



HIL/LHD/ENV/MoEF/428

Date: 25.11.2023

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

Sub: Compliance Report of EC conditions for Bagru (75.41 ha) Bauxite Mining project of M/s Hindalco Industries Limited located in Lohardaga District of Jharkhand for the period April'23 to September'23.

Ref: Environmental Clearance letters no J-11015/585/2007-IA. II (M) dated 04th Feb 2011

Sir,

With reference to the above, we are submitting herewith the Compliance status report of EC conditions for **Bagru (75.41 ha)** Bauxite Mining project of **M/s Hindalco Industries Limited**, located in Lohardaga District of Jharkhand for the period April'23 to September'23. The lease detail is as below.

Lease area (ha)	Production Capacity (MT)	Lease Period
75.41	85000	22.01.1974 to 31.03.2030

Hope you will find the same in order.

Thanking You

Yours Sincerely
FOR M/s Hindalco Industries Limited,

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

Enclosure: - As Above

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

Hindalco Industries Limited

Mines Division, Court Road, Lohardaga 835302, Jharkhand, India

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Registered Office: Ahura Centre, 1st Floor, B Wing, Mahakali Caves Road, Andheri (East), Mumbai 400 093, India

T: +91 22 6691 7000 | F: +91 22 6691 7001

Corporate ID No.: L27020MH1958PLC011238

Name of the Project : **Bagru Bauxite Mine (75.41 ha)**
M/s Hindalco Industries Ltd

Environment Clearance No & date : **J – 11015/585/2007-IA.II (M), dated 04.02.2011**

Period of compliance Report : **From 1st April 2023 to 30th September 2023**

CONDITIONS: -

Specific Conditions: -

Condition i: - All the conditions stipulated by the State Pollution Control Board in their NOC should be effectively implemented.

Reply: - Implementations of stipulated conditions in NOC are fulfilled post which consent to operate has been obtained from time to time when mine was operational. Presently, Mine is not in operation since November 2013.

Condition ii: - The environmental clearance is subject to grant of forestry clearance for diversion of 19.56 ha forestland.

Reply: - Compensatory land for forest diversion has been identified and NOC from DFO, AC and Registrar has already been obtained. Registration and Mutation in favor of State Forest Department for CA land have been completed. Obtaining forest clearance is under process (Bagru FC proposal has been recommended by the DFO and CF and has been forwarded to Nodal for further needful action). Presently, Mine is not in operation since November 2013.

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

Reply: - No mining operation has been carried out during the above period. The Mine is not in operation since November 2013.

Condition iv:- The project proponent shall ensure that no natural water course and/or water resources shall be obstructed due to any mining operations.

Reply: - No mining operation was carried out during above period. Mine has not been in operation since November 2013. No natural water course /water resource was obstructed /will be obstructed due to mining operation.

Condition v: - Topsoil should be temporarily stacked with proper slope at earmarked site(s) only with adequate measures and it should not be kept unutilized for a period of more than 3 years. The topsoil shall be used for land reclamation and rehabilitation of mined out areas.

Reply: - Sequential backfilling and reclamation of mined out area were exercised when mine was operational. No mining operation was being carried out during the above period and as on date. Mine has not been in operation since November 2013.

Condition vi :- The entire waste generated shall be backfilled and there shall be no external overburden dump left at the end of the mine life. The entire backfilled area shall be reclaimed by plantation. The backfilling should be carried out in such a manner that it is restored to the normal ground level. 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 and its Regional Office, Bhubaneswar on six monthly basis.

Reply: - No mining operation was carried out during above period and as on date. Cumulative 32.05 ha areas have been planted till date. Monitoring and management of rehabilitated areas is in progress through supervision. There is no active external dump. Old dumps are stabilized.

Condition vii:- The void left unfilled in an area of 1.76 ha shall be converted into water body. The higher benches of excavated void/mining pit shall be traced and plantation done to stabilize the slopes. The slopes of higher benches shall be made gentler for easy accessibility by local people to use the water body. Peripheral fencing shall be carried out along the excavated area.

Reply: - The earlier mined out area converted into water body which still exist. No mining operation has been carried out during the above period and as on date. Mine has not been in operation since November 2013.

Condition viii :- Catch drains and siltation ponds of appropriate size shall be constructed around the working pit, sub-grade dump, and mineral dumps to arrest flow of silt and sediment directly into Chanpi Nallah, Sukri Nadi and others water bodies. The water so collected should be utilized for watering the mine area, roads, green belt development etc. The drains should be regularly desilted, particularly after monsoon, and maintained properly. Garland drains settling tanks and check dams of appropriate size, gradient and length shall be constructed for both around the mine pit and sub-grade dump to prevent run off of water and flow sediments directly into Chanpi Nallah, Sukri Nadi and other water

bodies and sump capacity should be designed keeping 50% safety margin over and above peak sudden rainfall (based on 50 years date) and maximum discharge in the area adjoin the mine site. Sump capacity should also provide adequate retention period to allow proper settling of silt material. Sedimentation pits should be constructed at the corners of the garland drains and desilted at regular intervals.

Reply: - Mine has not been in operation since November 2013. No mining operation was carried out during the above period and as on date. Hence, no runoff was generated from mining activities. However, to collect and manage rainwater during monsoon rains, pit sumps were made, part of mined out area were used as settling tank. Settled water was used for sprinkling quarry, roads, green belt development, etc. Compliance to this provision will further continue post resumption of mining operation. Water harvesting pond and sump of adequate capacity exist in lease area to harvest rainwater.



Rainwater Harvesting Pond

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

Reply: - The dimensions of retaining wall of OB dumps are based on average rain fall. The dump is stabilized. The compliance to this provision was being practiced when mine was in operation and same will continue post resumption of mining operation. Mine has not in operation since November 2013. No active external dump exists in the mine lease area.

Condition x:- Plantation shall be raised in an area of 50.11 ha including a 7.5m wide green belt in the safety zone around the mining lease by planting the native species around ML area, backfilled and reclaimed area, around water body, roads etc. in consultation with the local

DFO/Agriculture Department. At least 1500 trees per year shall be planted with a tree density of 1000 trees per hectare.

Reply: - Plantation on Bagru plateau was carried out progressively. Till date 32.05 Ha areas are already planted. Total no of plantation is 83715 till date.



Bio-diversity Park - A classic bio park (Birsa Upvan) has been created to validate that all species can grow. We have also developed tea garden, strawberry garden, spice garden, medicinal garden, Nakshatra Van, VR-DOME & butterfly garden to build a unique Bio-diversity Park.



Biodiversity Park at Bagru mine in reclaimed area

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

Reply: - Water sprinkling is being carried out regularly. AAQ and water quality are monitored. Measured AAQ parameters reported are within permissible limit.



Water sprinkling on road

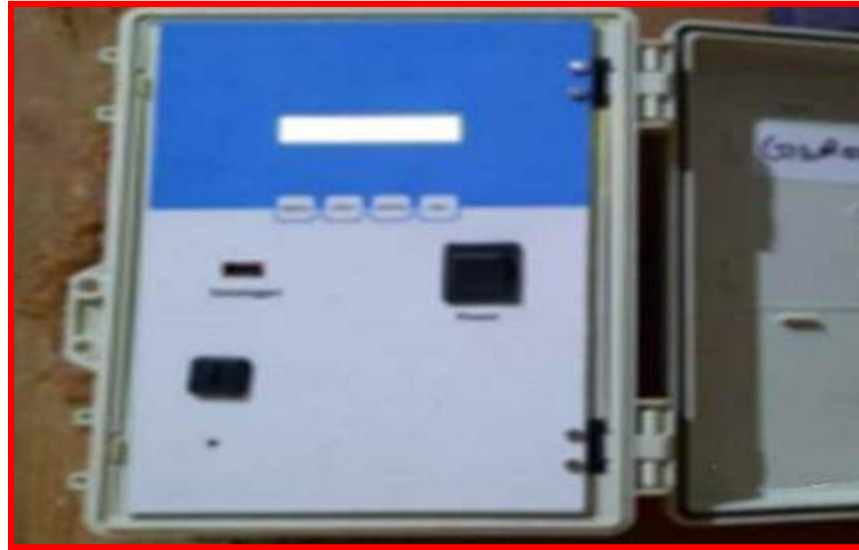
Condition xii:- The project authority should implement suitable conservation measures to augment ground water resources in the area in consultation with the Regional Director, Central Ground Water Board.

Reply: - System is in place and same will continue in future post resumption of mining activity. Mine is not in operation since November 2013. Rainwater harvesting pond and sump is already in place as water conservation measures.

Condition xiii:- 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, its Regional Office, Bhubaneswar; Central Ground Water Authority and Central Ground Water Board.

Reply: - We are not using ground water for any mining purpose. There is no chance of intersection ground water table during mining operation as it is much below mining horizon.

A piezometer has been installed for monitoring of ground water level. Water quality and level report are attached herewith as **Annexure 1**. Mine is not in operation since November 2013



Piezometer

Condition xiv: -The project authority shall obtain necessary prior approval of the competent authority for drawl of requisite quantity of water (surface water and ground water) for the project.

Reply: - Rainwater harvested during rainy season is being used for sprinkling on haul roads and raising plantation. No surface water from natural resource was/is being/will be used for mining operation. Mine is not in operation since November 2013.However, we have obtained NOC for drinking water only from CGWB, Patna.



भारत सरकार
जल संसाधन, नदी विकास
और शक्ति विभाग
केंद्रीय जल प्राधिकरण
Government of India
Ministry of Jal Shakti
Department of Water Resources,
River Development & Gangs Rejuvenation
Central Ground Water Authority

(भूजल निष्कासी श्रेय अनापत्ति प्रमाण पत्र)
NO OBJECTION CERTIFICATE (NOC) FOR GROUND WATER ABSTRACTION

Project Name:	Bagru Bauxite Mining Project (75.41 Ha)		
Project Address:	Bagru Bauxite Mining Project, Village - Bagru, Bhuasar And Hiran, Tehsil - Kasko		
Village:	Bagru	Block:	Kasko
District:	Lohardaga	State:	Jharkhand
Pin Code:			
Communication Address:	Hindalco Industries Limited, Bagru Bauxite Mine, Court Road Lohardaga, Lohardaga, Kasko, Lohardaga, Jharkhand - 835502		
Address of CGWB Regional Office :	Central Ground Water Board Mid Eastern Region, 8th & 7th Floor, Lok Nayak Jai Prakash Bhawan, Fraser Road Dak Banglow, Patna, Bihar - 800011		

1. NOC No.:	CGWA/NOC/MIN/REN/1/2023/7576	2. Date of Issuance	03/04/2023				
3. Application No.	21-4494/JH/MIN/2019	4. Category (GWRE 2020)	Safe				
5. Project Status:	Existing Ground Water	6. NOC Type:	Renewal				
7. Valid from:	16/02/2023	8. Valid up to:	15/02/2025				
9. Ground Water Abstraction Permitted:							
Fresh Water		Saline Water		Dewatering		Total	
m ³ /day	m ³ /year	m ³ /day	m ³ /year	m ³ /day	m ³ /year	m ³ /day	m ³ /year
9.50	3467.50						

CGWB License

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

Reply: - Mine is not in operation since November 2013. No mining operation was being carried out during above period and as on date.

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

Reply: - Mine is not in operation since November 2013. No mining operation was carried out during above period and as on date. However, blasting time is fixed during Lunch Time i.e. 1.00 PM -2.00 PM (whenever will be done post resumption of mining operation). Controlled blasting method will be practiced once mine becomes operational. All efforts will be taken to mitigate impact of blasting post resumption of mining activities.

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

Reply: - Mine is not in operation since November 2013. No mining operation was being carried out during above period and as on date.

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

Reply: - The sewage water from domestic uses is collected and treated in Sewage Treatment Plant. No effluent is generated. However, Effluent treatment mechanism (Oil grease separator) has been constructed at suitable site in Bagru plateau.



Oil & Grease separator

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

Reply: - No mining operation was carried out during the above period and as on date. Mine will be operative post obtaining renewed consent to operate and other clearances as applicable.

Condition xx:- Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.

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

Condition xxi:- The critical parameters such as RSPM (Particulate matter with size less than 10micron (i.e., PM10, PM2.5) and NOX in the ambient air within the impact zone, peak particle velocity at 300m distance or within the nearest habitation, whichever is closed shall be monitored periodically. Further, quantity of discharged water shall also be monitored [TDS,DO, PH and TSS}The monitored data shall be uploaded on the website of the company as well as displayed on a display board at the project site at a suitable location near the main gate of the Company in public domain. The Circular No. J-20012/1/2006-IA.II (M) dated 27.05.2009 issued by Ministry of Environment and Forest, which is available on the website of the Ministry www.envfor.nic.in shall also be referred in this regard for its compliance.

Reply: - Being carried out. Monitoring report is attached as **Annexure-2**. Data is being uploaded on the company website regularly.

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

Reply: - Progressive mine closure plan along with mining scheme has been approved by IBM. FMCP (part area) has also been approved by IBM. Final mine closure plan (FMCP) for total lease area will be prepared 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, mining operation will be done.

General Conditions: -

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

Reply: - Noted. The Mine is not in operation since November 2013.

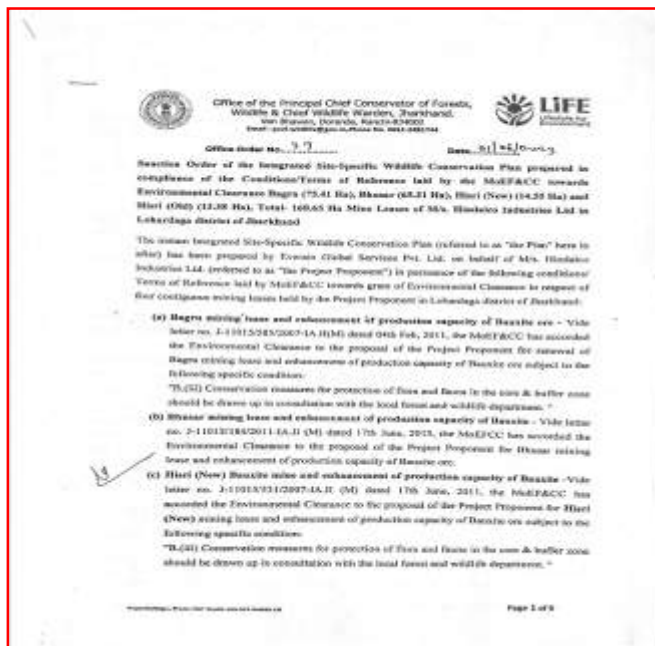
Condition ii: - **No change in the calendar plan including excavation, quantum of mineral bauxite and waste should be made.**

Reply: - The Mine is not in operation since November 2013. No mining operation was carried out during the above period and as on date. Report is attached as **Annexure-4**. We agree to comply with the provision stipulated herein post resumption of mining operations.

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

Reply: - The Mine is not in operation since November 2013. Suitable conservation measures were undertaken in past when mine was operational as per plan submitted and is being done continuously.

Also, we have been granted letter of approval for the Integrated Site-specific Wildlife Conservation Plan via Office Order No.29 dated 01.06.2023 by PCCF, Wildlife, Ranchi. No mining operation was carried out during the above period and as on date.



Approval Letter

Condition iv: - Four ambient air quality-monitoring stations should be established in the core zone as well as in the buffer zone for RPM, SPM, SO₂, NO_x monitoring. Location of the stations should be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets and frequency of monitoring should be undertaken in consultation with the State Pollution Control Board.

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

Condition v: - Data on ambient air quality (RPM, SPM, SO₂, and NO_x) should be regularly submitted to the Ministry including its Regional office located at Bhopal and the State Pollution Control Board / Central Pollution Control Board once in six months.

Reply: - Monitoring report are attached as **Annexure-2**.

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

Reply: - The Mine is not in operation since November 2013. No mining operation was carried out during the above period and as on date. We agree to comply with the provision stipulated herein post resumption of mining operations.

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

Reply: - The Mine is not in operation since November 2013. No mining operation was carried out during the above period and as on date.

We agree to comply with the provision stipulated herein post resumption of mining operation as complied in past.

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

Reply: - The Mine is not in operation since November 2013. No mining operation was carried out during the above period and as on date.

We agree to comply with the provision stipulated herein post resumption of mining operation as complied in past.

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

Reply: - The Mine is not in operation since November 2013. No mining operation was carried out during the above period and as on date.

We agree to comply with the provision stipulated herein post resumption of mining operation as complied in past.

Condition x:- A separate environmental management cell with suitable qualified personnel should be set-up under the control of a Senior Executive, who will report directly to the Head of the Organization.

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

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

Reply: - Mining Plan along with Progressive mine Closure Plan has been approved by IBM, Ranchi. This was an operating Mine, hence provision related to Financial closure is not applicable. Currently, the Regional Office is located at Ranchi.

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

Reply: - The funds earmarked for environmental protection measures is being budgeted. Annual expenditure is being reported to the Ministry as attached as **Annexure 5**.

Condition xiii: - The Regional Office of this Ministry located at Bhubaneshwar 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: - Being complied with. Now the Regional office is at Ranchi.

Condition xiv: -The project proponent shall submit six monthly reports on the status of compliance of the stipulated environmental clearance conditions including results of monitored data (both in hard copies as well as by e mail to the Ministry of Environment and Forests, its Regional office Bhubaneshwar, the respective Zonal office of Central Pollution Control Board the State Pollution Control Board. The proponent shall upload the status of compliance of the environmental clearance conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of the Ministry of Environment and Forest, Bhubaneshwar, the respective zonal office of Central Pollution Control Board and the State Pollution Control Board.

Reply: - Six monthly reports on the status of compliance of the stipulated environmental clearance conditions including results of monitored data by e mail are being submitted to the Ministry of Environment and Forests, its Regional office Ranchi, the respective Zonal office of Central Pollution Control Board the State Pollution Control Board and uploaded in company's website.

Condition xv: -A copy of clearance letter shall be sent by the proponent to concerned Panchayat, Zila Parisad / Municipal corporation, urban local body and the local NGO, if any, from whom and suggestions / representations if any were received while processing the proposal. The clearance letter shall also be put on the website of the company by the proponent.

Reply: - A copy of clearance letter has been sent to concerned Panchayat, Zila Parisad / Municipal corporation, urban local body and the local NGO.

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

Reply: - Displayed.

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

Reply: - Being submitted.

Condition xviii: - The project authorities should advertise at least in two local newspapers widely circulated, one of which shall be in the vernacular language of the locality concerned, within 7 days of the issue of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and also at web site of the Ministry of Environment and Forests at <http://envfor.nic.in> and a copy of the same should be forwarded to the Regional Office of this Ministry located Bhubaneshwar.

Reply: - Already done (Documents already submitted).

Annexure 1

Piezometer reading - Bagru Mines

S No	Month	Depth (meter)
1	Apr-23	35.03
2	May-23	34.54
3	Jun-23	34.33
4	Jul-23	33.88
5	Aug-23	33.5
6	Sep-23	34.13



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PLOT NO-30, MANSAROVAN 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



CIN: U74999JH3018PTC031125

TEST REPORT

Test Report No. : ELES/RNC/2023/1916	Report Release Date : 12.06.2023
Work Order No. : 13612310218	Work Order Date : 21.04.2023
ULR No. : TC883923000000877F	

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/1343
Address	: Lohardaga, Jharkhand-835302	Location	: Entrance Gate (Ropeway Loading Stn); Bagru Bauxite Mine(75.41ha)
Plant Status	: Non Operational	Sampling Date	: 21.04.2023 to 22.04.2023
Period of Analysis	: 10.05.2023 to 08.06.2023	Sample Received Date	: 10.05.2023
		Type of Sample	: Ambient Air
		Sample Drawn By	: ELES/DOC/SMPL/02
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION

1	Average Temperature (°C)	: 32	2	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%)	: 59	4	Weather Condition	: Clear

NABL Accredited

Discipline : Chemical

Group : Atmospheric Pollution

Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-23): 2006; RA2022	71	100 (24hrs)
Particulate Matter (PM2.5)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-24): 2019	33	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-2): 2001; RA2022	13.2	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-6): 2006; RA2022	19.4	80 (24hrs)
Ozone (O ₃)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m^3	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-22): 2004; RA2019	0.010	1 (24hrs)
Nickel (Ni)	ng/m^3	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m^3	ELES/AIR/SOP/01	1.2	06 (Annual)



****End of Report****

Authorized Signatory

Dr. Deependra Kumar Sinha

Ph. D. Environmental Engg.

Technical Manager

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Phone no.: 0651-2290103

Website : www.elespl.co.in

TEST REPORT

Test Report No.	: ELES/RNC/2023/1916	Report Release Date	: 12.06.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/1343
Address	: Lohardaga, Jharkhand-835302	Location	: Entrance Gate (Ropeway Loading Stn), Bagru Bauxite Mine(75.41ha)
Plant Status	: Non Operational	Sampling Date	: 21.04.2023 to 22.04.2023
Period of Analysis	: 10.05.2023 to 08.06.2023	Sample Received Date	: 10.05.2023
		Type of Sample	: Ambient Air
		Sample Drawn By	: ELES/DOC/SMPL/02
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 32	2	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%)	: 59	4	Weather Condition	: Clear

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

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



****End of Report****


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

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CIN: U74999JH2018PTC011125

TEST REPORT

Test Report No.	: ELES/RNC/2023/1917	Report Release Date	: 12.06.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883923000000878F		

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/1344
Address	: Lohardaga, Jharkhand-835302	Location	: Administrative Office Bagru Bauxite Mine (75.41ha)
		Sampling Date	: 21.04.2023 to 22.04.2023
Plant Status	: Non Operational	Sample Received Date	: 10.05.2023
Period of Analysis	: 10.05.2023 to 08.06.2023	Type of Sample	: Ambient Air
		Sample Drawn By	: ELES/DOC/SMPL/02
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 32	2	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%)	: 59	4	Weather Condition	: Clear

NABL Accredited				
Discipline : Chemical			Group : Atmospheric Pollution	
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	60	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part-24): 2019	28	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	6.2	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	15.5	80 (24hrs)
Ozone (O ₃)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m ³	IS 5182 (Part-25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	0.009	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)



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****End of Report****

Dr. Deependra Kumar Sinha

Page 1 of 1

Ph. D. Environmental Engg.

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TEST REPORT

Test Report No.	: ELES/RNC/2023/1917	Report Release Date	: 12.06.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/1344
Address	: Lohardaga, Jharkhand-835302	Location	: Administrative Office Bagru Bauxite Mine (75.41ha)
		Sampling Date	: 21.04.2023 to 22.04.2023
Plant Status	: Non Operational	Sample Received Date	: 10.05.2023
Period of Analysis	: 10.05.2023 to 08.06.2023	Type of Sample	: Ambient Air
		Sample Drawn By	: ELES/DOC/SMPL/02
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 32	2	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%)	: 59	4	Weather Condition	: Clear

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

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



****End of Report****

Authorized Signatory

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ELES Pvt. Ltd. Technical Manager



ENVIRONMENTAL LABORATORIES &

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CIN: U74909JH2018PTC011125

TEST REPORT

Test Report No.	: ELES/RNC/2023/1918	Report Release Date	: 12.06.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883923000000879F		

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/1345
Address	: Lohardaga, Jharkhand-835302	Location	: Near Shiv Temple Compound Bagru Bauxite Mine (75.41ha)
Plant Status	: Non Operational	Sampling Date	: 21.04.2023 to 22.04.2023
Period of Analysis	: 10.05.2023 to 08.06.2023	Sample Received Date	: 10.05.2023
		Type of Sample	: Ambient Air
		Sample Drawn By	: ELES/DQC/SMPL/02
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 32	2	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%)	: 59	4	Weather Condition	: Clear

NABL Accredited				
Discipline : Chemical		Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	67	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part-24): 2019	32	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	8.1	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	13.4	80 (24hrs)
Ozone (O ₃)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m ³	IS 5182 (Part-25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	0.007	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)



Authorized Signatory

Dr. Deependra Kumar Singh

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

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Page 1 of 1

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CIN: U74999JH2018PTC011125

TEST REPORT

Test Report No.	: ELES/RNC/2023/1918	Report Release Date	: 12.06.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/1345
Address	: Lohardaga, Jharkhand-835302	Location	: Near Shiv Temple Compound Bagru Bauxite Mine (75.41ha)
		Sampling Date	: 21.04.2023 to 22.04.2023
Plant Status	: Non Operational	Sample Received Date	: 10.05.2023
Period of Analysis	: 10.05.2023 to 08.06.2023	Type of Sample	: Ambient Air
		Sample Drawn By	: ELES/DOC/SMPL/02
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 32	2	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%)	: 59	4	Weather Condition	: Clear

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

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



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

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TC-8839

TEST REPORT

Test Report No.	: ELES/RNC/2023/1919	Report Release Date	: 12.06.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
UIR No.	: TC883923000000880F		

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/1346
Address	: Lohardaga, Jharkhand-835302	Location	: Near Weigh Bridge Bagru Bauxite Mine (75.41ha)
		Sampling Date	: 21.04.2023 to 22.04.2023
Plant Status	: Non Operational	Sample Received Date	: 10.05.2023
Period of Analysis	: 10.05.2023 to 08.06.2023	Type of Sample	: Ambient Air
		Sample Drawn By	: ELES/DOC/SMPL/02
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 32	2	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%)	: 59	4	Weather Condition	: Clear

NABL Accredited				
Discipline : Chemical			Group : Atmospheric Pollution	
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-23): 2006; RA2022	68	100 (24hrs)
Particulate Matter (PM2.5)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 24): 2019	41	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-2): 2001; RA2022	13.5	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-6): 2006; RA2022	27.8	80 (24hrs)
Ozone (O ₃)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m^3	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-22): 2004; RA2019	0.031	1 (24hrs)
Nickel (Ni)	ng/m^3	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m^3	ELES/AIR/SOP/01	2.4	06 (Annual)



Authorized Signatory

Dr. Deependra Kumar Singh

Ph. D. Environmental Engg.

ELES Pvt. Ltd. Technical Manager

****End of Report****

Page 1 of 1

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TEST REPORT

Test Report No.	: ELES/RNC/2023/1919	Report Release Date	: 12.06.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/1346
Address	: Lohardaga, Jharkhand-835302	Location	: Near Weigh Bridge Bagru Bauxite Mine (75.41ha)
		Sampling Date	: 21.04.2023 to 22.04.2023
Plant Status	: Non Operational	Sample Received Date	: 10.05.2023
Period of Analysis	: 10.05.2023 to 08.06.2023	Type of Sample	: Ambient Air
		Sample Drawn By	: ELES/DOC/SMPL/02
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 32	2	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%)	: 59	4	Weather Condition	: Clear

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

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



****End of Report****

Authorized Signatory

Dr. Deependra Kumar Sinha
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ENVIRONMENTAL LABORATORIES &

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CIN: U74099JH2011PTC011125

TEST REPORT

Test Report No.	: ELES/RNC/2023/1920	Report Release Date	: 12.06.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC88392300000881F		

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/1347
Address	: Lohardaga, Jharkhand-835302	Location	: Near Daldaliya Village Bagru Bauxite Mine (75.41ha)
		Sampling Date	: 20.04.2023 to 21.04.2023
Plant Status	: Operational	Sample Received Date	: 10.05.2023
Period of Analysis	: 10.05.2023 to 08.06.2023	Type of Sample	: Ambient Air
		Sample Drawn By	: ELES/DOC/SMPL/02
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 32	2	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%)	: 59	4	Weather Condition	: Clear
5	Longitude	: 84°35'37.93"E	6	Latitude	: 23°29'4.48"N

NABL Accredited				
Discipline : Chemical			Group : Atmospheric Pollution	
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	62	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	30	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	7.1	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	13.1	80 (24hrs)
Ozone (O ₃)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	<0.002	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)



****End of Report****

Authorized Signatory

Dr. Deevendra Kumar Singh

Ph. D. Environmental engg.

ELES Pvt. Ltd. Technical Manager

Page 1 of 1

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TEST REPORT

Test Report No.	: ELES/RNC/2023/1920	Report Release Date	: 12.06.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/1347
Address	: Lohardaga, Jharkhand-835302	Location	: Near Daldaliya Village Bagru Bauxite Mine (75.41ha)
		Sampling Date	: 20.04.2023 to 21.04.2023
Plant Status	: Operational	Sample Received Date	: 10.05.2023
Period of Analysis	: 10.05.2023 to 08.06.2023	Type of Sample	: Ambient Air
		Sample Drawn By	: ELES/DOC/SMPL/02
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 32	2	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%)	: 59	4	Weather Condition	: Clear
5	Longitude	: 84°35'37.93"E	6	Latitude	: 23°29'4.48"N

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

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



****End of Report****


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

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ENVIRONMENTAL LABORATORIES &

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CIN: U74999/JH2018PTC011125

TEST REPORT

Test Report No.	: ELES/RNC/2023/1921	Report Release Date	: 12.06.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883923000000882F		

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/1348
Address	: Lohardaga, Jharkhand-835302	Location	: Aditya School Gangupara Bagru Bauxite Mine (75.41 ha)
Plant Status	: Operational	Sampling Date	: 20.04.2023 to 21.04.2023
Period of Analysis	: 10.05.2023 to 08.06.2023	Sample Received Date	: 10.05.2023
		Type of Sample	: Ambient Air
		Sample Drawn By	: ELES/DOC/SMPL/02
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 32	2	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%)	: 59	4	Weather Condition	: Clear
5	Longitude	: 84°38'8.14"E	6	Latitude	: 23°27'46.28"N

NABL Accredited				
Discipline : Chemical		Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	61	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	28	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	7.1	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	12.2	80 (24hrs)
Ozone (O ₃)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	0.014	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)



****End of Report****

Authorized Signatory

Dr. Deependra Kumar Sinha
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Technical Manager

Page 1 of 1

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CIN: U74999JH2018PTC011125

TEST REPORT

Test Report No.	: ELES/RNC/2023/1921	Report Release Date	: 12.06.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/1348
Address	: Lohardaga, Jharkhand-835302	Location	: Aditya School Gangupara Bagru Bauxite Mine (75.41ha)
		Sampling Date	: 20.04.2023 to 21.04.2023
Plant Status	: Operational	Sample Received Date	: 10.05.2023
Period of Analysis	: 10.05.2023 to 08.06.2023	Type of Sample	: Ambient Air
		Sample Drawn By	: ELES/DOC/SMPL/02
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 32	2	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%)	: 59	4	Weather Condition	: Clear
5	Longitude	: 84°38'8.14"E	6	Latitude	: 23°27'46.28"N

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

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



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Authorized Signatory

Dr. Deependra Kumar Sinha
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Page 1 of 1

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CIN: U74909JH2013PTC011125

TEST REPORT

Test Report No.	: ELES/RNC/2023/1922	Report Release Date	: 12.06.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883923000000883F		

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/1349
Address	: Lohardaga, Jharkhand-835302	Location	: Ropeway Unloading Station Bagra Bauxite Mine (75.41ha)
Plant Status	: Operational	Sampling Date	: 20.04.2023 to 21.04.2023
Period of Analysis	: 10.05.2023 to 08.06.2023	Sample Received Date	: 10.05.2023
		Type of Sample	: Ambient Air
		Sample Drawn By	: ELES/DOC/SMPL/02
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 32	2	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%)	: 59	4	Weather Condition	: Clear
5	Longitude	: 84°41'28.22"E	6	Latitude	: 23°26'45.48"N

NABL Accredited				
Discipline : Chemical			Group : Atmospheric Pollution	
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	62	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	29	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	8.1	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	12.2	80 (24hrs)
Ozone (O ₃)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	0.015	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)



****End of Report****

Authorized Signatory

Dr. Deependra Kumar Sinha

Ph. D. Environmental Engg.

Chief Technical Manager

Page 1 of 1

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TEST REPORT

Test Report No.	: ELES/RNC/2023/1922	Report Release Date	: 12.06.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/1349
Address	: Lohardaga, Jharkhand-835302	Location	: Ropeway Unloading Station Bagru Bauxite Mine (75.41ha)
		Sampling Date	: 20.04.2023 to 21.04.2023
Plant Status	: Operational	Sample Received Date	: 10.05.2023
Period of Analysis	: 10.05.2023 to 08.06.2023	Type of Sample	: Ambient Air
		Sample Drawn By	: ELES/DOC/SMPL/02
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 32	2	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%)	: 59	4	Weather Condition	: Clear
5	Longitude	: 84°41'28.22"E	6	Latitude	: 23°26'45.48"N

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

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



****End of Report****


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

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TEST REPORT

Test Report No.	: ELES/RNC/2023/1923	Report Release Date	: 12.06.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883923000000884F		

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/1350
Address	: Lohardaga, Jharkhand-835302	Location	: Ropeway Angle Station Bagru Bauxite Mine (75.41ha)
		Sampling Date	: 20.04.2023 to 21.04.2023
Plant Status	: Operational	Sample Received Date	: 10.05.2023
Period of Analysis	: 10.05.2023 to 08.06.2023	Type of Sample	: Ambient Air
		Sample Drawn By	: ELES/DOC/SMPL/02
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 32	2	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%)	: 59	4	Weather Condition	: Clear
5	Longitude	: 84°37'18.22"E	6	Latitude	: 23°27'56.84N

NABL Accredited				
Discipline : Chemical		Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	61	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	33	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	7.9	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	12.2	80 (24hrs)
Ozone (O ₃)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	0.006	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)



Dr. Deependra Kumar Sinha

Authorized Signatory

Dr. Deependra Kumar Sinha

Ph. D. Environmental Chemist
Technical Manager

****End of Report****

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TEST REPORT

Test Report No.	: ELES/RNC/2023/1923	Report Release Date	: 12.06.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/1350
Address	: Lohardaga, Jharkhand-835302	Location	: Ropeway Angle Station Bagru Bauxite Mine (75.41ha)
		Sampling Date	: 20.04.2023 to 21.04.2023
Plant Status	: Operational	Sample Received Date	: 10.05.2023
Period of Analysis	: 10.05.2023 to 08.06.2023	Type of Sample	: Ambient Air
		Sample Drawn By	: ELES/DOC/SMPL/02
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 32	2	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%)	: 59	4	Weather Condition	: Clear
5	Longitude	: 84°37'18.22"E	6	Latitude	: 23°27'56.84N

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

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



****End of Report****

Authorized Signatory

Dr. Deependra Kumar Sinha
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ENVIRONMENTAL LABORATORIES &

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TEST REPORT

Test Report No. : ELES/RAN/2023/0499	Report Release Date : 06.05.2023
Work Order No. : 13612310218	Work Order Date : 21.04.2023

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RAN/2023/DW/0384
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 17.04.2023
		Sample Received Date	: 26.04.2023
Mines Status	: Non Operational	Type of Sample	: Drinking Water
		Source/Location of Sample	: Bagru Bauxite Mines (75.71 ha)
Period of Analysis	: 26.04.2023 to 05.05.2023	Sampling Procedure	: ELES/DOC/SMPL/01
		Sample Collected By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

Discipline : Chemical		Group : Water		Regulatory Limit as per IS 10500:2012	
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
pH (at 24.9 °C)	-	APHA 23 rd Ed.2017, 4500-H ⁺	6.72	6.5-8.5	No Relaxation
Turbidity	NTU	APHA 23 rd Ed.2017, 2130 B	0.09	1.0	5.0
Taste	-	APHA 23 rd Ed.2017, 2160 C	Agreeable	Agreeable	Agreeable
Odour	-	IS 3025 (Part-5):2018	Agreeable	Agreeable	Agreeable
Colour	Hazen	APHA 23 rd Ed.2017, 2120B&D	1.0	5	15
Total Dissolved Solids (TDS)	mg/L	APHA 23 rd Ed.2017, 2540B,C&D	378	500	2000
Chloride (as Cl)	mg/L	APHA 23 rd Ed.2017, 4500 Cl B	46.8	250	1000
Fluoride (as F)	mg/L	APHA 23 rd Ed.2017, 4500 F-D	BDL (DL: 0.1)	1.0	1.5
Total Alkalinity (as CaCO ₃)	mg/L	APHA 23 rd Ed.2017, 2320 B	118	200	600
Total Hardness (as CaCO ₃)	mg/L	APHA 23 rd Ed.2017, 2340 C	168	200	600
Sulphate (as SO ₄)	mg/L	APHA 23 rd Ed.2017, 4500 SO ₄ ²⁻ -E	36.8	200	400
Nitrate (as NO ₃)	mg/L	APHA 23 rd Ed.2017, 4500 NO ₃ -B	2.48	45	No Relaxation
Phenolic Compound (as C ₆ H ₅ OH)	mg/L	IS 3025 (Part-43):1992;RA2019	BDL (DL: 0.0005)	0.001	0.002

Page 1 of 4

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"Save Environment, Save Future"



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CIN: U74999MH2018PTC011323

TEST REPORT

Test Report No. : ELES/RAN/2023/0499	Report Release Date : 06.05.2023
Work Order No. : 13612310218	Work Order Date : 21.04.2023

Discipline : Chemical		Group : Water		Regulatory Limit as per IS10500:2012	
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
Cyanide (as CN)	mg/L	APHA 23 rd Ed.2017, 4500 CN-E	BDL (DL: 0.012)	0.05	No Relaxation
Residual Free Chlorine (RFC)	mg/L	IS 3025 (Part-26):2021	BDL (DL: 0.1)	0.02	1.0
Calcium (as Ca)	mg/L	APHA 23 rd Ed.2017, 3500 Ca B	44.8	75	200

Discipline : Chemical		Group : Residues in Water			
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
Aluminum (as Al)	mg/L	IS 3025 (Part-55): 2003; RA2019	BDL (DL: 0.02)	0.03	0.2
Arsenic (as As)	mg/L	IS 3025 (Part 37): 2022	BDL (DL: 0.005)	0.01	No Relaxation
Boron (as B)	mg/L	IS 3025(Part-57): 2005; RA2021	BDL (DL: 0.2)	0.5	1.0
Cadmium (as Cd)	mg/L	APHA 23 rd Ed.2017, 3111B	BDL (DL: 0.003)	0.003	No Relaxation
Total Chromium (as Cr)	mg/L	APHA 23 rd Ed.2017, 3111B	BDL (DL: 0.03)	0.05	No Relaxation
Copper (as Cu)	mg/L	APHA 23 rd Ed.2017, 3111B	BDL (DL: 0.03)	0.05	1.5
Iron (as Fe)	mg/L	APHA 23 rd Ed.2017, 3111B	0.181	1.0	1.0
Lead (as Pb)	mg/L	APHA 23 rd Ed.2017, 3111B	BDL (DL: 0.01)	0.01	No Relaxation
Manganese (as Mn)	mg/L	APHA 23 rd Ed.2017, 3111B	BDL (DL: 0.05)	0.1	0.3
Mercury (as Hg)	mg/L	IS 3025 (Part-48): 1994; RA2019	BDL (DL: 0.001)	0.001	No Relaxation
Selenium (as Se)	mg/L	IS 3025 (Part-56): 2003; RA2019	BDL (DL: 0.01)	0.01	No Relaxation
Zinc (as Zn)	mg/L	APHA 23 rd Ed.2017, 3111B	BDL (DL: 0.1)	5	15

Remarks: I, pH & RFC done at Lab.



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CIN: U74999JH2018PTC011125

TEST REPORT

Test Report No.	: ELES/RAN/2023/0499	Report Release Date	: 06.05.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

Discipline : Chemical		Group : Water		
Parameter	Unit	Test Protocol	Result	Regulatory Limit as 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	APHA	BDL (DL: 0.001)	0.01
Beta HCH*	µg/L	APHA	BDL (DL: 0.01)	0.04
Butachlor*	µg/L	APHA	BDL (DL: 10)	125
Chlorpyrifos*	µg/L	APHA	BDL (DL: 10)	30
Delta HCH*	µg/L	APHA	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	APHA	BDL (DL: 0.5)	1
Endosulfan (alpha, beta, and sulphate)*	µg/L	APHA	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
Isoproturon*	µg/L	APHA	BDL (DL: 0.5)	9

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CIN: U74999JH2018FC011125

TEST REPORT

Test Report No. : ELES/RAN/2023/0499	Report Release Date : 06.05.2023
Work Order No. : 13612310218	Work Order Date : 21.04.2023

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

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



****End of Report****

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B. Sc, M. Sc. (Botany)
Director
ELES Pvt. Ltd.



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TEST REPORT

Test Report No. : ELES/RNC/2023/2247	Report Release Date : 01.07.2023
Work Order No. : 13612310218	Work Order Date : 21.04.2023
ULR No. : TC883923000001169F	

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/1720
Address	: Lohardaga, Jharkhand-835302	Location	: Entrance Gate (Ropeway Loading Str); Bagru Bauxite Mine(75.41ha)
		Sampling Date	: 15.05.2023 to 16.05.2023
Plant Status	: Non Operational	Sample Received Date	: 06.06.2023
Period of Analysis	: 06.06.2023 to 07.06.2023	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sample Drawn By	: Sealed & Preserved
		Sample Condition	

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 34	2	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%)	: 58	4	Weather Condition	: Clear

NABL Accredited				
Discipline : Chemical			Group : Atmospheric Pollution	
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-23): 2006; RA2022	67	100 (24hrs)
Particulate Matter (PM2.5)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 24): 2019	30	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-2): 2001; RA2022	12.7	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-6): 2006; RA2022	17.5	80 (24hrs)
Ozone (O ₃)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m^3	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-22): 2004; RA2019	0.017	1 (24hrs)
Nickel (Ni)	ng/m^3	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m^3	ELES/AIR/SOP/01	1.2	06 (Annual)



****End of Report****

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

Page 1 of 1

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CIN: U74999JH2018PTC011125

TEST REPORT

Test Report No. : ELES/RNC/2023/2247	Report Release Date : 01.07.2023
Work Order No. : 13612310218	Work Order Date : 21.04.2023

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/1720
Address	: Lohardaga, Jharkhand-835302	Location	: Entrance Gate (Ropeway Loading Stn); Bagru Bauxite Mine(75.41ha)
		Sampling Date	: 15.05.2023 to 16.05.2023
Plant Status	: Non Operational	Sample Received Date	: 06.06.2023
Period of Analysis	: 06.06.2023 to 07.06.2023	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sample Drawn By	: Sealed & Preserved
		Sample Condition	

METEOROLOGICAL INFORMATION


1	Average Temperature (°C)	: 34	2	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%)	: 58	4	Weather Condition	: Clear

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

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



****End of Report****


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

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TEST REPORT

Test Report No.	: ELES/RNC/2023/2248	Report Release Date	: 01.07.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883923000001170F		

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/1721
Address	: Lohardaga, Jharkhand-835302	Location	: Administrative Office
		Sampling Date	: Bagra Bauxite Mine (75.41ha)
Plant Status	: Non Operational	Sample Received Date	: 15.05.2023 to 16.05.2023
Period of Analysis	: 06.06.2023 to 07.06.2023	Type of Sample	: 06.06.2023
		Sampling Procedure	: Ambient Air
		Sample Drawn By	: ELES/DOC/SMPL/02
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 34	2	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%)	: 58	4	Weather Condition	: Clear

NABL Accredited				
Discipline : Chemical			Group : Atmospheric Pollution	
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	58	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	30	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	6.7	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	13.1	80 (24hrs)
Ozone (O ₃)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	0.007	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)



****End of Report****

Authorized Signatory
Dr. Deependra Kumar Sinha

Env. Lab. & Engineering Svc. Pvt. Ltd., Technical Manager

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CIN: U74999JH2018PTC011125

TEST REPORT

Test Report No.	: ELES/RNC/2023/2248	Report Release Date	: 01.07.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/1721
Address	: Lohardaga, Jharkhand-835302	Location	: Administrative Office
		Sampling Date	: Bagru Bauxite Mine (75.41ha)
Plant Status	: Non Operational	Sample Received Date	: 15.05.2023 to 16.05.2023
Period of Analysis	: 06.06.2023 to 07.06.2023	Type of Sample	: 06.06.2023
		Sampling Procedure	: Ambient Air
		Sample Drawn By	: ELES/DOC/SMPL/02
		Sample Condition	: Sealed & Preserved

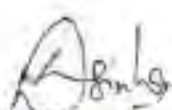
METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 34	2	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%)	: 58	4	Weather Condition	: Clear

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

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



****End of Report****


Authorized Signatory
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ELES Pvt. Ltd. Technical Manager



ENVIRONMENTAL LABORATORIES &

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TC-8895

TEST REPORT

Test Report No. : ELES/RNC/2023/2249	Report Release Date : 01.07.2023
Work Order No. : 13612310218	Work Order Date : 21.04.2023
ULR No. : TC883923000001171F	

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/1722
Address	: Lohardaga, Jharkhand-835302	Location	: Near Shiv Temple Compound Bagru Bauxite Mine (75.41ha)
		Sampling Date	: 15.05.2023 to 16.05.2023
Plant Status	: Non Operational	Sample Received Date	: 06.06.2023
Period of Analysis	: 06.06.2023 to 07.06.2023	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMP/02
		Sample Drawn By	: Sealed & Preserved
		Sample Condition	

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 34	2	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%)	: 58	4	Weather Condition	: Clear

NABL Accredited				
Discipline : Chemical			Group : Atmospheric Pollution	
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	62	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part-24): 2019	30	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	7.5	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	12.4	80 (24hrs)
Ozone (O ₃)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m ³	IS 5182 (Part-25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	0.016	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)



****End of Report****

Authorized Signatory
Dr. Deependra Kumar Sinha

Page 1 of 1

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

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CIN: U74999JH2018PT011125

TEST REPORT

Test Report No. : ELES/RNC/2023/2249	Report Release Date : 01.07.2023
Work Order No. : 13612310218	Work Order Date : 21.04.2023

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/1722
Address	: Lohardaga, Jharkhand-835302	Location	: Near Shiv Temple Compound Bagru Bauxite Mine (75.41ha)
		Sampling Date	: 15.05.2023 to 16.05.2023
Plant Status	: Non Operational	Sample Received Date	: 06.06.2023
Period of Analysis	: 06.06.2023 to 07.06.2023	Sampling Procedure	: Ambient Air
		Sample Drawn By	: ELES/DOC/SMPL/02
		Sample Condition	: Sealed & Preserved


METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 34	2	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%)	: 58	4	Weather Condition	: Clear

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

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



****End of Report****


Authorized Signatory
 Dr. Deependra Kumar Sinha
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ENVIRONMENTAL LABORATORIES &

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TEST REPORT

Test Report No. : ELES/RNC/2023/2250	Report Release Date : 01.07.2023
Work Order No. : 13612310218	Work Order Date : 21.04.2023
ULR No. : TC883923000001172F	

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/1723
Address	: Lohardaga, Jharkhand-835302	Location	: Near Weigh Bridge
		Sampling Date	: Bagru Bauxite Mine (75.4 ha)
Plant Status	: Non Operational	Sample Received Date	: 15.05.2023 to 16.05.2023
Period of Analysis	: 06.06.2023 to 07.06.2023	Type of Sample	: 06.06.2023
		Sampling Procedure	: Ambient Air
		Sample Drawn By	: ELES/DOC/SMPL/02
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 34	2	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%)	: 58	4	Weather Condition	: Clear

NABL Accredited				
Discipline : Chemical			Group : Atmospheric Pollution	
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	73	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	44	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	12.8	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	28.2	80 (24hrs)
Ozone (O ₃)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	0.022	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	2.0	06 (Annual)



****End of Report****

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

Page 1 of 1

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CIN: U74999JH2018PTC011125

TEST REPORT

Test Report No. : ELES/RNC/2023/2250	Report Release Date : 01.07.2023
Work Order No. : 13612310218	Work Order Date : 21.04.2023

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/1723
Address	: Lohardaga, Jharkhand-835302	Location	: Near Weigh Bridge
		Sampling Date	: Bagru Bauxite Mine (75.41ha)
Plant Status	: Non Operational	Sample Received Date	: 15.05.2023 to 16.05.2023
Period of Analysis	: 06.06.2023 to 07.06.2023	Type of Sample	: 06.06.2023
		Sampling Procedure	: Ambient Air
		Sample Drawn By	: ELES/DOC/SMPL/02
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 34	2	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%)	: 58	4	Weather Condition	: Clear

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

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



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

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TEST REPORT

Test Report No.	: ELES/RNC/2023/2251	Report Release Date	: 01.07.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883923000001173F		


CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/1724
Address	: Lohardaga, Jharkhand-835302	Location	: Near Daldaliya Village
		Sampling Date	: Bagru Bauxite Mine (75.4Iha)
Plant Status	: Operational	Sample Received Date	: 15.05.2023 to 16.05.2023
Period of Analysis	: 06.06.2023 to 07.06.2023	Type of Sample	: 06.06.2023
		Sampling Procedure	: Ambient Air
		Sample Drawn By	: ELES/DOC/SMPL/02
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 35	2	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%)	: 59	4	Weather Condition	: Clear
5	Longitude	: 84°35'37.93"E	6	Latitude	: 23°29'4.48"N

NABL Accredited				
Discipline : Chemical		Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	60	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	29	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	7.8	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	16.2	80 (24hrs)
Ozone (O ₃)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	<0.002	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)



****End of Report****


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

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CIN: U74999JH2018PTC011125

TEST REPORT

Test Report No.	: ELES/RNC/2023/2251	Report Release Date	: 01.07.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/1724
Address	: Lohardaga, Jharkhand-835302	Location	: Near Daldaliya Village
			: Bagra Bauxite Mine (75.41ha)
Plant Status	: Operational	Sampling Date	: 15.05.2023 to 16.05.2023
Period of Analysis	: 06.06.2023 to 07.06.2023	Sample Received Date	: 06.06.2023
		Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sample Drawn By	: Sealed & Preserved
		Sample Condition	

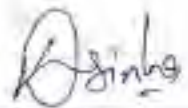
METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 35	2	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%)	: 59	4	Weather Condition	: Clear
5	Longitude	: 84°35'37.93"E	6	Latitude	: 23°29'4.48"N

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

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



****End of Report****


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



ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA
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TEST REPORT

Test Report No.	: ELES/RNC/2023/2252	Report Release Date	: 01.07.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883923000001174F		

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/1725
Address	: Lohardaga, Jharkhand-835302	Location	: Aditya School Gangupara Bagru Bauxite Mine (75.41ha)
		Sampling Date	: 15.05.2023 to 16.05.2023
Plant Status	: Operational	Sample Received Date	: 06.06.2023
Period of Analysis	: 06.06.2023 to 07.06.2023	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sample Drawn By	: Sealed & Preserved
		Sample Condition	

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 35	2	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%)	: 59	4	Weather Condition	: Clear
5	Longitude	: 84°38'8.14"E	6	Latitude	: 23°27'46.28"N

NABL Accredited				
Discipline : Chemical		Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	57	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	24	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	7.9	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	15.2	80 (24hrs)
Ozone (O ₃)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	0.010	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)



****End of Report****

Authorized Signatory
Dr. Deependra Kumar Sinha
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TEST REPORT

Test Report No. : ELES/RNC/2023/2252	Report Release Date : 01.07.2023
Work Order No. : 13612310218	Work Order Date : 21.04.2023

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No	: ELES/RNC/2023/AA/1725
Address	: Lohardaga, Jharkhand-835302	Location	: Aditya School Gangupara Bagru Bauxite Mine (75.41ha)
		Sampling Date	: 15.05.2023 to 16.05.2023
Plant Status	: Operational	Sample Received Date	: 06.06.2023
Period of Analysis	: 06.06.2023 to 07.06.2023	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sample Drawn By	: Sealed & Preserved
		Sample Condition	

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 35	2	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%)	: 59	4	Weather Condition	: Clear
5	Longitude	: 84°38'8.14"E	6	Latitude	: 23°27'46.28"N

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

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



****End of Report****


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



ENVIRONMENTAL LABORATORIES &

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TEST REPORT

Test Report No.	: ELES/RNC/2023/2253	Report Release Date	: 01.07.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883923000001175F		

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/1726
Address	: Lohardaga, Jharkhand-835302	Location	: Ropeway Unloading Station
		Sampling Date	: Bagra Bauxite Mine (75.4Iha)
Plant Status	: Operational	Sample Received Date	: 16.05.2023 to 17.05.2023
Period of Analysis	: 06.06.2023 to 07.06.2023	Type of Sample	: 06.06.2023
		Sampling Procedure	: Ambient Air
		Sample Drawn By	: ELES/DOC/SMPL/02
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 35	2	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%)	: 59	4	Weather Condition	: Clear
5	Longitude	: 84°41'28.22"E	6	Latitude	: 23°26'45.48"N

NABL Accredited				
Discipline : Chemical		Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-23): 2006; RA2022	59	100 (24hrs)
Particulate Matter (PM2.5)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 24): 2019	27	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-2): 2001; RA2022	6.8	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-6): 2006; RA2022	10.3	80 (24hrs)
Ozone (O ₃)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m^3	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-22): 2004; RA2019	0.008	1 (24hrs)
Nickel (Ni)	ng/m^3	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m^3	ELES/AIR/SOP/01	<2.0	06 (Annual)



****End of Report****


Authorized Signatory
Dr. Deependra Kumar Sinha
Env. & Environmental Engg.
ELES Pvt. Ltd, Technical Manager

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ENVIRONMENTAL LABORATORIES &

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CIN: U74999W2018PTC011225

TEST REPORT

Test Report No.	: ELES/RNC/2023/2253	Report Release Date	: 01.07.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/1726
Address	: Lohardaga, Jharkhand-835302	Location	: Ropeway Unloading Station
		Sampling Date	: Bagru Bauxite Mine (75.41ha)
Plant Status	: Operational	Sample Received Date	: 16.05.2023 to 17.05.2023
Period of Analysis	: 06.06.2023 to 07.06.2023	Type of Sample	: 06.06.2023
		Sampling Procedure	: Ambient Air
		Sample Drawn By	: ELES/DOC/SMPL/02
		Sample Condition	: Sealed & Preserved


METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 35	2	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%)	: 59	4	Weather Condition	: Clear
5	Longitude	: 84°41'28.22"E	6	Latitude	: 23°26'45.48"N

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

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



****End of Report****


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

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TC-8835

TEST REPORT

Test Report No.	: ELES/RNC/2023/2254	Report Release Date	: 01.07.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883923000001176F		

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/1727
Address	: Lohardaga, Jharkhand-835302	Location	: Ropeway Angle Station
		Sampling Date	: Bagru Bauxite Mine (75.41ha)
Plant Status	: Operational	Sample Received Date	: 16.05.2023 to 17.05.2023
Period of Analysis	: 06.06.2023 to 07.06.2023	Type of Sample	: 06.06.2023
		Sampling Procedure	: Ambient Air
		Sample Drawn By	: ELES/DOC/SMPL/02
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 35	2	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%)	: 59	4	Weather Condition	: Clear
5	Longitude	: 84°37'18.22"E	6	Latitude	: 23°27'56.84N

NABL Accredited				
Discipline : Chemical		Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	57	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	30	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	6.4	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	14.5	80 (24hrs)
Ozone (O ₃)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	0.005	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)



**** End of Report ****

Page 1 of 1

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

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CIN: U74999JH2018PTC011125

TEST REPORT

Test Report No.	: ELES/RNC/2023/2254	Report Release Date	: 01.07.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/1727
Address	: Lohardaga, Jharkhand-835302	Location	: Ropeway Angle Station
		Sampling Date	: Bagru Bauxite Mine (75.41ha)
Plant Status	: Operational	Sample Received Date	: 16.05.2023 to 17.05.2023
Period of Analysis	: 06.06.2023 to 07.06.2023	Type of Sample	: 06.06.2023
		Sampling Procedure	: Ambient Air
		Sample Drawn By	: ELES/DOC/SMPL/02
		Sample Condition	: Sealed & Preserved


METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 35	2	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%)	: 59	4	Weather Condition	: Clear
5	Longitude	: 84°37'18.22"E	6	Latitude	: 23°27'56.84N

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

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



****End of Report****


Authorized Signatory
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ELES Pvt. Ltd, Technical Manager



ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA
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TEST REPORT

Test Report No. : ELES/RNC/2023/2835	Report Release Date : 29.07.2023
Work Order No. : 13612310218	Work Order Date : 21.04.2023
ULR No. : TC883923000001700F	

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/2167
Address	: Lohardaga, Jharkhand-835302	Location	: Entrance Gate (Ropeway Loading Stn); Bagru Bauxite Mine(75.41ha)
		Sampling Date	: 20.06.2023 to 21.06.2023
Mines Status	: Non Operational	Sample Received Date	: 26.06.2023
Period of Analysis	: 26.06.2023 to 06.07.2023	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sample Drawn By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 32	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	: 58	4	Weather Condition	: Clear

NABL Accredited				
Discipline : Chemical		Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	69	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	39	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	12.3	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	20.7	80 (24hrs)
Ozone (O ₃)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	0.021	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)



****End of Report****

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

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TEST REPORT

Test Report No.	: ELES/RNC/2023/2835	Report Release Date	: 29.07.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/2167
Address	: Lohardaga, Jharkhand-835302	Location	: Entrance Gate (Ropeway Loading Stn); Bagru Bauxite Mine(75.41ha)
		Sampling Date	: 20.06.2023 to 21.06.2023
Mines Status	: Non Operational	Sample Received Date	: 26.06.2023
Period of Analysis	: 26.06.2023 to 06.07.2023	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sample Drawn By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 32	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	: 58	4	Weather Condition	: Clear

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

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



End of Report

Authorised Signatory

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

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CIN: U74999JH2018PTC011125

TEST REPORT

Test Report No.	: ELES/RNC/2023/2836	Report Release Date	: 29.07.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883923000001701F		

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/2168
Address	: Lohardaga, Jharkhand-835302	Location	: Administrative Office Bagru Bauxite Mine (75.41ha)
		Sampling Date	: 20.06.2023 to 21.06.2023
Mines Status	: Non Operational	Sample Received Date	: 26.06.2023
Period of Analysis	: 26.06.2023 to 06.07.2023	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sample Drawn By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 32	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	: 58	4	Weather Condition	: Clear

NABL Accredited				
Discipline : Chemical		Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-23): 2006; RA2022	56	100 (24hrs)
Particulate Matter (PM2.5)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 24): 2019	29	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-2): 2001; RA2022	7.2	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-6): 2006; RA2022	17.8	80 (24hrs)
Ozone (O ₃)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m^3	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-22): 2004; RA2019	0.005	1 (24hrs)
Nickel (Ni)	ng/m^3	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m^3	ELES/AIR/SOP/01	<2.0	06 (Annual)



****End of Report****

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

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ENVIRONMENTAL LABORATORIES &

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CIN: U74999JH2018PTC011125

TEST REPORT

Test Report No. : ELES/RNC/2023/2836	Report Release Date : 29.07.2023
Work Order No. : 13612310218	Work Order Date : 21.04.2023

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/2168
Address	: Lohardaga, Jharkhand-835302	Location	: Administrative Office Bagru Bauxite Mine (75.41ha)
		Sampling Date	: 20.06.2023 to 21.06.2023
Mines Status	: Non Operational	Sample Received Date	: 26.06.2023
Period of Analysis	: 26.06.2023 to 06.07.2023	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sample Drawn By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 32	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	: 58	4	Weather Condition	: Clear

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

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



****End of Report****

Authorized Signatory

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



ENVIRONMENTAL LABORATORIES &

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TEST REPORT

Test Report No. : ELES/RNC/2023/2837	Report Release Date : 29.07.2023
Work Order No. : 13612310218	Work Order Date : 21.04.2023
ULR No. : TC883923000001702F	


CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/2169
Address	: Lohardaga, Jharkhand-835302	Location	: Near Shiv Temple Compound Bagru Bauxite Mine (75.41ha)
		Sampling Date	: 20.06.2023 to 21.06.2023
Mines Status	: Non Operational	Sample Received Date	: 26.06.2023
Period of Analysis	: 26.06.2023 to 06.07.2023	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sample Drawn By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 32	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	: 58	4	Weather Condition	: Clear

NABL Accredited				
Discipline : Chemical		Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-23): 2006; RA2022	59	100 (24hrs)
Particulate Matter (PM2.5)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-24): 2019	33	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-2): 2001; RA2022	6.9	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-6): 2006; RA2022	11.8	80 (24hrs)
Ozone (O ₃)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m^3	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-22): 2004; RA2019	0.008	1 (24hrs)
Nickel (Ni)	ng/m^3	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m^3	ELES/AIR/SOP/01	<2.0	06 (Annual)



****End of Report****


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

Page 1 of 1

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TEST REPORT

Test Report No. : ELES/RNC/2023/2837	Report Release Date : 29.07.2023
Work Order No. : 13612310218	Work Order Date : 21.04.2023

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/2169
Address	: Lohardaga, Jharkhand-835302	Location	: Near Shiv Temple Compound Bagru Bauxite Mine (75.41ha)
Mines Status	: Non Operational	Sampling Date	: 20.06.2023 to 21.06.2023
Period of Analysis	: 26.06.2023 to 06.07.2023	Sample Received Date	: 26.06.2023
		Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sample Drawn By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION

1	Average Temperature (°C) : 32	2	Barometric Pressure (mmHg) : 738
3	Relative Humidity (%) : 58	4	Weather Condition : Clear

Discipline : Chemical		Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene*	$\mu\text{g}/\text{m}^3$	IS:5182 (Part-11): 2006;RA2017	<1.0	05(Annual)
Benzo (a) Pyrene*	ng/m^3	IS:5182 (Part-12): 2004;RA2019	<0.5	01(Annual)

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



****End of Report****


Authorized Signatory
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ELES Pvt. Ltd. Technical Manager



ENVIRONMENTAL LABORATORIES &

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TEST REPORT

Test Report No. : ELES/RNC/2023/2838	Report Release Date : 29.07.2023
Work Order No. : 13612310218	Work Order Date : 21.04.2023
ULR No. : TC883923000001703F	

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/2170
Address	: Lohardaga, Jharkhand-835302	Location	: Near Weigh Bridge Bagru Bauxite Mine (75.41ha)
		Sampling Date	: 20.06.2023 to 21.06.2023
Mines Status	: Non Operational	Sample Received Date	: 26.06.2023
Period of Analysis	: 26.06.2023 to 06.07.2023	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sample Drawn By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 32	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	: 58	4	Weather Condition	: Clear

NABL Accredited				
Discipline : Chemical			Group : Atmospheric Pollution	
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-23): 2006; RA2022	67	100 (24hrs)
Particulate Matter (PM2.5)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 24): 2019	38	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-2): 2001; RA2022	12.2	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-6): 2006; RA2022	30.7	80 (24hrs)
Ozone (O ₃)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m^3	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-22): 2004; RA2019	0.015	1 (24hrs)
Nickel (Ni)	ng/m^3	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m^3	ELES/AIR/SOP/01	<2.0	06 (Annual)



****End of Report****

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

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CIN: U74999HR2018PTC011125

TEST REPORT

Test Report No.	: ELES/RNC/2023/2838	Report Release Date	: 29.07.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindaleo Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/2170
Address	: Lohardaga, Jharkhand-835302	Location	: Near Weigh Bridge Bagru Bauxite Mine (75.41ha)
		Sampling Date	: 20.06.2023 to 21.06.2023
Mines Status	: Non Operational	Sample Received Date	: 26.06.2023
Period of Analysis	: 26.06.2023 to 06.07.2023	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sample Drawn By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION

1	Average Temperature (°C)	: 32	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	: 58	4	Weather Condition	: Clear

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

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



****End of Report****


Authorized Signatory
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ELES Pvt. Ltd. Technical Manager

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TEST REPORT

Test Report No. : ELES/RNC/2023/2839	Report Release Date : 29.07.2023
Work Order No. : 13612310218	Work Order Date : 21.04.2023
ULR No. : TC883923000001704F	

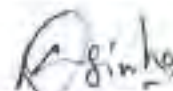
CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/2171
Address	: Lohardaga, Jharkhand-835302	Location	: Near Daldaliya Village Bagru Bauxite Mine (75.41 ha)
		Sampling Date	: 20.06.2023 to 21.06.2023
Mines Status	: Operational	Sample Received Date	: 26.06.2023
Period of Analysis	: 26.06.2023 to 06.07.2023	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sample Drawn By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 33	2	Barometric Pressure (mmHg)	: 739
3	Relative Humidity (%)	: 59	4	Weather Condition	: Clear
5	Longitude	: 84°35'37.93"E	6	Latitude	: 23°29'4.48"N

NABL Accredited				
Discipline : Chemical		Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-23): 2006; RA2022	57	100 (24hrs)
Particulate Matter (PM2.5)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 24): 2019	30	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-2): 2001; RA2022	6.9	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-6): 2006; RA2022	15.4	80 (24hrs)
Ozone (O ₃)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m^3	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-22): 2004; RA2019	<0.002	1 (24hrs)
Nickel (Ni)	ng/m^3	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m^3	ELES/AIR/SOP/01	<2.0	06 (Annual)



****End of Report****


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

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TEST REPORT

Test Report No.	: ELES/RNC/2023/2839	Report Release Date	: 29.07.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/2171
Address	: Lohardaga, Jharkhand-835302	Location	: Near Daldaliya Village Bagru Bauxite Mine (75.41ha)
		Sampling Date	: 20.06.2023 to 21.06.2023
Mines Status	: Operational	Sample Received Date	: 26.06.2023
Period of Analysis	: 26.06.2023 to 06.07.2023	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sample Drawn By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved


METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 33	2	Barometric Pressure (mmHg)	: 739
3	Relative Humidity (%)	: 59	4	Weather Condition	: Clear
5	Longitude	: 84°35'37.93"E	6	Latitude	: 23°29'4.48"N

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

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



****End of Report****


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

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ENVIRONMENTAL LABORATORIES &

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TEST REPORT

Test Report No. : ELES/RNC/2023/2840	Report Release Date : 29.07.2023
Work Order No. : 13612310218	Work Order Date : 21.04.2023
ULR No. : TC883923000001705F	

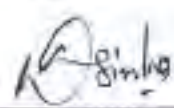
CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/2172
Address	: Lohardaga, Jharkhand-835302	Location	: Aditya School Gangupara Bagru Bauxite Mine (75.41ha)
		Sampling Date	: 20.06.2023 to 21.06.2023
Mines Status	: Operational	Sample Received Date	: 26.06.2023
Period of Analysis	: 26.06.2023 to 06.07.2023	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sample Drawn By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 33	2	Barometric Pressure (mmHg)	: 739
3	Relative Humidity (%)	: 59	4	Weather Condition	: Clear
5	Longitude	: 84°38'8.14"E	6	Latitude	: 23°27'46.28"N

NABL Accredited				
Discipline : Chemical			Group : Atmospheric Pollution	
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	63	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	34	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	7.3	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	11.6	80 (24hrs)
Ozone (O ₃)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	0.010	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)



****End of Report****


Authorized Signatory
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ELES Pvt. Ltd. Technical Manager

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ENVIRONMENTAL LABORATORIES &

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CIN: U74999JH2018PTC011125

TEST REPORT

Test Report No. : ELES/RNC/2023/2840	Report Release Date : 29.07.2023
Work Order No. : 13612310218	Work Order Date : 21.04.2023

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/2172
Address	: Lohardaga, Jharkhand-835302	Location	: Aditya School Gangupara Bagru Bauxite Mine (75.41ha)
		Sampling Date	: 20.06.2023 to 21.06.2023
Mines Status	: Operational	Sample Received Date	: 26.06.2023
Period of Analysis	: 26.06.2023 to 06.07.2023	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sample Drawn By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved


METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 33	2	Barometric Pressure (mmHg)	: 739
3	Relative Humidity (%)	: 59	4	Weather Condition	: Clear
5	Longitude	: 84°38'8.14"E	6	Latitude	: 23°27'46.28"N

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

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



****End of Report****


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

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TEST REPORT

Test Report No. : ELES/RNC/2023/2841	Report Release Date : 29.07.2023
Work Order No. : 13612310218	Work Order Date : 21.04.2023
ULR No. : TC883923000001706F	

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindafco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/2173
Address	: Lohardaga, Jharkhand-835302	Location	: Ropeway Unloading Station Bagru Bauxite Mine (75.41ha)
		Sampling Date	: 21.06.2023 to 22.06.2023
Mines Status	: Operational	Sample Received Date	: 26.06.2023
Period of Analysis	: 26.06.2023 to 06.07.2023	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sample Drawn By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 33	2	Barometric Pressure (mmHg)	: 739
3	Relative Humidity (%)	: 59	4	Weather Condition	: Clear
5	Longitude	: 84°41'28.22"E	6	Latitude	: 23°26'45.48"N

NABL Accredited				
Discipline : Chemical			Group : Atmospheric Pollution	
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	55	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	29	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	7.4	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	15.7	80 (24hrs)
Ozone (O ₃)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	0.011	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)



****End of Report****

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

Page 1 of 1

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TEST REPORT

Test Report No.	: ELES/RNC/2023/2841	Report Release Date	: 29.07.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/2173
Address	: Lohardaga, Jharkhand-835302	Location	: Ropeway Unloading Station Bagru Bauxite Mine (75.41ha)
		Sampling Date	: 21.06.2023 to 22.06.2023
Mines Status	: Operational	Sample Received Date	: 26.06.2023
Period of Analysis	: 26.06.2023 to 06.07.2023	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sample Drawn By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved


METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 33	2	Barometric Pressure (mmHg)	: 739
3	Relative Humidity (%)	: 59	4	Weather Condition	: Clear
5	Longitude	: 84°41'28.22"E	6	Latitude	: 23°26'45.48"N

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

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



****End of Report****


Authorised Signatory
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ELES Pvt. Ltd. Technical Manager



ENVIRONMENTAL LABORATORIES &

PLOT NO-3D, MANSAROVAR ENCLAVE, TUPUDANA
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CIN: U74999JH2013PTC011225

TEST REPORT

Test Report No. : ELES/RNC/2023/2842	Report Release Date : 29.07.2023
Work Order No. : 13612310218	Work Order Date : 21.04.2023
ULR No. : TC883923000001707F	


CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/2174
Address	: Lohardaga, Jharkhand-835302	Location	: Ropeway Angle Station Bagru Bauxite Mine (75.41ha)
		Sampling Date	: 21.06.2023 to 22.06.2023
Mines Status	: Operational	Sample Received Date	: 26.06.2023
Period of Analysis	: 26.06.2023 to 06.07.2023	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sample Drawn By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 33	2	Barometric Pressure (mmHg)	: 739
3	Relative Humidity (%)	: 59	4	Weather Condition	: Clear
5	Longitude	: 84°37'18.22"E	6	Latitude	: 23°27'56.84"N

NABL Accredited				
Discipline : Chemical			Group : Atmospheric Pollution	
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	52	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part-24): 2019	29	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	6.9	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	15.1	80 (24hrs)
Ozone (O ₃)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m ³	IS 5182 (Part-25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	0.006	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)



****End of Report****


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

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ENVIRONMENTAL LABORATORIES &

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TEST REPORT

Test Report No. : ELES/RNC/2023/2842	Report Release Date : 29.07.2023
Work Order No. : 13612310218	Work Order Date : 21.04.2023

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/2174
Address	: Lohardaga, Jharkhand-835302	Location	: Ropeway Angle Station Bagru Bauxite Mine (75.4 Iha)
		Sampling Date	: 21.06.2023 to 22.06.2023
Mines Status	: Operational	Sample Received Date	: 26.06.2023
Period of Analysis	: 26.06.2023 to 06.07.2023	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sample Drawn By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved


METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 33	2	Barometric Pressure (mmHg)	: 739
3	Relative Humidity (%)	: 59	4	Weather Condition	: Clear
5	Longitude	: 84°37'18.22"E	6	Latitude	: 23°27'56.84N

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

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



****End of Report****


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



ENVIRONMENTAL LABORATORIES &

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1C-6259

TEST REPORT

Test Report No.	: ELES/RNC/2023/2754	Report Release Date	: 29.07.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883923000001619F		

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/EP/2225
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 22.06.2023
		Sample Received Date	: 26.06.2023
Mines Status	: Non Operational	Type of Sample	: Effluent Water
Period of Analysis	: 26.06.2023 to 12.07.2023	Source of Sample	: Work Shop Effluent - Bagru Bauxite Mines (75.41 ha)
		Sampling Procedure	: ELES/DOC/SMPL/01
		Sample Collected By	: ELES Pvt. Ltd
		Sample Condition	: Sealed & Preserved

NABL Accredited

Discipline: Chemical		Group: Pollution & Environment		Discharge Limits - CPCB EPR, 1986 Schedule VI	
Parameter	Unit	Test Protocol	Result	Inland Surface Water	Land of Irrigation
Sulphide (as S)	mg/L	IS 3025 (Part-29):1986; RA2019	0.56	2.0	—
Fluoride (as F)	mg/L	IS 3025 (Part-60):2008; RA2019	0.734	2.0	—
Dissolved Oxygen (as DO)	mg/L	IS 3025 (Part-38):1989; RA2019	4.1	—	—
Discipline: Chemical		Group: Residues in Water			
Nickel (as Ni)	mg/L	APHA 23 rd Ed.2017; 3111 B & 3500 Ni	<0.01	3.0	—
Manganese (as Mn)	mg/L	APHA 23 rd Ed.2017; 3111 B & 3500 Mn B	<0.05	2.0	—
Lead (as Pb)	mg/L	APHA 23 rd Ed.2017; 3111 B & 3500 Pb B	<0.01	0.1	—
Mercury (as Hg)	mg/L	IS 3025 (Part-48):1994; RA2019	<0.001	0.01	—

Remarks: 1. pH done at Lab.



****End of Report****

Authorized Signatory

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

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CIN: U74909JH2016PT011125

TC-6839

TEST REPORT

Test Report No. : ELES/RNC/2023/2753	Report Release Date : 29.07.2023
Work Order No. : 13612310218	Work Order Date : 21.04.2023
ULR No. : TC883923000001618F	

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/EF/2224
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 22.06.2023
		Sample Received Date	: 26.06.2023
Mines Status	: Non Operational	Type of Sample	: Effluent Water
Period of Analysis	: 26.06.2023 to 12.07.2023	Source of Sample	: STP Outlet- Bagru Bauxite Mines (75.41 ha)
		Sampling Procedure	: ELES/DOC/SMPL/01
		Sample Collected By	: ELES Pvt. Ltd
		Sample Condition	: Sealed & Preserved

NABL Accredited

Discipline: Chemical		Group: Pollution & Environment		Discharge Limits – CPCB EPR, 1986 Schedule VI	
Parameter	Unit	Test Protocol	Result	Inland Surface Water	Land of Irrigation
pH (at 25.1 °C)	-	APHA 23 rd Ed.2017,4500-H ⁷ B	6.42	5.5-9.0	5.5-9.0
Total Suspended Solids (TSS)	mg/L	IS 3025 (Part-17):2022	52.4	100	200
Total Dissolved Solids (TDS)	mg/L	APHA 23 rd Ed2017, 2540B, C&D	1028	--	--
Chemical Oxygen Demand (COD)	mg/L	IS 3025 (Part-58): 2006; RA2022	48.2	250	--
Biochemical Oxygen Demand (BOD) (at 27 °C for 3 days)	mg/L	IS 3025 (Part-44): 1993; RA2019	5.2	30	100
Oil & Grease	mg/L	IS 3025 (Part-39): 2021	2.8	10	10
Calcium (as Ca)	mg/L	IS 3025 (Part-40):1991; RA2019	14.4	--	--
Discipline: Chemical		Group: Residues in Water			
Iron (as Fe)	mg/L	APHA 23 rd Ed.2017; 3111B & 3500 Fe B	0.983	3.0	--
Aluminum (as Al)	mg/L	IS 3025 (Part-55): 2003; RA2019	<0.02	--	--

Remarks: 1. pH done at Lab.



****End of Report****

R. Singh
Authorized Signatory
Jr. Deependra Kumar Sini
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ELES Pvt. Ltd. Technical Manager

Page 1 of 1

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ENVIRONMENTAL LABORATORIES &

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TEST REPORT

Test Report No. : ELES/RNC/2023/2962	Report Release Date : 08.08.2023
Work Order No. : 13612310218	Work Order Date : 21.04.2023
ULR No. : TC883923000001809F	

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/2748
Address	: Lohardaga, Jharkhand-835302	Location	: Entrance Gate (Ropeway Loading Str); Bagru Bauxite Mine(75.41ha)
		Sampling Date	: 23.07.2023 to 24.07.2023
Mines Status	: Non Operational	Sample Received Date	: 31.07.2023
Period of Analysis	: 31.07.2023 to 07.08.2023	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sample Drawn By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 26	2	Barometric Pressure (mmHg)	: 737
3	Relative Humidity (%)	: 65	4	Weather Condition	: Partly Cloudy

NABL Accredited				
Discipline : Chemical			Group : Atmospheric Pollution	
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	64	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part-24): 2019	33	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	10.7	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	18.2	80 (24hrs)
Ozone (O ₃)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m ³	IS 5182 (Part-25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	0.008	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)



****End of Report****

Authorized Signatory
Dr. Deependra Kumar Sinha
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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA
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CIN: U74999JH2018PTC011123

TEST REPORT

Test Report No.	: ELES/RNC/2023/2962	Report Release Date	: 08.08.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/2748
Address	: Lohardaga, Jharkhand-835302	Location	: Entrance Gate (Ropeway Loading Str); Bagru Bauxite Mine(75.41ha)
		Sampling Date	: 23.07.2023 to 24.07.2023
Mines Status	: Non Operational	Sample Received Date	: 31.07.2023
Period of Analysis	: 31.07.2023 to 07.08.2023	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sample Drawn By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 26	2	Barometric Pressure (mmHg)	: 737
3	Relative Humidity (%)	: 65	4	Weather Condition	: Partly Cloudy

Discipline : Chemical		Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene*	$\mu\text{g}/\text{m}^3$	IS:5182 (Part-11): 2006;RA2017	<1.0	05(Annual)
Benzo (a) Pyrene*	ng/m^3	IS:5182 (Part-12): 2004;RA2019	<0.5	01(Annual)

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



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Authorised Signatory

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TEST REPORT

Test Report No. : ELES/RNC/2023/2963	Report Release Date : 08.08.2023
Work Order No. : 13612310218	Work Order Date : 21.04.2023
ULR No. : TC883923000001810F	

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/2749
Address	: Lohardaga, Jharkhand-835302	Location	: Administrative Office Bagru Bauxite Mine (75.41ha)
		Sampling Date	: 23.07.2023 to 24.07.2023
Mines Status	: Non Operational	Sample Received Date	: 31.07.2023
Period of Analysis	: 31.07.2023 to 07.08.2023	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sample Drawn By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 26	2	Barometric Pressure (mmHg)	: 737
3	Relative Humidity (%)	: 65	4	Weather Condition	: Partly Cloudy

NABL Accredited				
Discipline : Chemical			Group : Atmospheric Pollution	
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-23): 2006; RA2022	52	100 (24hrs)
Particulate Matter (PM2.5)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 24): 2019	25	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-2): 2001; RA2022	6.9	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-6): 2006; RA2022	19.1	80 (24hrs)
Ozone (O ₃)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m^3	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-22): 2004; RA2019	0.004	1 (24hrs)
Nickel (Ni)	ng/m^3	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m^3	ELES/AIR/SOP/01	<2.0	06 (Annual)



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Authorized Signatory

Dr. Deependra Kumar Sinha

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ELES Pvt. Ltd. Technical Manager

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CIN: U74999JH2018PTC011125

TEST REPORT

Test Report No. : ELES/RNC/2023/2963	Report Release Date : 08.08.2023
Work Order No. : 13612310218	Work Order Date : 21.04.2023

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/2749
Address	: Lohardaga, Jharkhand-835302	Location	: Administrative Office Bagru Bauxite Mine (75.41ha)
		Sampling Date	: 23.07.2023 to 24.07.2023
Mines Status	: Non Operational	Sample Received Date	: 31.07.2023
Period of Analysis	: 31.07.2023 to 07.08.2023	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sample Drawn By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

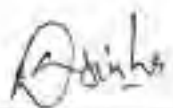
METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 26	2	Barometric Pressure (mm Hg)	: 737
3	Relative Humidity (%)	: 65	4	Weather Condition	: Partly Cloudy

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

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



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Authorized Signatory
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TEST REPORT

Test Report No. : ELES/RNC/2023/2964	Report Release Date : 08.08.2023
Work Order No. : L3612310218	Work Order Date : 21.04.2023
ULR No. : TC883923000001811F	

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/2750
Address	: Lohardaga, Jharkhand-835302	Location	: Near Shiv Temple Compound Bagru Bauxite Mine (75.41ha)
		Sampling Date	: 23.07.2023 to 24.07.2023
Mines Status	: Non Operational	Sample Received Date	: 31.07.2023
Period of Analysis	: 31.07.2023 to 07.08.2023	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sample Drawn By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 26	2	Barometric Pressure (mmHg)	: 737
3	Relative Humidity (%)	: 65	4	Weather Condition	: Partly Cloudy

NABL Accredited				
Discipline : Chemical			Group : Atmospheric Pollution	
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	55	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	29	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	5.5	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	9.8	80 (24hrs)
Ozone (O ₃)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	0.010	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)



Authorised Signatory
Dr. Deependra Kumar Sinha

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CIN: U74999JH2018PTC011125

TEST REPORT

Test Report No. : ELES/RNC/2023/2964	Report Release Date : 08.08.2023
Work Order No. : 13612310218	Work Order Date : 21.04.2023

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/2750
Address	: Lohardaga, Jharkhand-835302	Location	: Near Shiv Temple Compound Bagru Bauxite Mine (75.41ha)
		Sampling Date	: 23.07.2023 to 24.07.2023
Mines Status	: Non Operational	Sample Received Date	: 31.07.2023
Period of Analysis	: 31.07.2023 to 07.08.2023	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sample Drawn By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 26	2	Barometric Pressure (mmHg)	: 737
3	Relative Humidity (%)	: 65	4	Weather Condition	: Partly Cloudy

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

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



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

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TEST REPORT

Test Report No. : ELES/RNC/2023/2965	Report Release Date : 08.08.2023
Work Order No. : 13612310218	Work Order Date : 21.04.2023
ULR No. : TC883923000001812F	

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/2751
Address	: Lohardaga, Jharkhand-835302	Location	: Near Weigh Bridge Bagru Bauxite Mine (75.41 ha)
		Sampling Date	: 23.07.2023 to 24.07.2023
Mines Status	: Non Operational	Sample Received Date	: 31.07.2023
Period of Analysis	: 31.07.2023 to 07.08.2023	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sample Drawn By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 26	2	Barometric Pressure (mmHg)	: 737
3	Relative Humidity (%)	: 65	4	Weather Condition	: Partly Cloudy

NABL Accredited				
Discipline : Chemical			Group : Atmospheric Pollution	
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-23): 2006; RA2022	64	100 (24hrs)
Particulate Matter (PM2.5)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 24): 2019	35	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-2): 2001; RA2022	11.8	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-6): 2006; RA2022	27.3	80 (24hrs)
Ozone (O ₃)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m^3	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-22): 2004; RA2019	0.018	1 (24hrs)
Nickel (Ni)	ng/m^3	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m^3	ELES/AIR/SOP/01	<2.0	06 (Annual)



****End of Report****


 Dr. Deependra Kumar Sinha
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CIN: U74999JH2012BPYCO11125

TEST REPORT

Test Report No.	: ELES/RNC/2023/2965	Report Release Date	: 08.08.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/2751
Address	: Lohardaga, Jharkhand-835302	Location	: Near Weigh Bridge Bagru Bauxite Mine (75.41ha)
		Sampling Date	: 23.07.2023 to 24.07.2023
Mines Status	: Non Operational	Sample Received Date	: 31.07.2023
Period of Analysis	: 31.07.2023 to 07.08.2023	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sample Drawn By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved


METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 26	2	Barometric Pressure (mmHg)	: 737
3	Relative Humidity (%)	: 65	4	Weather Condition	: Partly Cloudy

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

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



****End of Report****


Authorised Signatory
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 Ph. D. Environmental Engg.
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ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA
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Website: www.elespl.co.in



TEST REPORT

Test Report No. : ELES/RNC/2023/2966	Report Release Date : 08.08.2023
Work Order No. : 13612310218	Work Order Date : 21.04.2023
ULR No. : TC883923000001813F	


CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/2752
Address	: Lohardaga, Jharkhand-835302	Location	: Near Daldaliya Village Bagru Bauxite Mine (75.41ha)
		Sampling Date	: 23.07.2023 to 24.07.2023
Mines Status	: Operational	Sample Received Date	: 31.07.2023
Period of Analysis	: 31.07.2023 to 07.08.2023	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sample Drawn By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 26	2	Barometric Pressure (mmHg)	: 737
3	Relative Humidity (%)	: 65	4	Weather Condition	: Partly Cloudy
5	Longitude	: 84°35'37.93"E	6	Latitude	: 23°29'4.48"N

NABL Accredited				
Discipline : Chemical			Group : Atmospheric Pollution	
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	53	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	27	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	6.2	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	17.8	80 (24hrs)
Ozone (O ₃)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	<0.002	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)



****End of Report****


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

Page 1 of 1

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ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA
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CIN: U74999JH2018PTC011125

TEST REPORT

Test Report No. : ELES/RNC/2023/2966	Report Release Date : 08.08.2023
Work Order No. : 13612310218	Work Order Date : 21.04.2023

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/2752
Address	: Lohardaga, Jharkhand-835302	Location	: Near Daldaliya Village Bagru Bauxite Mine (75.41ha)
		Sampling Date	: 23.07.2023 to 24.07.2023
Mines Status	: Operational	Sample Received Date	: 31.07.2023
Period of Analysis	: 31.07.2023 to 07.08.2023	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sample Drawn By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION

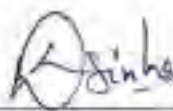
1	Average Temperature (°C)	: 26	2	Barometric Pressure (mmHg)	: 737
3	Relative Humidity (%)	: 65	4	Weather Condition	: Partly Cloudy
5	Longitude	: 84°35'37.93"E	6	Latitude	: 23°29'4.48"N

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

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



****End of Report****


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



ENVIRONMENTAL LABORATORIES &

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CIN: U74999HR2018PTC011125

TEST REPORT

Test Report No. : ELES/RNC/2023/2967	Report Release Date : 08.08.2023
Work Order No. : 13612310218	Work Order Date : 21.04.2023
ULR No. : TC883923000001814F	

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/2753
Address	: Lohardaga, Jharkhand-835302	Location	: Aditya School Gangupara Bagru Bauxite Mine (75.41ha)
		Sampling Date	: 23.07.2023 to 24.07.2023
Mines Status	: Operational	Sample Received Date	: 31.07.2023
Period of Analysis	: 31.07.2023 to 07.08.2023	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sample Drawn By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 26	2	Barometric Pressure (mmHg)	: 737
3	Relative Humidity (%)	: 65	4	Weather Condition	: Partly Cloudy
5	Longitude	: 84°38'8.14"E	6	Latitude	: 23°27'46.28"N

NABL Accredited				
Discipline : Chemical			Group : Atmospheric Pollution	
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	54	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part-24): 2019	29	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	8.5	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	9.2	80 (24hrs)
Ozone (O ₃)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m ³	IS 5182 (Part-25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	0.010	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)



****End of Report****

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

Page 1 of 1

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ENVIRONMENTAL LABORATORIES &

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TEST REPORT

Test Report No. : ELES/RNC/2023/2967	Report Release Date : 08.08.2023
Work Order No. : 13612310218	Work Order Date : 21.04.2023

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/2753
Address	: Lohardaga, Jharkhand-835302	Location	: Aditya School Gangupara Bagru Bauxite Mine (75.41ha)
		Sampling Date	: 23.07.2023 to 24.07.2023
Mines Status	: Operational	Sample Received Date	: 31.07.2023
Period of Analysis	: 31.07.2023 to 07.08.2023	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sample Drawn By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

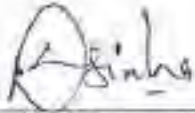
METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 26	2	Barometric Pressure (mmHg)	: 737
3	Relative Humidity (%)	: 65	4	Weather Condition	: Partly Cloudy
5	Longitude	: 84°38'8.14"E	6	Latitude	: 23°27'46.28"N

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

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



****End of Report****


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



ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSARDVAR ENCLAVE, TUPUDANA
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TEST REPORT

Test Report No. : ELES/RNC/2023/2968	Report Release Date : 08.08.2023
Work Order No. : I3612310218	Work Order Date : 21.04.2023
ULR No. : TC883923000001815F	

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/2754
Address	: Lohardaga, Jharkhand-835302	Location	: Ropeway Unloading Station Bagru Bauxite Mine (75.41ha)
		Sampling Date	: 24.07.2023 to 25.07.2023
Mines Status	: Operational	Sample Received Date	: 31.07.2023
Period of Analysis	: 31.07.2023 to 07.08.2023	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sample Drawn By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 24	2	Barometric Pressure (mmHg)	: 737
3	Relative Humidity (%)	: 68	4	Weather Condition	: Cloudy
5	Longitude	: 84°41'28.22"E	6	Latitude	: 23°26'45.48"N

NABL Accredited				
Discipline : Chemical			Group : Atmospheric Pollution	
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	52	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	24	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	6.2	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	18.9	80 (24hrs)
Ozone (O ₃)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	0.007	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)



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

****End of Report****

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ENVIRONMENTAL LABORATORIES &

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CIN: U74999JH2018PTC011125

TEST REPORT

Test Report No. : ELES/RNC/2023/2968	Report Release Date : 08.08.2023
Work Order No. : 13612310218	Work Order Date : 21.04.2023

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/2754
Address	: Lohardaga, Jharkhand-835302	Location	: Ropeway Unloading Station Bagru Bauxite Mine (75.41ha)
		Sampling Date	: 24.07.2023 to 25.07.2023
Mines Status	: Operational	Sample Received Date	: 31.07.2023
Period of Analysis	: 31.07.2023 to 07.08.2023	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sample Drawn By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION

1	Average Temperature (°C)	: 24	2	Barometric Pressure (mmHg)	: 737
3	Relative Humidity (%)	: 68	4	Weather Condition	: Cloudy
5	Longitude	: 84°41'28.22"E	6	Latitude	: 23°26'45.48"N

Discipline : Chemical

Group : Atmospheric Pollution

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

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



****End of Report****


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



ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA
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TC-6889

TEST REPORT

Test Report No. : ELES/RNC/2023/2969	Report Release Date : 08.08.2023
Work Order No. : 13612310218	Work Order Date : 21.04.2023
ULR No. : TC883923000001816F	


CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/2755
Address	: Lohardaga, Jharkhand-835302	Location	: Ropeway Angle Station Bagru Bauxite Mine (75.41 ha)
		Sampling Date	: 24.07.2023 to 25.07.2023
Mines Status	: Operational	Sample Received Date	: 31.07.2023
Period of Analysis	: 31.07.2023 to 07.08.2023	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sample Drawn By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 24	2	Barometric Pressure (mmHg)	: 737
3	Relative Humidity (%)	: 68	4	Weather Condition	: Cloudy
5	Longitude	: 84°37'18.22"E	6	Latitude	: 23°27'56.84N

NABL Accredited				
Discipline : Chemical			Group : Atmospheric Pollution	
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	48	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	25	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	5.8	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	137	80 (24hrs)
Ozone (O ₃)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	0.009	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)



****End of Report****


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

Page 1 of 1

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ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA
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CIN: U74999JH2018PTC011125

TEST REPORT

Test Report No. : ELES/RNC/2023/2969	Report Release Date : 08.08.2023
Work Order No. : 13612310218	Work Order Date : 21.04.2023

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/2755
Address	: Lohardaga, Jharkhand-835302	Location	: Ropeway Angle Station Bagru Bauxite Mine (75.41ha)
		Sampling Date	: 24.07.2023 to 25.07.2023
Mines Status	: Operational	Sample Received Date	: 31.07.2023
Period of Analysis	: 31.07.2023 to 07.08.2023	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sample Drawn By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 24	2	Barometric Pressure (mmHg)	: 737
3	Relative Humidity (%)	: 68	4	Weather Condition	: Cloudy
5	Longitude	: 84°37'18.22"E	6	Latitude	: 23°27'56.84N

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

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



****End of Report****

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

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Website : www.elespl.co.in



TEST REPORT

Test Report No. : ELES/RNC/2023/3409	Report Release Date : 09.09.2023
Work Order No. : 13612310218	Work Order Date : 21.04.2023
ULR No. : TC883923000002177F	

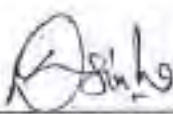
CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/3033
Address	: Lohardaga, Jharkhand-835302	Location	: Entrance Gate (Ropeway Loading Str); Bagru Bauxite Mine(75.41ha)
		Sampling Date	: 21.08.2023 to 22.08.2023
Mines Status	: Non Operational	Sample Received Date	: 26.08.2023
Period of Analysis	: 26.08.2023 to 08.09.2023	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sample Drawn By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 23	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%)	: 66	4	Weather Condition	: Partly Cloudy

NABL Accredited				
Discipline : Chemical			Group : Atmospheric Pollution	
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-23): 2006; RA2022	59	100 (24hrs)
Particulate Matter (PM2.5)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 24): 2019	31	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-2): 2001; RA2022	9.2	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-6): 2006; RA2022	19.8	80 (24hrs)
Ozone (O ₃)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m^3	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-22): 2004; RA2019	0.005	1 (24hrs)
Nickel (Ni)	ng/m^3	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m^3	ELES/AIR/SOP/01	<2.0	06 (Annual)



****End of Report****


Dr. **Authorised Signatory** Sinha
Ph. D. Environmental Engg.
ELESPL-2023 Technical Manager

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CIN: U74999JH2018PTC013125

TEST REPORT

Test Report No.	: ELES/RNC/2023/3409	Report Release Date	: 09.09.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/3033
Address	: Lohardaga, Jharkhand-835302	Location	: Entrance Gate (Ropeway Loading Stn); Bagru Bauxite Mine(75.41ha)
		Sampling Date	: 21.08.2023 to 22.08.2023
Mines Status	: Non Operational	Sample Received Date	: 26.08.2023
Period of Analysis	: 26.08.2023 to 08.09.2023	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sample Drawn By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 23	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%)	: 66	4	Weather Condition	: Partly Cloudy

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

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



****End of Report****


Authorised Signatory
 Mr. Deependra Kumar Smita
 B.E., D. Environmental Engg.
 ELES Pvt. Ltd. Technical Manager



ENVIRONMENTAL LABORATORIES &

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TEST REPORT

Test Report No.	: ELES/RNC/2023/3410	Report Release Date	: 09.09.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883923000002178F		

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/3034
Address	: Lohardaga, Jharkhand-835302	Location	: Administrative Office Bagru Bauxite Mine (75.41ha)
		Sampling Date	: 21.08.2023 to 22.08.2023
Mines Status	: Non Operational	Sample Received Date	: 26.08.2023
Period of Analysis	: 26.08.2023 to 08.09.2023	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sample Drawn By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 23	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%)	: 66	4	Weather Condition	: Partly Cloudy

NABL Accredited				
Discipline : Chemical			Group : Atmospheric Pollution	
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-23): 2006; RA2022	48	100 (24hrs)
Particulate Matter (PM2.5)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 24): 2019	21	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-2): 2001; RA2022	5.8	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-6): 2006; RA2022	22.5	80 (24hrs)
Ozone (O ₃)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m^3	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-22): 2004; RA2019	0.007	1 (24hrs)
Nickel (Ni)	ng/m^3	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m^3	ELES/AIR/SOP/01	<2.0	06 (Annual)



****End of Report****


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

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TEST REPORT

Test Report No. : ELES/RNC/2023/3-410	Report Release Date : 09.09.2023
Work Order No. : 13612310218	Work Order Date : 21.04.2023

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/3034
Address	: Lohardaga, Jharkhand-835302	Location	: Administrative Office Bagru Bauxite Mine (75.41ha)
		Sampling Date	: 21.08.2023 to 22.08.2023
Mines Status	: Non Operational	Sample Received Date	: 26.08.2023
Period of Analysis	: 26.08.2023 to 08.09.2023	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sample Drawn By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

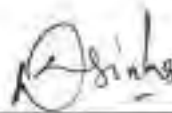
METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 23	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%)	: 66	4	Weather Condition	: Partly Cloudy

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

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



****End of Report****


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



ENVIRONMENTAL LABORATORIES & ENGINEERING SERVICES PVT. LTD.

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TC-803E

TEST REPORT

Test Report No. : ELES/RNC/2023/3411	Report Release Date : 09.09.2023
Work Order No. : 13612310218	Work Order Date : 21.04.2023
ULR No. : TC883923000002179F	

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/3035
Address	: Lohardaga, Jharkhand-835302	Location	: Near Shiv Temple Compound Bagru Bauxite Mine (75.41 ha)
		Sampling Date	: 21.08.2023 to 22.08.2023
Mines Status	: Non Operational	Sample Received Date	: 26.08.2023
Period of Analysis	: 26.08.2023 to 08.09.2023	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sample Drawn By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 23	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%)	: 66	4	Weather Condition	: Partly Cloudy

NABL Accredited				
Discipline : Chemical			Group : Atmospheric Pollution	
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-23): 2006; RA2022	52	100 (24hrs)
Particulate Matter (PM2.5)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 24): 2019	27	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-2): 2001; RA2022	5.1	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-6): 2006; RA2022	7.5	80 (24hrs)
Ozone (O ₃)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m^3	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-22): 2004; RA2019	0.006	1 (24hrs)
Nickel (Ni)	ng/m^3	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m^3	ELES/AIR/SOP/01	<2.0	06 (Annual)



Reviewed by

****End of Report****

Signature of Dr. Deependra Kumar Sinha
Authorised Signatory
Dr. Deependra Kumar Sinha

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ELES Pvt. Ltd. Technical Manager

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ENGINEERING SERVICES PVT. LTD.

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CIN: U74999JH2018PTC011125

TEST REPORT

Test Report No. : ELES/RNC/2023/3411	Report Release Date : 09.09.2023
Work Order No. : 13612310218	Work Order Date : 21.04.2023

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/3035
Address	: Lohardaga, Jharkhand-835302	Location	: Near Shiv Temple Compound Bagra Bauxite Mine (75.41ha)
Mines Status	: Non Operational	Sampling Date	: 21.08.2023 to 22.08.2023
Period of Analysis	: 26.08.2023 to 08.09.2023	Sample Received Date	: 26.08.2023
		Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sample Drawn By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION

1	Average Temperature (°C)	: 23	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%)	: 66	4	Weather Condition	: Partly Cloudy

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

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



End of Report

Authorised Signatory

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

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ENVIRONMENTAL LABORATORIES &

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TEST REPORT

Test Report No. : ELES/RNC/2023/3412	Report Release Date : 09.09.2023
Work Order No. : 13612310218	Work Order Date : 21.04.2023
ULR No. : TC883923000002180F	

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindaleo Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/3036
Address	: Lohardaga, Jharkhand-835302	Location	: Near Weigh Bridge Bagru Bauxite Mine (75.41ha)
		Sampling Date	: 21.08.2023 to 22.08.2023
Mines Status	: Non Operational	Sample Received Date	: 26.08.2023
Period of Analysis	: 26.08.2023 to 08.09.2023	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sample Drawn By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved


METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 23	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%)	: 66	4	Weather Condition	: Partly Cloudy

NABL Accredited				
Discipline : Chemical			Group : Atmospheric Pollution	
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	58	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	31	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	10.3	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	24.7	80 (24hrs)
Ozone (O ₃)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	0.011	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	2.0	06 (Annual)

Reviewed by

 Reviewed by

****End of Report****

Authorised Signatory

 Authorised Signatory
 Dr. Deependra Kumar Sinha

Page 1 of 1

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

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ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA
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TEST REPORT

Test Report No.	: ELES/RNC/2023/3412	Report Release Date	: 09.09.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/3036
Address	: Lohardaga, Jharkhand-835302	Location	: Near Weigh Bridge Bagru Bauxite Mine (75.41ha)
		Sampling Date	: 21.08.2023 to 22.08.2023
Mines Status	: Non Operational	Sample Received Date	: 26.08.2023
Period of Analysis	: 26.08.2023 to 08.09.2023	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sample Drawn By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved


METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 23	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%)	: 66	4	Weather Condition	: Partly Cloudy

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

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



****End of Report****


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



ENVIRONMENTAL LABORATORIES &

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TEST REPORT

Test Report No. : ELES/RNC/2023/3413	Report Release Date : 09.09.2023
Work Order No. : 13612310218	Work Order Date : 21.04.2023
ULR No. : TC883923000002181F	

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/3037
Address	: Lohardaga, Jharkhand-835302	Location	: Near Daldaliya Village Bagru Bauxite Mine (75.41ha)
		Sampling Date	: 21.08.2023 to 22.08.2023
Mines Status	: Operational	Sample Received Date	: 26.08.2023
Period of Analysis	: 26.08.2023 to 08.09.2023	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sample Drawn By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 23	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	: 66	4	Weather Condition	: Partly Cloudy
5	Longitude	: 84°35'37.93"E	6	Latitude	: 23°29'4.48"N

NABL Accredited				
Discipline : Chemical			Group : Atmospheric Pollution	
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	51	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	25	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	5.2	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	14.3	80 (24hrs)
Ozone (O ₃)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	<0.002	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)



****End of Report****

Dr. Deependra Kumar Sinha
Authorised Signatory
 Dr. Deependra Kumar Sinha
 Pk. D. Environmental E.

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CIN: U74909JH2019PTC011125

TEST REPORT

Test Report No. : ELES/RNC/2023/3413	Report Release Date : 09.09.2023
Work Order No. : 13612310218	Work Order Date : 21.04.2023

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/3037
Address	: Lohardaga, Jharkhand-835302	Location	: Near Daldaliya Village Bagru Bauxite Mine (75.41ha)
		Sampling Date	: 21.08.2023 to 22.08.2023
Mines Status	: Operational	Sample Received Date	: 26.08.2023
Period of Analysis	: 26.08.2023 to 08.09.2023	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sample Drawn By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 23	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	: 66	4	Weather Condition	: Partly Cloudy
5	Longitude	: 84°35'37.93"E	6	Latitude	: 23°29'4.48"N

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

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



****End of Report****

Authorised Signatory

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

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TEST REPORT

Test Report No. : ELES/RNC/2023/3414	Report Release Date : 09.09.2023
Work Order No. : 13612310218	Work Order Date : 21.04.2023
ULR No. : TC883923000002182F	

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/3038
Address	: Lohardaga, Jharkhand-835302	Location	: Aditya School Gangupara Bagru Bauxite Mine (75.41ha)
		Sampling Date	: 21.08.2023 to 22.08.2023
Mines Status	: Operational	Sample Received Date	: 26.08.2023
Period of Analysis	: 26.08.2023 to 08.09.2023	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sample Drawn By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 23	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	: 66	4	Weather Condition	: Partly Cloudy
5	Longitude	: 84°38'8.14"E	6	Latitude	: 23°27'46.28"N

NABL Accredited				
Discipline : Chemical			Group : Atmospheric Pollution	
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	51	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part-24): 2019	27	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	7.3	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	7.4	80 (24hrs)
Ozone (O ₃)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m ³	IS 5182 (Part-25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	0.010	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)



****End of Report****

Deependra Kumar Sirihā
Authorised Signatory
 Dr. Deependra Kumar Sirihā

P. N. S. Swasthikumar Engg.
 ELES Pvt. Ltd, Technical Manager

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TEST REPORT

Test Report No. : ELES/RNC/2023/3414	Report Release Date : 09.09.2023
Work Order No. : 13612310218	Work Order Date : 21.04.2023

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/3038
Address	: Lohardaga, Jharkhand-835302	Location	: Aditya School Gangupara Bagru Bauxite Mine (75.41ha)
		Sampling Date	: 21.08.2023 to 22.08.2023
Mines Status	: Operational	Sample Received Date	: 26.08.2023
Period of Analysis	: 26.08.2023 to 08.09.2023	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sample Drawn By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 23	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	: 66	4	Weather Condition	: Partly Cloudy
5	Longitude	: 84°38'8.14"E	6	Latitude	: 23°27'46.28"N

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

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



****End of Report****

Authorized Signatory

Dr. Deependra Kumar Sinha

Ph. D. Environmental Engg.

ELES Pvt. Ltd. Technical Manager

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ENVIRONMENTAL LABORATORIES &

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TEST REPORT

Test Report No. : ELES/RNC/2023/3415	Report Release Date : 09.09.2023
Work Order No. : 13612310218	Work Order Date : 21.04.2023
ULR No. : TC883923000002183F	

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/3039
Address	: Lohardaga, Jharkhand-835302	Location	: Ropeway Unloading Station Bagru Bauxite Mine (75.41 ha)
		Sampling Date	: 22.08.2023 to 23.08.2023
Mines Status	: Operational	Sample Received Date	: 26.08.2023
Period of Analysis	: 26.08.2023 to 08.09.2023	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sample Drawn By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 22	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	: 67	4	Weather Condition	: Cloudy
5	Longitude	: 84°41'28.22"E	6	Latitude	: 23°26'45.48"N

NABL Accredited				
Discipline : Chemical			Group : Atmospheric Pollution	
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	49	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part-24): 2019	22	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	5.8	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	19.1	80 (24hrs)
Ozone (O ₃)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m ³	IS 5182 (Part-25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	0.005	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)



End of Report

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

Page 1 of 1

ELES Pvt. Ltd. Technical Manager

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ENVIRONMENTAL LABORATORIES &

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CIN: U74999JH2018PT011225

TEST REPORT

Test Report No.	: ELES/RNC/2023/3415	Report Release Date	: 09.09.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/3039
Address	: Lohardaga, Jharkhand-835302	Location	: Ropeway Unloading Station Bagru Bauxite Mine (75.41ha)
		Sampling Date	: 22.08.2023 to 23.08.2023
Mines Status	: Operational	Sample Received Date	: 26.08.2023
Period of Analysis	: 26.08.2023 to 08.09.2023	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sample Drawn By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

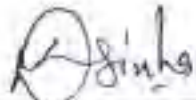
METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 22	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	: 67	4	Weather Condition	: Cloudy
5	Longitude	: 84°41'28.22"E	6	Latitude	: 23°26'45.48"N

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

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



****End of Report****


Authorised Signatory
 Dr. Deependra Kumar Singh
 Ph. D. Environmental Engg.
 ELER Pvt. Ltd. Technical Manager

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ENVIRONMENTAL LABORATORIES &

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TEST REPORT

Test Report No. : ELES/RNC/2023/3416	Report Release Date : 09.09.2023
Work Order No. : 13612310218	Work Order Date : 21.04.2023
ULR No. : TC883923000002184F	

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name : Hindalco Industries Limited	Address : Lohardaga, Jharkhand-835302	Sample Ref. No. : ELES/RNC/2023/AA/3040	Location : Ropeway Angle Station Bagru Bauxite Mine (75.41ha)
Mines Status : Operational	Period of Analysis : 26.08.2023 to 08.09.2023	Sampling Date : 22.08.2023 to 23.08.2023	Sample Received Date : 26.08.2023
		Type of Sample : Ambient Air	Sampling Procedure : ELES/DOC/SMPL/02
		Sample Drawn By : ELES Pvt. Ltd.	Sample Condition : Sealed & Preserved

METEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 22	2	Barometric Pressure (mmHg) : 736
3	Relative Humidity (%) : 67	4	Weather Condition : Cloudy
5	Longitude : 84°37'18.22"E	6	Latitude : 23°27'56.84"N

NABL Accredited				
Discipline : Chemical			Group : Atmospheric Pollution	
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	45	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part-24): 2019	21	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	7.3	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	14.2	80 (24hrs)
Ozone (O ₃)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m ³	IS 5182 (Part-25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	0.005	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)



****End of Report****

Authorised Signatory
Dr. Daspendra Kumar Sinha
Dr. D. Environmental Engg.

Page 1 of 1

ELES Pvt. Ltd, Technical Manager

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ENVIRONMENTAL LABORATORIES &

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TEST REPORT

Test Report No. : ELES/RNC/2023/3416	Report Release Date : 09.09.2023
Work Order No. : 13612310218	Work Order Date : 21.04.2023

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/3040
Address	: Lohardaga, Jharkhand-835302	Location	: Ropeway Angle Station Bagru Bauxite Mine (75.41ha)
		Sampling Date	: 22.08.2023 to 23.08.2023
Mines Status	: Operational	Sample Received Date	: 26.08.2023
Period of Analysis	: 26.08.2023 to 08.09.2023	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sample Drawn By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 22	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	: 67	4	Weather Condition	: Cloudy
5	Longitude	: 84°37'18.22"E	6	Latitude	: 23°27'56.84N

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



ENVIRONMENTAL LABORATORIES &

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TEST REPORT

Test Report No. : ELES/RAN/2023/1721	Report Release Date : 10.09.2023
Work Order No. : 13612310218	Work Order Date : 21.04.2023

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RAN/2023/DW/1608
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 17.08.2023
		Sample Received Date	: 28.08.2023
Mines Status	: Non Operational	Type of Sample	: Drinking Water
Period of Analysis	: 28.08.2023 to 09.09.2023	Source/Location of Sample	: Bagru Bauxite Mines (75.71 ha)
		Sampling Procedure	: ELES/DOC/SMPL/01
		Sample Collected By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

Discipline : Chemical		Group : Water		Regulatory Limit as per IS 10500:2012	
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
pH (at 24.8 °C)	-	APHA 23 rd Ed.2017, 4500-H'	6.83	6.5-8.5	No Relaxation
Turbidity	NTU	APHA 23 rd Ed.2017, 2130 B	0.14	1.0	5.0
Taste	-	APHA 23 rd Ed.2017, 2160 C	Agreeable	Agreeable	Agreeable
Odour	-	IS 3025 (Part-5) :2018	Agreeable	Agreeable	Agreeable
Colour	Hazen	APHA 23 rd Ed.2017, 2120B&D	1.0	5	15
Total Dissolved Solids (TDS)	mg/L	APHA 23 rd Ed.2017, 2540B,C&D	365	500	2000
Chloride (as Cl)	mg/L	APHA 23 rd Ed.2017, 4500 Cl B	44.8	250	1000
Fluoride (as F)	mg/L	APHA 23 rd Ed.2017, 4500 F-D	BDL (DL: 0.1)	1.0	1.5
Total Alkalinity (as CaCO ₃)	mg/L	APHA 23 rd Ed.2017, 2320 B	121	200	600
Total Hardness (as CaCO ₃)	mg/L	APHA 23 rd Ed.2017, 2340 C	140	200	600
Sulphate (as SO ₄)	mg/L	APHA 23 rd Ed.2017, 4500 SO ₄ ⁻² -E	32.8	200	400
Nitrate (as NO ₃)	mg/L	APHA 23 rd Ed.2017, 4500 NO ₃ -B	3.12	45	No Relaxation
Phenolic Compound (as C ₆ H ₅ OH)	mg/L	IS 3025 (Part-43):1992;RA2019	BDL (DL: 0.0005)	0.001	0.002

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Save Environment, Save Future



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CIN: U71999RH2018PTC011125

TEST REPORT

Test Report No. : ELES/RAN/2023/1721	Report Release Date : 10.09.2023
Work Order No. : 13612310218	Work Order Date : 21.04.2023

Discipline : Chemical		Group : Water		Regulatory Limit as per IS10500:2012	
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
Cyanide (as CN)	mg/L	APHA 23 rd Ed.2017, 4500 CN-E	BDL (DL: 0.012)	0.05	No Relaxation
Residual Free Chlorine (RFC)	mg/L	IS 3025 (Part-26):2021	BDL (DL: 0.1)	0.02	1.0
Calcium (as Ca)	mg/L	APHA 23 rd Ed.2017, 3500 Ca B	36.6	75	200
Discipline : Chemical		Group : Residues in Water			
Aluminum (as Al)	mg/L	IS 3025 (Part-55): 2003; RA2019	BDL (DL: 0.02)	0.03	0.2
Arsenic (as As)	mg/L	IS 3025 (Part 37): 2022	BDL (DL: 0.005)	0.01	No Relaxation
Boron (as B)	mg/L	IS 3025(Part-57): 2005; RA2021	BDL (DL: 0.2)	0.5	1.0
Cadmium (as Cd)	mg/L	APHA 23 rd Ed.2017, 3111B	BDL (DL: 0.003)	0.003	No Relaxation
Total Chromium (as Cr)	mg/L	APHA 23 rd Ed.2017, 3111B	BDL (DL: 0.03)	0.05	No Relaxation
Copper (as Cu)	mg/L	APHA 23 rd Ed.2017, 3111B	BDL (DL: 0.03)	0.05	1.5
Iron (as Fe)	mg/L	APHA 23 rd Ed.2017, 3111B	0.214	1.0	1.0
Lead (as Pb)	mg/L	APHA 23 rd Ed.2017, 3111B	BDL (DL: 0.01)	0.01	No Relaxation
Manganese (as Mn)	mg/L	APHA 23 rd Ed.2017, 3111B	BDL (DL: 0.05)	0.1	0.3
Mercury (as Hg)	mg/L	IS 3025 (Part-48): 1994; RA2019	BDL (DL: 0.001)	0.001	No Relaxation
Selenium (as Se)	mg/L	IS 3025 (Part-56): 2003; RA2019	BDL (DL: 0.01)	0.01	No Relaxation
Zinc (as Zn)	mg/L	APHA 23 rd Ed.2017, 3111B	BDL (DL: 0.1)	5	15

Remarks: 1. pH & RFC done at Lab.

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TEST REPORT

Test Report No. : ELES/RAN/2023/1721	Report Release Date : 10.09.2023
Work Order No. : 13612310218	Work Order Date : 21.04.2023

Discipline : Chemical		Group : Water		
Parameter	Unit	Test Protocol	Result	Regulatory Limit as 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	APHA	BDL (DL: 0.001)	0.01
Beta HCH*	µg/L	APHA	BDL (DL: 0.01)	0.04
Butachlor*	µg/L	APHA	BDL (DL: 10)	125
Chlorpyrifos*	µg/L	APHA	BDL (DL: 10)	30
Delta HCH*	µg/L	APHA	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	APHA	BDL (DL: 0.5)	1
Endosulfan (alpha, beta, and sulphate)*	µg/L	APHA	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
Isoproturon*	µg/L	APHA	BDL (DL: 0.5)	9

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TEST REPORT

Test Report No. : ELES/RAN/2023/1721	Report Release Date : 10.09.2023
Work Order No. : 13612310218	Work Order Date : 21.04.2023

Discipline : Biological		Group : Water		Regulatory Limit as per IS 10500:2012	
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
Total Coliform	Per 100 mL	IS 15185:2016; RA 2021	Not Detected	Shall not be detected	
Escherichia Coli (E. Coli)	Per 100 mL	IS 15185:2016; RA 2021	Not Detected	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 23 rd Edition	BDL (DL: 0.0001)	0.0001	No relaxation
Polychlorinated Biphenyls (PCB)*	mg/L	APHA 23 rd Edition	BDL (DL: 0.0005)	0.0005	No relaxation

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



****End of Report****

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



ENVIRONMENTAL LABORATORIES &

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TEST REPORT

Test Report No. : ELES/RNC/2023/4017	Report Release Date : 28.10.2023
Work Order No. : 13612310218	Work Order Date : 21.04.2023

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/3434
Address	: Lohardaga, Jharkhand-835302	Location	: Entrance Gate (Ropeway Loading Stn); Bagru Bauxite Mine(75.4 lha)
Mines Status	: Non Operational	Sampling Date	: 17.09.2023 to 18.09.2023
Period of Analysis	: 29.09.2023 to 10.10.2023	Sample Received Date	: 29.09.2023
		Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sample Drawn By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 26	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%)	: 65	4	Weather Condition	: Partly Cloudy

Discipline : Chemical		Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-23): 2006; RA2022	48	100 (24hrs)
Particulate Matter (PM2.5)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-24): 2019	27	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-2): 2001; RA2022	6.3	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-6): 2006; RA2022	15.1	80 (24hrs)
Ozone (O ₃)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m^3	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-22): 2004; RA2019	0.005	1 (24hrs)
Nickel (Ni)	ng/m^3	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m^3	ELES/AIR/SOP/01	<2.0	06 (Annual)



ENVIRONMENTAL LABORATORIES &

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TEST REPORT

Test Report No. : ELES/RNC/2023/4017	Report Release Date : 28.10.2023
Work Order No. : 13612310218	Work Order Date : 21.04.2023

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



ENVIRONMENTAL LABORATORIES &

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CIN: U74999W2018P7C011125

TEST REPORT

Test Report No. : ELES/RNC/2023/4018	Report Release Date : 28.10.2023
Work Order No. : 13612310218	Work Order Date : 21.04.2023

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/3435
Address	: Lohardaga, Jharkhand-835302	Location	: Administrative Office Bagru Bauxite Mine(75.41 ha)
		Sampling Date	: 17.09.2023 to 18.09.2023
Mines Status	: Non Operational	Sample Received Date	: 29.09.2023
Period of Analysis	: 29.09.2023 to 10.10.2023	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sample Drawn By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 26	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%)	: 65	4	Weather Condition	: Partly Cloudy

Discipline : Chemical		Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-23): 2006; RA2022	42	100 (24hrs)
Particulate Matter (PM2.5)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 24): 2019	19	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-2): 2001; RA2022	5.1	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-6): 2006; RA2022	18.1	80 (24hrs)
Ozone (O ₃)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m^3	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-22): 2004; RA2019	0.005	1 (24hrs)
Nickel (Ni)	ng/m^3	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m^3	ELES/AIR/SOP/01	<2.0	06 (Annual)

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TEST REPORT


Test Report No. : ELES/RNC/2023/4018	Report Release Date : 28.10.2023
Work Order No. : 13612310218	Work Order Date : 21.04.2023

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

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



****End of Report****


Authorised Signatory
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TEST REPORT

Test Report No. : ELES/RNC/2023/4019	Report Release Date : 28.10.2023
Work Order No. : 13612310218	Work Order Date : 21.04.2023

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/3436
Address	: Lohardaga, Jharkhand-835302	Location	: Near Shiv Temple Compound Bagru Bauxite Mine(75.41ha)
		Sampling Date	: 17.09.2023 to 18.09.2023
Mines Status	: Non Operational	Sample Received Date	: 29.09.2023
Period of Analysis	: 29.09.2023 to 10.10.2023	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sample Drawn By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 26	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%)	: 65	4	Weather Condition	: Partly Cloudy

Discipline : Chemical		Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	44	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	22	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	5.9	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	6.3	80 (24hrs)
Ozone (O ₃)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	<0.002	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)

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CIN: U74999JH2018PTC011173

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TEST REPORT


Test Report No. : ELES/RNC/2023/4019	Report Release Date : 28.10.2023
Work Order No. : 13612310218	Work Order Date : 21.04.2023

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

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



****End of Report****


Authorized Signatory
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ELES Pvt. Ltd. Technical Manager



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CIN: U74999JH2018PTC011125

TEST REPORT

Test Report No. : ELES/RNC/2023/4020	Report Release Date : 28.10.2023
Work Order No. : 13612310218	Work Order Date : 21.04.2023

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/3437
Address	: Lohardaga, Jharkhand-835302	Location	: Near Weigh Bridge Bagru Bauxite Mine(75.41ha)
		Sampling Date	: 17.09.2023 to 18.09.2023
Mines Status	: Non Operational	Sample Received Date	: 29.09.2023
Period of Analysis	: 29.09.2023 to 10.10.2023	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sample Drawn By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 26	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%)	: 65	4	Weather Condition	: Partly Cloudy

Discipline : Chemical		Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	45	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part-24): 2019	25	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	8.2	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	21.5	80 (24hrs)
Ozone (O ₃)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m ³	IS 5182 (Part-25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	0.007	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)

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TEST REPORT

Test Report No. : ELES/RNC/2023/4020	Report Release Date : 28.10.2023
Work Order No. : 13612310218	Work Order Date : 21.04.2023

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

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



****End of Report****

Authorised Signatory

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



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TEST REPORT

Test Report No. : ELES/RNC/2023/4021	Report Release Date : 28.10.2023
Work Order No. : 13612310218	Work Order Date : 21.04.2023

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/3438
Address	: Lohardaga, Jharkhand-835302	Location	: Near Daldaliya Village Bagru Bauxite Mine(75.41ha)
		Sampling Date	: 17.09.2023 to 18.09.2023
Mines Status	: Operational	Sample Received Date	: 29.09.2023
Period of Analysis	: 29.09.2023 to 10.10.2023	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sample Drawn By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 25	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	: 66	4	Weather Condition	: Partly Cloudy
5	Longitude	: 84°35'37.93"E	6	Latitude	: 23°29'4.48"N

Discipline : Chemical		Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	43	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	20	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	5.8	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	15.1	80 (24hrs)
Ozone (O ₃)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	<0.002	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)



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TEST REPORT


Test Report No. : ELES/RNC/2023/4021	Report Release Date : 28.10.2023
Work Order No. : 13612310218	Work Order Date : 21.04.2023

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

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



****End of Report****



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



ENVIRONMENTAL LABORATORIES &

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TEST REPORT

Test Report No. : ELES/RNC/2023/4022	Report Release Date : 28.10.2023
Work Order No. : 13612310218	Work Order Date : 21.04.2023

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/3439
Address	: Lohardaga, Jharkhand-835302	Location	: Aditya School Gangupara Bagru Bauxite Mine(75.41ha)
		Sampling Date	: 17.09.2023 to 18.09.2023
Mines Status	: Operational	Sample Received Date	: 29.09.2023
Period of Analysis	: 29.09.2023 to 10.10.2023	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sample Drawn By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 25	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	: 66	4	Weather Condition	: Partly Cloudy
5	Longitude	: 84°38'8.14"E	6	Latitude	: 23°27'46.28"N

Discipline : Chemical		Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-23): 2006; RA2022	40	100 (24hrs)
Particulate Matter (PM2.5)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 24): 2019	22	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-2): 2001; RA2022	6.1	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-6): 2006; RA2022	5.5	80 (24hrs)
Ozone (O ₃)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m^3	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	$\mu\text{g}/\text{m}^3$	IS 5182 (Part-22): 2004; RA2019	<0.002	1 (24hrs)
Nickel (Ni)	ng/m^3	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m^3	ELES/AIR/SOP/01	<2.0	06 (Annual)

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TEST REPORT

Test Report No. : ELES/RNC/2023/4022	Report Release Date : 28.10.2023
Work Order No. : 13612310218	Work Order Date : 21.04.2023

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

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



****End of Report****

Authorised Signatory

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



ENVIRONMENTAL LABORATORIES &

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TEST REPORT

Test Report No. : ELES/RNC/2023/4023	Report Release Date : 28.10.2023
Work Order No. : 13612310218	Work Order Date : 21.04.2023

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/3440
Address	: Lohardaga, Jharkhand-835302	Location	: Ropeway Unloading Station Bagru Bauxite Mine(75.41ha)
		Sampling Date	: 17.09.2023 to 18.09.2023
Mines Status	: Operational	Sample Received Date	: 29.09.2023
Period of Analysis	: 29.09.2023 to 10.10.2023	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sample Drawn By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 25	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	: 66	4	Weather Condition	: Partly Cloudy
5	Longitude	: 84°41'28.22"E	6	Latitude	: 23°26'45.48"N

Discipline : Chemical		Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	41	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	19	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	5.1	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	17.5	80 (24hrs)
Ozone (O ₃)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	0.006	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)

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CIN: U74999JH2018PTC011125

ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA
HATIA, RANCHI-834003 (JHARKHAND)
GST NO:- 20AAACE97130124

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/2023/4023	Report Release Date : 28.10.2023
Work Order No. : 13612310218	Work Order Date : 21.04.2023

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

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



****End of Report****


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



ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA
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Phone no.: 0651-2290103

Website: www.elespl.co.in

CIN: U74999JH2018PTC011124

TEST REPORT

Test Report No. : ELES/RNC/2023/4024	Report Release Date : 28.10.2023
Work Order No. : 13612310218	Work Order Date : 21.04.2023

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/3441
Address	: Lohardaga, Jharkhand-835302	Location	: Ropeway Angle Station Bagru Bauxite Mine(75.41ha)
		Sampling Date	: 17.09.2023 to 18.09.2023
Mines Status	: Operational	Sample Received Date	: 29.09.2023
Period of Analysis	: 29.09.2023 to 10.10.2023	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sample Drawn By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 25	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	: 66	4	Weather Condition	: Partly Cloudy
5	Longitude	: 84°41'28.22"E	6	Latitude	: 23°26'45.48"N

Discipline : Chemical		Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	39	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	17	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	5.5	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	15.6	80 (24hrs)
Ozone (O ₃)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	0.007	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)

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CIN: U74999JH2018PTC011125

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TEST REPORT

Test Report No. : ELES/RNC/2023/4024	Report Release Date : 28.10.2023
Work Order No. : 13612310218	Work Order Date : 21.04.2023

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



ENVIRONMENTAL LABORATORIES &

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Website : www.elespl.co.in

CIN: U74999JH2018FTCO11125

TEST REPORT

Test Report No. : ELES/RNC/2023/4127	Report Release Date : 31.10.2023
Work Order No. : 13612310218	Work Order Date : 21.04.2023

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name : Hindalco Industries Limited	Address : Lohardaga, Jharkhand-835302	Sampling Date : 17.09.2023 to 18.09.2023	Sampling Received Date : 30.09.2023
Mines Status : Non Operational		Type of Sample : Ambient Noise	Sampling procedure : ELES/DOC/SMPL/03
		Sample Drawn By : ELES Pvt. Ltd.	Period of Analysis : 30.09.2023 to 10.10.2023

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

Location	Unit	Test Protocol	Result		Regulatory Limit (Industrial Zone)
			Time	Leq	
Near Mine Office Bagru Bauxite Mines (75.41ha)	dB(A)	IS 9989:1981, RA 2020	Day Time	63	75 dB(A) Day Time & 70 dB(A) Night Time
Sample ID: ELES/RNC/2023/AN/3519			Night Time	50	



Reviewed by

****End of Report****

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

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CIN: U74999JH2018PTC011125

TEST REPORT

Test Report No. : ELES/RNC/2023/4149	Report Release Date : 31.10.2023
Work Order No. : 13612310218	Work Order Date : 21.04.2023

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sampling Date	: 17.09.2023
Address	: Lohardaga, Jharkhand-835302	Sampling Received Date	: 30.09.2023
		Type of Sample	: Workzone Noise
Mines Status	: Non Operational	Sampling procedure	: ELES/DOC/SMPL/03
		Sample Drawn By	: ELES Pvt. Ltd.
		Period of Analysis	: 30.09.2023 to 11.10.2023

METEOROLOGICAL INFORMATION

1	Average Temperature (°C) : 26	2	Barometric Pressure (mmHg) : 734
3	Relative Humidity (%) : 65	4	Weather Condition : Partly Cloudy

Location	Unit	Test Protocol	Result		Regulatory Limit (Industrial Zone)
			Time	L _{eq}	
Bagru Crusher Site - Bagru Bauxite Mine(75.41ha)	dB(A)	IS 4758:1968; RA 2017	Time	L _{eq}	90 dB (A)
Sample ID: ELES/RNC/2023/WN/3541			Day Time	72	



****End of Report****

Authorised Signatory
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TEST REPORT

Test Report No. : ELES/RNC/2023/4099	Report Release Date : 31.10.2023
Work Order No. : 13612310218	Work Order Date : 21.04.2023

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/EF/3487
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 17.09.2023
		Sample Received Date	: 29.09.2023
Mines Status	: Non Operational	Type of Sample	: Effluent Water
		Source of Sample	: Work Shop Effluent - Bagru Bauxite Mines (75.41 ha)
Period of Analysis	: 29.09.2023 to 06.10.2023	Sampling Procedure	: ELES/DOC/SMPL/01
		Sample Collected By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

Discipline: Chemical		Group: Pollution & Environment		Discharge Limits - CPCB EPR, 1986 Schedule VI	
Parameter	Unit	Test Protocol	Result	Inland Surface Water	Land for Irrigation
Dissolved Oxygen (as DO)	mg/L	IS 3025 (Part-38):1989; RA2019	5.2	--	--
Fluoride (as F)	mg/L	IS 3025 (Part-60):2008; RA2019	0.382	2.0	--
Sulphide (as S)	mg/L	IS 3025 (Part-29):1986; RA2019	0.90	2.0	--
Discipline: Chemical		Group: Residues in Water			
Lead (as Pb)	mg/L	APHA 23 rd Ed.2017; 3111 B	BDL (DL: 0.01)	0.1	--
Manganese (as Mn)	mg/L	APHA 23 rd Ed.2017; 3111 B	0.231	2.0	--
Mercury (as Hg)	mg/L	IS 3025 (Part-48):1994; RA2019	BDL (DL: 0.001)	0.01	--
Nickel (as Ni)	mg/L	APHA 23 rd Ed.2017; 3111 B	BDL (DL: 0.01)	3.0	--



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Authorized Signatory
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ELES Pvt. Ltd. Technical Manager

Page 1 of 1

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"Save Environment, Save Future"



Annexure 3

Date – 28.10.2023

Office Order

Environmental Cell has been re-constituted at Bagru Bauxite Mine (Area 75.41 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. Raj Sinha (Coordinator)
2. Mr. Gauri Shankar Prasad (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.

A handwritten signature in blue ink, appearing to read 'Basudev', is positioned above the printed name.

Basudev Gangopadhyay
AVP (Planning ,Environment &Compliance)

Annexure 4

Production, Mined Out, Back Filled and Over Burden removal from April'23 to September'23								
S No	Name of the Mines	Mining lease area (ha)	Production Capacity (MT)*	Lease Period*	Production (MT)	Mined out area (ha)	Back filled area (ha)	Over burden (Cu.M)
1	Bagru bauxite Mine	75.41	85000	22.01.1974 to 31.03.2030	0	0	0.00	0.00
2	Bhusar Bauxite Mine	65.31	280000	11.07.1981 to 31.03.2030	148918	0.92	0.45	163157.26
3	Hisri (New) Bauxite Mine	14.55	100000	19.07.1981 to 31.03.2030	56738	0.4	0.49	27329.28
4	Kujam - I Bauxite Mine	80.87	150000	13.03.2006 to 12.03.2056	102270	2.1	1.61	157784.02
5	Kujam - II Bauxite Mine	157.38	300000	24.03.2006 to 23.03.2056	61110	3.02	1.21	134785.10
6	Amtipani Bauxite Mine	190.95	150000	13.03.2006 to 12.03.2056	100700	2.91	1.00	125875.50
7	Gurdari Bauxite Mine	584.19	325000	23.03.1985 to 22.03.2035	78106	3.07	2.38	242675.00
8	Shrengdag A Bauxite Mine	155.81	260000	16.10.1974 to 31.03.2030	14860	0.39	0.35	14280
9	Shrengdag B Bauxite Mine	140.07	100000	04.10.1978 to 31.03.2030	43320	1.12	1.15	77170
10	Jalim & Sanai Bauxite Mine	12.14	50000	16.10.1974 to 31.03.2030	26725	0.21	0.2	8750
11	Orsapat Bauxite Mine	196.36	200000	17.07.1986 to 16.07.2036	NIL	NIL	NIL	NIL
12	Chiro Kukud bauxite Mine	152.57	100000	29.01.1985 to 28.01.2035	NIL	NIL	NIL	NIL
13	Pakhar (8.09)	8.09	80000	16.05.1973 to 31.03.2030	NIL	NIL	NIL	NIL
14	Pakhar (35.12)	35.12	200000	17.04.1975 to 31.03.2030	NIL	NIL	NIL	NIL

Annexure 4

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

*Static information about the mines included in the above table



Basudev Gangopadhyay
AVP (Planning, Environment and Compliance)

Annexure-5

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

The composite cost during the year 2023-24 for environmental protection & pollution control by Jharkhand Mines division of M/s Hindalco Industries Ltd & M/s Minerals & Minerals Ltd for implementation of the suggested measures in EC at our all the operating mines in the state of Jharkhand-namely Pakhar (115.13 ha), Pakhar (15.58 ha), Pakhar (109.507 ha), Pakhar (8.09 ha), Pakhar (35.12 ha), Serengdag (140.06 ha), Serengdag (155.81 ha), Jalim & Sanai (12.14 ha), Gurdari (584.19 ha), Amtipani (190.95 ha), Kujam I (80.97 ha) Kujam II (157.38 ha), Bagru (75.41 ha), Hisri New (14.55 ha), Chiro kukud (152.57 ha), Orsa pat (196.36 ha), Bhusar (65.31 ha), Bimarla Bauxite Mines (134.52 ha) and Amtipani Chirodih (130.01 ha) Bauxite Mine.

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

**Part of OB removed cost.

Basudev Gangopadhyay
AVP (Planning, Environment & Compliance)