

HIL/LHD/ENV/MoEF/704

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 Hisri New (14.55 ha) Bauxite Mining project of M/s Hindalco Industries Limited located in Lohardaga District of Jharkhand for the period October'23 to March'24.

Ref: Environmental Clearance letter no J-11015/531/2007-IA II (M) dated 17th June 2011

Sir,

With reference to the above, we are submitting herewith the Compliance status report of EC conditions for **Hisri New (14.55 ha)** Bauxite Mining project of **M/s Hindalco Industries Limited**, located in Lohardaga District of Jharkhand for the period October'23 to March'24.

The lease detail is as below.

Lease area (ha)	Production Capacity (MT)	Lease Period
14.55	100000	19.07.1981 to 31.03.2030

Hope you will find the same in order.

Thanking You

Yours Sincerely FOR M/s Hindalco Industries Limited,

Date: 23.05.2024

(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, mscb.cpcb@nic.in, zokolkatta.cpcb@nic.in, ranchijspcb@gmail.com, roranchi47@gmail.com

Corporate ID No.: L27020MH1958PLC011238

Name of the Project : Hisri New Bauxite Mine (14.55 ha)

M/s Hindalco Industries Ltd

Environment Clearance No & date : J-11015/531/2007-IA II (M), dated 17.06.2011

Period of compliance Report : From 1st October'23 to 31st March'24

Specific Conditions: -

Condition i: -The project proponent shall obtain Consent to Establish and Consent to Operate from the Jharkhand State Pollution Control Board and effectively implement all the conditions stipulated therein.

Reply: - Consent to establish and consent to operate have been obtained prior to start of Mining. Existing consent to operate (CTO) is valid till 31.12.2025. All the stipulated conditions of the CTE/CTO are being implemented effectively.

Condition ii: -The environmental clearance is subject to forestry clearance.

Reply: - Forest clearance is obtained.

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

Reply: - Noted. Entire land has been acquired for mining purposes as per applicable laws.

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

Reply: - Present depth of mining is 20-22 mtr (maximum) and does not intersect ground water. Working zones will be restricted to above ground water table in future also. We undertake that no mining is/was carried out below ground water table and the same status will be maintained in future also.

Condition v: -The Project proponent shall ensure that no natural watercourse shall be obstructed due to any mining operations. The first order streams and the seasonal nallahs originating from the mining lease area shall be protected.

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

Condition vi: -The topsoil, if any shall temporarily be stored at earmarked site (s) only and it should not be kept unutilized for long. The topsoil shall be used for land reclamation and plantation.

Reply: - Topsoil is being stacked temporally properly with proper slope as and when required. Concurrent backfilling and reclamation of mined out area are being exercised for which topsoil is being spread on backfilled area for reclamation. No OB dump is present in mines. The mining is being carried out as per the approved mining plan. Monitoring and management of rehabilitated areas is being done through effective supervision.



Reclaimed area

Condition vii: -The solid waste generated during the mining operation shall be backfilled and there shall be no external overburden dump left at the end of the mine life. The entire excavated area of 12.19 ha. shall be backfilled and 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 on six-month basis.

Reply: - Backfilling and reclamation are being done concurrently by overburden. There is no Overburden dump as of now in the mine lease area. Data pertaining to backfilling is enclosed as **Annexure-4.** Backfilling is a continuous process and is being done in commensurate with the progress of mining. Monitoring and management of rehabilitated areas is continued through supervision.

Condition viii: -Catch drains and siltation ponds of appropriate size should be constructed around the working pit, sub-grade dump, soil and mineral dumps to arrest flow of silt and sediment directly into the agricultural fields, the Kisco Nadi, the Sukri Nadi, the Chungahat nallah, the Barki nallah and other water bodies. The water so collected should be utilized for watering the mine area, roads, green belt development etc. The drains should be regularly desilted, particularly after monsoon and maintained properly.

Garland drain, settling tanks and check dams of appropriate size, gradient and length shall be constructed for both around the mine pit and sub grade dump to prevent run off of water and flow sediments directly into the agricultural fields, the Kisco Nadi, the Sukri Nadi, the

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

Reply: - To collect & manage rainwater during monsoon, part of mined out area is used as a settling tank for the runoff. Rainwater stored is being used for watering the mine area, roads, green belt development and sprinkling as necessary. Catch drains, Garland drains of appropriate size are being constructed in both around the mine pit to prevent runoff of water and flow of sediments directly into the agricultural field and water bodies, if applicable. Sump of adequate capacity is being provided and maintained as required. Sump of adequate capacity is being provided and maintained as required.



Garland drains

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

Reply: - There is no temporary dumps within the mining lease area. However, dimensions of the retaining wall of temporary OB dumps will be maintained based on average rain fall, if required.

Condition x: -Plantation shall be raised in an area of 12.7 ha including a 7.5 m. 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. Greenbelt shall be developed all along the mine lease area in a phased manner and shall be completed within first five years.

Reply: - Progressive plantation is being carried out with progress of mining in and around Mine lease area. Total 2540 saplings have been planted in the FY 2023-24 within this mining lease. In addition to this, agricultural activity is going on in reclaimed land as per the consent from landowners. Green belt development program is in progress with progress of mining activities.











Plantation at mines

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 to particulate matter such as around loading and unloading point and all transfer points. Extensive water sprinkling shall be carried out on haul roads. It should be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.

Reply: - Effective safeguard measures, such as regular water sprinkling, are being implemented in all critical areas prone to air pollution. Regular Ambient Air Quality (AAQ) monitoring is being carried out by NABL accredited Laboratory and all parameters are found within the prescribed limit. Monitoring report of AAQ is attached herewith as **Annexure-2**.



Dust suppression through water tanker.

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: - Effective measures have already been implemented. A detailed rainwater harvesting plan to augment ground water has been prepared and suitable measures like water harvesting pond etc. are created for augmentation of ground water in the area (Bagru Plateau) in consultation with Central Ground Water Board.

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 periodic monitoring [(at least four times in a year – pre-monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January) once in each season)] shall be carried out in consultation with the State Ground Water Board/ Central Ground water Authority and the data thus collected may be sent regularly to the Ministry of Environment and Forests and its Regional office Bhubaneshwar, The Central Ground Water Authority and the Regional Director, Central Ground Water Board. If at any stage, it is observed that the ground water table is getting depleted due to the mining activity, necessary corrective measures shall be carried out.

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



Piezometer

Condition xiv: - Monitoring to the springs shall be carried out for the quality and quantity of water regularly so as to ensure that there is no adverse impact on the same due to the project. Records in this regard shall be maintained.

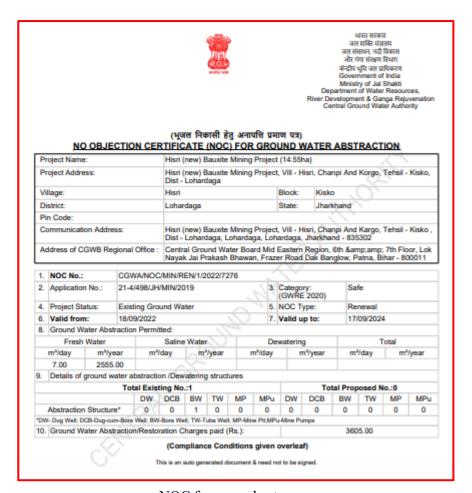
Reply: - Water Monitoring of Spring is being conducted regularly and Analysis report is attached as **Annexure 2**.

Condition xv: - It shall be ensured that there is no change in the hydrology of the area due to the project.

Reply: -Noted. We regularly monitor the ground water level and no adverse changes is observed.

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

Reply: Rainwater is collected rainwater harvesting pond and being used for sprinkling on haul roads, mining activities, and raising plantation. No groundwater or water from natural surface water bodies is being used for mining purposes. However, we have already obtained NOC for extraction of ground water from CGWA/CGWB for drinking purpose only. The copy of same is attached below.



NOC for groundwater

Condition xvii: - Suitable rainwater harvesting measures on long term basis shall be planned and implemented in consultation with the Regional Director, Central Ground Water Board.

Reply: - Suitable rainwater harvesting measures on long term basis have been implemented via creation of rainwater harvesting pond in consultation with Central Ground Water Board.

Condition xviii:- Appropriate mitigative measures shall be taken to prevent pollution of the Kisco Nadi, the Sukri Nadi and other rivers in the buffer zone of the mine, in consultation with the State Pollution Control Board.

Reply:- Appropriate mitigative measures have been taken to prevent pollution of nearby water bodies. The drainage system in the mining lease area is designed to collect all rainwater within the lease into the pit/ rainwater harvesting pond only and ensuring that water does not flow outside the boundaries of the mine lease under any circumstances.

Condition xix: Vehicular emissions should be kept under control and regularly monitored. Measures shall be taken for maintenance of vehicles used in mining operations and transportation of mineral from mine face to the Beneficiation plant. The vehicles should be covered with a tarpaulin and shall not be overloaded.

Reply:- Minimum vehicles are being used for transport and all vehicles are covered with tarpaulin. Regular maintenance of vehicles is being done to minimize vehicular emission. Bauxite is also being transported by ropeway from mines to Lohardaga siding.





Tarpaulin covered truck.

Ropeway transportation- eco-friendly

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

Reply: - Blasting time is fixed during Lunch Time i.e. 1.00 PM - 2.00 PM. Controlled blasting method is in practice. Ground vibration study has been conducted periodically. All efforts and mitigative measures are being implemented to minimize the impact of blasting.

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

Reply: - Wet drilling is in practice.



Wet Drilling

Condition xxii: - Mineral handling area shall be provided with adequate number of high efficiency dust extraction system. Loading and unloading areas including all the transfer points should also have efficient dust control arrangements. These should be properly maintained and operated.

Reply:- Water sprinkling is being carried out regularly at mineral handling area, loading and unloading areas to control the dust.



Water sprinkling through tanker.

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

Reply: - Sewage water for the working population is treated in a Sewage Treatment Plant (STP), and the treated water is utilized for plantation and gardening purposes only.

There is no industrial wastewater generation from mining operation. We are not discharging any wastewater outside the mine lease area. However, negligible amount of wastewater is generated in workshop from washing of vehicles and Effluent treatment plant (ETP) has been installed for this effluent. The treated water is in close circuit and being reused for washing of vehicles in the workshop.

Furthermore, the quality of treated water is being monitored regularly and all water parameters are within permissible limits. The monitoring report is attached herewith as **Annexure-2**. Photograph of Effluent treatment plant (ETP) is attached below.



Effluent treatment plant (ETP)

Condition xxiii: - The project authorities should undertake sample survey to generate data on pre-project community health status within a radius of 1 Km. from proposed mine

Reply:- Being getting done through medical camp.

Condition xxiv: - Pre-placement medical examination and periodical medical examination of the workers engaged in the project shall be carried out and records maintained. For the purpose, schedule of health examination of the workers should be drawn and followed accordingly.

Reply:- As a company, we are truly concerned about the health and safety of our on-site workers and in consideration to that, the health examination camps are being setup/scheduled on regularly basis.

Condition xxv: - 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 the temporary structures to be removed after the completion of the project.

Reply:- We believe that the wellbeing of all the labours working within the site should be taken care of on a priority 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 xxvi: - The critical parameters such as RSPM (Particulate matter with size less than 10 μm (i.e. $PM_{10}, PM_{2.5}$) and NO_x in the ambient air within the impact zone, peak particle velocity at 300 m. distance or within the nearest habitation, whichever is closer shall be monitored periodically. Further, quality of discharge water shall also be monitored [(TDS, DO, PH and Total Suspended Solids (TSS)], The monitored data shall be uploaded on the website of the Company as well as displayed on a display board at the project site at a suitable location near the main gate of the Company in Public domain. The Circular no. J-20012/1/2006-IA.II(M) dated 27.05.2009 issued by Ministry of Environment and Forests, which is available on the website of the Ministry www.envfor.nic.in shall also be referred in this regard for its compliance.

Reply:- Noted and being adhered. We have established four ambient air quality monitoring stations in the core zone as well as buffer zone. Monitoring of Ambient Air Quality and Treated Water is being carried out by NABL accredited Laboratory and reported to the concerned authorities. Monitoring Report is attached herewith as **Annexure 2.** Half-yearly EC compliance along with Environmental monitoring reports is being uploaded on company website regularly.

A Display board is already installed in front of mine gate office. We have also installed an online PM10 analyzer at mine site.

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

Reply: - Noted. Progressive Mine Closure Plan duly approved by Indian Bureau of Mines is with us. FMCP (part) is approved by IBM. FMCP for entire lease will be prepared in due time as per applicable guidelines and timelines mentioned in MCDR/IBM guidelines who are competent authority to approve the same. Based on the present resource estimate, and peak rated production capacity mentioned in EC, Mining operation is being carried out.

General Conditions:

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

Reply:- Noted.

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

Reply:- Calendar plan including excavation, quantum of mineral bauxite and waste is being done as per IBM approved mining plan / mining scheme in scientific manner. Report is attached as **Annexure 4.**

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

Reply:- Conservation measures for protection of flora and fauna in core & buffer zone has been drawn up in consultation with local forest and wildlife department. Also, we prepared Integrated Site-specific Wildlife Conservation Plan (WLCP) and obtained approval from by PCCF, Wildlife, Ranchi vide Office Order No.29 dated 01.06.2023

Condition iv: - Four ambient air quality-monitoring station should be established in the core zone as well as in the buffer zone for RSPM (Particulate matter with size less than 10 μ m (i.e. $PM_{10})PM_{2.5}$) & NOx monitoring. Location of the stations should be decided based on the metrological data, topographical features and environmentally and ecologically sensitive targets and frequency of monitoring should be undertaken in consultation with the State Pollution Control Board.

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

Condition v: - Data on ambient air quality RSPM (Particulate matter with size less than 10 μ m i.e. PM_{10}) & NOx should be regularly submitted to the Ministry including its Regional office located at Bhubneshwar and the State Pollution Control Board / Central pollution Control Board once in six months.

Reply: - The monitoring of Ambient Air Quality is conducted by an NABL-accredited Laboratory, and reports are regularly submitted to the MoEF&CC and JSPCB, Ranchi. The monitoring report is attached herewith as **Annexure 2.** Now, Regional office of MoEF&CC is in Ranchi.

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

Reply:- Water spraying arrangements on haul roads, loading and unloading and at transfer points have been provided and properly maintained.

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

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

Condition viii:- Industrial wastewater (workshops and waste water 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:- There is no industrial wastewater generation from mining operation. We are not discharging any wastewater outside the mine lease area. However, negligible amount of wastewater is generated in workshop from washing of vehicles and Effluent treatment plant (ETP) has been installed for this effluent. The treated water is in close circuit and being reused for washing of vehicles in the workshop.

Furthermore, the quality of this treated water is being monitored regularly and all water parameters are within permissible limits. The monitoring report is attached herewith as **Annexure-2**. Photograph of Effluent treatment plant (ETP) is attached below.



Effluent treatment plant (ETP)

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

Reply: - All the workers have been provided with PPEs including dust mask and dust respirators. Apart from PPEs distribution to all workers, we are also providing adequate safety training and

conducting awareness session on Safety and health aspects on regular basis. Periodical Occupational health surveillance program of the workers is being carried out and records maintained as per statute.

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

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

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

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

Reply: - It is an operational mine. Hence provisions related to financial closure is not applicable. Now, the Regional Office of MoEF&CC is in Ranchi.

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: - Agreed. Now, the Regional Office of MoEF&CC is in Ranchi.

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

Reply: - Six monthly reports on status of compliance of stipulated environmental clearance conditions including monitoring report are being submitted to the MoEFCC, Zonal office of CPCB and JSPCB Ranchi. Now, the Regional Office of MoEF&CC is in Ranchi.

Condition xv: - A copy of clearance letter shall be sent by the proponent to concerned Panchyat, Zila Parisad/ Municipal Corporation, Urban Local Body and the Local NGO, if any, from whom suggestions/ representations, if any, were received while processing the

proposal. The clearance letter shall also be put on the website of the Company by the proponent.

Reply: - Complied. A copy of clearance letter has already submitted and uploaded on website of the Company.

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

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

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

Reply: -Environment statement is being submitted regularly to Member Secretary, JSPCB. Also, the status of compliance of environmental clearance conditions is being sent to MoEF&CC and JSPCB, Ranchi on regular basis. Now, the Regional Office of MoEF&CC is in Ranchi.

Condition xviii:- The Company shall submit within 3 month their policy towards Corporate Environment Responsibility which should inter-alia address (i) Standard operating process/procedure to bring into focus any infringements/ deviation/ violation of environmental or forest norms/ conditions, (ii) Hierarchical system or Administrative order of the Company to deal with environmental issues and ensuring compliance with environmental issues and ensuring compliance with Environment Clearance conditions and (iii) System of reporting of non compliance / violation of environmental norms to the Board of Directors of the Company and / or stakeholders or shareholders.

Reply: - Policies towards Corporate Environment Responsibility is already in place. The latest corporate environment policy enumerating corporate responsibilities is attached as **Annexure 6.** Company has implemented a system in line with the above policies which addresses following points. (i) Standard operating process/procedure to bring into focus any infringements/ deviation/ violation of environmental or forest norms/conditions, (ii) Hierarchical system or administrative order of the company to deal with environmental issues and ensuring compliance EC conditions and (iii) System of reporting of noncompliance.

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

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

Annexure 1					
Piezometer reading - Hisri New Mines					
S No Month Depth (meter)					
1	Oct-23	34.1			
2	Nov-23	34.25			
3	Dec-23	34.62			
4	Jan-24	34.68			
5	Feb-24	34.1			
6	Mar-24	34.82			



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

ENGINEERING SERVICES PVT. LTD.

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

TEST REPORT

Test Report No.	: ELES/RNC/2023/4441	Report Release Date	: 22.11.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/3967	
		Location	: Near Water Pump; Hisri (New) Bauxite Mine(14.55ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 19.10.2023 to 20.10.2023	
		Sample Received Date	: 28.10.2023	
Mines Status : Operational		Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 28.10.2023 to 09.11.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

MI	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 24	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%)	: 56	4	Weather Condition	: Clear

Discipline : Chemica	ıl	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	55	100 (24hrs)	
Particulate Matter (PM2,5)	μg/m³	IS 5182 (Part- 24): 2019	31	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2): 2001; RA2022	6.5	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	μg/m³	IS 5182 (Part-6): 2006; RA2022	17.3	80 (24hrs)	
Ozone (O ₃)	μg/m³	IS 5182 (Part-9): 1974; RA2019	<20,0	100 (8hrs)	
Ammonia (NH ₃)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	μg/m³	IS 5182 (Part-22): 2004; RA2019	0.007	1 (24hrs)	
Nickel (Ni)	ng/m ²	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)	

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The Document stated as Test Report, is essued by the Laboratory under General Terms and Conditions, only on Company letter head in pre-approved format. The results shown in the Test Report refer or relates only to the job/analysis done by the Laboratory only. The information stated on the Test Report reflects the findings done by the Laboratory as the time of involvement utily and within the limits of client's instructions. The Laboratory is responsible for all the information or data provided on the report, except the information which is provided by the client. The Report cannot be reproduced except in fall and any part of the report is not taken out of context, without prior written approval of the Laboratory. The Report in fall or in part shall not be published, advertise, used for any legal actions unless prior permission has been secured from the Management of the Laboratory. Attention is drawn to the immution of liability, compensation and jurisdiction issues. Any unauthorized alternation & falsification of the content or appearance of the Test Report is unlawful and offenders may be prosecuted to the fullest extent of the law. All the samples are retained for 30days from the Date of release/issue of the Test Report. The samples from Regulatory bodies are to be remined as specified. Any type of Observations or Complaints regarding the Reports shall be done within 15days from the Date of Test Report released/issued. After the time period stated before, no complaints will be accepted. The entire Time schedule mentioned in Test Report is in 24hours format. Abbreviation used. N/A (Not Applicable), BDL (Below Detection Limit), LDL (Lower Detection Limit).



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

ENGINEERING SERVICES PVT. LTD.

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

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

TEST REPORT

Test Report No.	: ELES/RNC/2023/4441	Report Release Date	: 22.11.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

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

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

****End of Report****

Authorised Signatory

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

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

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TEST REPORT

Test Report No.	: ELES/RNC/2023/4442	Report Release Date	: 22.11.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET.	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/3968 : Near Old Rest Shelter; Hisri (New) Bauxite Mine(14.55ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 19.10.2023 to 20.10.2023 : 28.10.2023
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 28.10.2023 to 09.11.2023	Sample Drawn By Sample Condition	: ELES Pvt, Ltd, : Sealed & Preserved

M	ETEOROLOGICAL INFORMATION				
1	Average Temperature (°C) : 24	2	Barometric Pressure (mm)	Hg) : 734	
3	Relative Humidity (%) : 56	4	Weather Condition	: Clear	

Discipline: Chemica	al	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	28	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m ³	IS 5182 (Part-2): 2001; RA2022	6.7	80 (24hrs)	
Nitrogen Di-Oxide (NO ₃)	μg/m³	1S 5182 (Part-6): 2006; RA2022	17.5	80 (24hrs)	
Ozone (O ₃)	μg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH ₃)	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m ¹	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	μg/m ¹	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)	

Page 1 of 2

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

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TEST REPORT

 Test Report No.
 : ELES/RNC/2023/4442
 Report Release Date
 : 22.11.2023

 Work Order No.
 : 13612310218
 Work Order Date
 : 21.04.2023

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

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

Reviewed by

****End of Report****

Authorised Signatory

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

Page 2 of 2

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

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TEST REPORT

Test Report No.	: ELES/RNC/2023/4443	Report Release Date	: 22.11.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET.	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/3969 : Near Old Plantation (North West Corner)
Address	: Lohardaga, Jharkhand-835302	Sampling Date	Hisri (New) Bauxite Mine(14.55ha) : 19.10.2023 to 20.10.2023
Mines Status	: Operational	Sample Received Date Type of Sample Sampling Procedure	: 28.10.2023 : Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	; 28.10.2023 to 09.11.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

MI	ETEOROLOGICAL INFORM	AATION			
1	Average Temperature (°C)	24	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%)	: 56	4	Weather Condition	: Clear

Discipline : Chemica	al	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	51	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	29	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 3182 (Part-2): 2001; RA2022	5.9	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m [‡]	IS 5182 (Part-6); 2006; RA2022	20.5	80 (24hrs)	
Ozone (O ₃)	µg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH ₃)	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	1S 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	μg/m³	IS 5182 (Part-22): 2004; RA2019	0.008	1 (24hrs)	
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)	

Page 1 of 2

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TEST REPORT

Test Report No.	: ELES/RNC/2023/4443	Report Release Date	: 22.11.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

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

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

****End of Report****

Authorised Signatory

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

ELES Pyt. Ltd. Technical Manager

Page 2 of 2

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TEST REPORT

Test Report No.	: ELES/RNC/2023/4444	Report Release Date	: 22.11.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/3970 : Hisri New (Southern Area) Hisri (New) Bauxite Mine(14.55ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 19.10.2023 to 20.10.2023 : 28.10.2023
Mines Status	† Operational	Type of Sample Sampling Procedure Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 28.10.2023 to 09.11.2023	Sample Condition	Sealed & Preserved

MI	ETEOROLOGICAL INFORMATION				
1	Average Temperature (°C) : 24	2	Barometric Pressure (mm	Hg) : 734	
3	Relative Humidity (%) : 56	4	Weather Condition	: Clear	

Discipline : Chemica	al	Group: A	Atmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	56	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24); 2019	30	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2): 2001; RA2022	6.4	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part-6): 2006; RA2022	17.2	80 (24hrs)
Ozone (O ₃)	μg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH _J)	μg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m³	IS 5182 (Part-22): 2004; RA2019	0.007	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)

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

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TEST REPORT

Test Report No.	: ELES/RNC/2023/4444	Report Release Date	: 22.11.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

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

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

Au

Authorised Signatory

Ph. D. Environmental Engo.

ELES Pvt. Ltd. Technical Manager

Reviewed by

****End of Report****

Page 2 of 2

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PLOT NO.30, MANSAROVAR ENCLAVE, TUPUGANA HATIA, RANCHI-ES4003 (IHARKHAND) GST NO.-2014865557130124

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TEST REPORT

Test Report No.	: ELES/RNC/2023/4433	Report Release Date	: 22.11.2023
Work Order No.	± 13612310218	Work Order Date	: 21.04.2023

CUSTOMER DET.	AILS	SAMPLE DETAILS		
Customer Name	! Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/3959 : Near Daldaliya Village Bagru Bauxite Mine(75.41ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 17.10.2023 to 18.10.2023 : 28.10.2023	
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 28.10.2023 to 09.11.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

MI	ETEOROLOGICAL INFO	RMATION			
1	Average Temperature (°C)	: 25	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%)	: 55	4	Weather Condition	: Clear
5	Longitude	: 84°35'37.93"E	6	Latitude	: 23°29'4.48"N

Discipline: Chemica	al	Group:	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/m³	IS 5182 (Part- 24): 2019	23	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2): 2001; RA2022	6.5	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part-6): 2006; RA2022	18.1	80 (24hrs)	
Ozone (O ₃)	μg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH ₃)	µg/m³	IS 5182 (Part- 25); 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m ¹	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Ph)	µg/m³	IS 5182 (Part-22): 2004; RA2019	<0.002	1 (24hrs)	
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)	

Page 1 of 2

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PLOT NO:30, MANSAROVAR ENCLAVE, FURUDAMA RATIA, RANCHI:634065 (IMARKHAND) ISTNO:- 204466697.130124

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TEST REPORT

Test Report No.	: ELES/RNC/2023/4433	Report Release Date	: 22.11.2023	
Work Order No.	: 13612310218	Work Order Date	; 21.04.2023	

Discipline : Chemi	ical	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (C ₆ H ₆)*	μg/m ²	IS 5182 (Part-11)2006;RA2017	<1.0	05(Annual)
Benzo-(a)-Pyrene*	ng/m³	IS 5182 (Part-12)2004;RA2019	<0.5	01(Annual)

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

Reviewed by

****End of Report****

Authorised Signatory

Deependra Kumar Sinha
Ph. D. Environmental Engg

ELES Pvr. Ltd. Technical Manager

Page 2 of 2

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PLOT NO-30, MANSARO INF ENCLAVE, TUPLICAVA MATIA, RANCHI-934003 (IMBRIHAND) BIT NO - 20045C587130324

Email Info@ziespl.co.iii yies.rapchi@qmail.com Phone no.: 0651-2290103

Websile : www.elespl.co.in

TEST REPORT

Test Report No.	: ELES/RNC/2023/4434	Report Release Date	: 22.11.2023	
Work Order No.	± 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET.	CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/3960 : Aditya School Gangupara Bagru Bauxite Mine(75.41ha)		
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 17.10.2023 to 18.10.2023 : 28.10.2023 : Ambient Air : ELES/DOC/SMPL/02		
Mines Status	: Operational	Sample Drawn By			
Period of Analysis	: 28.10.2023 to 09.11.2023	Sample Condition	: ELES Pvi. Ltd. : Sealed & Preserved		

M	ETEOROLOGICAL INFO	RMATION			
1	Average Temperature (°C)	: 25	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%)	: 55	4	Weather Condition	; Clear
5	Longitude	:84°38'8.14"E	6	Latitude	: 23°27'46.28"N

Discipline: Chemica	al	Group:	Atmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	57	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	25	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2): 2001; RA2022	5.8	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m³	IS 5182 (Part-6): 2006; RA2022	11.2	80 (24hrs)
Ozone (O ₃)	μg/m³	1S 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	ug/m²	IS 5182 (Part-22): 2004; RA2019	< 0.002	1 (24hrs)
Nickel (Ni)	ng/m²	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.6	06 (Annual)

Page I of 2

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FLOT NO-30, MANSAROVAR ENCLAVE TUPUDANA: HATIA, RANCHI-E34003 (JHARKHAND) GST NO-284A6CE3713D124 YOTH EXPLOYOR STREET, FOR LINE

Eman: Info@elespl.co.ln , eles.ranchi@amail.com Phone no:: 0851-2290103 Website : www.elespl.co.ln

TEST REPORT

Test Report No.	: ELES/RNC/2023/4434	Report Release Date	: 22.11.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

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

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

Reviewed by

****End of Report****

Authorised Signatory

Desperata Kumar Sinha
Pili aronnenta/ Engg

ELES Pvt. Ltd. Technical Manager

Page 2 of 2

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PLOT NO-30, MANSAROVAR ENCLAVE TUPUDANA HATIA, RANCHIABIAGOS (IHAPXHAND) GST NO: 30AAEC297130124

ENGINEERING QUALICES PET, ATQ.

Email: into Deterpi.com eles ranchi Daman.com Phone no.: 0551-2190103 Website: www.elesci.co.lin

TEST REPORT

Test Report No.	: ELES/RNC/2023/4435	Report Release Date	: 22,11,2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET.	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/3961 : Ropeway Unloading Station Bagru Bauxite Mine(75.41ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 17.10.2023 to 18.10.2023 : 28.10.2023 : Ambient Air
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02
Period of Analysis	: 28.10.2023 to 09.11,2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

_	ETEOROLOGICAL INFOI		12	The state of the s	
4.	Average Temperature (°C)	: 25	2	Barometric Pressure (inmHg)	: 734
3	Relative Humidity (%)	: 55	- 4	Weather Condition	: Clear
5	Longitude	: 84°41'28.22"E	6	Latitude	: 23°26'45.48"N

Discipline: Chemica	al	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	58	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	21	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2): 2001; RA2022	5.9	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m³	IS 5182 (Part-6): 2006; RA2022	18.2	80 (24hrs)	
Ozone (O ₃)	μg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH ₃)	μg/m²	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	µg/m³	(S 5182 (Part-22): 2004; RA2019	0.008	1 (24hrs)	
Nickel (Ni)	ng/m²	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)	

Page 1 of 2

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-ESSDO3 (JHARKHAND) GST NOI-20ASECESTESDE24

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

Website: www.elespica.in

TEST REPORT

Test Report No.	: ELES/RNC/2023/4435	Report Release Date	: 22.11.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

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

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



****End of Report****

Authorised Signatory

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

Page 2 of 2

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PLOT NO-30/NIANSAROVAR ENCLAVE, TUFUDAVA HATIA, PANCHI-E34003 (JHARRHAND) CST NO- 704A2C597150124

Emain Into Designal, co.m. eles, ranchi Sigman, c.um. Phone no.: 0651-2290103

Website: www.eleapl.ca.in

TEST REPORT

Test Report No.	: ELES/RNC/2023/4436	Report Release Date	: 22.11.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/3962 : Ropeway Angle Station Bagru Bauxite Mine(75.41ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 17.10.2023 to 18.10.2023 : 28.10.2023 : Ambient Air
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02
Period of Analysis	; 28.10.2023 to 09.11.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

M	ETEOROLOGICAL INFO	RMATION			
Ţ.	Average Temperature (°C)	: 25	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%)	: 55	4	Weather Condition	: Clear
5	Longitude	: 84°41'28.22"E	6	Latitude	: 23°26'45.48"N

Discipline: Chemic:	al	Group :	tmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	55	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	26	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2): 2001; RA2022	5.9	80 (24hrs)
Nitrogen Di-Oxide (NO2)	μg/m³	IS 5182 (Part-6): 2006; RA2022	18.3	80 (24hrs)
Ozone (O ₃)	μg/m³	1S 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	μg/m³	IS 5182 (Part-22): 2004; RA2019	0.005	1 (24hrs)
Nickel (NI)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)

Page 1 of 2

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PLOT NO-30, MANSARDVAR ENCLAVE, TUPUDANA. HATIA, RANCHI-834003 (JHARKHAND) GST NO-30, AECESTI30121

ENGINEERING SERVICES PAY LINE

Emallinja@elesai.co.in . eles,ranchi@aman.cam Phone no.: 0851-2290103 Website : www.elesai.co.in

TEST REPORT

Test Report No.	: ELES/RNC/2023/4436	Report Release Date	: 22.11.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

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

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

Reviewed by

****End of Report****

Authorised Signatory

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

Page 2 of 2

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

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/2023/4784	Report Release Date	: 21.12.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4254 : Near Water Pump; Hisri (New) Bauxite Mine(14.55ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 19.11.2023 to 20.11.2023 : 24.11.2023
Mines Status	: Operational	Type of Sample Sampling Procedure Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 24.11.2023 to 09.12.2023	Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION			
1 Average Temperature (°C) : 20	2	Barometric Pressure (mmHg)	: 734
3 Relative Humidity (%) : 48	4	Weather Condition	: Clear

Discipline: Chemica	d	Group : A	tmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	59	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	1S 5182 (Part- 24): 2019	33	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2): 2001; RA2022	7.1	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m ³	1S 5182 (Part-6); 2006; RA2022	19.8	80 (24hrs)
Ozone (O ₃)	μg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	μg/m³	15 5182 (Part-22): 2004; RA2019	0.01	1 (24hrs)
Nickel (Ni)	ng/m³	1S 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)

Reviewed by

****End of Report****

Authorised Signatory

r. Deependra Kumar Sinha

Page 1 of 1

Ph D Environmental Engg

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

ENGINEERING SERVICES PVT. LTD.

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

Website: www.elespl.co.in

TEST REPORT

Test Report No.	: ELES/RNC/2023/4784	Report Release Date	: 21.12.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS	and the second second
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4254 : Near Water Pump; Hisri (New Bauxite Mine(14.55ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 19.11.2023 to 20.11.2023 : 24.11.2023 : Ambient Air
Mines Status	- Operational	Sampling Procedure Sample Drawn By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 24.11.2023 to 09.12.2023	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFORMATIO	N		
_	Average Temperature (°C) : 20	2	Barometric Pressure (mml	Ig) : 734
_	Relative Humidity (%) : 48	4	Weather Condition	: Clear

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

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

185 G

Reviewed by

****End of Report****

Authorised Signatory

Dr. Deependra Kumar Sinha Ph. D Environmental Engg.

ELES Pvl. Ltd. Technical Manager

Page 1 of 1

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

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TEST REPORT

Test Report No.	: ELES/RNC/2023/4785	Report Release Date	: 21.12.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4255 : Near Old Rest Shelter; Hisri (New) Bauxite Mine(14.55ha)
Address Mines Status	: Lohardaga, Jharkhand-835302 : Operational	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 19.11.2023 to 20.11.2023 : 24.11.2023 : Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 24.11.2023 to 09.12.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

MI	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 20	2	Barometric Pressure (mmHg)	: 734
_	Relative Humidity (%) : 48	4	Weather Condition	: Clear

Discipline : Chemica	ı	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m³	IS 5182 (Part-23): 2006; RA2022	63	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	32	60 (24hrs)	
Sulphur Di-Oxide (SO _z)	µg/m³	IS 5182 (Part-2): 2001; RA2022	7.1	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m³	1S 5182 (Part-6): 2006; RA2022	20.4	80 (24hrs)	
Ozone (O ₃)	μg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH ₃)	µg/m³	IS 5182 (Part- 25); 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	μg/m³	IS 5182 (Part-22): 2004; RA2019	0.012	l (24hrs)	
Nickel (Ni)	ng/m³	1S 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m ^{to}	ELES/AIR/SOP/01	<2.0	06 (Annual)	

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****End of Report****

Dr. Deenendra Kumar Sinha

Page 1 of 1

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

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TEST REPORT

Test Report No.	: ELES/RNC/2023/4785	Report Release Date	: 21.12.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET/	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4255 : Near Old Rest Shelter; Hisri (New) Bauxite Mine(14.55ha)	
Address Mines Status	: Lohardaga, Jharkhand-835302 : Operational	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 19.11.2023 to 20.11.2023 : 24.11.2023 : Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 24.11.2023 to 09.12.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed &Preserved	

METE	COROLOGICAL INFORMATION			
1 A	verage Temperature (°C) :: 20	2.	Barometric Pressure (mm	Hg) : 734
_	elative Humidity (%) : 48	. 4	Weather Condition	: Clear

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

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

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Authorised Signatory Peependra Kumar Sinha D Environmental Engg. Ltd. Technical Manager

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TEST REPORT

Test Report No.	: ELES/RNC/2023/4786	Report Release Date	: 21.12.2023	
Work Order No.	: 13612310218	Work Order Date	; 21.04.2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4256 : Near Old Plantation (North WestCorner) Hisri (New) Bauxite Mine(14.55ha
Address Mines Status	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 19.11.2023 to 20.11.2023 : 24.11.2023 : Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	±24.11.2023 to 09.12.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed &Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C) : 20	2	Barometric Pressure (mm	Hg) : 734	
3	Relative Humidity (%) : 48	4	Weather Condition	; Clear	

Discipline : Chemica	d	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23); 2006; RA2022	56	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m ³	IS 5182 (Part- 24): 2019	32	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2): 2001; RA2022	6.3	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part-6); 2006; RA2022	15.7	80 (24hrs)	
Özone (O ₃)	µg/m²	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH ₃)	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	μg/m³	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/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)	

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Dr. Deependra Kutta Sinha

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TEST REPORT

Test Report No.	: ELES/RNC/2023/4786	Report Release Date	: 21.12.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Location Sampling Date Sample Received Date	: ELES/RNC/2023/AA/4256 : Near Old Plantation (North WestCorner) Hisri (New) Bauxite Mine(14.55ha : 19.11.2023 to 20.11.2023 : 24.11.2023
Mines Status	; Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 24.11.2023 to 09.12.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed &Preserved

M	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 20	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%) : 48	4	Weather Condition	: Clear

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

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

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

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TEST REPORT

Test Report No.	; ELES/RNC/2023/4787	Report Release Date	: 21.12.2023	
Work Order No.	: 13612310218	Work Order Date	; 21.04.2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4257 : Hisri New (Southern Area) Hisri (New) Bauxite Mine(14.55ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 19.11.2023 to 20.11.2023 : 24.11.2023
		Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Operational	Sample Drawn By	: ELES Pvt. Ltd.
Period of Analysis	: 24.11.2023 to 09.12.2023	Sample Condition	: Sealed & Preserved

M	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 20	2	Barometric Pressure (mm	Hg) : 734
3	Relative Humidity (%) : 48	4	Weather Condition	: Clear

Discipline : Chemica	d	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	60	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	33	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2): 2001; RA2022	7.1	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part-6): 2006; RA2022	18.9	80 (24hrs)	
Ozone (O ₁)	μg/m³	IS 5182 (Part-9); 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH ₃)	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	μg/m³	IS 5182 (Part-22): 2004; RA2019	0.011	1 (24hrs)	
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)	

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Ph D Environmental Engg

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TEST REPORT

Test Report No.	: ELES/RNC/2023/4787	Report Release Date	: 21.12.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4257 : Hisri New (Southern Area) Hisri (New) Bauxite Mine(14,55ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 19.11.2023 to 20.11.2023 : 24.11.2023	
		Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Mines Status	: Operational	Sample Drawn By	: ELES Pvt. Ltd.	
Period of Analysis	: 24.11.2023 to 09.12.2023	Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 20	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%)	:48	4	Weather Condition	: Clear

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

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

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

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TEST REPORT

Test Report No.	: ELES/RNC/2023/4776	Report Release Date	: 21.12,2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET.	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4246 : Near Daldaliya Village Bagru Bauxite Mine(75.41ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 17.11.2023 to 18.11.2023 : 24.11.2023	
Mines Status	: Operational	Type of Sample Sampling Procedure Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis			; Sealed &Preserved	

1	Average Temperature (°C')	: 20	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%)	: 49	- 4	Weather Condition	: Clear
5	Longitude	:84°35'37.93"E	6	Latitude	: 23°29'4.48"N

Discipline : Chemica	d	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	52	100 (24hrs)		
Particulate Matter (PM2,5)	μg/m ³	IS 5182 (Part- 24): 2019	26	60 (24hrs)		
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2): 2001; RA2022	7.1	80 (24hrs)		
Nitrogen Di-Oxide (NO ₂)	µg/m³	IS 5182 (Part-6): 2006; RA2022	20.5	80 (24hrs)		
Ozone (O ₃)	µg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)		
Ammonia (NH ₃)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)		
Lead (Pb)	ug/m³	IS 5182 (Part-22): 2004; RA2019	0.008	1 (24hrs)		
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m²	ELES/AIR/SOP/01	<2.0	06 (Annual)		

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****End of Report***

Authorised Signatory Dr. Deependra Kumar Sinha

Ph. D Environmental Engg.

Page 1 of 1

The Document stated as 7 to Report to regular by the Laboratory under General Terms and Conditions, only IntES Pack Lide Teach Cold Medium The results above in the Test Report refer to referred by the Laboratory only. The information stoned on the Test Report reflects the findings done by the Laboratory at the time of invarience only and waters the limits of elected insurance only. The automation stoned on the report procept the information which is provided by the claim. The Report current he reproduced except in full and any part of the report in not taken out of context, without prior wenter improval of the Laboratory. The Report is full on in part stall not be published, abertise, used for any legal actions unless prior permission has been second from the Management of the Laboratory. Attention is drawn to the limitation of laboratory in part permission has been second from the Management of the Test Report is maintained of the content of interest and offenders are processed in the fullest extent of the limit. All the samples are retained for 16thors from the Date of released and offenders are to be remainful as specified. Any type of Conservations or Complaints regarding the Reports the samples from the Date of Test Report reliand/council. After the time period stated before, no complaints will be accepted. The entire Time echedule mentaged in Test Report is in 2-thorse former. Arbitrophon med. Note that the period stated before, no complaints will be accepted. The entire Time echedule mentaged in Test Report is in 2-thorse former. Arbitrophon med. Note that the Date Detection Limit, LDL (Leaver Detection Limit).

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

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

TEST REPORT

Test Report No.	: ELES/RNC/2023/4776	Report Release Date	: 21.12.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref, No. Location	: ELES/RNC/2023/AA/4246 : Near Daldaliya Village Bagru Bauxite Mine(75.41ha)	
Address	: Lohardaga, Jhurkhand-835302	Sampling Date Sample Received Date	: 17.11,2023 to 18.11.2023 : 24.11.2023	
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	¢ 24.11.2023 to 09.12.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed &Preserved	

M	ETEOROLOGICAL INFOR	RMATION			
1	Average Temperature (°C)	: 20	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%)	: 49	4	Weather Condition	: Clear
5	Longitude	: 84°35'37.93"E	6	Latitude	: 23°29'4.48"N

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

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

Reviewed by

****End of Report****

Authorised Signatory
Dr. Deependra Kumar Sinha
Ph. D Environmental Engg
ELES Pvl. Ltd. Technical Managor

Page 1 of 1

The Document stated as Test Report, is issued by the Laboratory under General Terms and Constituting, only on Company letter head in pre-approved format. The results shown in the Test Report refer or relates only to the job/analysis done by the Laboratory only. The information stated on the Test Report reflects the findings done by the Laboratory at the same of involvement units and within the limits of chem's instructions. The Laboratory is responsible for all the information or data provided on the report, ascept the information which is provided by the client. The Report cannot be reproduced except in full and any part of the report is not taken out of context, without practice approved of the Laboratory. The Report is full or in part shall not be published, advertise, used for any legal actions unless prior permission has been secured from the Management of the Laboratory. Attention is drawn to the limitation of liability, compensation and jurisdiction essets. Any uncurring alternation & falsification of the content of appearance of the Test Report in unlinvial and offenders may be prosecuted to the follest extent of the law. All the samples are returned for Vidays from the Date of reference to the first Report. The samples from Regulatory begins are to be returned at specified. Any type of Observations or Complaints regarding the Reports shall be done within 13days from the Date of Test Report released/mater!. After the time period until before, no complaints will be accepted. The entire Time schedule continued in Test Report to in 24tour florance. Address and All Applicable). BDL (Ballow Descript Limit). LDL (Lower Descript Limit).



PLOT NO-30, MANSAROVAR ENCLAVE, TUPLIDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:-20A8ECE9713D124

ENGINEERING SERVICE FOR LIB

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



TEST REPORT

Test Report No.	: ELES/RNC/2023/4777	Report Release Date	: 21.12.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4247 ; Aditya School Gangupara Bagru Bauxite Mine(75.41ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 17.11.2023 to 18.11.2023 : 24.11.2023 : Ambient Air	
Mines Status	:Operational	Type of Sample Sampling Procedure	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 24.11.2023 to 09.12.2023	Sample Drawn By Sample Condition	: Sealed & Preserved	

MJ	ETEOROLOGICAL INFO	RMATION			
1	Average Temperature (°C)	; 20	2	Barometric Pressure (mmHg)	; 734
3	Relative Humidity (%)	: 49	4	Weather Condition	: Clear
5	Longitude	: 84°38'8,14"E	6	Latitude	: 23°27'46.28"N

Discipline: Chemica	al	Group:	Atmospheric !	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	61	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	30	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2); 2001; RA2022	64	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part-6): 2006; RA2022	12.5	80 (24hrs)
Ozone (O ₃)	µg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₁)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m³	IS 5182 (Part-22): 2004; RA2019	< 0.002	I (24hrs)
Nickel (Ni)	uR/m ₂	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)

Reviewed by

OF RE

****End of Report****

Page 1 of 1

Authorised Signatory Dr. Deependra Kumar Sinha

Ph. D Environmental Engly

The Deciment stated is Cost Report, epilogist by the Laboratory under General Terms and Conditions, only on ESS-paid data. IECCULES MORE families. The results shown in the Test Report reflects the findings done by the Laboratory of the information stated on the Test Report reflects the findings done by the Laboratory in the time of monteness or data provided by the client The Report provided except in fall and any part of the report is not taken out of contest, without prior vertices approved of the Laboratory. The Report in fall or in part shall not be published, advertise, used for any legal actions seless prior permission has been secured from the Management of the Laboratory. Attention in drawn to the Institution of Institution on the Institution and prior and previous of the Test Report in institution of Institution of Institution and purposes of the Test Report in instanced and offenders may be prospected in the follows that the state of the take At the state of the Test Report in the Institution of Institution and provided in the follows that the Institution of Institution and the Test Report in the Institution of Institution and Institution and the Test Report in the Institution of Institution and Insti

minimized in Test Report is in Editors forms. Abbreviance used, N/A (Nov Applicable), BDL (Below Detector Limit), LDL (Lower Detector Limit).



PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 204AECE97130124 ENGINEERING SERVICES PYT. LTD.

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

TEST REPORT

Test Report No.	: ELES/RNC/2023/4777	Report Release Date	: 21.12.2023	
Work Order No.	: 13612310218	Work Order Date	: 21,04,2023	

CUSTOMER DET.	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref, No. Location	: ELES/RNC/2023/AA/4247 : Aditya School Gangupara Bagru Bauxite Mine(75.41ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 17.11.2023 to 18.11.2023 : 24.11.2023	
Mines Status	:Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis : 24.11.2023 to 09.12.2023		Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

M	ETEOROLOGICAL INFOR	RMATION			
1	Average Temperature (°C)	: 20	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%)	: 49	-4	Weather Condition	: Clear
5	Longitude	: 84°38'8.14"E	6	Latitude	: 23°27'46.28"N

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

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

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****End of Report****

Authorised Signatory

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

Page 1 of 1

The Lincolness stated in Test Report refet or retistes only to the judicial year done by the Laboratory under General Testus and Conditions, only on Company letter head in pre-approved format. The results shown in the Test Report refet or retistes only to the judicial year done by the Laboratory as the time of invalvement only and within the limits of client's instructions. The Laboratory is responsible for all the information of data provided on the report, except the information which is provided by the client. The Report cannot be reproduced except in full and any part of the report is not taken out of context, without provided approval of the Laboratory. The Report in full or in part shall not be published, advertise, used for any legal actions unless prior permission has been secured from the Management of the Laboratory. Attention is drawn to the limitation of fishility, compensation and jurisdiction issues. Any instantion of the Test Report is unlowful and offenders may be prosecuted to the fulfest extent of the law. All the samples are retained for 30days from the Date of refease/issue of the Test Report is unlowful and offenders may be prosecuted to the fulfest extent of the law. All the samples are retained for 30days from the Date of Test Report is required as specified. Any type of Observations or Complaints regarding the Reports shall be done heldern 15days from the Date of Test Report reference as specified. Any type of Observations or Complaints regarding the Reports shall be done heldern 15days from the Date of Test Report reference as specified. Fig. (But of the Proper is a 24hours in the 24hours format. Addressing the Reports shall be done heldern 15days from the Date of Test Report reference as specified. Fig. (But of the Proper is a 24hours in the 24hours in the 24hours format. Addressing the Reports shall be done heldern 15days from the Date of Test Report is substituted in Test Report in the Date of Test Report is substituted.



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



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



Website : www.elespi.co.in

TEST REPORT

Test Report No.	; ELES/RNC/2023/4778	Report Release Date	: 21.12.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4248 : Ropeway Unloading Station Bagru Bauxite Mine(75,41ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 17.11.2023 to 18.11.2023 : 24.11.2023	
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 24,11,2023 to 09,12,2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed &Preserved	

M	ETEOROLOGICAL INFOR	RMATION			
1	Average Temperature (*C)	: 20	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%)	: 49	4	Weather Condition	: Clear
5	Longitude	: 84°41'28.22"E	6	Latitude	: 23°26'45.48"N

Discipline: Chemica	1	Group: A	Atmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m³	IS 5182 (Part-23): 2006; RA2022	61	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24); 2019	26	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2): 2001; RA2022	6.4	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part-6): 2006; RA2022	20.1	80 (24hrs)
Ozone (O ₃)	µg/m	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m³	IS 5182 (Part- 25); 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	μg/m ³	IS 5182 (Part-22): 2004; RA2019	0.011	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)

Reviewed by

****End of Report***

Authorised Signatory
Dr. Deependra Kumar Sinha

Ph. D Environmental Engg

Page 1 of 1

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

TEST REPORT

Test Report No.	; ELES/RNC/2023/4778	Report Release Date	: 21,12.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4248 : Ropeway Unloading Station Bagru Bauxite Mine(75.41ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 17.11.2023 to 18.11.2023 : 24.11.2023 : Ambient Air	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02	
Period of Analysis	: 24.11.2023 to 09.12.2023		: ELES Pvt. Ltd. : Sealed &Preserved	

MI	ETEOROLOGICAL INFO	RMATION			
t	Average Temperature (°C)	: 20	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%)	: 49	4	Weather Condition	: Clear
5	Longitude	: 84°41'28.22"E	6	Latitude	: 23°26'45.48"N

Discipline: Chem	ical	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Benzene (C ₆ H ₆)*	µg/m [†]	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.

Reviewed by

****End of Report****

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

Page 1 of 1

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

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

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



TEST REPORT

Test Report No.	: ELES/RNC/2023/4779	Report Release Date	: 21.12.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET.	AILS	SAMPLE DETAILS	SAMPLE DETAILS		
Customer Name	: Hindaleo Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4249 : Ropeway Angle Station Bagru Bauxite Mine(75.41ha)		
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 17.11,2023 to 18.11.2023 : 24.11,2023		
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02		
Period of Analysis	: 24.11.2023 to 09.12.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved		

M	ETEOROLOGICAL INFO	RMATION			
1	Average Temperature (°C)	; 20	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%)	: 49	4	Weather Condition	: Clear
5	Longitude	: 84"41'28.22"E	6	Latitude	: 23°26'45.48"N

Discipline : Chemica	al.	Group: /	tmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m³	IS 5182 (Part-23); 2006; RA2022	64	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	31	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2): 2001; RA2022	6.7	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part-6): 2006; RA2022	20.1	80 (24hrs)
Ozone (O ₃)	μg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	μg/m ²	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ²	15 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	μg/m³	IS 5182 (Part-22): 2004; RA2019	0.009	1 (24hrs)
Nickel (Ni)	ng/m³	1S 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)

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****End of Report****

Dr. Deependra Kumar Sinha

Page 1 of 1

Page 1 of 1

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

NGINEERING SERVICES PYT, LTD.

Email: Info@elespl.co.in , eles.ranchi@amail.com Phone no.: 0451-2290103

Website: www.elespl.co.in

TEST REPORT

Test Report No.	: ELES/RNC/2023/4779	Report Release Date	: 21.12.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4249 : Ropeway Angle Station Bagru Bauxite Mine(75.41ha)	
Address	; Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 17.11.2023 to 18.11.2023 : 24.11.2023	
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 24.11.2023 to 09.12.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

M	ETEOROLOGICAL INFOI	RMATION			
1	Average Temperature (°C)	: 20	2	Barometric Pressure (mmHg	: 734
3	Relative Humidity (%)	3.49	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 (C ₆ H ₆)*	μg/m³	IS 5182 (Part-11)2006;RA2017	<1.0	05(Annual)		
Benzo-(a)-Pyrene*	ng/m*	1S 5182 (Part-12)2004;RA2019	< 0.5	D1(Annual)		

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

Reviewed by

****End of Report***

Authorised Signatory

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

Page 1 of 1

The Discurrent stated in Test Report, is issued by the Laboratory under General Terms and Conditions, only on Company letter lead in pre-approved farmit. The results shown in the Test Report refer or relates only to the jobsanalysis done by the Laboratory only. The information stated on the Test Report reflects the findings done by the Laboratory at the time of involvement only and waters the limits of client's instructions. The Laboratory is responsible for all the information or data provided on the report, except the information which is provided by the client. The Report rannot be reportliced except in full and any part of the report is not taken out of context, without prior written approval of the Laboratory. The Report in full or in part shall not be published, advertise, used for any legal stations unless prior permission has been secured from the Management of the Laboratory. Attention is drawn to the limitation of liability, compensation issues and participation of security attention of the Test Report is callawful and offenders may be prosecuted to the fallest extent of the law. All the samples are retained in fall the drawn within 15 days from the Date of release issue of the Test Report. The samples from Regulatory bodies are to be retained as specified. Any type of Observations or Complaints regarding the Reports that he draw within 15 days from the Date and Test Report is no 24 hours format. Abbreviation used 30 A. Nor Applicable, EDI, (Batew Direction Limit), LOI, (Lower Descention Limit).



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

ENGINEERING SERVICES PVT. LTD.

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

TEST REPORT

Test Report No.	: ELES/RAN/2023/3122	Report Release Date	: 21.12.2023
Work Order No.	: 13612310218	Work Order Date	; 21.04.2023

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Sampling Date	: ELES/RAN/2023/DW/3009 : 08.11.2023	
Address	; Lehardaga, Jharkhand-835302	Sample Received Date Type of Sample	: 24.11.2023 : Drinking Water	
		Source/Location of Sample Sampling Procedure	: Hisri (New) Bauxite Mines : ELES/DOC/SMPL/01	
Mines Status	: Operational	Sample Collected By	: ELES Pvt. Ltd.	
Period of Analysis	: 24.11.2023 to 08.12.2023	Sample Condition	: Sealed & Preserved	

Discipline : Chemical		Group : Water	r	Regulatory Limit as per IS 10500:2012	
Parameter Unit		Test Protocol	Result	Acceptable Limit	Permissible Limit
pH (at 24.5°C)	3	APHA 23 rd Ed.2017, 4500-H	6,70	6.5-8.5	No Relaxation
Turbidity	NTU	APHA 23 rd Ed.2017, 2130 B	0.12	1.0	5.0
Taste	103-1	APHA 23rd Ed.2017, 2160 C	Agreeable	Agreeable	Agreeable
Odour	-3	IS 3025 (Part-5):2018	Agreeable	Agreeable	Agreeable
Colour	Hazen	APHA 23rd Ed.2017, 2120B&D	1.0	5	15
Total Dissolved Solids (TDS)	mg/L	APHA 23 rd Ed.2017, 2540B,C&D	318	500	2000
Chloride (as Cl)	mg/L	APHA 23rd Ed.2017, 4500 CI B	24.4	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 CaCO3)	mg/L	APHA 23rd Ed.2017, 2320 B	138	200	600
Total Hardness (as CaCO ₃)	mg/L	APHA 23rd Ed.2017, 2340 C	154	200	600
Sulphate (as SO ₄)	mg/L	APHA 23rd Ed.2017, 4500 SO4-2-E	8.84	200	400
Nitrate (as NO ₃)	mg/L	APHA 23 rd Ed.2017, 4500 NO ₃ -B	1.48	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

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

ENGINEERING SERVICES PUT. LTD.

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

TEST REPORT

 Test Report No.
 : ELES/RAN/2023/3122
 Report Release Date
 : 21.12.2023

 Work Order No.
 : 13612310218
 Work Order Date
 : 21.04.2023

Discipl	ine: Che	mical Group : V	Vater		tory Limit 10500:2012
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	38.2	75	200
Discipl	ine : Che	mical Group	: Residues in	Water	
Aluminum (as Al)	mg/L	IS 3025 (Part-55): 2003; RA2019	BDL (DL: 0.02)	0.03	0.2
Arsenic (as As)	mg/L	IS 3025 (Part 37): 2022	BDL (DL: 0.005)	0,01	No Relaxation
Boron (as B)	mg/L	IS 3025(Part-57): 2005; RA2021	BDL (DL: 0.2)	0.5	1.0
Cadmium (as Cd)	mg/L	APHA 23 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	0.187	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/2023/3122
 Report Release Date
 : 21.12.2023

 Work Order No.
 : 13612310218
 Work Order Date
 : 21.04.2023

Discipline: Che	mical		Group: Water	
Parameter	Unit	Test Protocol	Result	Regulatory Limit as per IS 10500:2012
Pesticides				
Alachlor*	μg/L	АРНА	BDL (DL: 1.0)	20
Atrazine*	μg/L	АРНА	BDL (DL: 1.0)	2
Aldrin/Dieldrin*	μg/L	АРНА	BDL (DL: 0.01)	0.03
Alpha HCH*	μg/L	АРНА	BDL (DL: 0,001)	0.01
Beta HCH*	μg/L	АРНА	BDL (DL: 0.01)	0.04
Butachlor*	µg/L	АРНА	BDL (DL: 10)	125
Chlorpyriphos*	µg/L	АРНА	BDL (DL: 10)	30
Delia HCH*	μg/L	АРНА	BDL (DL: 0.01)	0.04
2,4 dichlorophenoxyacetic acid*	μg/L	АРНА	BDL (DL: 10)	30
DDT(o,p and p,p-isomers of DDT,DDE and DDD)*	μg/L	АРНА	BDL (DL: 0.5)	t
Endosulfan (alpha, beta, and sulphate)*	μg/L	АРНА	BDL (DL: 0.1)	0.4
Ethion*	μg/L	АРНА	BDL (DL: 0.5)	3
Gamma HCH (Lindane)*	μg/1_	APHA	BDL (DL: 0.5)	2
Isoproturon*	μg/L	APHA	BDL (DL: 0.5)	9

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

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TEST REPORT

 Test Report No.
 : ELES/RAN/2023/3122
 Report Release Date
 : 21.12.2023

 Work Order No.
 : 13612310218
 Work Order Date
 : 21.04.2023

Discipline : Bi	ological	Group: 1	Votor		ory Limit
Discipline : Bi	ological	Group:	iy ater	as per IS	0500:2012
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	Shan not	e detected
Discipline : Chemical		Group:	Water	Regulate	ry Limit
Discipine:	Chemicai	Group:	water	as per IS	10500:2012
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
Anionic Surfactants (as MBAS)*	mg/L	1S 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 ^{nt} Edition	BDL (DL: 0.0005)	0.0005	No relaxation

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

Reviewed by

****End of Report***

Authorised Signatory

Dr. Deependra Kumar Sinha

Ph. D Environmental Engg.

cLES Pvt. Ltd. Technical Manager

Page 4 of 4

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

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TEST REPORT

Test Report No.	: ELES/RNC/2024/0223	Report Release Date	: 15.01.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
ULR No.	: TC883924000000206F			

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4822 : Near Water Pump; Hisri (New) Bauxite Mine(14.55ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 21.12.2023 to 22.12.2023 : 26.12.2023	
Mines Status	: Operational	Type of Sample Sampling Procedure Sampling Done By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 26.12.2023 to 08.01.2024	Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 19	2	Barometric Pressure (mm	Hg) : 734
3	Relative Humidity (%) :47	4	Weather Condition	: Clear

Discipline : Chemica	d	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	63	100 (24hrs)
Particulate Matter (PM2.5)	μg/m ¹	IS 5182 (Part- 24): 2019	36	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2): 2001; RA2022	8.8	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	1S 5182 (Part-6): 2006; RA2022	23.7	80 (24hrs)
Ozone (O ₁)	µg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	μg/m ³	1S 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/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)

Reviewed by

****End of Report****

Ph. D Environmental Engg.

ELES PVL Ltd Technical Man

Page 1 of 1

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Save Environment, Save Future



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

ENGINEERING SERVICES PVT. LTD.

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TEST REPORT

Test Report No.	: ELES/RNC/2024/0223	Report Release Date	: 15.01.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4822 : Near Water Pump; Hisri (New) Bauxite Mine(14.55ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 21.12.2023 to 22.12.2023 : 26.12.2023	
		Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Mines Status	: Operational	Sampling Done By	: ELES Pvt. Ltd.	
Period of Analysis	: 26.12,2023 to 08.01.2024	Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	:19	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%)	:47	-4	Weather Condition	: Clear

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

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



****End of Report***

Dr. Dependent Signatory
Ph. D Environmental Engg.

ELES Pvt. Ltd. Technical Manager

Page 1 of 1

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

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TEST REPORT

Test Report No.	: ELES/RNC/2024/0224	Report Release Date	: 15.01,2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883924000000207F		

CUSTOMER DETA	AILS	SAMPLE DETAILS	The state of the s
Customer Name	# Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4823 : Near Old Rest Shelter; Hisri (New) Bauxite Mine(14.55ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 21.12.2023 to 22.12.2023 : 26.12.2023
Mines Status	: Operational	Type of Sample Sampling Procedure Sampling Done By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	3 26.12.2023 to 08.01.2024	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFO	RMATION			
1	Average Temperature (°C)	: 19	2	Barometric Pressure (mml-	lg) ; 734
3	Relative Humidity (%)	:47	4	Weather Condition	: Clear

1	Group : A	Group: Atmospheric Pollution			
Unit	Test Protocol	Result	Regulatory Limit		
μg/m³	IS 5182 (Part-23): 2006; RA2022	62	100 (24hrs)		
μg/m³	IS 5182 (Part- 24): 2019	35	60 (24hrs)		
μg/m³	IS 5182 (Part-2): 2001; RA2022	8.3	80 (24hrs)		
μg/m³	IS 5182 (Part-6): 2006; RA2022	22.2	80 (24hrs)		
μg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)		
μg/m³	IS 5182 (Part-25): 2018	<10.0	400 (24hrs)		
mg/m³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)		
µg/m³	IS 5182 (Part-22): 2004; RA2019	0.012	1 (24hrs)		
ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)		
ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)		
	μg/m ³	Unit Test Protocol μg/m³ IS 5182 (Part-23): 2006; RA2022 μg/m³ IS 5182 (Part-24): 2019 μg/m³ IS 5182 (Part-2): 2001; RA2022 μg/m³ IS 5182 (Part-6): 2006; RA2022 μg/m³ IS 5182 (Part-6): 1974; RA2019 μg/m³ IS 5182 (Part-25): 2018 mg/m³ IS 5182 (Part-10): 1999; RA2019 μg/m³ IS 5182 (Part-10): 1999; RA2019 μg/m³ IS 5182 (Part-22): 2004; RA2019 ng/m³ IS 5182 (Part-26): 2020	Unit Test Protocol Result μg/m³ IS 5182 (Part-23): 2006; RA2022 62 μg/m³ IS 5182 (Part-24): 2019 35 μg/m³ IS 5182 (Part-2): 2001; RA2022 8,3 μg/m³ IS 5182 (Part-6): 2006; RA2022 22.2 μg/m³ IS 5182 (Part-9): 1974; RA2019 <20.0		

****End of Report****

Reviewed by

Authorised Signatory

Dr. Deependra Kumar Sinna

Ph. D Environmental Ed

Page 1 of 1

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

ENGINEERING SERVICES PVT. LTD.

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TEST REPORT

Test Report No.	: ELES/RNC/2024/0224	Report Release Date	: 15.01.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4823 : Near Old Rest Shelter, Hisri (New) Bauxite Mine(14.55ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 21.12.2023 to 22.12.2023 : 26.12.2023	
		Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Mines Status	: Operational	Sampling Done By	: ELES Pvt. Ltd.	
Period of Analysis	: 26.12.2023 to 08.01.2024	Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 19	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%)	: 47	4	Weather Condition	: Clear

Discipline : Chem	ical	Group:	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Benzene (C ₆ H ₆)*	μg/m³	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 Sinila

Ph. D Environmental Engg.

ELES Pvt. Ltd. Technical Manager

Page 1 of 1

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 20AAFCE971301Z4

ENGINEERING SERVICES PVT. LTD.

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TEST REPORT

Test Report No.	: ELES/RNC/2024/0225	Report Release Date	: 15.01.2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883924000000208F		

CUSTOMER DETA	MLS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/4824	
		Location	: Near Old Plantation (North West Corner)	
			Hisri (New) Bauxite Mine(14.55ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 21.12.2023 to 22.12.2023	
		Sample Received Date	: 26.12.2023	
		Type of Sample	: Ambient Air	
		Sampling Procedure	: ELES/DOC/SMPL/02	
Mines Status	Operational	Sampling Done By	: ELES Pvt. Ltd.	
Period of Analysis	: 26.12.2023 to 08.01.2024	Sample Condition	: Sealed & Preserved	

M	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 19	2	Barometric Pressure (mml	Hg) : 734
3	Relative Humidity (%) : 47	4	Weather Condition	: Clear

Discipline : Chemica	d	Group : A	tmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	61	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24); 2019	35	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2): 2001; RA2022	7.5	80 (24hrs)
Nitrogen Di-Oxide (NO2)	μg/m³	1S 5182 (Part-6): 2006; RA2022	23.5	80 (24hrs)
Ozone (O ₃)	μg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ámmonia (NH ₁)	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)
Lend (Pb)	μg/m³	IS 5182 (Part-22): 2004; RA2019	0.011	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Armual)

****End of Report***

Reviewed by

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



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

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TEST REPORT

Test Report No.	: ELES/RNC/2024/0225	Report Release Date	: 15.01.2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4824 : Near Old Plantation (North West Corner) Hisri (New) Bauxite Mine(14.55ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 21.12.2023 to 22.12.2023 : 26.12.2023 : Ambient Air	
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 26.12.2023 to 08.01.2024	Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 19	2	Barometric Pressure (mmHg	: 734
3	Relative Humidity (%)	: 47	4.	Weather Condition	: Clear

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

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



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

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TEST REPORT

Test Report No.	: ELES/RNC/2024/0226	Report Release Date	: 15.01.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

ULR No. : TC883924000000209F

Reviewed by

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4825 : Hisri New (Southern Area) Hisri (New) Bauxite Mine(14,55ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 21.12,2023 to 22.12,2023 : 26.12,2023	
		Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Mines Status	: Operational	Sampling Done By	: ELES Pvt. Ltd.	
Period of Analysis	: 26.12.2023 to 08.01.2024	Sample Condition	: Sealed & Preserved	

M	ETEOROLOGICAL INFOR	RMATION			
1	Average Temperature (°C)	: 19	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%)	2.47	4	Weather Condition	: Clear

Discipline : Chemica	al .	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	55	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	28	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2): 2001; RA2022	8.2	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part-6): 2006; RA2022	20.2	80 (24hrs)	
Ozone (O ₃)	μg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH ₃)	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	μg/m³	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/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)	

****End of Report****

Authorised Signatory

Dr. Deependra Kumar Sinna

Ph. D Environmental Enga.

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TEST REPORT

Test Report No.	: ELES/RNC/2024/0226	Report Release Date	: 15.01.2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4825 : Hisri New (Southern Area) Hisri (New) Bauxite Mine(14.55ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 21.12.2023 to 22.12.2023 : 26.12.2023	
		Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Mines Status	: Operational	Sampling Done By	: ELES Pvt. Ltd.	
Period of Analysis	: 26.12.2023 to 08.01.2024	Sample Condition	: Sealed & Preserved	

M	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	:19	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%)	: 47	4	Weather Condition	: Clear

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

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



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Dr. Deependra Kumar Situra
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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (IHARKHAND) GST NO:- 20AAECE97130124

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TEST REPORT

Test Report No.	: ELES/RNC/2024/0215	Report Release Date	: 15.01.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
ULR No.	: TC883924000000198F			

CUSTOMER DETA	ULS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4814 : Near Daldaliya Village Bagru Bauxite Mine(75.41ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 19.12.2023 to 20.12.2023 : 26.12.2023	
Mines Status	: Non Operational	Type of Sample Sampling Procedure Sampling Done By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 26.12,2023 to 08.01.2024	Sample Condition	: Scaled & Preserved	

MI	ETEOROLOGICAL INFO	RMATION			
1	Average Temperature (°C)	: 19	2	Barometric Pressure (mmHg	g) : 736
3	Relative Humidity (%)	: 47	4	Weather Condition	: Clear

Discipline: Chemica	al	Group: A	tmospheric :	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	62	100 (24hrs)
Particulate Matter (PM2,5)	μg/m³	IS 5182 (Part- 24): 2019	33	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2): 2001; RA2022	8.8	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part-6): 2006; RA2022	22.8	80 (24hrs)
Ozone (O ₃)	µg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	0.012	1 (24hrs)
Nickel (Ni)	ng/m²	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ¹	ELES/AIR/SOP/01	<2.0	06 (Annual)

****End of Report****

Reviewed h

Authorised Signatory

Dr. Deependra Kumar Sinka

Ph. D Environmental Engo

Page 1 of 1 ELES Pvt. Ltd. Technical Manager

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

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TEST REPORT

Test Report No.	: ELES/RNC/2024/0215	Report Release Date	: 15.01.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4814 : Near Daldaliya Village Bagru Bauxite Mine(75.41ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 19.12.2023 to 20.12.2023 : 26.12.2023	
Mines Status	: Non Operational	Type of Sample Sampling Procedure Sampling Done By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 26.12.2023 to 08.01.2024	Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	; 19	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	: 47	4	Weather Condition	: Clear

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

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

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****End of Report****

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

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPHDANA HATIA, RANCHI-934003 (IHARKHAND) GST NO:- 30AASCE9713D124

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TEST REPORT

Test Report No.	: ELES/RNC/2024/0216	Report Release Date	: 15.01.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
ULR No.	: TC883924000000199F			

CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4815 : Aditya School Gangupara Bagru Bauxite Mine(75.41ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 19.12.2023 to 20.12.2023 : 26.12.2023
Mines Status	: Non Operational	Type of Sample Sampling Procedure Sampling Done By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 26,12,2023 to 08.01,2024	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	:19	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	: 47	4	Weather Condition	: Clear

Discipline: Chemica	AI.	Group:	tmospheric	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/m³	IS 5182 (Part- 24): 2019	37	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2): 2001; RA2022	7,2	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part-6): 2006; RA2022	15.1	80 (24hrs)
Ozone (O ₃)	µg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Antmonía (NH ₂)	µg/m³	1S 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	15 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	μg/m³	IS 5182 (Part-22): 2004; RA2019	0.011	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ¹	ELES/AIR/SOP/01	<2.0	06 (Annual)

****End of Report****

Reviewed by

Ph. D Environmental Engg.

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST WO:- 20AAFCE9713D124

RING SERVICES PVT. LTD.

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

TEST REPORT

Test Report No.	: ELES/RNC/2024/0216	Report Release Date	: 15.01.2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4815 : Aditya School Gangupara Bagru Bauxite Mine(75,41ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 19.12.2023 to 20.12.2023 : 26.12.2023
Mines Status	: Non Operational	Type of Sample Sampling Procedure Sampling Done By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 26.12.2023 to 08.01.2024	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 19	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	; 47	4	Weather Condition	: Clear

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

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

185 G Reviewed by

End of Report**

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

ELES Pvt. Ltd. Technical Managers

Page I of I

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PLDT NO-30; MANSAROVAR ENCLAVE, TUPUDANA HATIA: RANCHI-834003 (IHARKHAND) GET NO:- 200A8ECE9713D124

INCINCERING SERVICES PVT. LTD

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



TEST REPORT

Test Report No.	: ELES/RNC/2024/0217	Report Release Date	: 15.01.2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883924000000200F		

CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name	; Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4816 : Ropeway Unloading Station Bagru Bauxite Mine(75.41ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 19.12.2023 to 20.12.2023 : 26.12.2023
Mines Status	: Non Operational	Type of Sample Sampling Procedure Sampling Done By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvl. Ltd.
Period of Analysis	: 26.12.2023 to 08.01.2024	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFORMATION				
1.	Average Temperature (°C) ; 19	2	Barometric Pressure (mm	Hg) : 736	
3	Relative Humidity (%) : 47	4	Weather Condition	: Clear	

Discipline : Chemica	al .	Group: A	tmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	68	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	34	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2): 2001; RA2022	8.3	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part-6): 2006; RA2022	23.5	80 (24hrs)
Ozone (O ₅)	µg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m²	1S 5182 (Part- 25); 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	μg/m³	IS 5182 (Part-22): 2004; RA2019	0.013	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	< 6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)

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****End of Report****

Dr. Deependra Kumar Sinna

Ph. D Environmental Engo.

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PLOT NO-30, MANSAROVAR ENCLAVE, TURUDANA HATIA, RANCHI-834093 (IHARKHAND) GST NO:- 20AAECE97130124

ENGINEERING SERVICES PYT. LTD.

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TEST REPORT

Test Report No.	: ELES/RNC/2024/0217	Report Release Date	: 15.01.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET.	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4816 : Ropeway Unloading Station Bagru Bauxite Mine(75.41ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 19.12.2023 to 20.12.2023 : 26.12.2023 : Ambient Air
Mines Status	: Non Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 26.12.2023 to 08.01.2024	Sample Condition	Sealed & Preserved

MI	ETEOROLOGICAL INFOR	MATION				
4	Average Temperature (°C)	: 19	2	Barometric Pressure (mmHg)	: 736	
3	Relative Humidity (%)	: 47	4	Weather Condition	; Clear	

Discipline: Chem	ical	Group:	Atmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (C ₀ H ₆) ^w	μg/m ²	IS 5182 (Part-11)2006;RA2017	<1.0	05(Annual)
Benzo-(a)-Pyrene*	ng/m³	IS 5182 (Part-12)2004;RA2019	<0.5	01(Annual)

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



****End of Report****

Authorised Signatory
Dr. Deependra Kurrar Siring
Ph. D Environmental Engg.
ELES Pvt. Ltd. Technical Manager

Page 1 of 1

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (IHARKHAND) GST NO:- 20AAECE9715D124

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TEST REPORT

Test Report No.	: ELES/RNC/2024/0218	Report Release Date	: 15.01.2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883924000000201F		

CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name	: Hîndalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4817 : Ropeway Angle Station Bagru Bauxite Mine(75.41ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 19.12.2023 to 20.12.2023 : 26.12.2023
Mines Status	: Non Operational	Type of Sample Sampling Procedure Sampling Done By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 26.12.2023 to 08.01.2024	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 19	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	: 47	4	Weather Condition	: Clear

Discipline : Chemica	il	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	71	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	35	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m ³	IS 5182 (Part-2): 2001; RA2022	9.1	80 (24hrs)	
Nitrogen Di-Oxide (NO ₁)	μg/m ³	IS 5182 (Part-6): 2006; RA2022	23,5	80 (24hrs)	
Ozone (O ₃)	μg/m ³	1S 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammenia (NH ₃)	µg/m ¹	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/m³	IS 5182 (Part-22): 2004; RA2019	0.011	1 (24hrs)	
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)	

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****End of Report****

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Ph. D Environmental Engg.

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ENGINEERING SERVICES PVT. LTD.

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Website: www.elespl.co.in

TEST REPORT

Test Report No.	; ELES/RNC/2024/0218	Report Release Date	: 15.01.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET.	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4817 : Ropeway Angle Station Bagru Bauxite Mine(75.41ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 19.12,2023 to 20.12.2023 : 26.12,2023 : Ambient Air	
Mines Status	: Non Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 26.12.2023 to 08.01.2024	Sample Condition	: Sealed & Preserved	

M	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 19	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	: 47	4	Weather Condition	: Clear

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

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

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****End of Report****

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

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

ENGINEERING SERVICES PVT. LTD.

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



TEST REPORT

Test Report No.	: ELES/RNC/2024/0543	Report Release Date	: 06.02.2024
Work Order No.	: 13612310218	Work Order Date	; 21.04.2023
ULR No.	: TC883924000000514F		

CUSTOMER DET/	MLS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/0482 : Near Water Pump; Hisri (New) Bauxite Mine(14.55ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 23.01.2024 to 24.01.2024 : 27.01.2024	
Mines Status	: Operational	Type of Sample Sampling Procedure Sampling Done By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
All and the second second	Control of the contro		The same of the sa	
Period of Analysis	: 27.01.2024 to 05.02,2024	Sample Condition	Sealed & Preserved	

METEOROLOGICAL INFORMATION						
1	Average Temperature (°C)	: 18	2	Barometric Pressure (mmHg)	: 734	
3	Relative Humidity (%)	: 46	4	Weather Condition	: Clear	

Discipline : Chemica	ıl	Group : A	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	67	100 (24hrs)		
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	40	60 (24hrs)		
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2): 2001; RA2022	10.2	80 (24hrs)		
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part-6): 2006; RA2022	25.1	80 (24hrs)		
Ozone (O ₃)	μg/m³	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/m³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)		
Lead (Pb)	μg/m³	IS 5182 (Part-22): 2004; RA2019	0.011	1 (24hrs)		
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Amual)		
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)		

Reviewed by

****End of Report****

Authorised Signatory
Dr. Deependra Kumar Sirina

ELES PVI. Ltd. Technical Mans

Ph. D Environmental Engg.

Page 1 of 1

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

ENGINEERING SERVICES PVT. LTD.

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

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

TEST REPORT

Test Report No.	: ELES/RNC/2024/0543	Report Release Date	: 06.02.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04,2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/0482 : Near Water Pump; Hisri (New) Bauxite Mine(14,55ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 23.01.2024 to 24.01.2024 : 27.01.2024 : Ambient Air : ELES/DOC/SMPL/02	
Mines Status	: Operational	Sampling Done By	: ELES Pvt. Ltd.	
Period of Analysis	: 27.01.2024 to 05.02,2024	Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFOR	MATION	7		
1	Average Temperature (°C)	: 18	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%)	: 46	4	Weather Condition	: Clear

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

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



****End of Report****

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

Page 1 of 1

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

ENGINEERING SERVICES PVT. LTD.

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

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TEST REPORT

 Test Report No.
 : ELES/RNC/2024/0544
 Report Release Date
 : 06.02.2024

 Work Order No.
 : 13612310218
 Work Order Date
 : 21.04.2023

ULR No. : TC883924000000515F

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/0483 : Near Old Rest Shelter; Hisri (New) Bauxite Mine(14.55ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 23.01.2024 to 24.01.2024 : 27.01.2024	
		Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Mines Status	: Operational	Sampling Done By	: ELES Pvt. Ltd.	
Period of Analysis	: 27.01.2024 to 05.02.2024	Sample Condition	: Sealed & Preserved	

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 18	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%)	: 46	4	Weather Condition	: Clear

Discipline : Chemica	d	Group: A	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	61	100 (24hrs)		
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	33	60 (24hrs)		
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2): 2001; RA2022	6.5	80 (24hrs)		
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 3182 (Part-6): 2006; RA2022	15.2	80 (24hrs)		
Ozone (O ₃)	μg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)		
Antmonia (NH ₃)	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)		
Lead (Pb)	μg/m³	IS 5182 (Part-22): 2004; RA2019	0.010	1 (24hrs)		
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)		

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Dr. Deependra Kumar Sining

Ph. D Environmental Engg.

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

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

TEST REPORT

Test Report No.	: ELES/RNC/2024/0544	Report Release Date	: 06.02.2024	
Work Order No.	; 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET/	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref, No. Location	: ELES/RNC/2024/AA/0483 : Near Old Rest Shelter; Hisri	
		Sampling Date	(New) Bauxite Mine(14.55ha) : 23.01.2024 to 24.01.2024	
Address	: Lohardaga, Jharkhand-835302	Sample Received Date	: 27.01.2024	
		Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Mines Status	; Operational	Sampling Done By	: ELES Pvt. Ltd.	
Period of Analysis	: 27.01.2024 to 05.02.2024	Sample Condition	: Sealed & Preserved	

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 18	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%)	: 46	4	Weather Condition	: Clear

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

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



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TEST REPORT

Test Report No.	: ELES/RNC/2024/0545	Report Release Date	: 06.02.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
ULR No.	: TC883924000000516F			

CUSTOMER DET.	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2024/AA/0484	
		Location	: Near Old Plantation	
			(North West Corner)	
			Hisri (New) Bauxite Mine(14.55ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 23.01.2024 to 24.01.2024	
		Sample Received Date	: 27.01.2024	
		Type of Sample	: Ambient Air	
		Sampling Procedure	: ELES/DOC/SMPL/02	
Mines Status	: Operational	Sampling Done By	: ELES Pvt. Ltd.	
Period of Analysis	: 27.01.2024 to 05.02.2024	Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFOR	RMATION			
1	Average Temperature (°C)	: 18	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%)	: 46	4	Weather Condition	: Clear

Discipline : Chemica	al .	Group: A	Atmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	64	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24); 2019	39	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2): 2001; RA2022	8.2	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part-6): 2006; RA2022	24.8	80 (24hrs)
Ozone (O ₃)	μg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m³	1S 5182 (Part-22): 2004; RA2019	0.014	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As) Engl	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)

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r. Deependra Kumar Sinna

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TEST REPORT

Test Report No.	; ELES/RNC/2024/0545	Report Release Date	: 06.02.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETA	CUSTOMER DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/0484 : Near Old Plantation (North West Corner) Hisri (New) Bauxite Mine(14.55ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 23.01.2024 to 24.01.2024 : 27.01.2024 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Operational	Sampling Done By	: ELES Pvt. Ltd.
Period of Analysis	: 27.01.2024 to 05.02.2024	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	±18	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%)	€ 46	4	Weather Condition	: Clear

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

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



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TEST REPORT

Test Report No.	; ELES/RNC/2024/0546	Report Release Date	: 06.02.2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883924000000517F		

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/0485 : Hisri New (Southern Area) Hisri (New) Bauxite Mine(14.55ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 23.01.2024 to 24.01.2024 : 27.01.2024	
Mines Status	: Operational	Type of Sample Sampling Procedure Sampling Done By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 27.01.2024 to 05.02.2024	Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	:18	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%)	46	4	Weather Condition	: Clear

Discipline : Chemica	ol .	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	58	100 (24hrs)		
Particulate Matter (PM2.5)	μg/m³	1S 5182 (Part- 24): 2019	31	60 (24hrs)		
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2): 2001; RA2022	7.8	80 (24hrs)		
Nitrogen Di-Oxide (NO2)	μg/m³	IS 5182 (Part-6): 2006; RA2022	19.5	80 (24hrs)		
Ozone (O ₃)	μg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)		
Ammonia (NH ₃)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)		
Lead (Pb)	µg/m³	IS 5182 (Part-22): 2004; RA2019	0.007	1 (24hrs)		
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)		

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TEST REPORT

Test Report No.	: ELES/RNC/2024/0546	Report Release Date	: 06.02.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	t Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/0485 : Hisri New (Southern Area) Hisri (New) Bauxite Mine(14.55ha)	
Address	Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 23.01,2024 to 24.01.2024 : 27.01.2024 : Ambient Air	
Mines Status	Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 27.01.2024 to 05.02.2024	Sample Condition	; Sealed & Preserved	

MI	ETEOROLOGICAL INFOR	MATION			
11	Average Temperature (°C)	:18	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%)	: 46	4	Weather Condition	: Clear

Discipline : Chem	ical	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Benzene (C ₆ H ₆)*	μg/m³	IS 5182 (Part-11): 2006; RA2022	<1.0	05(Annual)		
Benzo-(a)-Pyrene*	ng/m³	IS 5182 (Part-12): 2004; RA2019	<0,5	01(Annual)		

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

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TEST REPORT

Test Report No.	: ELES/RNC/2024/0531	Report Release Date	: 06.02.2024
Work Order No.	: 13612310218	Work Order Date	; 21.04.2023
ULR No.	: TC883924000000502F		

CUSTOMER DET.	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/0470 : Near Daldaliya Village Bagru Bauxite Mine(75.41ha)
Address	: Liohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 21.01.2024 to 22.01.2024 :: 27.01.2024
Mines Status	: Non Operational	Type of Sample Sampling Procedure Sampling Done By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 27.01.2024 to 05.02.2024	Sample Condition	: Sealed & Preserved

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

Discipline: Chemica	nI	Group;	Atmospheric	Pallution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (FM10)	μg/m²	IS 5182 (Part-23): 2006; RA2022	69	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	38	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2): 2001; RA2022	9.3	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part-6): 2006; RA2022	23,7	80 (24hrs)
Ozone (O ₃)	μg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m²	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m³	IS 5182 (Part-22): 2004; RA2019	0.017	1 (24hrs)
Nickel (Ni)	ng/m²	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)

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TEST REPORT

Test Report No.	: ELES/RNC/2024/0531	Report Release Date	: 06.02.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETA	CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/0470 : Near Daldaliya Village Bagru Bauxite Mine(75.41ha)		
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 21.01.2024 to 22.01.2024 : 27.01.2024 : Ambient Air : ELES/DOC/SMPL/02		
Mines Status	: Non Operational	Sampling Done By	: ELES Pvt. Ltd.		
Period of Analysis	: 27.01.2024 to 05.02.2024	Sample Condition	: Sealed & Preserved		

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

Discipline : Chem	ical	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Benzene (C ₆ H ₆)*	µg/m³	IS 5182 (Part-11): 2006; RA2022	<1,0	05(Annual)		
Benzo-(a)-Pyrene®	ng/m³	IS 5182 (Part-12): 2004; RA2019	< 0.5	01(Annual)		

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

Reviewed by

**** End of Report ***

Authorised Signatory
Dr. Deependra Kumar Simul
Ph. D Environmental Engg
ELES Pvl. Ltd. Technical Manageri

Page 1 of 1

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

ENGINEERING SERVICES PUT. LTD.

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TEST REPORT

Test Report No.	: ELES/RNC/2024/0532	Report Release Date	: 06,02,2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883924000000503F		

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2024/AA/0471
		Location	: Aditya School Gangupara
			Bagru Bauxite Mine(75.41ha)
		Sampling Date	: 21.01.2024 to 22.01.2024
Address	: Lohardaga, Jharkhand-835302	Sample Received Date	: 27.01.2024
	1000	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
Mines Status	: Non Operational	Sampling Done By	: ELES Pvt. Ltd.
Period of Analysis	: 27.01.2024 to 05.02.2024	Sample Condition	: Sealed & Preserved

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

Discipline: Chemica	af	Group: /	tmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23); 2006; RA2022	76	100 (24hrs)
Particulate Matter (PM2.5)	µg/m³	JS 5182 (Part- 24); 2019	43	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2): 2001; RA2022	10.7	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part-6): 2006; RA2022	20.2	80 (24hrs)
Ozone (O ₃)	µg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₁)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m³	IS 5182 (Part-22): 2004; RA2019	0.014	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)
STATES AND				-4

****End of Report****

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Authorised Signatory

Dr. Deependra Kumar Sin. L.

Ph. D Environmental Enon.

Page 1 of 1 ELES Pvt. Ltd. Technical Mane

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPLIOANA HATIA, RANCHI-834003 (JHARKHAND) 537 NOI-20AAECE9713D124

ENGINEERING SERVICES PUT. LTD.

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TEST REPORT

Test Report No.	: ELES/RNC/2024/0532	Report Release Date	: 06.02.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/0471 : Aditya School Gangupara Bagru Bauxite Mine(75.41ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 21.01.2024 to 22.01.2024 : 27.01.2024 : Ambient Air
Mines Status	(Non Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 27.01.2024 to 05.02.2024	Sample Condition	; Sealed & Preserved

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

Discipline : Chem	ical	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Benzene (C ₆ H ₆)*	μg/m³	(S 5182 (Part-11): 2006; RA2022	<1.0	05(Annual)		
Benzo-(a)-Pyrene*	ng/m²	IS 5182 (Part-12): 2004; RA2019	< 0.5	01(Annual)		

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

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Ph. Deependra Kumar Sinus Ph. D Environmental Enga. ELES Pvi. Ltd. Technical Manager

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TEST REPORT

Test Report No.	: ELES/RNC/2024/0533	Report Release Date	: 06.02,2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883924000000504F		

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/0472 : Ropeway Unloading Station Bagru Bauxite Mine(75,41ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 21,01,2024 to 22,01,2024 : 27,01,2024 : Ambient Air	
Mines Status	t Non Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	; 27.01.2024 to 05.02.2024	Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFORT	MATION			1.4.
1	Average Temperature (°C)	: 18	2	Barometric Pressure (mmHg)	: 736
ġ.	Relative Humidity (%)	:47	4	Weather Condition	: Clear

1	Group: A	Group: Atmospheric Pollution			
Unit	Test Protocol	Result	Regulatory Limit		
µg/m³	IS 5182 (Part-23): 2006; RA2022	74	100 (24hrs)		
μg/m³	IS 5182 (Part- 24); 2019	41	60 (24hrs)		
µg/m³	IS 5182 (Part-2): 2001; RA2022	11.5	80 (24hrs)		
μg/m³	IS 5182 (Part-6): 2006; RA2022	26.9	80 (24hrs)		
µg/im³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)		
μg/m³	IS 5182 (Part- 25): 2018	<1().()	400 (24hrs)		
mg/m³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)		
μg/m³	IS 5182 (Part-22): 2004; RA2019	0.017	I (24hrs)		
ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)		
ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)		
	μg/m ³	Unit Test Protocol μg/m³ IS 5182 (Part-23): 2006; RA2022 μg/m³ IS 5182 (Part-24): 2019 μg/m³ IS 5182 (Part-2): 2001; RA2022 μg/m³ IS 5182 (Part-6): 2006; RA2022 μg/m³ IS 5182 (Part-6): 1974; RA2019 μg/m³ IS 5182 (Part-25): 2018 μg/m³ IS 5182 (Part-10): 1999; RA2019 μg/m³ IS 5182 (Part-22): 2004; RA2019 μg/m³ IS 5182 (Part-22): 2004; RA2019 μg/m³ IS 5182 (Part-26):2020	Unit Test Protocol Result μg/m³ IS 5182 (Part-23): 2006; RA2022 74 μg/m³ IS 5182 (Part-24): 2019 41 μg/m³ IS 5182 (Part-2): 2001; RA2022 11.5 μg/m³ IS 5182 (Part-6): 2006; RA2022 26.9 μg/m³ IS 5182 (Part-9): 1974; RA2019 <20.0		

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****End of Report***

Authorised Signatory
Dr. Deependra Kumar Sini J.

Ph. D Environmental Engg

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TEST REPORT

Test Report No.	: ELES/RNC/2024/0533	Report Release Date	: 06.02.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET.	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/0472 : Ropeway Unloading Station Bagru Bauxite Mine(75.41ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 21.01.2024 to 22.01.2024 : 27.01.2024 : Ambient Air : ELES/DOC/SMPL/02	
Mines Status	: Non Operational	Sampling Done By	: ELES Pvt. Ltd.	
Period of Analysis	: 27.01.2024 to 05.02.2024	Sample Condition	: Sealed & Preserved	

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

Discipline: Chem	ical	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Benzene (C ₆ H ₆)*	μg/m ³	IS 5182 (Part-11); 2006; RA2022	<1.0	05(Annual)		
Benzo-(a)-Pyrene*	ng/m²	IS 5182 (Part-12): 2004; RA2019	<0.5	01(Annual)		

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

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****End of Report***

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Dt. Deependra Kurner Sincul
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TEST REPORT

Test Report No.	: ELES/RNC/2024/0534	Report Release Date	: 06.02.2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883924000000505F		

CUSTOMER DET.	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2024/AA/0473
		Location	: Ropeway Angle Station
			Bagru Bauxite Mine(75.41ha)
	I a second	Sampling Date	: 21.01.2024 to 22.01.2024
Address	: Lohardaga, Jharkhand-835302	Sample Received Date	: 27.01.2024
		Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
Mines Status	7 Non Operational	Sampling Done By	: ELES Pvt. Ltd.
Period of Analysis	: 27.01.2024 to 05.02.2024	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFORMATI	ON		
1	Average Temperature (°C) : 18	2	Barometric Pressure (mmH	g) : 736
3	Relative Humidity (%) : 47		Weather Condition	: Clear

Discipline: Chemica	it	Group:	Atmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m³	IS 5182 (Part-23); 2006; RA2022	79	100 (24hrs)
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part- 24): 2019	40	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m³	IS 5182 (Part-2): 2001; RA2022	12.5	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m³	IS 5182 (Part-6): 2006; RA2022	27.1	80 (24hrs)
Ozone (O ₁)	µg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (Shrs)
Ammonia (NH ₃)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ⁴	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/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)

****End of Report****

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Dr. Deependra Kumar Sinna

Ph. D Environmental Engg

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TEST REPORT

Test Report No.	: ELES/RNC/2024/0534	Report Release Date	: 06.02.2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/0473 : Ropeway Angle Station Bagru Bauxite Mine(75.41ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 21.01.2024 to 22.01.2024 : 27.01.2024 : Ambient Air : ELES/DOC/SMPL/02	
Mines Status	: Non Operational	Sampling Done By	: ELES Pvi. Ltd.	
Period of Analysis	: 27.01.2024 to 05.02.2024	Sample Condition	: Sealed & Preserved	

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

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

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

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

ENGINEERING SERVICES PVT. LTD.

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TEST REPORT

Test Report No.	: ELES/RNC/2024/0590	Report Release Date	: 06.02.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
ULR No.	: TC883924000000561F			

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Sampling Date Sample Received Date	: ELES/RNC/2024/SW/0625 : 24.01.2024 : 31.01.2024
Address	: Lohardaga, Jharkhand-835302	Type of Sample Source of Sample	: Surface Water : Near Water Pump, Hisri (New Bauxite Mine(14.55ha)
Mines Status	± Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/01 : ELES Pvt. Ltd.
Period of Analysis	: 31.01.2024 to 05.02.2024	Sample Condition	: Sealed & Preserved

Discipline: Chemical		Group	: Water	Tolerance Limits
Parameter	Unit	Test Protocol	Result	as per IS 2296-1992 Class C (Inland Surface Water
pH (at 24.5°C)	4	IS 3025 (Part 11) = 2022	6.85	6.5-8.5
Temperature	°C	IS 3025 (Part 9):1984; RA2017	24.6	
Chemical Oxygen Demand (COD)	-	IS 3025 (Part-58) :2006; RA2017	4.0	
Biochemical Oxygen Demand (BOD) (@ 20°C for 5 days)	mg/L	APHA 23 rd Ed.2017; 5210B	1.2	3.0
Total Dissolved Solids (TDS)	mg/L	IS 3025 (Part 16):1984; RA2017	108	1500
Total Suspended Solids (TSS)	mg/L	IS 3025 (Part-17):2022	9.0	
Oil & Grease	mg/L	IS 3025 (Part-39): 2021	BDL (DL: 0.1)	0.1
Calcium (as Ca)	mg/L	IS 3025 (Part-40):1991, RA2019	4.7	4.
Discipline : Cher	nical	Group :	Residues in W	Vater
Aluminium (Al)	mg/L	IS 3025 (Part-55) :2003; RA2019	BDL (DL: 0.02)	0.03
Iron (as Fe)	mg/L	APHA23 rd Ed 2017; 3111B	0.109	50

Remarks: 1, pH done at Lab.

Reviewed by

****End of Report****

Authorised Signatory Dr. Deependra Kumar Simila

Page 1 of 1

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

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TEST REPORT

Test Report No.	: ELES/RNC/2024/0606	Report Release Date	: 06.02.2024
Work Order No.	: 13612310218	Work Order Date	: 21,04.2023
ULR No.	: TC883924000000577F		

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Sampling Date Sample Received Date	: ELES/RNC/2024/SL/0641 : 24.01.2024 : 31.01.2024
Address	: Lohardaga, Jharkhand-835302	Type of Sample Location of Sample	: Soil : Near Mines, Hisri (New) Bauxite Mines
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/05 : ELES Pvt. Ltd.
Period of Analysis	: 31.01.2024 to 05.02.2024	Sample Condition	: Sealed

Discipline: Chemical		Group: Pollution & Environment		
Parameter	Unit	Test Protocol	Result	
pH (1:2) at 24.6 °C	-	IS 2720 (Part 26):1987; RA2021	4.55	
Conductivity (1:2) at 24.6 °C	µS/cm	IS 14767: 2000; RA2021	174	
Total Organic Carbon (TOC)	%	Soil Testing in India: 2011 (Walkley & Black Method)	0.47	
Available Phosphorus (as P) (1:10)	kg/ha	Soil Testing in India; 2011	3.24	
Potassium (as K)	mg/kg	IS 9497:1980; RA 2020	1450	
Available Nitrogen	%	Soil Testing in India: 2011	6.72	
Chloride (1:2)	%	ELES/SOIL/SOP/01	0.09	
Lead (as Pb)	mg/kg	US EPA 3050 A&B: 1996	BDL (DL: 0.1)	
Cadmium (as Cd)	mg/kg	US EPA 3050 A&B: 1996	BDL (DL: 0.1)	
Mercury (as Hg)	mg/kg	US EPA 7473: 2007	BDL (DL: 0.01)	
Magnesium (as Mg)	mg/kg	Soil Testing in India: 2011	251	

Remarks: 1. pH done at Lab.

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TEST REPORT

Test Report No.	: ELES/RNC/2024/0606	Report Release Date	: 06.02.2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2024/SL/0641 : 24.01.2024
		Sampling Date Sample Received Date	: 31.01.2024
4.14	: Lohardaga, Jharkhand-835302	Type of Sample	: Soil
Address	: Lonardaga, marknand-835302	Location of Sample	: Near Mines, Hisri (New) Bauxite Mines
		Sampling Procedure	: ELES/DOC/SMPL/05
Mines Status	: Operational	Sampling Done By	: ELES Pvt. Ltd.
Period of Analysis	: 31.01.2024 to 05.02.2024	Sample Condition	: Sealed

Discipline: Chemical		Group: Pollution & Environment	
Parameter	Unit	Test Protocol	Result
Arsenic (as As)	mg/kg	1S 3025 (Part 37): 2022	BDL (DL: 0.005)
Selenium (as Se)	mg/kg	IS 3025 (Part-56) :2003; RA 2019	BDL (DL: 0.01)

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TC-8839

TEST REPORT

Test Report No.	: ELES/RNC/2024/1217	Report Release Date	: 13.02.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
ULR No.	: TC883924000001153F	1		_

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	‡ Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1139 : Near Water Pump; Hisri (New Bauxite Mine (14.55ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 11.02,2024 to 12.02.2024 : 12.02.2024
Mines Status	: Operational	Type of Sample Sampling Procedure Sampling Done By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 12.02.2024 to 13.02.2024	Sample Condition	: Sealed & Preserved

METEOROL	OGICAL INFORM	IATION			
1 Average 1	emperature (°C)	22	2	Barometric Pressure (mmHg)	: 734
3 Relative I	lumidity (%)	49		Weather Condition	: Clear

Disciplin	e: Chemical	Group : Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23); 2006; RA2022	69	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	43	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2): 2001; RA2022	9.7	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part-6): 2006; RA2022	22.6	80 (24hrs)	
Ozone (O ₃)	μg/m'	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH ₃)	μg/m³	IS 5182 (Part- 25); 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	μg/m ³	IS 5182 (Part-22): 2004; RA2019	0.009	1 (24hrs)	
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m¹	ELES/AIR/SOP/01	<2.0	D6 (Annual)	

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TEST REPORT

Test Report No.	: ELES/RNC/2024/1285	Report Release Date	: 26.02.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET.	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1139 : Near Water Pump; Hisri (New) Bauxite Mine (14,55ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 11.02,2024 to 12.02,2024 : 12.02,2024	
Mines Status	: Operational	Type of Sample Sampling Procedure Sampling Done By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 12.02.2024 to 21.02.2024	Sample Condition	: Sealed & Preserved	

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 22	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	: 49		Weather Condition	: Clear

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

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

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Dr. Deependra Kumar Sinha Ph D Environmental Engg.

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TC-BR35

TEST REPORT

Test Report No.	; ELES/RNC/2024/1218	Report Release Date	: 13.02.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
ULR No.	: TC883924000001154F			

CUSTOMER DET		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1140 : Near Old Rest Shelter, Hisri (New) Bauxite Mine (14.55ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 11.02.2024 to 12.02.2024 : 12.02.2024
Mines Status	; Operational	Type of Sample Sampling Procedure Sampling Done By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 12.02.2024 to 13.02.2024	Sample Condition	: Sealed & Preserved

2	Barometric Pressure (mmHg)	: 734	
4		12.91	
	4	Barometric Pressure (mmHg) Weather Condition	

Disciplin	e: Chemical	Group : Atmosp	heric Pollutio	00
Parameter Unit		Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23); 2006; RA2022	68	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	31	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m ⁱ	IS 5182 (Part-2): 2001; RA2022	9.8	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part-6): 2006; RA2022	23.7	80 (24hrs)
Ozone (O ₃)	μg/m²	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	μg/m ⁶	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019 (NDIR Method)	<1,0	2 (8hrs)
Lead (Pb)	μg/m³	IS 5182 (Part-22): 2004; RA2019	0.015	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)

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TEST REPORT

Test Report No.	: ELES/RNC/2024/1286	Report Release Date	: 26.02.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1140 : Near Old Rest Shelter; Hisri (New) Bauxite Mine (14.55ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 11.02.2024 to 12.02.2024 : 12.02.2024 : Ambient Air
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 12.02,2024 to 21.02,2024	Sample Condition	: Sealed & Preserved

MI	TEOROLOGICAL INFOR	MATION			
į.	Average Temperature (°C)	: 22	12	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	: 49		Weather Condition	: Clear

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

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

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TC-8839

TEST REPORT

Test Report No.	: ELES/RNC/2024/1219	Report Release Date	: 13.02.2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883924000001155F		
CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	- PLES/PMC/2024/A A/1141

		CONTRACTOR DESCRIPTIONS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1141 : Near Old Plantation (North West Corner) Hisri (New)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	Bauxite Mine(14.55ha) : 11.02.2024 to 12.02.2024 : 12.02.2024
Mines Status	: Operational	Type of Sample Sampling Procedure Sampling Done By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 12.02.2024 to 13.02.2024	Sample Condition	: Sealed & Preserved

M	ETEOROLOGICAL INFORMATION				
1	Average Temperature (°C) = 22	2	Barometric Pressure (mml-	(g) : 734	
3	Relative Humidity (%) : 49	4	Weather Condition	: Clear	

Disciplin	e: Chemical	Group : Atmosp	Group : Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	68	100 (24hrs)		
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part- 24): 2019	41	60 (24hrs)		
Sulphur Di-Oxide (SO ₂)	μg/m ³	IS 5182 (Part-2): 2001; RA2022	9.7	80 (24hrs)		
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part-6): 2006; RA2022	22.2	80 (24hrs)		
Ozone (O ₃)	μg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)		
Ammonia (NH ₁)	µg/m¹	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019 (NDIR Method)	<1.0	2 (8hrs)		
Lead (Pb)	μg/m³	IS 5182 (Part-22): 2004; RA2019	0.009	1 (24hrs)		
Nickel (Ni)	ng/m¹	1S 5182 (Part-26):2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)		

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TEST REPORT

Test Report No.	: ELES/RNC/2024/1287	Report Release Date	: 26.02.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET.	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1141 : Near Old Plantation (North West Corner) Hisri (New) Bauxite Mine(14.55ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 11.02.2024 to 12.02.2024 : 12.02.2024 : Ambient Air	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02	
Period of Analysis	: 12.02.2024 to 21.02.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

M	METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 22	2	Barometric Pressure (mmHg)	: 736	
3	Relative Humidity (%)	: 49	4	Weather Condition	: Clear	

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

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

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****End of Report****

Authorised Signatory

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

Page I of I

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

ENGINEERING SERVICES PVT. LTD.

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

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TC-6839

TEST REPORT

Test Report No.	: ELES/RNC/2024/1220	Report Release Date	: 13.02.2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883924000001156F		200100000

CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1142 : Hisri New (Southern Area) Hisri (New) Bauxite Mine(14.55ha
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 11.02.2024 to 12.02.2024 : 12.02.2024
Mines Status	: Operational	Type of Sample Sampling Procedure Sampling Done By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 12.02.2024 to 13.02.2024	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 22	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%)	: 49		Weather Condition	: Clear

Discipline : Chemical		Group : Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m ³	IS 5182 (Part-23): 2006; RA2022	59	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	32	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2): 2001; RA2022	10.5	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part-6): 2006; RA2022	19.6	80 (24hrs)	
Ozone (O ₃)	μg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH ₃)	μg/m ^λ	IS 5182 (Part- 25): 2018	<10,0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	µg/m²	IS 5182 (Part-22): 2004; RA2019	< 0.002	1 (24hrs)	
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)	

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TEST REPORT

Test Report No.	: ELES/RNC/2024/1288	Report Release Date	: 26.02.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	; Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1142 : Hisri New (Southern Area) Hisri (New) Bauxite Mine(14.55ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 11.02.2024 to 12.02.2024 : 12.02.2024	
Mines Status	: Operational	Type of Sample Sampling Procedure Sampling Done By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 12.02,2024 to 21.02.2024	Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	; 22	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	: 49	-4	Weather Condition	: Clear

Discipline: Chemical		Group: Atmo	spheric Pollu	ition
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (C ₆ H ₆)*	μg/m³	IS 5182 (Part-11): 2006; RA2022	<1.0	05(Annual)
Benzo-(a)-Pyrene*	ng/m ¹	1S 5182 (Part-12); 2004; RA2019	<0.5	01(Annual)

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

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Authorised Signatory

Dr. Deependra Kumar Sinnu Ph. D. Environments! Engg. ELES Pvt. Ltd. Technical Manager

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



TEST REPORT

Test Report No.	: ELES/RNC/2024/1213	Report Release Date	: 13.02.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
ULR No.	: TC883924000001149F		7,70.2300.000	

CUSTOMER DET.		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/I135 : Near Daldaliya Village
Address Mines Status	: Lohardaga, Jharkhand-835302 : Non Operational	Sampling Date Sample Received Date Type of Sample Sampling Procedure Sampling Done By	Bagru Bauxite Mine (75,41ha : 10.02,2024 to 11.02,2024 : 12.02,2024 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 12.02.2024 to 13.02.2024	Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION			
Average Temperature (°C) : 22	2	Barometric Pressure (mml	(0) .736
Relative Humidity (%) : 48		Weather Condition	: Clear

Discipline	: Chemical	Group : Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m ¹	IS 5182 (Part-23): 2006; RA2022	64	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	33	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m ⁵	IS 5182 (Part-2): 2001; RA2022	8.2	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	µg/m¹	IS 5182 (Part-6): 2006; RA2022	22.3	80 (24hrs)	
Ozone (O ₃)	µg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH ₁)	µg/m³	15:5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m ¹	IS 5182 (Part-10): 1999; RA2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	0.013	I (24brs)	
Nickel (Ni)	ng/m ²	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)	

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Email: |nfo@elespl.co.in , eles.ranchi@amail.com Phone nor: 0651-2290103 Website : www.elespl.co.in

TEST REPORT

Test Report No.	: ELES/RNC/2024/1281	Report Release Date	: 26.02.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET.	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1135 : Near Daldaliya Village Bagru Bauxite Mine (75,41ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 10.02.2024 to 11.02.2024 : 12.02.2024 : Ambient Air : ELES/DOC/SMPL/02	
Mines Status	; Non Operational	Sampling Done By	: ELES Pvt. Ltd.	
Period of Analysis	±12.02.2024 to 21.02,2024	Sample Condition	: Sealed & Preserved	

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

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

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

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****End of Report****

Authorised Signatory

Dr. Dermendra Kumai film

Ph. D. Environmanuri Phys.

ELES PVI. Lyo. Technical circ

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

ENGINEERING SERVICES PVT, LTB.

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TEST REPORT

Test Report No.	: ELES/RNC/2024/1214	Report Release Date	: 13.02.2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883924000001150F		

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1136 : Aditya School Gangupara Bagru Bauxite Mine (75.41ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 10.02.2024 to 11.02.2024 : 12.02.2024 : Ambient Air
Mines Status	; Non Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvl. Ltd.
Period of Analysis	: 12.02.2024 to 13.02,2024	Sample Condition	: Sealed & Preserved

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

Disciplin	e: Chemical	Group : Atmosp	heric Pollutio	on
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m ¹	IS 5182 (Part-23): 2006; RA2022	71	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	40	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2): 2001; RA2022	8.8	80 (24hrs)
Nitrogen Di-Oxide (NO2)	μg/m³	15 5182 (Part-6): 2006; RA2022	17.6	80 (24hrs)
Ozone (O ₁)	µg/m²	IS 5182 (Part-9); 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m¹	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RAZ019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m³	IS 5182 (Part-22): 2004; RA2019	0.016	1.(24hrs)
Nickel (Ni)	ng/m³	1S 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)

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Authorised Signatory Dr. Dengendra Kuman Sin.

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Website: www.elespi.co.in

TEST REPORT

Test Report No.	: ELES/RNC/2024/1282	Report Release Date	: 26.02,2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04,2023	

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1136 : Aditya School Gangupara Bagru Bauxite Mine (75.41ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 10.02.2024 to 11.02.2024 : 12.02.2024 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Non Operational	Sampling Done By	: ELES Pvt. Ltd.
Period of Analysis	: 12.02.2024 to 21.02.2024	Sample Condition	: Scaled & Preserved

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

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

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

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

ENGINEERING SERVICES PVT. LTD.

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Website: www.elespi.co.in



TEST REPORT

Test Report No.	: ELES/RNC/2024/1215	Report Release Date	: 13.02.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04,2023	
ULR No.	: TC883924000001151F			

CUSTOMER DET.	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1137 : Ropeway Unloading Station Bagru Bauxite Mine (75.41ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 10.02.2024 to 11.02.2024 : 12.02.2024 : Ambient Air
Mines Status	: Non Operational	Sampling Procedure Sampling Done By	± ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 12.02.2024 to 13.02.2024	Sample Condition	: Scaled & Preserved

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

Disciplin	e: Chemical	Group : Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m³	IS 5182 (Part-23): 2006; RA2022	78	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part- 24): 2019	45	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2): 2001; RA2022	13.1	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m ³	IS 5182 (Part-6): 2006; RA2022	27.3	80 (24hrs)	
Ozone (O ₁)	hã/m ₁	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH ₃)	μg/πτ ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	μg/m³	IS 5182 (Part-22): 2004; RA2019	0.013	1 (24hrs)	
Nickel (Ni)	ng/m³	15 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m ³	ELES/AIR/SOP/DI	<2.0	06 (Annual)	

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****End of Report****

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ENGINEERING SERVICES PYT. LYD.

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

TEST REPORT

Test Report No.	: ELES/RNC/2024/1283	Report Release Date	: 26.02,2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

CUSTOMER DET.	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1137 : Ropeway Unloading Station Bagru Bauxite Mine (75.41ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 10.02.2024 to 11.02.2024 : 12.02.2024 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Non Operational	Sampling Done By	ELES Pvt. Ltd.
Period of Analysis	: 12.02,2024 to 21.02,2024	Sample Condition	: Sealed & Preserved

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

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

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

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Dr. Cambondra Kurtin Chical Ph. C Environmental Single

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TEST REPORT

Test Report No.	: ELES/RNC/2024/1216	Report Release Date	: 13.02.2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883924000001152F		

CUSTOMER DET	22.4	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1138 : Ropeway Angle Station
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	Bagru Bauxite Mine (75.41ha) : 10.02,2024 to 11.02,2024 : 12.02,2024 : Ambient Air
Mines Status	: Non Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	1 12.02,2024 to 13.02.2024	Sample Condition	: Sealed & Preserved

ME	TEOROLOGICAL INFORMATION				
1	Average Temperature (°C) : 22	2	Barometric Pressure (mml-	(a) -736	_
3	Relative Humidity (%) : 47		Weather Condition	: Clear	

Disciplin	e: Chemical	Group : Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	73	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	1S 5182 (Part- 24): 2019	37	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2): 2001; RA2022	10.8	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m ³	IS 5182 (Part-6): 2006; RA2022	25.3	80 (24hrs)	
Ozone (O ₃)	µg/m ²	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH ₁)	μg/m³	IS 5182 (Part-25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	µg/m³	IS 5182 (Part-22): 2004; RA2019	0.014	T (24hrs)	
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m ¹	ELES/AIR/SOP/01	<2.0	06 (Annual)	

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****End of Report****

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TEST REPORT

Test Report No.	; ELES/RNC/2024/1284	Report Release Date	: 26.02.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	; Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1138 : Ropeway Angle Station Bagru Bauxite Mine (75.41ha)
Address	; Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 10.02.2024 to 11.02.2024 : 12.02.2024 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Non Operational	Sampling Done By	: ELES Pvt. Ltd.
Period of Analysis	: 12.02.2024 to 21.02.2024	Sample Condition	: Sealed & Preserved

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

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

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

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TEST REPORT

Test Report No.	: ELES/RAN/2024/1319	Report Release Date	: 11.03.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET	TAILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Sampling Date	: ELES/RAN/2024/DW/1163 : 12.02.2024
Address	Lohardaga, Jharkhand-835302	Sample Received Date Type of Sample	: 14.02.2024 : Drinking Water
		Source/Location of Sample Sampling Procedure	: Hisri (New) Bauxite Mines : ELES/DOC/SMPL/01
Mines Status	: Operational	Sample Collected By	: ELES Pvt. Ltd.
Period of Analysis	: 14.02.2024 to 23.02.2024	Sample Condition	: Sealed & Preserved

Discipline : Chemical		Group : Water	r	Regulatory Limit as per IS 10500:2012	
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
pH (at 24.6 °C)	7	APHA 23 rd Ed.2017, 4500-H	7.20	6.5-8.5	No Relaxation
Turbidity	NTU	APHA 23rd Ed.2017, 2130 B	0.24	1.0	5.0
Taste		APHA 23rd Ed.2017, 2160 C	Agreeable	Agreeable	Agreeable
Odour	100	IS 3025 (Part-5) :2018	Agreeable	Agreeable	Agreeable
Colour	Hazen	APHA 23rd Ed,2017, 2120B&D	1.0	5	15
Total Dissolved Solids (TDS)	mg/L	APHA 23 rd Ed.2017, 2540B,C&D	328	500	2000
Chloride (as Cl)	mg/L	APHA 23rd Ed.2017, 4500 CI B	48.6	.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 ₅)	mg/L	APHA 23rd Ed.2017, 2320 B	128	200	600
Total Hardness (as CaCO ₃)	mg/L	APHA 23rd Ed.2017, 2340 C	134	200	600
Sulphate (as SO ₂)	mg/L	APHA 23th Ed.2017, 4500 SO4-2-E	24.8	200	400
Nitrate (as NO ₃)	mg/L	APHA 23 rd Ed,2017, 4500 NO ₃ -B	3.68	45	No Relaxation
Phenolic Compound (as C ₀ H ₁ OH)	mg/L	IS 3025 (Part-43):1992;RA2019	BDL (DL: 0.001)	0.001	0.002

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TEST REPORT

Test Report No. : ELES/RAN/2024/1319 Report Release Date : 11.03.2024

Work Order No. : 13612310218 Work Order Date : 21.04.2023

Discipl	ine : Che	mical Group: V	Vater		ory Limit
	1		1 377		10500:2012
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	1S 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	35.6	75	200
Discipl	ine: Che	mical Group	p : 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 23rd Ed.2017, 3111B	BDL (DL: 0.03)	0.05	1,5
Iron (as Fe)	mg/L	APHA 23rd Ed.2017, 3111B	0.321	1.0	1.0
Lead (as Pb)	mg/L	APHA 23 rd Ed.2017, 3111B	BDL (DL; 0.01)	10.01	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	BD1. (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 23rd Ed.2017, 3111B	BDL (DL: 0.1)	5	15

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TEST REPORT

 Test Report No.
 : ELES/RAN/2024/1319
 Report Release Date
 : 11.03.2024

 Work Order No.
 : 13612310218
 Work Order Date
 : 21.04.2023

Discipline : Cl	emical	Group:	Water		tory Limit 10500:2012
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
Pesticides					
Alachlor*	μg/L	APHA 23 rd Edition 6630 B&C	BDL (DL: 1.0)	20	No Relaxation
Atrazine*	μg/L	APHA 23 rd Edition 6630 B&C	BDL (DL: 1.0)	2.0	No Relaxation
Aldrin/Dieldrin*	µg/L	APHA 23 rd Edition 6630 B&C	BDL (DL: 0.01)	0.03	No Relaxation
Alpha HCH*	μg/L USEPA 508:1985 BDL (DL: 0.001)		0.01	No Relaxation	
Beta HCH*	µg/L	USEPA 508:1985	BDL (DL: 0.01)	0.04	No Relaxation
Butachlor*	μg/L APHA 23 rd Edition 6630 B&C (DL: 10)		BDL (DL: 10)	125	No Relaxation
Chlorpyriphos*	μg/L	USEPA 8141 A	BDL (DL: 10)	30	No Relaxation
Delta HCH*	μg/L	USEPA 508:1985	BDL (DL: 0.01)	0.04	No Relaxation
2,4 dichlorophenoxyacetic acid*	μg/L	APHA 23rd Edition 6640 B	BDL. (DL; 10)	30	No Relaxation
DDT(o,p and p,p-isomers of DDT,DDE and DDD)*	µg/L	APHA 23 rd Edition 6630 B&C	BDL (DL: 0.5)	1.0	No Relaxation
Endosulfan (alpha, beta, and sulphate)*	pg/L	APHA 23 rd Edition 6630 B&C	BDL (DL: 0.1)	0.4	No Relaxation
Ethion*	μg/L	USEPA 1657 A	BDL (DL: 0.5)	3.0	No Relaxation
Gamma HCH (Lindane)*	μg/L	USEPA 508:1985	BDL (DL: 0.5)	2.0	No Relaxation
Isoproturon*	μg/L	USEPA 532:2000	BDL (DL: 0.5)	9.0	No Relaxation

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TEST REPORT

Test Report No.	: ELES/RAN/2024/1319	Report Release Date	: 11.03.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

District P	Marke 1	Conn. N	Vatan	Regulate	ory Limit
Discipline : Biological		Group: V	vater	as per IS	10500:2012
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
Total Caliform	Per 100 mL	IS 15185:2016; RA 2021	Not Detected	Shall not be detecte	
Escherichia Coli (E. Coli)	Per 100 mL	IS 15185:2016; RA 2021	Not Detected		
Walete.	en coloni	A1000.4	Washington .	Regulate	ory Limit
Discipline :	Chemical	Group: Water		as per IS 10500:2012	
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
Anionic Surfactants (as MBAS)*	mg/L	IS 3025 (Part- 68): 2019 (RA2023)	BDL (DL: 0.1)	0.2	0.1
Polynuclear Aromatic Hydrocarbons (PAH)*	mg/L	APHA 23 rd Edition: 6440 B	BDL (DL: 0.0001)	0.0001	No Relaxation
Polychlorinated Biphenyls (PCB)*	mg/L	APHA 23 rd Edition: 6431B	BDL (DL: 0.0005)	0.0005	No Relaxation

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

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****End of Report****

Dr. Deependra Kumar Sinha
Ph. D Environmental Engg.

ES Pvt. Ltd. Technical Manager

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TEST REPORT

Test Report No.	: ELES/RAN/2024/1337	Report Release Date	: 11.03.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

		SAMPLE DETAILS			
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sampling Date Sampling Received Date Type of Sample Sampling procedure Sampling Done By	: 12.02.2024 to 13.02.2024 : 14.02.2024 : Ambient Noise : ELES/DOC/SMPL/03 : ELES Pvt. Ltd.		
Mines Status	: Operational	Period of Analysis	: 14.02.2024 to 20.02.2024		

M	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 22	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%)	: 48	4	Weather Condition	: Clear

Location	Unit	Test Protocol	Resi	alt	Regulatory Limit (Industrial Zone)
			Time	Leq	
Hisri (New) Bauxite Mines (14.55ha)	dB(A)	IS 9989:1981, RA 2020	Day Time	64	75 dB(A) Day Time &
Sample ID: ELES/RAN/2024/AN/1280	ub(A)	KA 2020	Night Time	47	70 dB(A) Night Time

Reviewed by

****End of Report****

Authorised Signatory

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

Page 1 of 1

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ENVIRONMENTAL LABORATORIES &

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

ENGINEERING SERVICES PVT. LTD.

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

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

TEST REPORT

Test Report No.	: ELES/RAN/2024/1351	Report Release Date	: 11.03.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sampling Date Sampling Received Date Type of Sample	: 12.02.2024 : 14.02.2024 : Workzone Noise	
Address	: Lohardaga, Jharkhand-835302	Sampling procedure Sampling Done By	: ELES/DOC/SMPL/03 : ELES Pvt. Ltd.	
Mines Status	: Operational	Period of Analysis	: 14.02,2024 to 20.02.2024	

M	ETEOROLOGICAL INFO	RMATION			
1	Average Temperature (°C)	: 22	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%)	: 48	4	Weather Condition	: Clear

Location	Unit	Test Protocol	Res	ult	Regulatory Limit (Industrial Zone)
South Area -			Time	Leq	
Hisri (New) Bauxite Mine (14.55ha)	dB(A)	IS 4758:1968; RA 2017	-	70	90 dB (A)
Sample ID: ELES/RAN/2024/WN/1285			Day Time		



****End of Report****

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

Page 1 of 1

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: Operational

: 06.03.2024 to 12.03.2024

Mines Status

Period of Analysis



Lab : M)G, R-3 Housing Colony, Oltanbad, Pin - 825001, State - Ilharidsand (9830067044 / (9304513737

TEST REPORT

Test Report No.	: ELES/RNC/2024/1449	Report Release Date	: 10.04,2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1196 : Near Water Pump; Hisri (New) Bauxite Mine (14.55ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 03.03.2024 to 04.03.2024 : 06.03.2024 : Ambient Air : ELES/DOC/SMPL/02

MI	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	3 22	2	Barometric Pressure (mml	lg) : 734
3	Relative Humidity (%)	±48	4	Weather Condition	: Clear

Sampling Done By Sample Condition

Discipline: 0	Chemical	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23); 2006; RA2022	69	100 (24hrs)		
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24); 2019	43	60 (24hrs)		
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2): 2001; RA2022	9.7	80 (24hrs)		
Nitrogen Di-Oxide (NO2)	μg/m ³	IS 5182 (Part-6): 2006; RA2022	22.6	80 (24hrs)		
Ozone (O ₃)	µg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)		
Ammonia (NH ₅)	μg/m³	1S 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m ³	1S 5182 (Part-10): 1999; RA2019 (NDIR Method)	<1.0	2 (8hrs)		
Lead (Pb)	μg/m³	1S 5182 (Part-22): 2004; RA2019	0.009	l (24hrs)		
Nickel (Ni)	ng/m ²	IS 5182 (Part-26):2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)		
Benzene (CaHa)	µg/m³	ELES/GC/SOP/06	<2.5	05(Annual)		
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05	< 0.5	01(Annual)		

Reviewed by:

****End of Report***

Jharkhand 826001

Authorised Signatory:

(Saswata Burman Roy, Dy. Quality Manager)

(Bapan Das, Dy. Technical Manager)

: ELES Pvt. Ltd.

: Sealed & Preserved

Page I of I





TEST REPORT

	E A.I.J. E	MILL OWN		
Test Report No.	: ELES/RNC/2024/1450	Report Release Date	: 10.04.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure	: ELES/RNC/2024/AA/1197 : Near Old Rest Shelter; Hisri (New) Bauxite Mine (14.55ha : 03.03.2024 to 04.03.2024 : 06.03.2024 : Ambient Air : ELES/DOC/SMPL/02	
Mines Status	: Operational	Sampling Done By	; ELES Pvt. Ltd.	
Period of Analysis : 06.03.2024 to 12.03.2024		Sample Condition : Sealed & Preserved.		
METEOROLOGIC	AL INFORMATION	-3		
1 Average Temper	rature (°C) : 22	2 Barometric Pressure	(mmHg) : 734	
3 Relative Humidi	ity (%) : 48	4 Weather Condition	:: Clear	

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/m³	IS 5182 (Part- 24): 2019	33	60 (24hrs)		
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2); 2001; RA2022	7.7	80 (24hrs)		
Nitrogen Di-Oxide (NO2)	μg/m³	IS 5182 (Part-6): 2006; RA2022	25.1	80 (24hrs)		
Ozone (O ₅)	μg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)		
Ammonia (NH ₃)	µg/m ¹	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m³	15 5182 (Part-10): 1999; RA2019 (NDIR Method)	<1.0	2 (8hrs)		
Lead (Pb)	µg/m³	IS 5182 (Part-22): 2004; RA2019	0.011	1 (24hrs)		
Nickel (Ni)	ng/m ^y	IS 5182 (Part-26):2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)		
Benzene (C _n H _n)	μg/m³	ELES/GC/SOP/06	<2.5	05(Annual)		
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05	<0.5	01(Annual)		

Reviewed by :

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****End of Report****

Jharkhand

or Colors

(Saswata Burman Roy, Dy. Quality Manager)

Authorised Signatory:

Telan.

(Bapan Das, Dy. Technical Manager)



Lab : MIG. R-3 Housing Colony, Illianitud, Pin - 826001, State - Jbackhand C 9830067044 / C 9304512737



18-1830

TEST REPORT

Test Report No.	: ELES/RNC/2024/1451	Report Release Date	z 10.04.2024		
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023		
CUSTOMER DETAILS		SAMPLE DETAILS			
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1198 : Near Old Plantation (North West Corner) Hisri (New) Bauxite Mine(14.55ba)		
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 03.03.2024 to 04.03.2024 : 06.03.2024 : Ambient Air		
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.		
Period of Analysis	: 06.03.2024 to 12.03.2024	Sample Condition	: Sealed & Preserved		

M	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 22	2	Barometric Pressure (mmH	g) : 734
3	Relative Humidity (%) : 48	4	Weather Condition	: Clear

Discipline:	Chemical	Group: Atn	iospheric Poll	ution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	63	100 (24hrs)
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part- 24): 2019	34	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2): 2001; RA2022	7.9	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part-6): 2006; RA2022	23.8	80 (24hrs)
Ozone (O ₃)	μg/m ^h	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	μμ/m ^λ	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	μg/m ³	IS 5182 (Part-22): 2004: RA2019	0.011	1 (24hrs)
Nickel (Ni)	ng/m ^A	IS 5182 (Part-26):2020	< 6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)
Benzene (C ₆ H ₆)	µg/m²	ELES/GC/SOP/06	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m ¹	ELES/GC/SOP/05	< 0.5	O1(Annual)

Reviewed by :

230-01

****End of Report****

Authorised Signatory :

(Saswata Burman Roy, Dy. Quality Manager)

ENVIRON SOLUTION OF COLORY OLIVER

(Bapan Das, Dy. Technical Manager)





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TEST REPORT

Test Report No.	: ELES/RNC/2024/1452	Report Release Date	; 10.04.2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
CUSTOMER DET.	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2024/AA/1199 : Hisri New (Southern Area) Hisri (New) Bauxite Mine(14.55ha : 03.03.2024 to 04.03.2024
Address	: Lohardaga, Jharkhand-835302	Sample Received Date Type of Sample Sampling Procedure	: 06.03.2024 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Operational	Sampling Done By	: ELES Pvt. Ltd.
Period of Analysis	: 06.03.2024 to 12.03.2024	Sample Condition	: Sealed & Preserved

ı.	Average Temperature (°C)	: 22	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%)	: 48	4	Weather Condition	: Clear

Discipline:	Chemical	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	63	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	36	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m ³	IS 5182 (Part-2): 2001; RA2022	7.9	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m ³	IS 5182 (Part-6): 2006; RA2022	21.2	80 (24hrs)	
Ozone (O ₁)	μg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH ₃)	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	1S 5182 (Part-10): 1999; RA2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	µg/m³	IS 5182 (Part-22): 2004; RA2019	< 0.002	1 (24hrs)	
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m ⁴	ELES/AIR/SOP/01	<2.0	06 (Annual)	
Benzene (C ₅ H ₆)	μg/m ³	ELES/GC/SOP/06	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05	< 0.5	01(Annual)	

Reviewed by:

****End of Report****

Jharkhand

(Saswata Burman Roy, Dy. Quality Manager)

Authorised Signatory:

3597

(Bapan Das, Dy. Technical Manager)

Page | of |





TEST REPORT

		NAMES OF STREET	
Test Report No.	: ELES/RNC/2024/1445	Report Release Date	: 10.04,2024
Work Order No.	: 13612310218	Work Order Date	: Z1.0A.2023
CUSTOMER DET	ULS	SAMPLE DETAILS	
Customer Name Address	: Hindakoo Industries Limited) Lohardaga, Jharkhand-835302	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sample Procedure	: ELES/RNC/2024/AA/1192 :Near Daidaliya Village Bagru Bauxite Mine (75.41hn) : 02.03 2024 to 03.03 2024 : 06.03 2024 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Non Operational	Sampling Done By	: ELES Pvt. Ltd.
Period of Analysis	: 06,03,2024 to 12,03,2024	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFOR	MATION			
.1	Average Temperature (°C)	: 22	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	: 47	. 4	Weather Condition	Clear

Discipline:	Chemical	Group: Atmo	spheric Pollu	tion
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	59	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Pari- 24): 2019	28	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m³	IS 5182 (Part-2); 2001; RA2022	10.4	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m³	IS 5182 (Part-6); 2006; RA2022	24.1	80 (24hrs)
Ozone (O ₃)	μg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	μg/m ⁷	IS 5182 (Part-22): 2004; RA2019	0.010	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2,0	06 (Annual)
Benzene (C ₆ H ₆)	μg/m³	ELES/GC/SOP/06	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05	< 0.5	01(Annual)

Reviewed by :

****End of Report****

Jharkhand 826001

Saswata Burman Roy, Dy. Quality Manager)

Authorised Signatory:

TO THE THE RESERVE

(Bapan Das, Dy. Technical Manager)

Page I of I



Tel: 105, 0-3 No going Chicago Di mand, Tel -976201, State - Disconant (9830067044 /) VXII4913737



TEST REPORT

Test Report No.	: ELES/RNC/2024/1446	Report Release Date	: 10,04.2024	
Work Order No.	: 13612310218	Work Order Data	: 21.04.2023	

CUSTOMER DETA	Aft.S	SAMPLE DETAILS		
Customer Name	: Hindalea Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1193 : Aditya School Gangapara Bagru Bauxite Mine (75.41ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure Sampling Done By	: 02.03.2024 to 03.03.2024 : 06.03.2024 : Ambient Air : ELES/DOC/SMPL/02 ; ELES Pvt. Ltd.	
Mines Status	: Non Operational			
Period of Analysis	: 06.03.2024 to 12.03.2024	Sample Condition	: Sealed & Preserved	

ME	TEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 22	2	Barometric Pressure (mmHg)	:736
3	Relative Humidity (%)	: 47	4	Weather Condition	: Clear

Discipline: (Chemical	Group: Atmo	spheric Pollu	tion
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	36	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2); 2001; RA2022	9.4	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m³	IS 5182 (Part-6); 2006; RA2022	19.2	80 (24hrs)
Ozone (O:)	pg/m³	15 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	μg/m³	(S 5182 (Part- 25): 2018.	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	1S 5182 (Part-10): 1999; RA2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m³	IS 5182 (Part-22): 2004; RA2019	0.013	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)
Benzene (C ₆ H ₆)	μg/m ³	ELES/GC/SOP/06	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05	< 0.5	01(Annual)

Reviewed by:

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****End of Report***

ROCHE

Jharkhand 826001

Posing Colo

Authorised Signatory:

Shan

(Saswata Burman Roy, Dy. Quality Manager)

(Bapan Das, Dy. Technical Manager)



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Lan : MIC II-B Housey Colony, Dismosa Phys 92 mid J. Span Therman & \$450067044 y \$18306515187



TEST REPORT

Test Report No.	: ELES/RNC/2024/1447	Report Release Date	: 10,04,2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETA	ULS	SAMPLE DETAILS		
Customer Name	: Hindaico Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1194 : Ropeway Unloading Station Bagry Bauxite Mine (75.41ha)	
Address	± Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 02.03.2024 to 03.03.2024 : 06.03.2024 : Ambient Air : ELES/DOC/SMPL/02	
Mines Status	: Non Operational	Sampling Done By	: ELES Pvi. Ltd.	
Period of Analysis	: 06.03,2024 to 12.03,2024	Sample Condition	: Sealed & Preserved	

Mi	ETEOROLOGICAL INFORMATION			
1	Average Temperature (9C) : 22	2	Barometric Pressure (mmHg	(36)
3	Relative Humidity (%) : 47	- 4	Weather Condition	: Clear

Discipline:	Chemical	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	µg/m³	IS 5182 (Pan-23): 2006; RA2022	64	100 (24hrs)		
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	39	60 (24irs)		
Sulphur Di-Oxide (SO ₂)	μg/m ³	IS 5182 (Part-2); 2001; RA2022	10.8	80 (24hrs)		
Nitrogen Di-Oxide (NO2)	μg/m³	IS 5182 (Part-6): 2006; RA2022	25.1	80 (24hrs)		
Ozone (O ₃)	μg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)		
Ammonia (NH1)	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10); 1999; RA2019 (NDIR Method)	<1.0	2 (8hrs)		
Lead (Pb)	μg/m ²	IS 5182 (Part-22); 2004; RA2019	0.011	1 (24hrs)		
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)		
Benzene (C ₆ H ₆)	µg/m)	ELES/GC/SOP/06	<2.5	05(Annual)		
Benzo-(a)-Pyrene	ng/m²	ELES/GC/SOP/05	< 0.5	01(Annual)		

Reviewed by :

****End of Report****

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Jharkhand 826001

Reing Colo

(Saswaiii Burman Roy, Dy. Quality Manager)

Authorised Signatory:

(Bapan Das, Dy. Technical Manager)





TEST REPORT

Test Report No.	: ELES/RNC/2024/1448	Report Release Date	: 10.04.2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

CUSTOMER DET.	ATLS	SAMPLE DETAILS		
Customer Name	: Hinduleo Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1195 : Ropeway Angle Station Begin Bangite Mine (75.41 in	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 02.03,2024 to 03.03.2024 : 06.03,2024 : Ambient Air	
Mines Status	: Non Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 06.03.2024 to 12.03.2024	Sample Condition	: Senled & Preserved	

MI	TEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	1.22	2	Barometric Pressure (mmHg)	736
3	Relative Humidity (%)	: 47	4	Weather Condition	: Clear

Discipline:	Chemical	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	µg/m³	1S 5182 (Part-23): 2006; RA2022	69	100 (24hrs)		
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	34	60 (24hrs)		
Sulphur Di-Oxide (SO ₂)	μg/m³	18 5182 (Part-2); 2001; RA2022	8.2	80 (24hrs)		
Nitrogen Di-Oxide (NO2)	μg/m²	IS 5182 (Part-6): 2006; RA2022	22.8	80 (24hrs)		
Ozone (O ₃)	μg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)		
Ammonia (NH ₁)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019 (NDIR Method)	<1,0	2 (8hrs)		
Lead (Pb)	μg/m³	IS 5182 (Part-22): 2004; RA2019	0.012	1 (24hrs)		
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)		
Benzene (C ₆ H ₆)	μy/m³	ELES/GC/SOP/06	<2.5	05(Annual)		
Benzo-(a)-Pyrene	ng/m ⁵	ELES/GC/SOP/05	< 0.5	01(Annual)		

Reviewed by :

**** End of Report****

Jharkhand

Authorised Signatory 2

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(Sasweta Burman Roy, Dy. Quality Manager)

(Bapan Das, Dy. Technical Manager)



Annexure 3

Date - 20.05.2024.

Office Order

Environmental Cell has been re-constituted at Hisri New Bauxite Mine (Area 14.55 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. Basudev Gangopadhyay (Geologist)
- 3. Ms. Abhilasha Singh (Environment Engineer)
- 4. Mr. Anand Prakash Tiwari Environment Engineer

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

Basudev Gangopadhyay
AVP (Planning, Environment & Compliance)

Annexure 4

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

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

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

Basudev Gangopadhyay
AVP (Planning, Environment and Compliance)

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

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

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

^{**}Part of OB removed cost.

Basudev Gangopadhyay
AVP (Planning, Environment & Compliance)



ENVIRONMENT POLICY

We, at Hindalco Industries Limited, operating across the process chain from mining to semi-fabricated products in non-ferrous metals, will strive to continually improve our environmental performance for sustainable operations and responsible growth globally, by integrating sound environmental systems & practices and Pollution Prevention approach.

To achieve this, we shall:

- Continue to comply with all applicable legal and other requirements on environment.
- Continually improve environmental performance by strengthening the Environmental Management System conforming to national /international standards, including setting up and reviewing targets and measuring, monitoring and reporting their progress.
- Allocate sufficient resources such as organisational structure, technology and funds for implementation of the policy and for regular monitoring of performance.
- Adopt pollution prevention approach for all our processes; enhance material efficiency and achieve high productivity.
- Conserve key resources like electricity, coal, water, oil, and raw materials, by promoting efficient technologies and manufacturing process improvements, water conservation programmes, and efficient use of raw materials.
- Adopt energy efficient and cleaner technologies based on techno-economic viability, appropriate to the region in which we operate, and in line with our growth and diversification plans.
- Promote the principles of waste prevention, reduction, reuse, recycling and recovery to minimize waste generation and strengthen the practices for management of wastes.
- Work in partnership with regulatory authorities, relevant suppliers, contractors, distributors and logistics partners and all other stakeholders, as applicable, to understand and initiate improvement actions.
- Engage with internal and external stakeholders including key business partners such as joint venture partners, licensees and outsourcing partners and wider communities, to broaden our understanding of environmental priorities and initiate actions on key environmental challenges.
- Adapt environmental performance over life cycle as an important input to the <u>decision-making</u> processes in the <u>organization</u>.
- Raise environmental awareness at all levels of our operations, through training and effective communication, participation and consultation.
- Communicate this Policy within the Organization. Develop and follow appropriate communication system to inform other stakeholders, as applicable, about our environmental commitment and performance.
- Conduct environmental, health and safety due diligence before undergoing any mergers and acquisitions.

This policy shall be made available to all employees, suppliers, customers, community and other stakeholders, as appropriate. The implementation of this policy is the responsibility of respective heads of units with the monitoring and tracking done by the Apex Sustainability Committee under the guidance of the Managing Director.

Satish Pai

MD. Hindalco Industries Limited

Date: 9th August, 2022