioned in Test Report is in 24hours format. Abbreviation used: N/A (Not Applicable), BDL (Below Detection Limit), I.DL (Lower Detection Limit).



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

### ENGINEERING SERVICES PVT LTD.

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

Phone na.: 0651-2290103 Website: www.elespl.co.in

#### TEST REPORT

Test Report No. : ELES/RNC/2024/0202		Report Release Date	: 15.01.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4801 : Near Colony; Jalim & Sanai Bauxite Mine (12,14ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 14.12.2023 to 15.12.2023 : 26.12.2023 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Operational	Sampling Done By	: ELES Pvt. Ltd.
Period of Analysis	: 26.12.2023 to 08.01.2024	Sample Condition	: Sealed & Preserved

M	ETEOROLOGICAL INFORM	MATION			
1	Average Temperature (*C)	118	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	: 47	4	Weather Condition	: Clear

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

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



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

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

ELES PVL Ltd. Technical Managery

Page 1 of 1

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PLOT NO-30, MANSAROVAR ENCLIVE TUPUDUNA HATIA, RANCHI-834003 (MARKHANID) BIT NO - JOAANCESTIADLIA



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

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



TEST REPORT

Test Report No.	: ELES/RNC/2024/0191	Report Release Date	: 15.01.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
ULR No.	: TC883924000000174F			

CUSTOMER DET.	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4790 : Near Banjari Village Serengdag-A Bauxite Mines (155.81ha)
Address Mines Status	: Lohardaga, Jharkhand-835302 : Operational	Sampling Date Sample Received Date Type of Sample Sampling Procedure Sampling Done By	: 12.12.2023 to 13.12.2023 : 26.12.2023 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 26.12.2023 to 08.01.2024	Sample Condition	: Sealed & Preserved

M	ETEOROLOGICAL INFO	RMATION			
1	Average Temperature (°C)	: 18	2	Barometric Pressure (mmHg)	:736
3	Relative Humidity (%)	: 49	4	Weather Condition	: Clear

Discipline : Chemica	al	Group : Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	62	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	1S 5182 (Part- 24): 2019	33	60 (24hrs)	
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part-2): 2001; RA2022	7.4	80 (24hrs)	
Nitrogen Di-Oxide (NO <sub>2</sub> )	µg/m³	IS 5182 (Part-6): 2006; RA2022	28.1	80 (24hrs)	
Ozone (O <sub>3</sub> )	μg/m <sup>3</sup>	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH <sub>3</sub> )	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m <sup>3</sup>	[S 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	Hg/m <sup>3</sup>	IS 5182 (Part-22): 2004; RA2019	< 0.002	T (24hrs)	
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)	

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

Page 1 of 1

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPLIDANA HATIA, RANCHI-034003 (JHARKHAND) 657 NO: 23A4ECES713D124 CHOMEERING SERVICES PUT. LTD.

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

#### TEST REPORT

Test Report No.	: ELES/RNC/2024/0191	Report Release Date	: 15.01.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET.	AILS	SAMPLE DETAILS		
Customer Name	: Hindalce Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4790 : Near Banjari Village Serengdag-A Bauxite Mines (155.81ha)	
Address Mines Status	: Lohardaga, Jharkhand-835302 : Operational	Sampling Date Sample Received Date Type of Sample Sampling Procedure Sampling Done By	: 12.12.2023 to 13.12.2023 : 26.12.2023 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 26.12.2023 to 08.01,2024	Sample Condition	: Scaled & Preserved	

M	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 18	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	: 49	4	Weather Condition	: Clear

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

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

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

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

Page 1 of 1

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PEOT NO-30, MANSAROWAR ENCLAVE, TUPLEDAMA HATIA, RANCHI-E34003 (INERHOLEND) GIT NG:- 2044EEE5TE3U324

### CHARGE STRUCKS FOR A THE

Email: info@elesol.co.in , eles.runchi@omdil.com Phono no.: 0651-2290101 Website : wurm.elesol.co.in



TEST REPORT

Test Report No.	: ELES/RNC/2024/0192	Report Release Date	: 15.01.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
ULR No.	: TC883924000000175F			

CUSTOMER DET.	AILS	SAMPLE DETAILS		
Customer Name	: Hindaico Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4791 : Near Pauri Village Serengdag-A Bauxite Mines (155,81ha)	
Address Mines Status	Lohardaga, Jharkhand-835302  : Operational	Sampling Date Sample Received Date Type of Sample Sampling Procedure Sampling Done By	: 12.12.2023 to 13.12.2023 : 26.12.2023 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 26.12.2023 to 08.01.2024	Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFORMATION				
1	Average Temperature (°C) : 18	2	Barometric Pressure (mml	lg) : 736	
3	Relative Humidity (%) : 49	4	Weather Condition	: Clear	

1	Group: /	Atmospheric	Pollution
Unit	Test Protocol	Result	Regulatory Limit
μg/m³	IS 5182 (Part-23): 2006; RA2022	60	100 (24hrs)
μg/m³	IS 5182 (Part- 24): 2019	31	60 (24hrs)
μg/m³	IS 5182 (Part-2): 2001; RA2022	7.9	80 (24hrs)
μg/m <sup>3</sup>	IS 5182 (Part-6): 2006; RA2022	22.3	80 (24hrs)
μg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
mg/m <sup>3</sup>	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
μg/m³	IS 5182 (Part-22): 2004; RA2019	0.012	1 (24hrs)
ng/m²	IS 5182 (Part-26);2020	<6.0	20 (Annual)
ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)
	μg/m <sup>3</sup>	Unit Test Protocol  μg/m³ IS 5182 (Part-23): 2006; RA2022  μg/m³ IS 5182 (Part-24): 2019  μg/m³ IS 5182 (Part-2): 2001; RA2022  μg/m³ IS 5182 (Part-6): 2006; RA2022  μg/m³ IS 5182 (Part-6): 1974; RA2019  μg/m³ IS 5182 (Part-25): 2018  mg/m³ IS 5182 (Part-10): 1999; RA2019  μg/m³ IS 5182 (Part-22): 2004; RA2019  μg/m³ IS 5182 (Part-22): 2004; RA2019  ng/m³ IS 5182 (Part-22): 2004; RA2019	Unit Test Protocol Result  μg/m³ IS 5182 (Part-23): 2006; RA2022 60  μg/m³ IS 5182 (Part-24): 2019 31  μg/m³ IS 5182 (Part-2): 2001; RA2022 7.9  μg/m³ IS 5182 (Part-6): 2006; RA2022 22.3  μg/m³ IS 5182 (Part-6): 1974; RA2019 <20.0  μg/m³ IS 5182 (Part-25): 2018 <10.0  mg/m³ IS 5182 (Part-10): 1999; RA2019 <1.0  μg/m³ IS 5182 (Part-22): 2004; RA2019 0.012  ng/m³ IS 5182 (Part-26): 2004; RA2019 0.012

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

Reviewed by

Undienparsignakumar Sinha

Ph D Environmental Engg.

Page 1 of L ELES Pvt. Ltd. Technical Manager

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PLOT NO-30, MANSAROVAE ENCLAVE, TUPLIDANA HATIA, RANCHI-834003 (HARKHAND) GST NO- 1044ECE9713D174 ENGINEERING KENVICES PVT. 520.

Emall: <u>Info@elespl.co.in</u>, <u>eles ranchi@gmall.com</u> Phane no. 1 0551-2280103 Website i veviocelespl.co.in

#### TEST REPORT

Test Report No.	: ELES/RNC/2024/0192	Report Release Date	: 15.01.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/479) : Near Pauri Village Serengdag-A Bauxite Mines (155.81ha)	
Address Mines Status	: Lohardaga, Jharkhand-835302 : Operational	Sampling Date Sample Received Date Type of Sample Sampling Procedure Sampling Done By	: 12.12.2023 to 13.12.2023 : 26.12.2023 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 26.12.2023 to 08.01.2024	Sample Condition	: Sealed & Preserved	

M	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 18	2	Barometric Pressure (mml-	lg) : 736
3	Relative Humidity (%) : 49	1.4	Weather Condition	: Clear

Discipline: Chem	ical	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C <sub>8</sub> H <sub>6</sub> )*	μg/m³	IS 5182 (Part-11)2006;RA2017	<1.0	05(Annual)	
Benzo-(a)-Pyrene*	ng/m²	IS 5182 (Part-12)2004;RA2019	<0.5	01(Annual)	

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



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

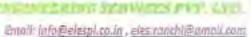
Authorised Signatory
Dr. Deependra Kurnar Sinha
Ph. D Environmental Engg.
ELES Pvt. Ltd. Technical Manager

Page 1 of 1

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PLOT NO-3G, BLANDAROVAR ENCLAVE, TUPUDANE HATIN, RANCHI-R34003 (JHARKHAND) GST NO:-2014ECES7330114



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



TEST REPORT

Test Report No.	: ELES/RNC/2024/0193	Report Release Date	: 15.01.2024
Work Order No.	: 13612310218	Work Order Date	: 21,04.2023
ULR No.	: TC883924000000176F		

CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4792 : Near Harup Village Serengdag-A Bauxite Mines (155.81ha)
Address Mines Status	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure Sampling Done By	: 12.12.2023 to 13.12.2023 : 26.12.2023 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
			The state of the s
Period of Analysis	: 26.12.2023 to 08.01.2024	Sample Condition	: Sealed & Preserved

M	ETEOROLOGICAL INFOR	MATION			
-1	Average Temperature (*C)	: 18	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	: 49	4	Weather Condition	: Clear

Discipline : Chemic	al	Group: 2	Atmospheric :	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	58	100 (24hrs)
Particulate Matter (PM2.5)	µg/m³	15 5182 (Part- 24): 2019	31	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	µg/m³	IS 5182 (Part-2): 2001; RA2022	6.4	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	15 5182 (Part-6): 2006; RA2022	22.1	80 (24hrs)
Ozone (O <sub>3</sub> )	µg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (Shrs)
Ammonia (NH <sub>3</sub> )	μg/m³	1S 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	μg/m³	IS 5182 (Part-22); 2004; RA2019	< 0.002	I (24hrs)
Nickel (Ni)	næ/m³	1S 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m²	ELES/AIR/SOP/01	<2.0	06 (Annual)

Reviewed by

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

Page 1 of 1

Authorised Signatory Dr. Deependra Kumer Sinha

The Environmental chief

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PLOT NO-30, MANSARDYAR ENCLAVE, TUPUDANA HATIA, RANCH-834003 (IHATUKANO) GST NO: 20AASCE97140424

### ENGINEERING SERVICES PVC LED

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

#### TEST REPORT

Test Report No.	: ELES/RNC/2024/0193	Report Release Date	1 15.01.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4792 Near Harup Village Serengdag-A Bauxite Mines (155.81ha)
Address Mines Status	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure Sampling Done By	: 12.12.2023 to 13.12.2023 : 26.12.2023 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 26.12.2023 to 08.01.2024	Sample Condition	: Sealed & Preserved

M	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	:18	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	: 49	4	Weather Condition	: Clear

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

Remarks: (4)-Parameters are outsourced to other Lab.



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

Authorised Signatory
Dr. Deependra Kumar Sinha
Ph. D Environmental Engg.
ELES Pyr. Ltd. Tachnical Manager

Page T of I

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PLOT NO-30, MANSAROVAR ENCLAVE, TUHUDANII HATIA, RANCHI-834003 [THAREHAND! 05T NO:- 10A-ADCE97230124

Email: Info@ulespl.co.in , sies.imchi@pmail.com Phone no.: 0651-2290103 Webstre: www.elespl.co.m



#### TEST REPORT

Test Report No.	: ELES/RNC/2024/0194	Report Release Date	: 15.01.2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883924000000177F		

CUSTOMER DETA	AILS	SAMPLE DETAILS	Telesconia de la composición dela composición de la composición de la composición de la composición de la composición dela composición de la composición dela composición dela composición de la composición de la composición de la composición dela composición de la composición dela composición dela composición dela composición dela composición dela composición dela compos
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4793 : Near Paintoli Village Serengdag-A Bauxite Mines (155.81ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date. Sample Received Date Type of Sample Sampling Procedure	: 12.12.2023 to 13.12.2023 : 26.12.2023 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Operational	Sampling Done By	; ELES Pvt. Ltd.
Period of Analysis	: 26.12.2023 to 08.01.2024	Sample Condition	: Sealed & Preserved

M	ETEOROLOGICAL INFO	RMATION			
1	Average Temperature (°C)	±18	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	149	4:	Weather Condition	Clear

Discipline: Chemica	el l	Group:	Atmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	60	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	33	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part-2): 2001; RA2022	7.1	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	µg/m³	IS 5182 (Part-6): 2006; RA2022	22.3	80 (24hrs)
Ozone (O <sub>3</sub> )	µg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (Shrs)
Ammonia (NH <sub>1</sub> )	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>1</sup>	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	μg/m³	IS 5182 (Part-22): 2004; RA2019	< 0.002	1 (24hrs)
Nickel (Ni)	ng/m²	IS 5182 (Part-26);2020	<6.0	20 (Annual)
Arsenic (As)	ng/m¹	ELES/AIR/SOP/01	<2.0	06 (Annual)

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

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Page 1 of 1 ELES Pvt. Ltd. Technical Manager.
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ENVIRONMENTAL LABORATI

PLOT NO-30, MANSAROVAR ENCLAVE, TUPLIDANA NATIA, RANCHI-834003 (INCREMAND) 857 NO:-20AAECE9719D124 WOOMERSHIP SERVICES PTT. LTD.

Email: info@elespi.co.in : ejes.conchi@amail.com Phane no.: 0651-2290203 Website : www.elespi.co.in

#### TEST REPORT

Test Report No.	: ELES/RNC/2024/0194	Report Release Date	: 15.01.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET.	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4793 : Near Paintoli Village Serengdag-A Bauxite Mines (155,81ha)	
Address Mines Status	: Lohardaga, Jharkhand-835302 : Operational	Sampling Date Sample Received Date Type of Sample Sampling Procedure Sampling Done By	: 12.12.2023 to 13.12.2023 : 26.12.2023 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 26.12.2023 to 08.01,2024	Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFORMATION				
1	Average Temperature (°C) : 18	2	Barometric Pressure (mmH	g) ; 736	
3	Relative Humidity (%) : 49	4	Weather Condition	Clear	

Discipline: Chem	ical	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C <sub>5</sub> H <sub>8</sub> )*	μg/m²	1S 5182 (Part-11)2006;RA2017	<1.0	05(Annual)	
Benzo-(a)-Pyrene*	ng/m³	IS 5182 (Part-12)2004;RA2019	<0.5	01(Annual)	

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

Reviewed by

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

Dr. Aydiorised Signatury
Ph. D Environmental Engg.
ELES Pvt. Ltd. Technical Manager

Page 1 of 1

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

### ENGINEERING SERVICES PVT. LTD.

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

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



TC-8835

#### TEST REPORT

Test Report No.	: ELES/RNC/2024/0515	Report Release Date	: 05.02.2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883924000000486F		

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/0300 : Mine Pit Quarry No 2 Jalim & Sanai Bauxite Mine (12.14ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure Sampling Done By	: 16.01.2024 to 17.01.2024 : 20.01.2024 : Ambient Air : ELES/DOC/SMPL/02	
Mines Status	: Operational		ELES Pvt. Ltd.	
Period of Analysis	20.01.2024 to 30.01,2024	Sample Condition	Sealed & Preserved	

MI	ETEOROLOGICAL INFORMATION			
_	Average Temperature (°C) : 19	2	Barometric Pressure (mmH	g) : 736
_	Relative Humidity (%) 145	4	Weather Condition	: Clear

Discipline : Chemica	it	Group: A	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	1S 5182 (Part-23); 2006; RA2022	63	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	37	60 (24hrs)	
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part-2): 2001; RA2022	8.1	80 (24hrs)	
Nitrogen Di-Oxide (NO <sub>2</sub> )	µg/m <sup>±</sup>	1S 5182 (Part-6); 2006; RA2022	27.5	80 (24hrs)	
Ozone (O <sub>3</sub> )	ng/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH <sub>3</sub> )	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	μg/m <sup>5</sup>	IS 5182 (Part-22): 2004; RA2019	0.011	1 (24hrs)	
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01	<2.0	06 (Annual)	

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

Reviewed by

Authorised Signatory
Dr. Deependra Kumar Sinha

Ph. D Environmental Engg

Page 1 of 1

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

### 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/2024/0515	Report Release Date	: 05.02.2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/0300 : Mine Pit Quarry No 2 Jalim & Sanai Bauxite Mine (12.14ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure Sampling Done By	: 16.01.2024 to 17.01.2024 : 20.01.2024 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Mines Status	: Operational			
Period of Analysis	: 20.01,2024 to 30.01.2024	Sample Condition	: Scaled & Preserved	

MI	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	:19	2	Barometric Pressure (mmHg)	: 736
	Relative Flumidity (%)	: 45	4	Weather Condition	Clear

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

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



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

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

Page 1 of 1

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 20AAECE9713D12A

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

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



TC-683B

### TEST REPORT

Test Report No.	: ELES/RNC/2024/0516	Report Release Date	: 05.02.2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883924000000487F		

CUSTOMER DETA	VILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: Nava Prathmik Vidyalay (Dhanka Toli) Jalim & Sanai
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	Bauxite Mine (12.14ha) : 16.01.2024 to 17.01.2024 : 20.01.2024 : Ambient Air
Mines Status		Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 20.01.2024 to 30.01,2024	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature ("C)	: 19	2	Barometric Pressure (mmHg)	= 736
3	Relative Humidity (%)	: 45	4	Weather Condition	Clear

Discipline : Chemica	d	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	60	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	36	60 (24hrs)	
Sulphur Di-Oxide (SO <sub>2</sub> )	µg/m³	IS 5182 (Part-2): 2001; RA2022	7.9	80 (24hrs)	
Nitrogen Di-Oxide (NO <sub>2</sub> )	µg/m³	IS 5182 (Part-6): 2006; RA2022	25.1	80 (24hrs)	
Ozone (O <sub>3</sub> )	μg/m³	IS 5182 (Part-9); 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH <sub>3</sub> )	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m <sup>3</sup>	1S 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	µg/m³	IS 5182 (Part-22): 2004; RA2019	0.012	1 (24hrs)	
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)	

Reviewed by

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

D. Anthorised Signatory Cumar Sinna

ELESP

Page 1 of 1

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

### ENGINEERING SERVICES PVT. LTD.

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

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

### TEST REPORT

Test Report No.	: ELES/RNC/2024/0516	Report Release Date	: 05.02.2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/0301 : Nava Prathmik Vidyalay (Dhanka Toli) Jalim & Sana Bauxite Mine (12.14ha)	
Address Mines Status	; Lohardaga, Jharkhand-835302 : Operational	Sampling Date Sample Received Date Type of Sample Sampling Procedure Sampling Done By	: 16.01.2024 to 17.01.2024 : 20.01.2024 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
	: Operational		The second secon	
Period of Analysis	= 20.01.2024 to 30.01.2024	Sample Condition	: Sealed & Preserved	

M	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 19	.2	Barometric Pressure (mmHg	; 736
3	Relative Humidity (%) : 45	.4	Weather Condition	: Clear

Discipline : Chem	ical	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C <sub>6</sub> H <sub>6</sub> )*	µg/m³	IS 5182 (Part-11): 2006; RA2022	<1.0	05(Annual)	
Benzo-(a)-Pyrene*	ng/m <sup>1</sup>	IS 5182 (Part-12): 2004; RA2019	<0.5	01(Annual)	

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



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

Authorised Signatory
Dr. Deependra Kumar Sinita

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

Page 1 of 1

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA. BANCHI-834003 (JHARNHAND) GST NO:- JOAAECE9713D174

### ENGINEERING SERVICES PUT. LTD.

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

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



TC-8839

#### TEST REPORT

Test Report No.	: ELES/RNC/2024/0517	Report Release Date	: 05.02.2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883924000000488F		

CUSTOMER DETA	AILS	SAMPLE DETAILS	The second secon
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/0302 : Mine Pit Quarry No 3 Jalim & Sanai Bauxite Mine (12.14ha)
Address	± Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 16.01.2024 to 17.01.2024 : 20.01.2024 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Operational	Sampling Done By	: ELES Pvt. Ltd.
Period of Analysis	:: 20.01.2024 to 30.01.2024	Sample Condition	: Sealed & Preserved

1	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 19	2	Barometric Pressure (mml	Hg) 2 736
3	Relative Humidity (%) : 45	4	Weather Condition	‡Clear

Discipline: Chemica	d	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	66	100 (24hrs)
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part- 24): 2019	38	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part-2): 2001; RA2022	7.5	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>1</sub> )	μg/m <sup>3</sup>	IS 5182 (Part-6): 2006; RA2022	25.1	80 (24hrs)
Ozone (O <sub>3</sub> )	µg/m³	IS 5182 (Part-9); 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	µg/m	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	μg/m³	IS 5182 (Part-22): 2004; RA2019	0.017	I (24hrs)
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)

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

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Authorised Signatory

Dr. Deependra Kumar Sinha

Page 1 of 1 Ph. D Environmental Engg

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

### GINEERING 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/2024/0517	Report Release Date	: 05.02.2024
Work Order No.	13612310218	Work Order Date	7 21.04.2023

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/0302 : Mine Pit Quarry No 3 Jalim & Sanai Bauxite Mine (12.14ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure Sampling Done By	: 16.01.2024 to 17.01.2024 : 20.01.2024 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Mines Status	( Operational	and the second s	The state of the s	
Period of Analysis	: 20.01,2024 to 30.01,2024	Sample Condition	: Scaled & Preserved	

M	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 19	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	1.45	4	Weather Condition	: Clear

Discipline : Chem	ical	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C <sub>s</sub> H <sub>6</sub> )*	μg/m³	15 5182 (Part-11): 2006; RA2022	<1.0	05(Annual)	
Benzo-(a)-Pyrene*	ng/m³	15 5182 (Part-12): 2004; RA2019	<0.5	01(Annual)	

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

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

Dr. Deependra Kullar Sinha Ph. D Environmental Engg

ELES Pvt. Ltd. Technical Manager

Page 1 of 1

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

#### ENGINEERING SERVICES PVT, LTD.

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

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



TC-8619

#### TEST REPORT

Test Report No.	: ELES/RNC/2024/0518	Report Release Date	: 05.02.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
ULR No.	: TC883924000000489F			

CUSTOMER DET/	MLS	SAMPLE DETAILS	The same of the same of the same of
Customer Name	Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/0303 : Near Colony; Jalim & Sanai Bauxite Mine (12.14ha)
Address	Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 16.01.2024 to 17.01.2024 : 20.01.2024 : Ambient Air : ELES/DOC/SMP1/02
Mines Status	: Operational	Sampling Done By	: ELES Pvt. Ltd.
Period of Analysis	: 20.01.2024 to 30.01.2024	Sample Condition	: Sealed & Preserved

M	ETEOROLOGICAL INFOR	RMATION	-		
1	Average Temperature (°C)	: 19	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	1.45	4	Weather Condition	: Clear

Discipline: Chemica	ıl	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	63	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	35	60 (24hrs)	
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 518Z (Part-2); 2001; RA2022	9.1	80 (24hrs)	
Nitragen Di-Oxide (NO <sub>2</sub> )	μg/m³	IS 5182 (Part-6): 2006; RA2022	24.2	80 (24hrs)	
Ozone (O <sub>1</sub> )	µg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH <sub>3</sub> )	µg/m²	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	1S 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Ph)	hā/m3	IS 5182 (Part-22): 2004; RA2019	0.015	1 (24hrs)	
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)	

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Dr. Deependra Kurnar Sinha

Page 1 of 1

Ph. D Environmental Engg.

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

### ENGINEERING SERVICES PVT. LTD.

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

#### TEST REPORT

Test Report No.	: ELES/RNC/2024/0518	Report Release Date	: 05.02.2024	
Work Order No.	: 13612310218	Work Order Date	± 21.04.2023	

CUSTOMER DET/	AILS	SAMPLE DETAILS	
Customer Name	; Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/0303 : Near Colony; Jalim & Sanai Bauxite Mine (12.14ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 16.01.2024 to 17.01.2024 : 20.01.2024 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Mines Status	: Operational	Sampling Done By	THE RESERVE TO SERVE THE PARTY OF THE PARTY
Period of Analysis	: 20.01.2024 to 30.01.2024	Sample Condition	: Sealed & Preserved

M	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	119	2	Barometric Pressure (mmHg)	2736
3	Relative Humidity (%)	: 45.	4	Weather Condition	: Clear

Discipline : Chem	ical	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C <sub>6</sub> H <sub>6</sub> )*	μg/m³	1S 5182 (Part-11): 2006; RA2022	<1.0	05(Annual)	
Benzo-(a)-Pyrene*	ng/m³	IS 5182 (Part-12): 2004; RA2019	<0.5	01(Annual)	

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



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

Authorised Signatory
Dr. Deependra Kumar Sinna
Ph. D Environmental Engg
ELES Pvt. Ltd., Technical Manar

Page 1 of 1

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) G57 /NO:- Z0A48CE9713D1Z#

Email: Info@eiespl.co.In , eles./anchi@gmail.com

Phone no.: 0651-2290103 Website: anww.alexal.co.in



#### TEST REPORT

Test Report No.	: ELES/RNC/2024/0511	Report Release Date	: 05.02,2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883924000000482F		

CUSTOMER DET.	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/0296 : Near Banjari Village Serengdag-A Bauxite Mines (155.81ha)
Address Mines Status	: Lohardaga, Iharkhand-835302 : Operational	Sampling Date Sample Received Date Type of Sample Sampling Procedure Sampling Done By	: 15.01.2024 to 16.01.2024 : 20.01.2024 : Ambient Air ! ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 20.01.2024 to 30.01.2024	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 19	7	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%) : 45	4	Weather Condition	: Clear

Discipline : Chemics	Je	Group ;	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	μg/m <sup>7</sup>	IS 5182 (Part-23): 2006; RA2022	67	100 (24hrs)		
Particulate Matter (PM2.5)	μg/m³	1S 5182 (Part- 24): 2019	38	60 (24hrs)		
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part-2): 2001; RA2022	8.2	80 (24hrs)		
Nitrogen Di-Oxide (NO <sub>1</sub> )	μg/m³	IS 5182 (Part-6): 2006; RA2022	31.5	80 (24hrs)		
Ozone (O <sub>5</sub> )	ug/m <sup>3</sup>	1S 5182 (Part-9); 1974; RA2019	<20.0	100 (Shrs)		
Ammonia (NH <sub>3</sub> )	μg/m³	IS 5182 (Part- 25); 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)		
Lead (Pb)	µg/m <sup>1</sup>	IS 5182 (Part-22): 2004; RA2019	< 0.002	1 (24hrs)		
Nickel (Ni)	ng/m	IS 5182 (Part-26):2020	<6.0	20 (Amuni)		
Arsenic (As)	ng/m'	ELES/AIR/SOP/01	<2.0	05 (Annual)		

Reviewed by

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

Dr. Dauburiard Kurraurising

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Page 1 of 1

FLES PVL Ltd. Technical Manager

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-83/1003 (JHARKHANO) GST NO.- 20445C597130164 ENGINEERING SERVICES PTT. ATD.

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

#### TEST REPORT

Test Report No.	: ELES/RNC/2024/0511	Report Release Date	: 05.02.2024
Work Order No.	: 13612310218	Work Order Date	: 21.04,2023

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	† Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/0296 ; Near Banjari Village Serengdag-A Banxite Mines (155.81ha)	
Address Mines Status	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure Sampling Done By	: 15.01.2024 to 16.01.2024 : 20.01.2024 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
WILLIES STRIES	« Operational	The second secon	The state of the s	
Period of Analysis	: 20.01.2024 to 30.01.2024	Sample Condition	: Sealed & Preserved	

MI	CTEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	:19	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	: 45	4	Weather Condition	: Clear

Discipline: Chem	ical	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Henzene (C₀H₀)*	µg/m²	IS 5182 (Part-11); 2006; RA2022	<1.0	05(Annual)		
Benzo-(a)-Pyrene <sup>4</sup>	ng/m³	IS 5182 (Part-12): 2004; RA2019	< 0.5	01(Annual)		

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



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

Authorised Signatory

Dr. Deependra Kamar Sinnu Ph. D Environmental Engg. ELES Pvt. Ltd. Technical Manager

Page 1 of 1

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PLOT NO-SU, MANSAROVAR ENCLAVE, TUPUDANA HATIA RANCHI-834003 (IHARRHAND). GET WOY- 20AAECESTISDIZA

Website : www.elespl.co.in

Empli: Info@elespl.co.ln , eles.rancni@gmall.com Phone no.: 0651-2290103



70-0839

#### TEST REPORT

Test Report No.	: ELES/RNC/2024/0512	Report Release Date	: 05.02.2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883924000000483F		

CUSTOMER DET.	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/0297 : Near Pauri Village Serengdag-A Bauxite Mines
Address	Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	(155.81ha) : 15.01.2024 to [6.0].2024 : 20.01.2024 : Ambient Air
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pyt, Ltd.
Period of Analysis	: 20.01,2024 to 30,01,2024	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFO	MATION			
1	Average Temperature (°C)	: 19	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	: 45	4.	Weather Condition	: Clear

Discipline: Chemica	ıl	Group: /	tmospheric	Pollation
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m <sup>1</sup>	15 5182 (Part-23); 2006; RA2022	54	100 (24his)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	36	60 (24hrs)
Solphur Di-Oxide (SO <sub>2</sub> )	µg/m³	IS 5182 (Part-2): 2001; RA2022	8.2	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	µg/m³	18 5182 (Part-6): 2006; RA2022	25.1	80 (24hrs)
Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	15 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH <sub>2</sub> )	μg/m <sup>1</sup>	1S 5182 (Part- 25): 2018	<1,0,0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	18 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	μg/m³	IS 5182 (Part-22): 2004; RA2019	0.009	1 (24hrs)
Nickel (Ni)	ng/m²	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m²	ELES/AIR/SOP/01	<2.0	06 (Armunt)

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Dr. Daenendra Komar S

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PLOT NO-30, MANGABOVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST ND:-2044ECE9713D124

### WITHEREND SERVICES PUT LYD.

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/2024/0512	Report Release Date	: 05.02.2024
Work Order No.	: 13612310218	Work Order Date	: 21,04.2023

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/0297 : Near Pauri Village Serengdag-A Bauxite Mines (155.81ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	; 15.01,2024 to 16.01,2024 ; 20.01,2024 ; Ambient Air ; ELES/DOC/SMPL/02	
Mines Status	: Operational	Sampling Done By	: ELES Pvt. Ltd.	
Period of Analysis	: 20.01.2024 to 30.01.2024	Sample Condition	; Sealed & Preserved	

M	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) 19	2	Barometric Pressure (mmHg	() :736
3	Relative Humidity (%) 145	4	Weather Condition	; Clear

Discipline: Chem	ical	Group: Atmospheric Pollution				
Parameter	L'ait.	Test Protocol	Result	Regulatory Limit		
Benzene (C <sub>t</sub> H <sub>t</sub> )*	µg/m³	TS 5182 (Part-11): 2006; RA2022	<1.0	05(Annual)		
Benzo-(a)-Pyrene*	ng/m³	TS 5182 (Part-12): 2004; RA2019	<0.5	01(Annual)		

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

OHEA.

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Dr. Deependra Kurnar Shina eh: D Environmental Enga ELES Pvi. Ltd. Technical Mana.

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Email: Info@elespi.co.in , eles ranchi@gmail car: Phone no.: 0551-2290103

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



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#### TEST REPORT

Test Report No.	: ELES/RNC/2024/0513	Report Release Date	: 05,02,2024
Work Order No.	: 13612310218	Work Order Date	: 21,04,2023
ULR No.	: TC883924000000484F		

CUSTOMER DET	ATLS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	(ELES/RNC/2024/AA/0298 : Near Harup Village Screngdag-A Bauxite Mines (155.81ha)
Address Mines Status	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure Sampling Done By	: 15.01.2024 to 16.01.2024 : 20.01.2024 : Ambient Air : ELES/DOC/SMPL/02 : BLES Pvt. Ltd.
Period of Analysis	: 20.01.2024 to 30.01.2024	Sample Condition	: Sealed & Preserved

MI	TEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 19	2	Barometric Pressure (mmHg)	; 736
3	Relative Humidity (%) : 45	-4	Weather Condition	: Clear

Discipline: Chemica	il	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m³	IS 5182 (Part-23); 2006; RA2022	63	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part- 24): 2019	35	60 (24hrs)	
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part-2): 2001; RA2022	7,8	80 (24hrs)	
Nitrogen Di-Osida (NO <sub>2</sub> )	µg/m³	1S 5182 (Part-6): 2006; RA2022	24.5	80 (24hrs)	
Ozone (O <sub>3</sub> )	ug/m <sup>T</sup>	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH <sub>2</sub> )	Jig/m²	IS 5182 (Part- 25); 2018	<10,0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	JS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	ug/m <sup>)</sup>	IS 5182 (Part-22): 2004; RA2019	< 0.002	1 (24hrs)	
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Ausenia (Au)	ng/m²	ELES/AIR/SOP/01	<2.0	06 (Annual)	

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Authorised Signatory
Dr. Deependra Kumar Sinha

Ph D'Environmental Engg.

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#### TEST REPORT

Test Report No.	: ELES/RNC/2024/0513	Report Release Date	: 05.02.2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	Near Harup Village Serengdag-A Bauxite Mines (155.81ha)	
Address Mines Status	: Lohardaga, Jharkhand-835302 : Operational	Sampling Date Sample Received Date Type of Sample Sampling Procedure Sampling Done By	15.01,2024 to 16.01,2024 20,01,2024 Ambient Air ELES/DOC/SMPL/02 ELES Pvt. Ltd.	
	and A control of the			
Period of Analysis	: 20.01,2024 to 30.01,2024	Sample Condition	: Sealed & Preserved	

M	ETEOROLOGICAL INFORMATION				
1	Average Temperature (°C') : 19	2	Barometric Pressure (mmH	(g) :736	
3	Relative Humidity (%) ; 45	4.	Weather Condition	: Clear	

Discipline: Chem	ical	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Benzene (C <sub>6</sub> H <sub>6</sub> ) <sup>44</sup>	μg/m³	IS 5182 (Part-11): 2006; RA2022	<1.0	05(Annual)		
Benzo-(a)-Pyrene*	ng/m³	IS 5182 (Part-12): 2004; RA2019	<0.5	01(Annual)		

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

Roviewed by

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

Authorised Signatory
Dt. Deependra Kurrar Sirina
Ph. D Environmental Engg.
ELES Pvt. Ltd. Tschnical Maner

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### PRODUCES DESCRIPTION PUT, LTD.

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

Phone na.: U651-2290103 Website: www.elespl.co.in



TC-8884

#### TEST REPORT

Test Report No.	: ELES/RNC/2024/0514	Report Release Date	: 05.02,2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883924000000485F		

CUSTOMER DETA	CUSTOMER DETAILS		A COURT
Customer Name	Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/0299 : Near Paintoli Village Serengdag-A Bauxite Mines (155.81ha)
Address Mines Status	: Lohardaga, Jharkhand-835302 Operational	Sampling Date Sample Received Date Type of Sample Sampling Procedure Sampling Done By	: 15.01.2024 to 16.01.2024 : 20.01.2024 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
The state of the s			
Period of Analysis	: 20.01.2024 to 30.01,2024	Sample Condition	Sealed & Preserved

MI	ETEOROLOGICAL INFORMATION			
1	Average Temperature (%C) : 19	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%) : 45	4	Weather Condition	: Clear

Discipline: Chemica	st.	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	μg/m³	IS 5182 (Pari-23): 2006; RA2022	64	100 (24hrs)		
Particulate Motter (PM2.5)	µg/m³	IS 5182 (Part- 24); 2019	35	60 (24hrs)		
Sulphur Di-Oxide (SO <sub>2</sub> )	µg/m³	IS 5182 (Part-2): 2001; RA2022	8.5	80 (24hrs)		
Mitrogen Di-Oxide (NO <sub>2</sub> )	µg/m³	IS 5182 (Part-6): 2006; RA2022	24.1	80 (24hrs)		
Ozone (O <sub>3</sub> )	µg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)		
Ammonia (NH <sub>2</sub> )	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)		
Lead (Ph)	µg/m²	IS 5182 (Part-22): 2004; RA2019	< 0.002	((24hrs)		
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Pari-26):2020	< 6.0	20 (Annual)		
Arsenic (As)	ng/m <sup>2</sup>	ELES/AIR/SOP/01	<2.0	06 (Annual)		

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Dr. Deependra Kumar Sinna

Ph. D environmental engg

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

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

#### TEST REPORT

Test Report No.	: ELES/RNC/2024/0514	Report Release Date	: 05.02.2024	
Work Order No.	13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindaleo Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/0299 : Near Paintoli Village Serengdag-A Bauxite Mines (155.81ha)
Address Mines Status	Lishardaga, Jharkhand-835302  Operational	Sampling Date Sample Received Date Type of Sample Sampling Procedure Sampling Done By	: 15.01.2024 to 16.01.2024 20.01.2024 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Withes Senius	z obeignousi		
Period of Analysis	; 20.01.2024 to 30.01.2024	Sample Condition	: Sealed & Preserved

341	ETEOROLOGICAL INFORMATION				
1	Average Temperature (°C) : 19	2	Barometric Pressure (mm	Hg) - 736	
3	Relative Humidity (%) 45	4	Weather Condition	: Clear	

Discipline: Chemical		Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (C <sub>0</sub> H <sub>6</sub> )*	μg/m³	IS 5182 (Part-11): 2006; RA2022	<1.0	05(Annual)
Benzo-(a)-Pyrene*	ng/m³	1S 5182 (Part-12): 2004; RA2019	<0.5	OI(Annual)

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

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

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

Page 1 of 1

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

Website: www.elespi.co.in



#### TEST REPORT

Test Report No.	: ELES/RNC/2024/0586	Report Release Date	: 06.02.2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883924000000557F		

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Sampling Date Sample Received Date	: ELES/RNC/2024/SW/0621 : 17.01.2024 : 31.01.2024	
Address	: Lohardaga, Jharkhand-835302	Type of Sample Source of Sample	: Surface Water : Near Paintoli Village, Jalim & Sanai (12.14ha) Bauxite Mine	
Mines Status	: Operational	Sampling Procedure Sampling Done By	ELES/DOC/SMPL/01 : ELES Pvt. Ltd.	
Period of Analysis	: 31.01.2024 to 05.02.2024	Sample Condition	: Sealed & Preserved	

Discipline : Chemical		Group	Water	Tolerance Limits
Parameter	Unit	Test Protocol	Result	as per IS 2296-1992 Class C (Inland Surface Water
pH (at 24.5 °C)	4	(S 3025 (Part 11): 2022	7.42	6.5-8.5
Temperature	"C	IS 3025 (Part 9):1984; RA2017	24.8	9
Chemical Oxygen Demand (COD)	-	IS 3025 (Part-58) :2006; RA2017	16.1	
Biochemical Oxygen Demand (BOD) (@ 20°C for 5 days)	mg/L	APHA 23 <sup>rd</sup> Ed.2017; 5210B	1.8	3.0
Total Dissolved Solids (TDS)	mg/L	IS 3025 (Part 16):1984; RA2017	220	1500
Total Suspended Solids (TSS)	mg/L	IS 3025 (Part-17):2022	20.8	TT.
Oil & Grease	mg/L	IS 3025 (Part-39); 2021	BDL (DL: 0.1)	0.1
Calcium (as Ca)	mg/L	IS 3025 (Part-40):1991, RA2019	34.5	-
Discipline : Chen	nical	Group: 1	Residues in W	ater
Aluminium (Al)	mg/L	1S 3025 (Part-55) :2003; RA2019	BDL (DL: 0.02)	0,03
Iron (as Fe)	mg/L	APHA23 <sup>rd</sup> Ed 2017; 3111B	0.353	50

Remarks: 1. pH done at Lab.

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Authorised Signatory Dr. Deependra Kumar Sinlau

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

#### ENGINEERING LENVICES PVT. LTD.

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

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



TEST REPORT

Test Report No.	: ELES/RNC/2024/0601	Report Release Date	: 06.02.2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883924000000572F		

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	2 Hindalco Industries Limited	Sample Ref. No. Sampling Date Sample Received Date	: ELES/RNC/2024/SL/0636 : 17.01.2024 : 31.01.2024
Address	: Lohardaga, Jharkhand-835302	Type of Sample Location of Sample	: Soil Mine Pit Quarry No 2 Jalim & Sanai (12.14 ha)
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/05 : ELES Pvt. Ltd.
Period of Analysis	: 31.01.2024 to 05.02.2024	Sample Condition	: Sealed

Discipline : Chemical		Group: Pollution & En	vironment
Parameter	Unit	Test Protocol	Result
pH (1:2) at 24.6 °C	*	IS 2720 (Part 26):1987; RA2021	4.66
Conductivity (1:2) at 24.6 °C	μS/cm	IS 14767: 2000; RA2021	242
Total Organic Carbon (TOC)	%	Soil Testing in India: 2011 (Walkley & Black Method)	0.42
Available Phosphorus (as P) (1:10)	kg/ha	Soil Testing in India; 2011	0.64
Potassium (as K)	mg/kg	IS 9497:1980; RA 2020	1380
Available Nitrogen	%	Soil Testing in India: 2011	1.4
Chloride (1:2)	%	ELES/SOIL/SOP/01	0.10
Lead (as Pb)	mg/kg	US EPA 3050 A&B: 1996	BDL (DL; 0.1)
Cadmium (as Cd)	mg/kg	US EPA 3050 A&B: 1996	BDL (DL: 0.1)
Mercury (as Hg)	mg/kg	US EPA 7473 : 2007	BDL (DL: 0.01)
Magnesium (as Mg)	mg/kg	Soil Testing in India: 2011	255

Remarks: 1. pH done ni Lab.

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

Authorised Signatory

Dr. Deependra Kurnar Sina o

Page I of 1

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### ENGINEERING SERVICES PVT. LTD.

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

Website: www.elespl.co.in

#### TEST REPORT

Test Report No.	: ELES/RNC/2024/0601	Report Release Date	: 06.02.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2024/SL/0636
		Sampling Date	: 17.01.2024
		Sample Received Date	: 31.01.2024
Address	: Lohardaga, Jharkhand-835302	Type of Sample	: Soil
		Location of Sample	: Mine Pit Quarry No 2 Jalim & Sanai (12.14 ha)
		Sampling Procedure	: ELES/DOC/SMPL/05
Mines Status	: Operational	Sampling Done By	: ELES Pvt. Ltd.
Period of Analysis	: 31.01.2024 to 05.02,2024	Sample Condition	: Sealed

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

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Ph. D Environmental Engg.

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#### ENGINEERING SERVICES PVT. LTD.

Email: info@elespl.co.ln , eies.ranchi@amail.com

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



#### TEST REPORT

1101 Cruci Date . 21.04.2023	Test Report No.	: ELES/RNC/2024/1205	Report Release Date	: 13.02.2024
ULR No. : TC883924000001141F	Work Order No.	13612310218	Work Order Date	: 21.04.2023
The state of the s	ULR No.	; TC883924000001141F		

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1127 : Mine Pit Quarry No 2, Jalim & Sanai Bauxite Mine (12.14ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 09.02.2024 to 10.02.2024 : 12.02.2024	
Mines Status	: Operational	Type of Sample Sampling Procedure Sampling Done By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 12.02.2024 to 13.02.2024	Sample Condition	Sealed & Preserved	

Mi	ETEOROLOGICAL INFORM	ATION			
_	Average Temperature (°C)	22	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	48	4	Weather Condition	: Clear

Discipline	e : Chemical	Group : Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	ng/m <sup>1</sup>	IS 5182 (Part-23): 2006; RA2022	60	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m <sup>3</sup>	IS 5182 (Part- 24); 2019	31	60 (24hrs)	
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part-2): 2001; RA2022	8.9	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	μg/m³	IS 5182 (Part-6): 2006: RA2022	23,2	80 (24hrs)	
Ozone (O <sub>1</sub> )	μg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH <sub>1</sub> )	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m <sup>5</sup>	IS 5182 (Part-10); 1999; RA2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	μg/m³	IS 5182 (Part-22); 2004; RA2019	0.009	1 (24hrs)	
Nickel (Ni)	ng/m²	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)	

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Depoendra Kumar Sino

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

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

#### TEST REPORT

Test Report No.	: ELES/RNC/2024/1273	Report Release Date	: 26.02.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET.	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1127 : Mine Pit Quarry No 2, Jalim & Sanai Bauxite Mine (12.14ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 09.02,2024 to 10.02.2024 : 12.02,2024 : Ambient Air	
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 12.02.2024 to 21.02.2024	Sample Condition	: Sealed & Preserved	

M	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 22	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	: 48	4	Weather Condition	: Clear

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C <sub>6</sub> H <sub>6</sub> )*	μg/m <sup>3</sup>	IS 5182 (Part-11): 2006; RA2022	<1.0	05(Annual)	
Benzo-(a)-Pyrene*	ng/m³	IS 5182 (Part-12): 2004; RA2019	< 0.5	01(Annual)	

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

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Authorised Signatory

Dr. Deependra Kumar Sinha Ph. D Environments/ Engg

ELES PVL Ltd. Technical Manager

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

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



#### TEST REPORT

Test Report No.	: ELES/RNC/2024/1206	Report Release Date	: 13.02.2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883924000001142F		

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1128 : Nava Prathmik Vidyalay (DhankaToli) Jalim & Sanai Bauxite Mine (12,14ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 09.02.2024 to 10.02.2024 : 12.02.2024 : Ambient Air : ELES/DOC/SMPL/02	
Mines Status	Operational	Sampling Done By	: ELES Pvt. Ltd.	
Period of Analysis	; 12.02.2024 to 13.02.2024	Sample Condition	: Sealed & Preserved	

M	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 22	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%) 48	4	Weather Condition	: Clear

Discipline	: Chemical	Group : Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	μg/m <sup>3</sup>	1S 5182 (Part-23): 2006; RA2022	54	100 (24hrs)		
Particulate Matter (PM2.5)	μg/m <sup>3</sup>	IS 5182 (Part- 24); 2019	33	60 (24hrs)		
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part-2): 2001; RA2022	8.8	80 (24hrs)		
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m <sup>3</sup>	IS 5182 (Part-6): 2006; RA2022	22.3	80 (24hrs)		
Ozone (O <sub>3</sub> )	µg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (Shrs)		
Ammonia (NH <sub>5</sub> )	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m <sup>2</sup>	JS 5182 (Part-10): 1999; RA2019 (NDIR Method)	<1.0	2 (8hrs)		
Lead (Pb)	μg/m"	1S 5182 (Part-22): 2004; RA2019	0.008	1 (24hrs)		
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m²	ELES/AIR/SOP/01	<2.0	06 (Annual)		

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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/2024/1274	Report Release Date	: 26.02.2024	
Work Order No.	: 13612310218	Work Order Date	; 21.04.2023	

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1128 : Nava Prathmik Vidyalay (DhankaToli) Jalim & Sanai Bauxite Mine (12.14ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 09.02.2024 to 10.02.2024 : 12.02.2024 : Ambient Air	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02	
Period of Analysis	: 12,02,2024 to 21,02,2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

METEOROLOGICAL INFORMATION						
1	Average Temperature (°C)	: 22	2	Barometric Pressure (mmH	g) ±736	
3	Relative Humidity (%)	: 48	4	Weather Condition	: Clear	

Discipline: Chemical		Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Benzene (C <sub>6</sub> H <sub>6</sub> )*	μg/m³	IS 5182 (Part-11): 2006; RA2022	<1.0	05(Annual)		
Benzo-(a)-Pyrene*	ng/m1	IS 5182 (Part-12): 2004; RA2019	<0.5	01(Annual)		

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

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Authorised Signator Sinna
Dr. Deependra Kumar Sinna
Ph. D Environmental Engl.
ELES Pvt. Ltd. Technical Manne

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

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/2024/1207	Report Release Date	: 13.02.2024	
Work Order No.	; 13612310218	Work Order Date	: 21.04.2023	
ULR No.	: TC883924000001143F			

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1129 : Mine Pit Quarry No 3, Jalim & Sanai Bauxite Mine (12.14ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 09.02.2024 to 10.02.2024 : 12.02.2024	
Mines Status	: Operational	Sampling Procedure Sampling Done By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 12.02.2024 to 13.02.2024	Sample Condition	: Sealed & Preserved	

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	5-22	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	: 48	4	Weather Condition	: Clear

Discipline	: Chemical	Group : Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	69	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part- 24): 2019	42	60 (24hrs)	
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part-2); 2001; RA2022	9.3	80 (24hrs).	
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	IS 5182 (Part-6): 2006; RA2022	26.6	80 (24hrs)	
Ozone (O <sub>3</sub> )	µg/m <sup>1</sup>	IS 5182 (Part-9); 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH <sub>1</sub> )	μg/m¹	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part-10): 1999; RA2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	µg/m³	IS 5182 (Part-22); 2004; RA2019	0.012	I (24hrs)	
Nickel (Ni)	ng/m³	1S 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)	

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Dr. Deensadia Kuma

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

#### ENGINEERING SERVICES PVT. LTD.

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

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

#### TEST REPORT

Test Report No.	: ELES/RNC/2024/1278	Report Release Date	: 26.02.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1129 : Mine Pit Quarry No 3, Jalim & Sanai Bauxite Mine (12.14ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 09.02.2024 to 10.02.2024 : 12.02.2024 : Ambient Air	
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 12.02.2024 to 21.02.2024	Sample Condition	: Sealed & Preserved	

METEOROLOGICAL INFORMATION					
T	Average Temperature (°C)	: 22	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	: 48	4	Weather Condition	: Clear

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C6H6)*	μg/m³	IS 5182 (Part-11): 2006; RA2022	<1.0	05(Annual)	
Benzo-(a)-Pyrene*	ng/m²	IS 5182 (Part-12): 2004; RA2019	<0.5	01(Annual)	

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

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Authorised Signatory

Dr. Deependra Kutter Sinua Ph. D Erwironmarasi Engg. ELES Pvt. Ltd. Technical Idanaget

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

### ENGINEERING SERVICES PVT. LTD.

Email: Info@elespi.co.in , eles.ranchi@amail.com

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



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#### TEST REPORT

Test Report No.	; ELES/RNC/2024/1208	Report Release Date	: 13.02.2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883924000001144F		

CUSTOMER DETA	MLS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1130 ; Near Colony; Jalim & Sanai Bauxite Mine (12.14ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 09.02,2024 to 10.02,2024 : 12.02,2024 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Operational	Sampling Done By	: ELES Pvt, Ltd,
Period of Analysis	: 12.02.2024 to 13.02.2024	Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	_ 22	2	Barometric Pressure (mmHg)	:736
3	Relative Humidity (%)	- 48	4	Weather Condition	Clear

Discipline	: Chemical	Group : Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	60	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	28	60 (24hrs)	
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m <sup>3</sup>	IS 5182 (Part-2): 2001; RA2022	8.2	80 (24hrs)	
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	IS 5182 (Part-6); 2006; RA2022	22,5	80 (24hrs)	
Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH <sub>3</sub> )	μg/m¹	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m <sup>2</sup>	IS 5182 (Part-10): 1999; RA2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	µg/m²	IS 5182 (Part-22): 2004; RA2019	0.005	1 (24hrs)	
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m <sup>1</sup>	ELES/AIR/SOP/01	29	( 06 (Annual)	

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Dr. Deependra Kumar Sinua

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PLOT NC-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/2024/1275	Report Release Date	: 26.02.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET.	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1130 : Near Colony; Jalim & Sanai Bauxite Mine (12.14ha)	
Address	:: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 09.02.2024 to 10.02.2024 : 12.02.2024 : Ambient Air	
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 12.02,2024 to 21,02,2024	Sample Condition	: Sealed & Preserved	

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 22	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	: 48	4	Weather Condition	: Clear

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

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

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Dr. Deependra Kumar Sinua Ph. D Environmental Enga-ELES Pvl. Ltd. Technical Manager

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PLOT NO 30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (IHARKHAND) 857 NO - 204AECE9723D124

### ENGINEERING SERVICES PVT. LTD.

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



TEST REPORT

Test Report No.	: ELES/RNC/2024/1197	Report Release Date	; 13.02,2024
Work Order No.	: 13612310218	Work Order Date	± 21.04,2023
ULR No.	: TC883924000001133F		

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1119 : Near Banjari Village Serengdag-A Bauxite Mines (155,81ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 08.02.2024 to 09.02.2024 : 12.02.2024 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	; Operational	Sampling Done By	- ELES Pvt. Ltd.
Period of Analysis	: 12,02.2024 to 13,02.2024	Sample Condition	Sealed & Preserved

MI	ETEOROLOGICAL INFO	RMATION			
	Average Temperature (°C)		2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	:50	4	Weather Condition	: Clear

Discipline	: Chemical	Group : Atmosp	heric Pollutio	n a
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m³	IS 5182 (Part-23); 2006; RA2022	60	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24); 2019	32	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	µg/m³	TS 5182 (Part-2): 2001; RA2022	6.8	80 (24las)
Nitrogen Di-Oxide (NO <sub>1</sub> )	μg/m <sup>3</sup>	IS 5182 (Part-6): 2006; RA2022	24.3	80 (24hrs)
Ozone (O <sub>1</sub> )	µg/m³	IS 5182 (Part-9): 1974; RA2019	<26.0	100 (8hrs)
Ammonia (NH <sub>2</sub> )	ug/m²	IS 5182 (Part- 25); 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RAZ019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m"	IS 5182 (Part-22): 2004; RA2019	<0.002	1 (24hirs)
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)

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Dr. Deasendar Kurrar Sir

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PLOT NO-30, MANSANOVAN ENCLAVE, FUPUDANA HATTA, HANCHI-834003 (HARKHAND) 637 NO:- ZNARECE97180121

Email: lefo@siespl.co.in , eles.conchl@gmail.com Phone no. 0851-2290103 Website : www.elespl.co.in

TEST REPORT

Test Report No.	ELES/RNC/2024/1265	Report Release Date	: 26.02.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1119 : Near Banjari Village Serengdag-A Bauxite Mines (155.81ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	; 08,02.2024 to 09.02.2024 ; 12.02.2024 ; Ambient Air ; ELES/DOC/SMPL/02
Mines Status	; Operational	Sampling Done By	: ELES Pvt. Ltd.
Period of Analysis	: 12,02,2024 to 21,02,2024	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 23	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	: 50	4	Weather Condition	: Clear

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

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

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#### ENGINEERING SERVICES PVT. LTD.

Email: Info@elesal.co.in , eles rancial@amail.com

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



TEST REPORT

Test Report No.	: ELES/RNC/2024/1198	Report Release Date	: 13.02.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
ULR No.	: TC883924000001134F			

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1120 : Near Pauri Village Serengdag-A Bauxite Mines (155.81ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 08.02.2024 to 09.02.2024 : 12.02.2024 : Ambient Air	
Mines Status	: Operational	Type of Sample Sampling Procedure Sampling Done By	ELES/DOC/SMPL/02 ELES Pvt Ltd.	
Period of Analysis	= 12.02.2024 to 13.02.2024	Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFOR	RMATION			
1	Average Temperature (°C)	: 23	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	: 50	4	Weather Condition	: Clear

Discipline	: Chemical	Group : Atmosp	heric Pollutio	no
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m <sup>3</sup>	IS 5182 (Part-23); 2006; RA2022	59	100 (24hrs)
Particulate Matter (PM2.5)	μg/m <sup>2</sup>	IS 5182 (Part- 24): 2019	32	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	15 5182 (Part-2): 2001; RA2022	6.8	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	IS 5182 (Part-6): 2006; RA2022	21.8	80 (24hrs)
Ozone (O <sub>1</sub> )	μg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	цg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m³	1S 5182 (Part-22): 2004; RA2019	0.006	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m²	ELES/AIR/SOP/01	≤2.0	06 (Annual)

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PLOT NO-SO, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (HARRIMAND) GST NO:- 20045C19713D120

Email Into@elesol.co.lu \_ eles ranchi Manuali com Phone no.: 0631 2290103

Website: www.elespi.colih

#### TEST REPORT

Test Report No.	: ELES/RNC/2024/1266	Report Release Date	: 26.02.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET.	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1120 : Near Pauri Village Serengdag-A Bauxite Mines (155.81ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 08.02.2024 to 09.02.2024 : 12.02.2024 : Ambient Air : ELES/DOC/SMPL/02	
Mines Status	: Operational	Sampling Done By	ELES Pvt. Ltd.	
Period of Analysis	: 12.02.2024 to 21.02,2024	Sample Condition	: Sealed & Preserved	

MI	TEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 23	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	: 50	4	Weather Condition	; Clear

Discipline: Chemical		Group: Atmospheric Pollution		
Parameter	Unit	Test Protocul	Result	Regulatory Limit
Benzene (C <sub>6</sub> H <sub>6</sub> )*	µg/m"	IS 5182 (Part-11): 2006; RA2022	<1.0	05(Annual)
Benzo-(a)-Pyrene*	ng/m³	IS 5182 (Part-12); 2004; RA2019	< 0.5	O1(Annual)

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

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPLIDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 20A4ECE9713D1J4

Email: infa@elesal.co.in, eles.tench@gmail.com

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



#### TEST REPORT

Test Report No.	: ELES/RNC/2024/1199	Report Release Date	: 13.02.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
LLR No.	: TC883924000001135F			

CUSTOMER DE1	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1121 Near Harup Village Serengdag-A Bauxite Mines (155.81ha)
Address	Lehardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 08.02.2024 to 09.02.2024 : 12.02.2024 : Ambient Air
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvi. Ltd.
Period of Analysis	: 12.02.2024 to 13.02,2024	Sample Condition	: Scaled & Preserved

MI	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 23	2	Barometric Pressure (mmHg)	₹736
3	Relative Humidity (%) : 50	4	Weather Condition	: Clear

Disciplina	: Chemical	Group : Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	ug/m <sup>7</sup>	IS 5182 (Part-23): 2006; RA2022	60	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part- 24); 2019	32	60 (24hrs)	
Sulphur Di-Oxide (SO <sub>1</sub> )	μg/m³	IS 5182 (Part-2): 2001; RA2022	6.9	80 (24hrs)	
Nitrogen Di-Oxide (NO <sub>1</sub> )	µg/m³	IS 5182 (Part-6); 2006; RA2022	21.8	80 (24hrs)	
Ozone (O <sub>2</sub> )	μg/m²	IS \$182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH <sub>1</sub> )	jug/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Ph)	pg/m <sup>1</sup>	IS 5182 (Part-22): 2004; RA2019	<0.002	(24hrs)	
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)	

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

Anthorised Signatory Dr. Osepandiz Kumaraina

Page I of I

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PLOT NO-3G, MANSAROVAN ENCLAYE, TURUDANA HATIA, RANGHI-524003 (JHARKHAND) 657 NG - 104A86297180124

Email: info@elespi.co.in , eles.rancni@amail.com

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

TEST REPORT

Test Report No.	: ELES/RNC/2024/1267	Report Release Date	: 26.02.2024	- 1
	123111111111111		-311-316	
Work Order No.	: 13612310218	Work Order Date	: 21,04,2023	

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1121 : Near Harup Village Serengdag-A Bauxite Mines (155.81ha)
Address	Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 08.02.2024 to 09.02.2024 : 12.02.2024 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	; Operational	Sampling Done By	: ELES Pyt. Ltd.
Period of Analysis	: 12,02,2024 to 21,02,2024	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 23	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	: 50	- 4	Weather Condition	: Clear

Discipline	:: Chemical	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocul	Result	Regulatory Limit	
Benzene (C <sub>4</sub> H <sub>4</sub> )*	µg/m²	TS 5182 (Part-11): 2005; RA2022	<1.0	05(Annual)	
Benzo-(a)-Pyrene*	ng/m³	IS 5182 (Part-12): 2004; RA2019	<0.5	01(Annual)	

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

Reviewed by

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

Authorised Signatory

DV. Data under Kumlar fuln.

PN C. Edward Benni Flyg

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Page 1 of 1

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

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



Website: www.clespl.co.ln

#### TEST REPORT

Test Report No.	: ELES/RNC/2024/1200	Report Release Date	: 13.02,2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883924000001136F		

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1122 : Near Paintoli Village Serengdag-A Bauxite Mines (155.81ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 08.02.2024 to 09.02.2024 : 12.02.2024 : Ambient Air
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 12.02.2024 to 13.02.2024	Sample Condition	: Sealed & Preserved

M	ETEOROLOGICAL INFORMATION	ON			
1	Average Temperature (°C) +23	2	Barometric Pressure (mml-	(g) : 736	
3	Relative Humidity (%) : 50	4	Weather Condition	: Clear	

Discipline :	Chemical	Group : Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	61	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	30	60 (24hrs)	
Sulphur Di-Oxide (SO <sub>2</sub> )	µg/m³	15 5182 (Part-2): 2001; RA2022	7.3	80 (24hrs)	
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	IS 5182 (Part-6): 2006; RA2022	21.8	80 (24hrs)	
Ozone (O <sub>3</sub> )	µg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH <sub>3</sub> )	µg/m <sup>T</sup>	IS 5182 (Part-25): 2018	<1.0.0	400 (24hrs)	
Carbon Mosoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	μg/m <sup>3</sup>	IS 5182 (Part-22); 2004; RA2019	<0.002	1 (24hrs)	
Nickel (Ni)	ng/m	15 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenie (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)	

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Authorised Signatory Dr. Deeper

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PLOT NO-BO, MANISARDIVAR ENCLAVE, TUPUDANA HATTA, RANCHI-BIAGOS UHARRHAND) GST NO-BOASCESTESDIZA

ernaill info@elespl.co.in , eles rauchit@amail.com

Website: www.elespl.co.in

#### TEST REPORT

Test Report No.	: ELES/RNC/2024/1268	Report Release Date	: 26.02.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET.	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1122 : Near Paintoli Village Serengdag-A Bauxite Mines (155.81ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 08.02.2024 to 09.02.2024 : 12.02.2024 : Ambient Air	
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	±12.02.2024 to 21.02.2024	Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 23	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%).	:50	4	Weather Condition	: Clear

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

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

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Page I of I

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

#### ENGINEERING SERVICES PVT. LTD.

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

#### TEST REPORT

Test Report No.	: ELES/RAN/2024/1317	Report Release Date	: 11.03,2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Sampling Date Sample Received Date	: ELES/RAN/2024/DW/1165 + 10.02,2024 : 14.02,2024	
Address	Lohardagu, Jharkhand-835302	Type of Sample Source/Location of Sample	: Drinking Water : Jalim & Sanai (12,14ha) Bauxite Mine	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/01	
Period of Analysis	: 14.02.2024 to 23.02.2024	Sample Collected By Sample Condition	ELES Pvt. Ltd. Sealed & Preserved	

Discipline : Chemie	cal	Group : Water	r	Regulatory Limit as per IS 10500:2012	
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
pH (at 24,6 °C)	9.1	APHA 23 <sup>rd</sup> Ed.2017, 4500-H	6.90	6.5-8.5	No Relaxation
Turbidity	NTU	APHA 23 <sup>rd</sup> Ed.2017, 2130 B	0.80	1.0	5,0
Taste	8	APHA 23 <sup>rd</sup> Ed.2017, 2160 C	Agreeable	Agreeable	Agreeable
Odour	81	1S 3025 (Part-5) ;2018	Agrecable	Agreeable	Agreeable
Colour	Hazen	APHA 23 <sup>rd</sup> Ed.2017, 2120B&D	2.0	5	15
Total Dissolved Solids (TDS)	mg/L	APHA 23 <sup>rd</sup> Ed.2017, 2540B,C&D	294	500	2000
Chloride (as Cl)	mg/L	APHA 23 <sup>rd</sup> Ed.2017, 4500 CI B	38.8	250	1000
Fluoride (as F)	mg/L	APHA 23rd Ed.2017, 4500 F-D	BDL. (DL: 0.1)	1.0	1.5
Total Alkalinity (as CaCO <sub>3</sub> )	mg/L	APHA 23 <sup>rd</sup> Ed.2017, 2320 B	114	200	600
Total Hardness (as CaCO <sub>3</sub> )	mg/L	APHA 23 <sup>rd</sup> Ed.2017, 2340 C	112	200	600
Sulphate (as SO <sub>4</sub> )	mg/L	APHA 23 <sup>th</sup> Ed.2017, 4500 SO <sub>4</sub> <sup>-2</sup> -E	36.8	200	400
Nitrate (as NO <sub>3</sub> )	mg/L	APHA 23 <sup>rd</sup> Ed.2017, 4500 NO <sub>3</sub> -B	3.40	45	No Relaxation
Phenolic Compound (as C <sub>6</sub> H <sub>5</sub> OH)	mg/L	IS 3025 (Part-43):1992;RA2019	BDL (DL: 0.001)	0.001	0.002

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

#### ENGINEERING SERVICES PVT. LTD.

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

#### TEST REPORT

 Test Report No.
 : ELES/RAN/2024/1317
 Report Release Date
 : 11.03.2024

 Work Order No.
 : 13612310218
 Work Order Date
 : 21.04.2023

Discipl	ine : Che	mical Group: V	Vater		tory Limit
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
Cyanide (as CN)	mg/L	APHA 23 <sup>rd</sup> Ed.2017, 4500 CN-E	BDL (DL: 0.012)	0.05	No Relaxation
Residual Free Chlorine (RFC)	mg/L	IS 3025 (Part-26):202)	BDL (DL: 0.1)	0.02	1.0
Calcium (as Ca)	mg/L	APHA 23 <sup>rd</sup> Ed.2017, 3500 Ca B	29.8	75	200
Discipl	ine : Che	mical Group	t Residues in	Water	
Aluminum (as AI)	mg/L	IS 3025 (Part-55); 2003; RA2019	BDL (DL: 0.02)	0.03	0.2
Arsenie (as As)	mg/L	IS 3025 (Part 37): 2022	BDL (DL: 0.005)	0.01	No Relaxation
Boron (as B)	mg/L	IS 3025(Part-57): 2005; RA2021	BDL (DL: 0.2)	0.5	1:0
Cadmium (as Cd)	mg/L	APHA 23 <sup>rd</sup> Ed:2017, 3111B	BDL (DL: 0.003)	0.003	No Relaxation
Total Chromium (as Cr)	mg/L	APHA 23 <sup>rd</sup> Ed.20[7, 3111B	BDL (DL: 0.03)	0.05	No Relaxation
Copper (as Cu)	mg/L	APHA 23th Ed 2017, 3111B	BDL (DL: 0.03)	0.05	1:5
Iron (as Fe)	mg/L	APHA 23 <sup>rd</sup> Ed.2017 . 3111B	0.348	1.0	1.0
Lead (as Pb)	mg/L	APHA 23 <sup>rd</sup> Ed,2017, 3111B	BDL (DL: 0.01)	0.01	No Relaxation
Manganese (as Mn)	mg/L	APHA 23 <sup>rd</sup> Ed.2017, 3111B	BDL (DL: 0.05)	0.1	0.3
Mercury (as Hg)	mg/L	IS 3025 (Part-48): 1994; RA2019	BDL (DL: 0.001)	0.001	No Relaxation
Selenium (as Se)	mg/L	IS 3025 (Part-56): 2003; RA2019	BDL (DL: 0.01)	10.0	No Relaxation
Zinc (as Zn)	mg/L	APHA 23 <sup>rd</sup> Ed.2017.3111B	BDL, (DL: 0.1)	5	15

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CM: U74999H42018P7C011125

### ENVIRONMENTAL LABORATORIES &

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

### ENGINEERING SERVICES PVT. LTD.

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

#### TEST REPORT

 Test Report No.
 : ELES/RAN/2024/1317
 Report Release Date
 : 11.03.2024

 Work Order No.
 : 13612310218
 Work Order Date
 : 21.04.2023

Discipline : Cl	emical	Group:	Water	Regulatory Lir as per IS 10500;2	
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
Pesticides					
Alachlor*	μg/L.	APHA 23 <sup>rd</sup> Edition 6630 B&C	BDL (DL; L0)	20	No Relaxation
Atrazine*	µg/L	APHA 23 <sup>rd</sup> Edition 6630 B&C	BDL (DL: 1.0)	2.0	No Relaxation
Aldrin/Dieldrin*	μg/L	APHA 23 <sup>rd</sup> Edition 6630 B&C	BDL (DL: 0.01)	0.03	No Relaxation
Alpha HCH*	μg/L	USEPA 508:1985	BDL (DL: 0.001)	0.01	No Relaxation
Beta HCH*	μg/L	USEPA 508:1985	BDL (DL: 0.01)	0.04	No Relaxation
Butachlor*	μμ/Ι.	APHA 23 <sup>rd</sup> Edition 6630 B&C	BDL (DL; 10)	125	No Relaxation
Chlorpyriphos*	μg/L	USEPA 8141 A	BDL (DL: 10)	30	No Relaxation
Delta HCH*	µg/L	USEPA 508:1985	BDL (DL: 0.01)	0.04	No Relaxation
2,4 dichlorophenoxyacetic acid*	μg/L	APHA 23rd Edition 6640 B	BDL (DL; 10)	30	No Relaxation
DDT(o,p and p,p-isomers of DDT,DDE and DDD)*	μg/L	APHA 23rd Edition 6630 B&C	BDL (DL: 0.5)	1.0	No Relaxation
Endosulfan (alpha, beta, and sulphate)*	µg/L	APHA 23rd Edition 6630 B&C	BDL (DL: 0.1)	0.4	No Relaxation
Ethion*	µg/L	USEPA 1657 A	BDL (DL: 0.5)	3.0	No Relaxation
Gamma HCH (Lindane)*	pg/L	USEPA 508:1985	BDL, (DL: 0.5)	2.0	No Relaxation
Isoproturon*	μg/L	USEPA 532:2000	BDL (DL: 0.5)	9.0	No Relaxation

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CW: U74999W42018PTC011125

### ENVIRONMENTAL LABORATORIES &

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

#### ENGINEERING SERVICES PVT. LTD.

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

Website: www.elespl.co.in

#### TEST REPORT

 Test Report No.
 : ELES/RAN/2024/1317
 Report Release Date
 : 11.03.2024

 Work Order No.
 : 13612310218
 Work Order Date
 : 21,04.2023

Discipline: B	inlagical	Group: V	Vater	Regulat	ory Limit
rescipinic. U	ologica:	Group. V	vater	as per IS	10500:2012
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
Total Collform	Per 100 mL	IS 15185:2016; RA 2021	Not Detected	Shall not be detected	
Escherichia Coli (E. Coli)	Per 100 mL	1S 15185:2016; RA 2021	Not Detected		
Discipline :	Chambrol	Parent v 1	Maria	Regulat	ory Limit
Discipline:	Chemicai	Group: \	water	as per 1S	10500:2012
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
Anionic Surfactants (as MBAS)*	mg/L	1S 3025 (Part- 68) : 2019 (RA2023)	BDL (DL: 0.1)	0.2	1.0
Polynuclear Aromatic Hydrocarbons (PAH)*	mg/L	APHA 23rd Edition: 6440 B	BDL (DL: 0.0001)	0.0001	No Relaxation
Polychlorinated Biphenyls (PCB)*	mg/L	APHA 23 <sup>rd</sup> Edition: 6431B	BDL (DL; 0.0005)	0.0005	No Relaxation

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

Reviewed by

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

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

Page 4 of 4

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

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

#### TEST REPORT

Test Report No.	: ELES/RAN/2024/1335	Report Release Date	: 11.03.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sampling Date Sampling Received Date Type of Sample Sampling procedure Sampling Done By	: 10.02.2024 to 11.02.2024 : 14.02.2024 : Ambient Noise : ELES/DOC/SMPL/03 : ELES Pvt. Ltd.	
Mines Status	: Operational	Period of Analysis	: 14.02.2024 to 20.02.2024	

M	ETEOROLOGICAL INFO	RMATION			
1	Average Temperature (°C)	: 23	2	Barometric Pressure (mmHg)	:734
3	Relative Humidity (%)	: 50	4	Weather Condition	Clear

Location	Unit	Test Protocol	Res	ult	Regulatory Limit (Industrial Zone)
			Time	$L_{eq}$	
Jalim & Sanai Bauxite Mines (12.14ha)  dB(A)  Sample 1D: ELES/RAN/2024/AN/1278	dB(A)	1S 9989:1981 RA 2020	Day Time	Day Time 69	75 dB(A) Day Time &
			Night Time	52	70 dB(A) Night Time



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

Authorised Signatory

Dr. Deependra Kumar Sinha

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

Page 1 of 1

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have Environment, have Future



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

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

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

#### TEST REPORT

Test Report No.	: ELES/RAN/2024/1349	Report Release Date	: 11.03.2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	Hindalco Industries Limited     Lohardaga, Jharkhand-835302	Sampling Date Sampling Received Date Type of Sample	: 11.02.2024 : 14.02.2024 : Workzone Noise : ELES/DOC/SMPL/03	
Mines Status	: Operational	Sampling procedure Sampling Done By Period of Analysis	: ELES Pvt. Ltd. : 14.02.2024 to 20.02.2024	

M	ETEOROLOGICAL INFORM	ATION			
1	Average Temperature ("C) : 2	23	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%)	50	4	Weather Condition	: Clear

Location	Unit	Test Protocol	Resi	alt	Regulatory Limit (Industrial Zone)	
Near Loader -			Time	Leq		
Jalim & Sanai Bauxite Mine (12.14ha)	dB(A)	IS 4758:1968: RA 2017		-	90 dB (A)	
Sample ID: ELES/RAN/2024/WN/1283		KA 2017	Day Time	72	- Company	

Reviewed by

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

Authorised Signatory

Dr. Deependra Kumar Sinha

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

Page 1 of 1

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: Operational

: Lohardaga, Jharkhand-835302

: 18.03.2024 to 23.03.2024

Address

Mines Status

Period of Analysis



TEST REPORT

Test Report No.	: ELES/RNC/2024/1501	Report Release Date	: 10.04.2024
Work Order No.	: 13612310218	Work Order Date	; 21.04.2023
CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1449 : Mine Pit Quarry No 2, Jalim & Sanai Bauxite Mine (12,14ha)
		Sampling Date	: 16.03,2024 to 17.03,2024

Sample Received Date

Sampling Procedure

Sampling Done By

Sample Condition

Type of Sample

MI	ETEOROLOGICAL INFORMATION		
1	Average Temperature (°C) : 24	2	Barometric Pressure (mmHg) . 736
3	Relative Humidity (%) : 45	- 4	Weather Condition : Clear

Discipline:	Chemical	Group: Atn	nospheric Poll	ution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	$\mu g/m^3$	1S 5182 (Part-23): 2006; RA2022	67	100 (24hrs)
Particulate Matter (PM2,5)	μg/m³	15 5182 (Part- 24): 2019	26	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part-2): 2001; RA2022	9.3	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	1S 5182 (Part-6): 2006; RA2022	20.8	80 (24hrs)
Ozone (O <sub>3</sub> )	μg/m <sup>2</sup>	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NHs)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part-10): 1999; RA2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m³	IS 5182 (Part-22): 2004; RA2019	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	<2.0	06 (Annual)
Benzene (C <sub>6</sub> H <sub>e</sub> )	ng/m³	ELES/GC/SOP/06	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m"	ELES/GC/SOP/05	< 0.5	01(Annual)

Reviewed by:

790-1

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

VIRO/

Jharkhand

(Saswata Burman Roy, Dy. Quality Manager)

Authorised Signatory:

Jan.

: 18.03.2024

: Ambient Air

: ELES Pvt. Ltd.

Sealed & Preserved

: ELES/DOC/SMPL/02

(Bapan Das, Dy. Technical Manager)



: Operational

Lab., MIG, R. J. Rousing Colony, Bhantrad, Phys. 826504, State - Harkhand & 9830067044 / \$ 9304513737



#### TEST REPORT

Test Report No.	: ELES/RNC/2024/1502	Report Release Date	: 10.04.2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1450 : Nava Prathmik Vidyalay (DhankaToli) Jalim & Sanai Bauxite Mine (12.14ha)
Address	: Lobardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 16.03.2024 to 17.03.2024 : 18.03.2024

Period of Analysis : 18,03,2024 to 23.03,2024		Sampl	Sample Condition ; Scaled & Preserved			
MI	ETEOROLOGIC	CAL INFORMATION				
1	Average Tempe	rature (°C) 24	2	Barometric P	ressure (mmHg) : 736	
2	Relative Humid	(to (96) - 45	4	Wentless Con	dition : Clear	

Type of Sample

Sampling Procedure

Sampling Done By

Discipline:	Chemical	Group: Atmo	ospheric Pollu	tion
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part-23); 2006; RA2022	50	100 (24hrs)
Particulate Matter (PM2.5)	μg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	31	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m <sup>3</sup>	IS 5182 (Part-2): 2001; RA2022	7.2	80 (24hrs)
Nitrogen Di-Oxide (NO2)	μg/m³	IS 5182 (Part-6): 2006; RA2022	24,8	80 (24hrs)
Ozone (O <sub>3</sub> )	μg/m <sup>7</sup>	1\$ 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NHs)	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>7</sup>	IS 5182 (Part-10): 1999; RA2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	μg/m <sup>3</sup>	IS 5182 (Part-22): 2004; RA2019	0.012	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)
Benzene (C <sub>6</sub> H <sub>6</sub> )	μg/m <sup>T</sup>	ELES/GC/SOP/06	<2.5	05(Amual)
Benzo-(a)-Pyrene	ng/m*	ELES/GC/SOP/05	<0.5	DI(Ammal)

Reviewed by :

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

Jharkhand 826001

(Saswata Burman Roy, Dy. Quality Manager)

Authorised Signatory:

: Ambient Air

: ELES Pvt. Ltd.

: ELES/DOC/SMPL/02

(Bapan Das, Dy Technical Manager)

Page 1 of 1

Mines Status



hab : MKs. R-J Housing Colony, Dhanbad, Pin B20001, Sate : Blankhani (19830067044 / (19304513737



#### TEST REPORT

Test Report No.	; ELES/RNC/2024/1503	Report Release Date	: 10.04.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2024/AA/1451
		Location	: Mine Pit Quarry No 3, Jalim & Sanai Bauxite Mine (12,14hn)
	1	Sampling Date	: 16.03.2024 to 17.03.2024
Address	Lohardaga, Jharkhand-835302	Sample Received Date	: 18,03,2024
		Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
Mines Status	Operational	Sampling Done By	: ELES Pvt. Ltd.
Period of Analysis	: 18.03.2024 to 23.03.2024	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature ("C)	: 24	2	Barometric Pressure (mmHg)	1.736
3	Relative Humidity (%)	45	4	Weather Condition	; Clear

Discipline:	Chemical	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	1S 5 (82 (Part-23): 2006; RA2022	62	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	35	60 (24hrs)	
Sulphur Di-Oxide (SO <sub>2</sub> )	µg/m³	15 5182 (Part-2): 2001; RA2022	10.2	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m³	IS 5182 (Part-6): 2006; RA2022	23.7	80 (24hrs)	
Ozone (O <sub>7</sub> )	ng/m³	15 5182 (Part-9); 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH <sub>2</sub> )	hrā/m <sub>3</sub>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m <sup>1</sup>	[S 5182 (Part-10): 1999; RA2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	ug/m <sup>3</sup>	IS 5182 (Part-22): 2004; RA2019	0.008	(24hrs)	
Nickel (Ni)	ng/m²	15 5182 (Pan-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)	
Benzene (C <sub>6</sub> H <sub>6</sub> )	,µg/m²	ELES/GC/SOP/06	<2.5	05(Annual)	
Benzo-(n)-Pyrene	ng/m³	ELES/GC/SOP/05	<0.5	01(Annual)	

Reviewed by :

190mg

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

The T.

(Saswata Burman Roy, Dy. Quality Manager)

Jherkhand 828001

(Bapan Das, Dy. Technical Manager)

Authorised Signatory:



Lab ; MIG. R- 2 Housing Colony, Diambad. Ph. | 826001, State: | Harkbook € 98300670 €4 / € 9304613737



#### TEST REPORT

Test Report No.	± ELES/RNC/2024/1504	Report Release Date	: 10.04.2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2024/AA/1452 : Near Colony; Jalim & Sanai Bauxite Mine (12,14ha) : 16.03,2024 to 17.03,2024
Address	: Lohardaga, Jharkhand-835302	Sample Received Date Type of Sample Sampling Procedure	: 18.03.2024 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Operational	Sampling Done By	: ELES Pvt. Ltd.
Period of Analysis	: 18.03.2024 to 23.03.2024	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFORMATION			
.1	Average Temperature (*C) 24	2	Barometric Pressure (mml	lg) :736
3	Relative Humidity (%) 345	4	Weather Condition	: Clear

Discipline:	Chemical	Group: At	mospheric Pol	Uation
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m³	IS 5182 (Part-23): 2006; RA2022	54	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	26	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	µg/m³	15 5182 (Part-2): 2001; RA2022	7.4	80 (24hrs)
Nitrogen Di-Oxide (NOz)	μg/m <sup>3</sup>	1S 5182 (Part-6): 2006; RA2022	24.2	80 (24hrs)
Ozone (O <sub>3</sub> )	μg/m*	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	μg/m <sup>2</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10); 1999; RA2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	μg/m³	IS 5182 (Part-22): 2004; RA2019	0.009	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m²	ELES/AIR/SOP/01	<2.0	06 (Annual)
Benzone (C <sub>0</sub> H <sub>6</sub> )	pg/m³	ELES/GC/SOP/06	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m/	ELES/GC/SOP/05	< 0.5	01(Annual)

Reviewed by :

10000

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

Jharkhand 8280V)

(Saswata Burman Roy, Dy. Quality Mnunger)

(Bapan Das, Dy Technical Manager)

Authorised Signatory :



agy W/E n-3 Havenag Crome Discussion, Pin - #26001, Score - Darkstanni 1 9830067044 y 1 8004819757

#### TEST REPORT

Test Report No.	: ELES/KNC/2/024/1493	Report Release Date	10,04,2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Inclusiries Ulmited	Sample Ref. No. Location	: BLES/RNC/2024/AA/1441 : Near Banjari Villago Serengdag-A Backire Mines (135.81tm)
Address	: Lohardaga, Jharkhand-535302	Sampling Date Sample Received Date Type of Sample Sampling Procesure	: 14:03.2024 to 15:03.2024 18:03.2024 Ambient Air : ELES/DOC/SMPL/02
Mines Status	- Operations	Sampling Done By	- SLES Pvt. Ltd.
Period of Analysis	= 18.03.2024 to 23.03.2024	Sample Condition	: Sesled & Preserved

341	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 24	2	Barometric Pressure (mmHg	; 736
3	Relative Humidity (%) : 46	4	Wenther Condition	: Clear

Discipline:	Chemical	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	ug/m³	IS 5182 (Part-23): 2006; RA2022	57	100 (24hrs)	
Particulate Matter (PM2,5)	μg/m³	IS 5182 (Part- 24): 2019	35	60 (24hrs)	
Sulphur Di-Oxide (SO <sub>2</sub> )	цg/m³	IS-5182 (Part-2): 2001; RA2022	7.4	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m³	IS 5182 (Part-6); 2006; RA2022	27.1	80 (24hrs)	
Ozone (O3)	µg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (Shrs)	
Ammenia (NH <sub>4</sub> )	H8/m3	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	μg/m³	IS 5182 (Part-22): 2004; RA2019	0.009	1 (24hrs)	
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)	
Benzene (CoHa)	µg/m³	ELES/GC/SOP/06	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m	ELES/GC/SOP/05	< 0.5	01(Annuai)	

Reviewed by :

1292-1

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

ROCHE

Sharkhand 820001

(Saswata Burman Roy, Dy. Quality Manager).

Authorised Signatory:

(Bapan Das, Dy. Technical Manager)





#### TEST REPORT

	- Addition	A. (03.04.008.7.01.A)	
Test Report No.	: ELES/RNC/2024/1494	Report Release Date	: 10.04.2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindaleo Industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2024/A.A/1442 : Near Pauri Village Sovengdag-A Bauxite Wilnes (155.816a) : 14.03.2024 to 15.03.2024
Address	Lohardsga, Jharkhand+835302	Sample Received Date Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPE/02
Mines Status	: Operations)	Sampling Done By	: ELES Pyt. Ltd.
Period of Analysis	+ 18.03.2024 to 23.03.2024	Sample Condition	: Seared & Preserved

MI	TEOROLOGICAL INFO	MATION			
1	Average Temperature (°C)	: 24	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	: 46	4	Weather Condition	: Clear

Discipline: Chemical		Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	μg/m <sup>3</sup>	IS 5182 (Part-23): 2006; RA2022	55	100 (24hrs)		
Particulate Mutter (PM2.5)	µg/m³	IS 5182 (Part- 24): 2019	29	60 (24hrs)		
Sulphur Di-Oxide (SO <sub>2</sub> )	µg/m³	IS 5182 (Part-2): 2001; RA2022	7.5	80 (24hrs)		
Nitrogen Di-Oxide (NO <sub>1</sub> )	µg/m³	IS 5182 (Part-6): 2006; RA2022	24.2	80 (24hts)		
Ozone (Os)	Hg/m <sup>3</sup>	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)		
Ammonia (NH <sub>5</sub> )	µg/m <sup>1</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10); 1999; RA2019 (NDIR Method)	<1.0	2 (8hrs)		
Lead (Pb)	µg/m³	IS 5182 (Part-22): 2004; RA2019	0.009	1 (24hrs)		
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part-26):2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01	<2.0	96 (Annual)		
Benzene (C6H6)	µg/m³	ELES/GC/SOP/06	<2.5	05(Annual)		
Benzo-(n)-Pyrene	ng/m³	ELES/GC/SOP/05	< 0.5	01(Annual)		

Reviewed by :

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

Authorised Signatory;

7/10/7

(Bapun Das, Dy. Technical Manager)







#### TEST REPORT

Test Report No.	: ELES/RNC/2024/1495	Report Release Date	: 10.04.1024	
Work Order No.	: 13612310218	Work Order Date	: 21,04,2023	

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hinduloo Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1443 : Near Harup Village Serengdsg-A Bauxics Mines (155.81ba)	
Address	Loherdage, Jhurkhand-835302	Sampling Date Sample Received Date Type of Sample	: 14.03.2024 to 15.03.2024 : 18.03.2024 : Ambient Air	
Mines Status	- Operational	Sampling Procedure Sampling Done By	: ELES/DGC/SMPL/02 : ELES Pyt. Ltd.	
Period of Analysis	: 18.03,2024 to 23.03,2024	Sample Condition	e Scaled & Preservog	

MI	TEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 24	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	: 46	4	Weather Condition	: Clear

Discipline: Chemical		Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	µg/m³	IS 5182 (Part-23): 2006; RA2022	55	100 (24hrs)		
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	28	60 (24hrs)		
Sulphur Di-Oxide (SO <sub>2</sub> )	µg/m³	1S 5182 (Part-2): 2001; RA2022	6,3	80 (24hrs)		
Nitrogen Di-Oxide (NO <sub>2</sub> )	µg/m³	IS 5182 (Part-6): 2006; RA2022	24,2	80 (24hrs)		
Ozone (Os)	mg/m²	1S 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)		
Ammonia (NH <sub>1</sub> )	pg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part-10); 1999; RA2019 (NDIR Method)	<1.0	2 (8hrs)		
Lead (Pb)	μg/m³	IS 5182 (Part-22): 2004; RA2019	<0.002	1 (24hrs)		
Nickel (Ni)	ng/m	IS 5182 (Part-26):2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01	<2.0	06 (Annual)		
Benzene (C <sub>6</sub> H <sub>6</sub> )	μg/m <sup>3</sup>	ELES/GC/SOP/06	<2.5	05(Annual)		
Benzo-(a)-Pyrene	ng/m²	ELES/GC/SOP/05	<0.5	01(Annual)		

Reviewed by :

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

(Saswata Bunnan Roy, Dy. Quality Manager)

# Jharkhand # 826001

Authorised Signatory:

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(Bapan Das, Dy. Fechnical Mauager)

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TEST REPORT

	-6.5-CH	I MELCINI	
Test Report No.	: ELES/RNC/2024/1496	Report Release Date	: 10.04.2024
Work Order No.	: 13612319248	Work Order Date	: 21/04/2023
CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindatco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1444 : Near Paintoli Villago Serengdag-A Bauxita Mines (155.81ba)
Audress	Lohmdaga, Jharldrand-835502	Sampling Date Sample Received Date Type of Sample	; 14.03,2024 to 15.03,2024 -18.03,2024 ; Ambient Air
Mires Status	Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPE/02 : ELES Pvt. Ltd.
Period of Analysis	: 18.03.2024 to 23.03.2024	Smaple Condition	: Seased & Preserved

Discipline: Chemical		Group; Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	µg/m³	15 5182 (Part-23); 2006; RA2022	53	100 (24brs)		
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part- 24); 2019	27	60 (24hrs)		
Sulphur Di-Oxide (SO <sub>1</sub> )	µg/m <sup>I</sup>	IS 5182 (Pan-2): 2001; RAZ022	9.6	80 (24brs)		
Nitrogen Di-Oxide (NO2)	µg/m³	IS 5182 (Part-6): 2006; RAZ022	24.2	.80 (24hrs)		
Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)		
Ammonia (NH <sub>3</sub> )	μg/m³	IS 5182 (Part- 25); 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part-10): 1999; RA2019 (NDIR Method)	<1.0	2 (8hrs)		
Lezd (Pb)	µg/m <sup>1</sup>	IS 5182 (Part-22): 2004; RA2019	0.009	L(24hrs)		
Nickel (Ni)	ng/m²	IS 5182 (Part-26):2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06.(Annual)		
Benzene (CoHo)	pg/m <sup>3</sup>	ELES/GC/SOP/06	<2.5	05(Annual)		
Benzo-(a)-Pyrene	ng/m <sup>3</sup>	ELES/GC/SOP/05	<0.5	01(Annual)		

Reviewed by ?

Average Temperature (°C)

Relative Humidity (%)

anna End of Reportant

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Authorised Signatory:

(Saswata Burman Roy, Dy. Quality Manager),

Barometric Pressure (mmHg)

Weather Condition

(Bapan Das, Dy, Technical Manager)

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Clear.

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Annexure 3

Date - 20.05.2024

### **Office Order**

Environmental Cell has been re-constituted at Jalim & Sanai Bauxite Mine (Area 12.14 ha) comprising below mentioned team members. The team will ensure compliance of Environment Act, Regulation & Rule in respect of the said mines of Hindalco Industries Limited.

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

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

<sup>\*</sup>Static information about the mines included in the above table

Basudev Gangopadhyay
AVP (Planning, Environment and Compliance)

#### Annexure-5

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

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

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

<sup>\*\*</sup>Part of OB removed cost.

Basudev Gangopadhyay
AVP (Planning, Environment & Compliance)