

HIL/LHD/ENV/MoEF&CC/066

Date: 16<sup>th</sup> May 2025

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

**Sub:** Six Monthly EC Compliance Report for Pakhar (35.12 Ha) Bauxite Mining project of M/s Hindalco Industries Limited, Lohardaga Jharkhand for the period from October 2024 to March 2025.

Ref: Environmental Clearance Letter No. J-11015/137/2006-IA II (M), dated 05<sup>th</sup> April 2007.

Dear Sir,

With reference to the above, we are submitting herewith the Compliance status report of EC conditions for **Pakhar (35.12 Ha) Bauxite Mining project of M/s Hindalco Industries Limited**, Lohardaga Jharkhand for the period from **October 2024 to March 2025** for your kind perusal please.

The lease details are below:

Lease area (ha)	<b>Production Capacity (MT)</b>	Lease Period	
35.12	200000	17.04.1975 to 31.03.2030	

Hope you will find the same in order.

Thanking You

Yours faithfully, For **Hindalco Industries Limited** 

Basadev Gangopadhyay AVP (Planning, Environment & Compliance)

Enclosure: - As Above

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

Hindalco Industries Limited Mines Division, Court Road, Lohardaga 835302, Jharkhand, India | T: +91 6526 223163 Corporate Office : 6th & 7th Floor, Birla Birla Centurion, Pandurang Budhakar Marg, Worli, Mumbai-400030, India T: +91 22 66626666/626105555 | F: +91 22 62610400/62610500 Registered Office : 21st Floor, One Unity Center, Senapati Bapat Marg, Prabhadevi, Mumbai - 400013, India T: +91 22 69477000/69477150 | F: +91 22 69477001/69477090 W: www.hindalco.com | E: hilinvestors@adityabirla.com

Name of the Project	:	Pakhar Bauxite Mine (35.12 ha) M/s Hindalco Industries Limited
Environment Clearance No. & date	:	J-11015/137/2006-IA.II(M), dated 05.04.2007
Period of compliance Report	:	From 1 <sup>st</sup> October 2024 to 31 <sup>st</sup> March 2025

**Specific Conditions: -**

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

**Reply:** Implementation of the stipulated conditions in the NOC was fulfilled, after which consent to operate was obtained from time to time while the mine was operational.

Presently, the mine has not been in operation as the winning of bauxite is closed w.e.f 08.06.2009 due to the exhaustion of mineral reserve. The final mine closure plan (FMCP) has been submitted and approved by Indian Bureau of Mines.

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

**Reply:** - Presently, the mine has not been in operation as the winning of bauxite is closed w.e.f 08.06.2009 due to the exhaustion of mineral reserve. The final mine closure plan (FMCP) has been submitted and approved by Indian Bureau of Mines.

The entire land was acquired in accordance with applicable laws while the mine was operational.

#### Condition iii: - Environmental clearance is subject to grant of forestry clearance, Necessary forestry clearance under the Forest (Conservation) Act, 1980 for an area of 3.45ha forestland shall be obtained before starting mining operation in that area.

**Reply:** - Presently, the mine has not been in operation as the winning of bauxite is closed w.e.f 08.06.2009 due to the exhaustion of mineral reserves. The final mine closure plan (FMCP) has been submitted and approved by Indian Bureau of Mines.

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

**Reply:** - Presently, the mine has not been in operation as the winning of bauxite is closed w.e.f 08.06.2009 due to the exhaustion of mineral reserves. The final mine closure plan (FMCP) has been submitted and approved by Indian Bureau of Mines.

Shallow depth mining was carried out in the past; therefore, groundwater was not intersected during mining operations while the mine was operational.

### Condition v: - The project proponent shall ensure that no natural watercourse shall be obstructed due to any mining operation.

**Reply:** - No natural water course was obstructed during mining operations in the past. Presently, the mine has not been in operation as the winning of bauxite is closed w.e.f 08.06.2009 due to the exhaustion of mineral reserve. The final mine closure plan (FMCP) has been submitted and approved by Indian Bureau of Mines.

### Condition vi: -Top soil shall be stacked properly with proper slope with adequate measures and should be used for reclamation and rehabilitation of mined out areas.

**Reply:** - The winning of bauxite is closed w.e.f. 08.06.2009 due to the exhaustion of mineral reserve. Therefore, the mine has not been in operation. The final mine closure plan (FMCP) has been submitted and approved by Indian Bureau of Mines.

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

**Reply:** - Presently, The mine has not been in operation as the winning of bauxite is closed w.e.f 08.06.2009 due to the exhaustion of mineral reserve. There is no external OB dump in mine lease area.

The final mine closure plan (FMCP) has been submitted and approved by Indian Bureau of Mines.

Condition viii: - Catch drains and siltation ponds of appropriate size should be constructed to arrest silt and sediment flows from mine working. The water so collected should be utilized for watering the mine area, roads, green belt development etc. The drains should be regularly desilted particularly after monsoon and maintained properly. Garland drain (size, gradient and length) shall be constructed for mine pit and sump capacity should be designed keeping 50% safety margin over and above peak sudden rainfall (based on 50 years data) and maximum discharge in the area adjoining the mine site. Sump capacity should also provide adequate retention period to allow proper setting of silt material. Sedimentation pits should be constructed at the corners of the garland drains and desilted at regular intervals.

**Reply:** - Presently, the mine has not been in operation as the winning of bauxite is closed w.e.f 08.06.2009 due to the exhaustion of mineral reserves. The final mine closure plan (FMCP) has been submitted and approved by Indian Bureau of Mines.

Condition ix: - Plantation shall be raised in an area of 24.83ha including a green belt of adequate width by planting the native species around the ML area, roads, reclaimed area etc. in consultation with the local DFO / Agriculture Department. The density of the trees should be around 1500 plants per ha.

**Reply:** - Already 32.85 ha has been planted in and around the mine/Plateau area.

Presently, the mine has not been in operation as the winning of bauxite is closed w.e.f 08.06.2009 due to the exhaustion of mineral reserve.

The final mine closure plan (FMCP) has been submitted and approved by Indian Bureau of Mines.

# Condition x: - 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:** - Presently, the mine has not been in operation as the winning of bauxite is closed w.e.f 08.06.2009 due to the exhaustion of mineral reserves.

The final mine closure plan (FMCP) has been submitted and approved by Indian Bureau of Mines.

Condition xi: - Regular monitoring of ground water level and quality should be carried out by establishing a network of existing wells and constructing new piezometers during the mining operation. The monitoring should be carried out four times in a year – premonsoon (April-May), monsoon (August), post-monsoon (November) and winter (January) and the data thus collected may be sent regularly to MOEF, Central Ground water Authority and Regional Director Central Ground Water Board.

**Reply:** - Presently, the mine has not been in operation as the winning of bauxite is closed w.e.f 08.06.2009 due to the exhaustion of mineral reserves.

The final mine closure plan (FMCP) has been submitted and approved by Indian Bureau of Mines.

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

**Reply:** - Presently, the mine has not been in operation as the winning of bauxite is closed w.e.f. 08.06.2009 due to the exhaustion of mineral reserves.

The final mine closure plan (FMCP) has been submitted and approved by Indian Bureau of Mines.

Condition xiii: - 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 minerals. The vehicles should be covered with a tarpaulin and shall not be overloaded.

**Reply:** - The winning of bauxite is closed w.e.f. 08.06.2009 due to the exhaustion of mineral reserve. Therefore, the mine has not been in operation.

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

**Reply:** - The winning of bauxite is closed w.e.f. 08.06.2009 due to the exhaustion of mineral reserve. Therefore, the mine has not been in operation.

Condition xv: - 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:** - The winning of bauxite is closed w.e.f. 08.06.2009 due to the exhaustion of mineral reserve. Therefore, the mine has not been in operation.

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

**Reply:** - The winning of bauxite is closed w.e.f. 08.06.2009 due to the exhaustion of mineral reserve. Therefore, the mine has not been in operation.

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

**Reply:** - The winning of bauxite is closed w.e.f. 08.06.2009 due to the exhaustion of mineral reserve. Therefore, the mine has not been in operation.

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

**Reply:** - The winning of bauxite is closed w.e.f. 08.06.2009 due to the exhaustion of mineral reserve. Therefore, the mine has not been in operation.

The final mine closure plan (FMCP) has been submitted and approved by Indian Bureau of Mines.

# Condition xix: - 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:** - Approval letter of Final Mine closure plan duly approved by Indian Bureau of Mines is hereby attached as <u>Annexure-1</u>.

#### **General Conditions**

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

**Reply:** - The winning of bauxite is closed w.e.f 08.06.2009 due to the exhaustion of mineral reserve. Therefore, the mine has not been in operation.

The final mine closure plan (FMCP) has been submitted and approved by Indian Bureau of Mines.

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

**Reply:** - The winning of bauxite is closed w.e.f. 08.06.2009 due to the exhaustion of mineral reserve. Therefore, the mine has not been in operation.

The final mine closure plan (FMCP) has been submitted and approved by Indian Bureau of Mines. Data of the same are enclosed herewith as <u>Annexure 4</u>.

Condition iii: - Four ambient air quality-monitoring station should be established in the core zone as well as in the buffer zone for RPM, SPM, SO<sub>2</sub>, NO<sub>X</sub> monitoring. Location of the stations should be decided based on the metrological data, topographical features and environmentally and ecologically sensitive targets and frequency of monitoring should be undertaken in consultation with the State Pollution Control Board.

Reply: - Monitoring Reports of Pakhar Plateau is enclosed as <u>Annexure-2</u>.

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

Reply: - Monitoring Reports of Pakhar Plateau is enclosed as Annexure-2.

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

**Reply:** - The winning of Bauxite is closed w.e.f. 08.06.2009 due to exhaustion of resources. Therefore, the mine has not been in operation.

The final mine closure plan (FMCP) has been submitted and approved by Indian Bureau of Mines.

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

**Reply:** - The winning of Bauxite is closed w.e.f. 08.06.2009 due to exhaustion of resources. Therefore, the mine has not been in operation.

The final mine closure plan (FMCP) has been submitted and approved by Indian Bureau of Mines.

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

**Reply:** - The winning of bauxite is closed w.e.f. 08.06.2009 due to the exhaustion of mineral reserve. Therefore, the mine has not been in operation.

The final mine closure plan (FMCP) has been submitted and approved by Indian Bureau of Mines.

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

**Reply:** - The winning of bauxite is closed w.e.f. 08.06.2009 due to the exhaustion of mineral reserve. Therefore, the mine has not been in operation.

The final mine closure plan (FMCP) has been submitted and approved by Indian Bureau of Mines.

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

**Reply:** - The winning of bauxite is closed w.e.f. 08.06.2009 due to the exhaustion of mineral reserve. Therefore, the mine has not been in operation. The final mine closure plan (FMCP) has been submitted and approved by Indian Bureau of Mines

We have Environment Management Cell for our Pakhar Group of Mines. This cell is looking after Environmental compliance of this Mine also. The copy of the same is attached herewith as <u>Annexure-3</u>.

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

**Reply:** - The winning of bauxite is closed w.e.f. 08.06.2009 due to the exhaustion of mineral reserve. Therefore, the mine has not been in operation. The final mine closure plan (FMCP) has been submitted and approved by Indian Bureau of Mines.

Approval letter of Final Mine closure plan duly approved by IBM is hereby attached as <u>Annexure-1</u>

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

**Reply:** - Statement of budgetary provision and actual expenses for environmental protection measure is enclosed as <u>Annexure-5</u>. The final mine closure plan (FMCP) has been submitted and approved by Indian Bureau of Mines. Now, the Regional Office of MoEFC&CC is in Ranchi.

Condition xii: - The Regional Office of this Ministry located at Bhubneshwar shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information / monitoring reports.

**Reply:** - Agreed. However, the winning of bauxite is closed w.e.f 08.06.2009 due to the exhaustion of mineral reserve. Therefore, the mine has not been in operation. Now, the Regional Office of MoEFC&CC is in Ranchi.

Condition xiii: - The project proponent shall submit six monthly report on the status of the implementation of the stipulated environmental safeguards to the Ministry of Environment and Forests, its Regional Office, Bhubaneshwar, Central Pollution Control Board and State Pollution Control Board.

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

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

**Reply:** - Already complied. A copy of the clearance letter has already been submitted.

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

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

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

**Reply:** - Already complied. The information on grant of the EC has been published in two local newspapers. The copy of the advertisement has already been submitted to the Regional Office of the MoEF&CC vide our letter no. HIL/GMO(M)/ENV/142 dated 23.05.2007. Now, the Regional office of MoEF&CC is in Ranchi.

Annexure-1

**Registered Parcel** 

(0651) 2242903

Fax: (0651) 2242903

Telephone: (0651) 2242889



**GOVERNMENT OF INDIA** MINISTRY OF MINES E-mail: ro.ranchi@ibm.gov.in INDIAN BUREAU OF MINES OFFICE OF THE REGIONAL CONTROLLER OF MINES

No.: RAN/LOH/BX/FMCP-02/2014-15.

Shri A. K. Agarwal, To:

**Director cum Nominated Owner** M/s HINDALCO Industries Ltd., Court Road, Lohardaga - 835 302 (Jharkhand).

Sub: Approval of Final Mine Closure Plan in respect of PAKHAR Bauxite Mines of M/s HINDALCO Industries Ltd. over an area of 38.95 hectares in village-Pakhar, Lohardaga district of Jharkhand State submitted under Rule 23C of MCDR, 1988.

Ref: Your A.G.M. (Geology) letters no. HIL/LHD/BX/IBM/245 Dated 02/08/2014

Your R.Q.P. letter nos. NIL, dated.03/11/2014 & 26/12/2014

This office letter no. रांची/लोहरदगा/बाक्साइट/एफ.एम.सी पी.-02/2014-15,दिनांक:26/09/2014

Sir,

In exercise of the powers conferred by the sub-rule 2 of Rule 23C of Mineral Conservation & Development Rules, 1988; I hereby approve the above said Final Mine Closure Plan in respect of PAKHAR Bauxite mines of M/s HINDALCO Industries Ltd. over an area of 38.95 hectares in village-Pakhar, Lohardaga district of Jharkhand State, submitted under Rule 23C of MCDR, 1988. This approval is subject to the following conditions: -

- that the Final Mine Closure Plan is approved without prejudice to any other (i) laws applicable to the mine/lease area from time to time whether made by the Central Government, State Government or any other Authority.
- that this approval of the Final Mine Closure Plan does not, in any way, (ii) imply the approval of the Government in terms of any other provisions of the Mines & Minerals (Development & Regulation) Act, 1957 or the Mineral and any other laws including Forest Concession Rules, 1960 (Conservation) Act, 1980, Environment (Protection) Act, 1986 and the rules made there under.
- that the Final Mine Closure Plan is approved without prejudice to any order (iii) or direction from any court of competent jurisdiction.
- that the Regional Office, Indian Bureau of Mines, Ranchi shall be informed (iv) after completion of activities of final mine closure as per proposal of the Final Mine Closure Plan.
- that the Yearly report as required under Rule 23E(2) of MCDR, 1988 setting (V) forth the extent of protection and rehabilitation works carried out as envisaged in the approved final mine closure plan and if there is any deviations, reasons thereof shall be submitted before 1<sup>st</sup> July of every year to the Regional office, Indian Bureau of Mines, Ranchi.

318-B,Road No.- 3, Ashok Nagar, Ranchi - 834 002, Date: 93/04/2015

#### No.: RAN/LOH/BX/FMCP-02/2014-15.

(iv) The financial assurance submitted for Rs. 2,74,000/-(Two lacs seventy four thousand only) is valid up to 31/03/2016. A new bank guarantee is to be submitted on or before its expiry i.e. 31/03/2016, if the rehabilitation proposal not completed by the time.

Yours faithfully

Encl.: One copy of approved Final Mine Closure Plan.

(R. Purohit)

**Regional Controller of Mines** 

Copy forwarded for information to: -

1. The Director (Mines),

> Directorate of Mines and Geology, had to both all change

Government of Jharkhand,

Nepal House Area, Doranda,

Ranchi - 834 002.(Jharkhand), along with a copy of approved Final Mine Closure Plan. It is requested to ensure that the determination of aforesaid lease is not accepted unless and until a certificate issued by the Indian Bureau of Mines under Rule 29A (2) of Mineral Concession Rules, 1960 to the effect that protective, reclamation and rehabilitative works as envisaged in the approved Final Mine Closure Plan are carried out.

- 2. The Director of Mines Safety Ranchi Region CMPDIL-Campus 3<sup>rd</sup> Floor, Old Building Kanke Road, Ranchi-834008 along with a copy of approved Final Mine Closure Plan.
- Shri P.K. Sen, RQP, 3. Kali Mandir Road. Doranda, Ranchi - 834 002.

(R. Purohit) Regional Controller of Mines

-2-

Annexure - 2

### ENVIRONMENTAL LABORATORIES & ENGINEERING SERVICES PVT. LTD.

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

Pakhar (115.13) Bauxite Mine-Environmental Monitoring Report

October 2024



### CONTENT

2 -	Hindalco-Industries : Pakhar (115.13) Environmental Monitoring Report October 2024
	Pakhar (115.13)
	AMBIENT AIR QUALITY- CORE ZONE
1	Near Mine Block-B, Quarry No.3
2	Near Mine Block-B, Quarry No.4
3	Near Mine Block B, Quarry No - 6
4	Near Mine Block-B, Quarry No.7
	AMBIENT AIR QUALITY- BUFFER ZONE
1	Near Bunglapart Village
2	Yatri Shed (Near K-10)
3	Near Utkarmit Rajkiya Prathmik Vidyalaya Bunglapart Village
4	Near Utkarmit Rajkiya Prathmik Vidyalaya Dumrapart Village





D. P. P. C. P.

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) G57 NO:- 20AAECE97130124

#### GINEERING SERVICES PVT. LTD

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



Test Report No.	: ELES/RNC/2024/6297	Report Release Date	: 26.10.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400004180F		
CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name Address Mines Status	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302 : Operational	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure	: ELES/RNC/2024/AA/7347 : Near Mine Block-B, Quarry No.3 Pakhar Bauxite Mine (115.13 ha) : 19.10.2024 to 20.10.2024 : 21.10.2024 : Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 21.10.2024 to 26.10.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

1	Average Temperature (°C)	: 29	2	Barometric Pressure (mmHg)	: 740
3	Relative Humidity (%)	: 58	4	Weather Condition	: Clear

Discipline : Chemic	al	Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m <sup>3</sup>	15 5182 (Part- 23): 2022	63	100 (24hrs)
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	54	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m <sup>1</sup>	IS 5182 (Part- 2/Sec1): 2023	6.8	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 6): 2022	23.6	80 (24hrs)
Ozone (O <sub>A</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH3)	µg/m <sup>2</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lend (Pb)	µg/m³	IS 5182 (Part- 22): 2019	0.016	1 (24hrs)
Nickel (Ni)	ng/m*	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m <sup>#</sup>	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)
Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m <sup>3</sup>	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

-Reviewed by Akash Kumar

R'als

Authorised Signatory

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

Dr. Deependra Kumar Sinha Ph. D. Environmental Enog

Page 1 of 1

#### **Technical Manager**

The Discarring stated as Test Report, is lossed by the Laboratory under General Tarms and Conditions, only on Company letter head in pre-approved brittle. The results shown in the Test Report refer or velates only in the jultimalysis done by the Laboratory only. The information stated on the Test Report reflects the findings done by the Laboratory at the time of involvement only and within the hours of chare's convectors. The Laboratory is suppossible for all the information or data provided on the report, assayt the information which is provided by the class. The Report country he reproduced except in full and any part of the report in not taken not of context, without prior version approval of the Laboratory. The Report in full or in part diall not be published, indication, and for any legal actions unless prior permission has been accurate from the Management of the Laboratory. Attaction is drawn to the laboratory of labelity, compression and particle is unlessful and offendated alteration & folding accurate of the context of the Test Report is indexed and offendates may be presented to the laboratory of the test. All the complex are returned for 30 days from the Date of referencies of the Twe Report. The samples from Regulatory holies are to be returned as apecified. Any type of Observations or Compliants equations the Reports shall be done within Unders from the Date of Test Report reference insured and before, on compliants will be accepted. The auton Time schedule manifested in Test Report is in 20 over format. Althoritation camp 30.5 (Not Applicable), RDL (Relew Dataction 1 and); U.M. (Lower Detection Limit).



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

#### ENGINEERING SERVICES PVT. LTD

Email: info@elespl.co.in , eles.ranchi@amail.com Phone no.: 0551-2290103 Website : www.elespl.co.in



	TES	T REPORT	
Test Report No.	: ELES/RNC/2024/6298	Report Release Date	: 26.10.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400004181F		
CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name Address Mines Status	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302 : Operational	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure	: ELES/RNC/2024/AA/7348 : Near Mine Block-B, Quarry No.4 Pakhar Bauxite Mine (115.13 ha) : 19.10.2024 to 20.10.2024 : 21.10.2024 : Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 21.10.2024 to 26.10.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

#### METEOROLOGICAL INFORMATION

2 : 740 1 Average Temperature (°C) :29 Barometric Pressure (mmHg) 3 Relative Humidity (%) : 58 4 Weather Condition : Clear

Discipline : Chemic	al	Group : Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part- 23): 2022	66	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	31	60 (24hrs)	
Sulphur Di-Oxide (SO2)	µg/m <sup>3</sup>	IS 5182 (Part- 2/Sec1): 2023	7.4	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m³	IS 5182 (Part- 6): 2022	26.1	80 (24hrs)	
Ozone (O <sub>3</sub> )	µg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH3)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m <sup>2</sup>	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	µg/m <sup>3</sup>	IS 5182 (Part- 22): 2019	0.005	1 (24hrs)	
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	
Benzene (C <sub>s</sub> H <sub>s</sub> )	µg/m	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m <sup>3</sup>	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

T P Reviewed by Akash Kumar

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

Quality Manager

Authorised Signatory Dr. Deependra Kumar Sinha

Ph. D. Environmental Enog

Page 1 of 1

The Discussent stated as Test Report, is issued by the Laboratory under General Terms and Conditions, only on Company letter head in pro-opproved format. The results of refer or relates only in the job analysis done by the Laboratory only. The information and Conditions, only on Company letter head in pro-opproved format. The results of The Disconnect stated as Test Report, is issued by the Laboratory under General Terra and Conditions, only on Company letter head in principleneed format. The residue down is the Test Report reflects only in the physical-pair down by the Laboratory only. The information instant iss the Test Report reflects the findings down by the Laboratory on the information instant iss the Test Report reflects the findings down by the Laboratory on the information instant iss the Test Report reflects the findings down by the Laboratory in responsible for all the information of data previated on the report, sound the information which is previated by the client. The Report cannot be septimized except in full and any part of the report is not been or of moment, within a previated on the report is and the information of indicity, used for my legal actions unless prior permission has been accord from the Management of the Laboratory. The Report is distributed except in full and my part of the context is appreciate of the Test Report of the Test Report of the report of the moments of the moments approximation of indicity, comparisation and particulation structures of the report of the context is approximate of the Test Report of the report of the report of the moments of the Test Report of the test of the surgerised of the surgerise of the Test Report of the report of the report of the report of the moments of the report o actuant for 10 deep from the Date of releasements of the Test Report. The samples from Regularity bodies are to be introduced by proceeding to the intervations or Compliants regarding the Report shall be done written 15 days from the Date of Test Report released/second. After the time period strend before, no compliants will be accepted. The entire Time schedule mentioned in Test Report is in Statute format. Attraction used 50.5 (Nor Applicable), BEIL (Below Detection Limit); LDI. (Lower Detection Limit)



PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) G57 NO:- 20AAECE97130124

#### ENGINEERING SERVICES PVT. LTD

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



12-0107

	TES	T REPORT	
Test Report No.	: ELES/RNC/2024/6299	Report Release Date	: 26.10.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400004182F		
CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name Address Mines Status	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302 : Operational	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure	: ELES/RNC/2024/AA/7349 : Near Mine Block-B, Quarry No.6 Pakhar Bauxite Mine (115.13 ha) : 19.10.2024 to 20.10.2024 : 21.10.2024 : Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 21.10.2024 to 26.10.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

1	Average Temperature ("C)	: 29	2	Barometric Pressure (mmHg)	: 740
3	Relative Humidity (%)	: 58	4	Weather Condition	: Clear

Discipline : Chemic	int .	Group :	Atmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part- 23): 2022	59	100 (24hrs)
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	28	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m <sup>™</sup>	IS 5182 (Part- 2/Sec1): 2023	8.2	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m <sup>3</sup>	IS 5182 (Part- 6): 2022	22.6	80 (24hrs)
Ozone (O <sub>1</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH3)	µg/m"	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m*	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m <sup>3</sup>	IS 5182 (Part- 22): 2019	0.011	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)
Benzene (C <sub>a</sub> H <sub>a</sub> )	µg/m <sup>1</sup>	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m1	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

Reviewed by Akash Kumar **Quality Manager** 

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

Authorised Signatory

Dr. Deependra Kumar Sinha

Ph. D. Environmental Engg

Page 1 of 1

Page 1 of 1
Technical Manager
The Outsenant stated as Test Report, is instead by the Laboratory suches Greenal Terms and Conditions, only on Company letter head in pro-approved former. The result shown in the Test Report
tells or references in the polyanahous done by the Laboratory such: Terms and conditions, only on Company letter head in pro-approved former. The result shown in the Test Report
tells or references the findings done by the Laboratory or the information stated on the Test Report reflects the findings done by the Laboratory or the time of involvement only and
within the limits of client's materiation. 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 whereas the entropy of full and any part of the paper in the net taken out of annual, without prior written approval of the Laboratory. The Report is full as in part shall not be published, advertise, used the any legal actions eating prior permission has been expendicated prior to the Laboratory. Attention is drawn to the Interaction of Intellity, componentiation and prior descent of the Laboratory. Attentions is drawn to the Interaction of Intellity, componentiation and prior descent of the Laboratory. Attentions is drawn to the Interaction of Intellity, componentiation and prior descent of the Laboratory. Attentions is drawn to the Interaction of Intellity, componentiation and prior descent of the Laboratory. Attentions is drawn to the Interaction of the Laboratory attention of the Laboratory of the Interaction of Intellity, componentiation and prior descent of the Laboratory. Attentions is drawn to the Interaction of Intellity, componentiation and prior descent of the Laboratory attention is drawn to the Interaction of the Laboratory attention in the Interaction of Intellity, componentiation and prior descent of the Laboratory attention in the Interaction of the Laboratory attention of the Interaction of the Interactio returned for Midays from the Data of primore loane of the Taut Report. The samples from Regulatory budies are to be estained as specified. Any type of Observations or Complaints regarding the Reports shall be done written 15days from the Data of Tam Report released issued. After the time period stated before, no complaints will be accepted. The source Time schedule momented in Tem Report to in Different format. Althorytation and, M/A (Nor Applicable), MRI (Helport Determine), (12), (Lower Determine Long).



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

#### ENGINEERING SERVICES PVT. LTD

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



	TES	TREPORT	
Test Report No.	: ELES/RNC/2024/6300	Report Release Date	: 26.10.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400004183F		
CUSTOMER DET	TAILS	SAMPLE DETAILS	
Customer Name Address Mines Status	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302 : Operational	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure	: ELES/RNC/2024/AA/7350 : Near Mine Block-B, Quarry No.7 Pakhar Bauxite Mine (115.13 ha) : 19.10.2024 to 20.10.2024 : 21.10.2024 : Amblent Air : ELES/DOC/SMPL/02
Period of Analysis	: 21.10.2024 to 26.10.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

1	Average Temperature (°C) :	29	2	Barometric Pressure (mmHg)	: 740
3	Relative Humidity (%) :	58	4	Weather Condition	: Clear

Discipline : Chemic	ai	Group :	Group : Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit			
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part- 23): 2022	63	100 (24hrs)			
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part-24): 2019	35	60 (24hrs)			
Sulphur Di-Oxide (SO2)	µg/m <sup>3</sup>	IS 5182 (Part- 2/Sec1): 2023	7.5	80 (24hrs)			
Nitrogen Di-Oxide (NO2)	µg/m <sup>3</sup>	IS 5182 (Part- 6): 2022	20.2	80 (24hrs)			
Ozone (O <sub>3</sub> )	µg/m³	15 5182 (Part- 9): 2019	<20.0	100 (8hrs)			
Ammonia (NH3)	µg/m <sup>3</sup>	1S 5182 (Part- 25): 2018	<10.0	400 (24hrs)			
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)			
Lead (Pb)	µg/m <sup>3</sup>	IS 5182 (Part- 22): 2019	0.013	1 (24hrs)			
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)			
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)			
Benzene (C <sub>4</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	ELES/GC/SOP/06: 2023	<2.5	05(Annual)			
Benzo-(a)-Pyrene	ng/m <sup>1</sup>	ELES/GC/SOP/05: 2023	<0.5	01(Annual)			

Reviewed by Akash Kumar

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

Dr. Dettheriani Fienale Sinha Ph. D. Environmental Engg.

Quality Manager

"End of Report"\*\*\*

Technical Monogor

Page 1 of 1 The Document stated as Test Report, is bound by the Laboratory under General Tarms and Conditions, soly on Company latter head in pro-opproved format. The results shown in the Test Report while at values only to the polyamitysis 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 whither the limits of cheet a correction. The Laboratory is responsible for all the information of an provided to the report, each the information of the information of the information of the information of the report comes to reproduced energy in full and are part of the report is not taken out of context, without prior written approval of the Laboratory. The Report is full or in part shall not be published, advertise, and fir my legit actions achieve on other to context or approximate of the Taboratory. Attention is drawn to the Information of liability, compression and priordecies tomas. Any uniformate the from the Date of advances on the Test Report. The samples from Report for allocations of the takes are to be testined as specified. Any type of Cherrentons of the Samples are returned for 30 days from the Date of advances for the Date of Test Report released issue. After the result of the Date of the result of the Date of the Date of the Samples are returned for 30 days from the Date of advances form of the Test Report released issue. After the result of the test and of produces are to be testined as specified. Any type of Cherrentons of Completions regarding the Reports shall be draw within 15 days from the Date of Test Report released issue. After the result dated before, no compliants will be accepted. The other Tone schedule organized is Test Report is in 34 down to the tone within 15 days from the Date of Test Report released issue. After the runs period stated before, no compliants will be accepted. The other Tone schedule organized is Test Reports shall be draw within 15 days from the Date of Test Report



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 No.	: ELES/RNC/2024/6301	Report Release Date	: 26.10.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400004184F			
CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name Address Mines Status	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302 : Operational	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure	: ELES/RNC/2024/AA/735 : Near Bunglapart Village Pakhar Bauxite Mine : 19.10.2024 to 20.10.2024 : 21.10.2024 : Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 21.10.2024 to 26.10.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

1	Average Temperature ("C)	: 29	2	Barometric Pressure (mmHg)	: 740	_
3	Relative Humidity (%)	: 58	4	Weather Condition	: Clear	

Discipline : Chemie	cal	Group :	Atmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part- 23); 2022	55	100 (24hrs)
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	27	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m³	IS 5182 (Part- 2/Sec1): 2023	8.1	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>1</sub> )	µg/m <sup>3</sup>	IS 5182 (Part-6): 2022	19.7	80 (24hrs)
Ozone (O <sub>3</sub> )	µg/m <sup>2</sup>	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part- 10): 2019 (NDIR. Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m <sup>9</sup>	IS 5182 (Part- 22): 2019	0.011	1 (24brs)
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)
Benzene (CsH6)	µg/m"	ELES/GC/SOP/06: 2023	<2.5	05(Annoal)
Benzo-(a)-Pyrene	ng/m <sup>3</sup>	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

Reviewed by Akash Kumar

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

Quality Mananer

Authorised Signatory Dr. Deependra Kumar Sinha

Ph. D. Environmental Engg.

Page 1 of 1.

**Technical Manager** 

The Desament stand to Tax Report, a concil by the Laboratory usate General Terms and Conditions, only on Company letter head is pro-optioned format. The tessils shown in the Tax Report of the Debaratysis down by the Laboratory and the General Terms and Conditions, only on Company letter head is pro-optioned format. The tessils shown in the Tax Report of the Debaraty is down by the Laboratory only. The information stated on the Tax Report reflacts the feelings down by the Laboratory at the time of introlecanon only and within the limits of cherr's instructions. The Laboratory is segmentifie for all the information stated on the topological on the report, except the information oblick is provided in the time. The Report introle cherries, and for are legal actions after principling the optimized from the Management of the Laboratory. The Report in fail are in part shall not be published, adverter, and for are legal actions after principling at the content or appearance of the Tax Report is understand allocations. All the content of appearance of the Tax Report is understand to the laboratory of the Information of the laboratory and the information of the laboratory. The Report is full are input after the amplitude and offenders may be presented on the Information of Explored to the laboratory. All the samplers are removed for the United from the United to the Tax Report is understand to the laboratory of the Information of the Information of the Information of Cherry internation and the amplitude are removed for the Information of the Information of the Information of the Information of the Information in the content of appearance of the Tax Report is understand at organized to remove the presented to remove the Information of the Information and Information and Information of the Information of the Information of the Information of the Information and Information of the Information retained for Midaya from the Date of release taxes of the Test Report. The samples from Regulatory bodies are to be retained as specified. Any type of Observations or Complexets regarding the Reports shall be done within 15 days from the Data of Text Report released annual. After this time period stated before, no compliants will be succepted. The entire Time schedule mentioned in Text Report is in 34bours format. Altervisition used: NA (Not Applicable), BOI, (Delow Denotion Limit), LOE, (Lower Detection Limit)



PLOT NO-36, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 20AAECE9713D124

#### ENGINEERING SERVICES PVT. LTD

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

10-12887

			TEST	REP	ORT			
Test Report No.	; ELES/R	NC/2024/6302	1	Report Release Date : 26.10.2024				
Work Order No.	: 13612312	113		Work Order Date : 28.03.2024				
ULR No.	: TC13587	2400004185F	f					
CUSTOMER DE	TAILS			SA	MPLE DETAILS			
Customer Name       : Hindalco Inda         Address       : Lohardaga, Jl         Mines Status       : Operational		a, Jharkhand-8	835302 Si Si Tj Si		nple Ref. No. cation npling Date nple Received Date pe of Sample npling Procedure	: ELES/RNC/2024/AA/7352 : Yatri Shed (Near K-10) Pakhar Bauxite Mine : 19.10.2024 to 20.10.2024 : 21.10.2024 : Ambient Air : ELES/DOC/SMPL/02		
Period of Analysis	: 21.10.202	4 to 26,10,202	1024		npling Done By nple Condition	: ELES Pvt. Ltd. : Sealed & Preserved		
METEOROLOG	ICAL INFOR	MATION						
1 Average Temp	water and a state of the state	29		2 Barometric Pressure		(mmHg) : 740		
3 Relative Humi	dity (%)	: 58		4 Weather Condition : Clear			Clear	
Disciplin	e : Chemical				Group :	Atmospheric l	Pollution	
Parame	ter	Unit		Test	Protocol	Result	Regulatory Limit	
Particulate Matter (	PM10)	µg/m <sup>3</sup>	IS 51	5182 (Part- 23): 2022		59	100 (24hrs)	
Particulate Matter (	PM2.5)	µg/m <sup>3</sup>	IS 5	1S 5182 (Part- 24): 2019		28	60 (24hrs)	
Sulphur Di-Oxide (	SO <sub>2</sub> )	µg/m <sup>3</sup>	IS 518	IS 5182 (Part- 2/Sec1): 2023		7.4	80 (24hrs)	
TARKS A REAL STORE FOR A REAL STORE		15.5	182 (	Part- 6): 2022	19.1	80 (24hrs)		
Carterio de la companya de la		IS 5	182 (	Part- 9): 2019	<20.0	100 (8hrs)		
Ammonia (NH3)	, D	µg/m <sup>1</sup>	IS 51	82 ()	Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide	(CO)	mg/m <sup>3</sup>		15 5182 (Part- 10): 2019 (NDIR Method)		<1.0	2 (8hrs)	

		-
	1 1	
1.00	+ Hotel	
	as Beviewed by	
	Quality Manager	

ug/m"

ng/m\*

ng/m

µg/m

ng/m<sup>3</sup>

Lead (Pb)

Nickel (Ni)

Arsenic (As)

Benzene (CeHe)

Benzo-(a)-Pyrene

< 0.002

<6.0

<2.0

<2.5

<0.5

1 (24hrs)

20 (Annual)

06 (Annual)

05(Annual)

01(Annual)

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

(NDIR Method)

IS 5182 (Part- 22): 2019

IS 5182 (Part-26): 2020

ELES/AIR/SOP/01: 2021

ELES/GC/SOP/06: 2023

ELES/GC/SOP/05: 2023

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

Page 1 of 1

Technical Manager

The Decamant statud to Test Report, is bound by the Laboratory onder Grannal Terms and Conditions, only on Company lefter hand in pro-approved format. The resolu shows in the Test Report toffer or relates only to the privatelysis dame by the Laboratory only. The information statud on the Test Report reflects the findings dame by the Laboratory at the time of involvament only and southin the limits of cherr's metractives. The Laboratory only. The information statud on the Test Report reflects the findings dame by the Laboratory at the time of involvament only and southin the limits of cherr's metractives. The Laboratory is responsible for all the informations in data provided on the report, encapt the information which is provided by the claim. This Report immet be seproduced recept to full industry part of the report is not taken out of contacts, softmar prior written approval of the Laboratory. The Report is full industry pertronation the been secured from the Macagoment of the Laboratory. Altertions in decam to the full on the particular depression of the Laboratory of Habity, compression and from the Macagoment of the Laboratory. Altertion is down or the interactions of the laboratory is provided by the claim. The morphologic are returned for Molays from the Date of relationships of the content or approximate of the Test Report is subwelld and offenders may be protocold. Any type of Observations or Compliants regarding the Report is not 30 perturbation (5 days from the Date of relationships), BDC (There there the time period state before, we compliants will be accepted by the accepted by the claim of the Cathodic manual of the time period state before, we compliant will be accepted by and state accepted by the date of the state regarding the Report is in 30 period. (More vertice used NA (Ner Applicable), BDC (Tester from period state before, be complianted limit).



PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATTA, RANCHI-834003 (IHARKHAND) 53T NO:- 20AAECE97130124

#### NGINEERING SERVICES PVT. LTD.

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



70-13587

	TES	TREF	ORT		
Test Report No.	: ELES/RNC/2024/6303	Re	port Release Date	: 26.10.2024	
Work Order No.	: 13612312113	W	ork Order Date	; 28.03.2024	
ULR No.	: TC135872400004186F				
CUSTOMER DET	AILS	SA	MPLE DETAILS		
Customer Name Address Mines Status	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302 : Operational : 21.10.2024 to 26.10.2024		mple Ref. No. cation mpling Date mple Received Date pe of Sample mpling Procedure	: ELES/RNC/2024/AA/7353 : Near Utkarmit Rajkiya Prathmil Vidyalaya Bungiapart Village Pakhar Bauxite Mine : 19.10.2024 to 20.10.2024 : 21.10.2024 : 21.10.2024 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd. : Scaled & Preserved	
Period of Analysis			mpling Done By mple Condition		
METEOROLOGI	CAL INFORMATION				
1 Average Temp	erature (°C) : 29	2 Barometric Pre		(mmHg) : 740	
3 Relative Humia	lity (%) : 58	4	: Clear		
Discipline	: Chemical	-	Crimer	Atmosphesis Dellection	

Discipline : Chemic	al	Group :	Atmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part-23): 2022	52	100 (24hrs)
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	31	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m³	IS 5182 (Part- 2/Sec1): 2023	7.3	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m³	IS 5182 (Part-6): 2022	18.7	80 (24hrs)
Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	1S 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m²	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m <sup>3</sup>	IS 5182 (Part- 22): 2019	0.001	I (24hrs)
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m²	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)
Benzene (C <sub>6</sub> R <sub>6</sub> )	µg/m <sup>3</sup>	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m <sup>®</sup>	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

Reviewed by Akash Kumar

Dr. Deependra Kullert Sinha

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Page I of 1

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

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

#### ENGINEERING SERVICES PVT. LTD.

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



Test Report No.	: ELES/RNC/2024/6304	Report Release Date	: 26.10.2024	
Work Order No.	: 13612312113	Work Order Date	: 28,03.2024	
ULR No.	: TC135872400004187F			
CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name Address Mines Status	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302 : Operational	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure	: ELES/RNC/2024/AA/7354 : Near Utkarmit Rajkiya Prathmil Vidyalaya Dumrapart Village Pakbar Bauxite Mine : 19.10.2024 to 20.10.2024 : 21.10.2024 : Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis : 21.10.2024 to 26.10.2024		<ul> <li>Sampling Done By Sample Condition</li> </ul>	: ELES Pvt. Ltd. : Sealed & Preserved	

and the second s	Average Temperature ("C)	: 29	2	Barometric Pressure (mmHg)	: 740
3	Relative Humidity (%)	: 58	4	Weather Condition	: Clear

Discipline : Chemie	cal	Group : Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part- 23): 2022	57	100 (24hrs)		
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	29	60 (24hrs)		
Sulphur Di-Oxide (SO2)	µg/m <sup>3</sup>	IS 5182 (Part- 2/Sec1): 2023	6.8	80 (24hrs)		
Nitrogen Di-Oxide (NO2)	µg/m <sup>3</sup>	IS 5182 (Part- 6): 2022	18.2	80 (24hrs)		
Ozone (O <sub>1</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)		
Ammonia (NH2)	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m <sup>3</sup>	15 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)		
Lead (Pb)	µg/m³	IS 5182 (Part- 22): 2019	0.012	1 (24hrs)		
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m <sup>4</sup>	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)		
Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	ELES/GC/SOP/06: 2023	<2.5	05(Annual)		
Benzo-(a)-Pyrene	ng/m*	ELES/GC/SOP/05: 2023	<0.5	01(Annual)		
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Dr. Deependra Kumar Sinha

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

Page 1 of 1
The Document stead as Test Report, is issued by the Laboreney using General Terms and Conditions, only on Company letter head is performing. Manager, include store in the Test Report of the laboreney only. The information stated on the Test Report reflects the findings does by the Laboreney at the time of involvement only and entities of the laboreney is responsible for all the information or data provided the information which is perioded by the Laboreney is responsible for all the information or data provided the information which is perioded by the Laboreney is responsible for all the information or data provided the information which is perioded by the class of the report of th terrained for Milaro Born the Data of relation issue of the Tert Report. The samples from Regulatory bodies are to be retained as specified. Any type of Observations or Complators regarding the Reports shall be done within Unlass from the Data of Tert Report related assault. (For the time period stated before, on complation will be accepted. The uniter Tene schedule memories of a Test Reports a as 2000an flower. Abbreviation used: N/S (Not Applicable), BOR, (Below Detection Limit), LOC (Lower Detection Limit).

### ENVIRONMENTAL LABORATORIES & ENGINEERING SERVICES PVT. LTD.

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

Pakhar (115.13) Bauxite Mine-Environmental Monitoring Report

November 2024



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	Hindalco Industries : Pakhar (115.13) Environmental Monitoring Report November 202	H
	Pakhar (115.13)	
	AMBIENT AIR QUALITY- CORE ZONE	
1	Near Mine Block-B, Quarry No.3	
2	Near Mine Block-B, Quarry No.4	
3	Near Mine Block B, Quarry No - 6	2.0
4	Near Mine Block-B, Quarry No.7	
121	AMBIENT AIR QUALITY- BUFFER ZONE	
1	Near Bunglapart Village	
2	Yatri Shed (Near K-10)	
3	Near Utkarmit Rajkiya Prathmik Vidyalaya Bunglapart Village	
4	Near Utkarmit Rajkiya Prathmik Vidyalaya Dumrapart Village	
	Drinking Water	
	Effluent Water	





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

#### ENGINEERING SERVICES PVT. LTD.

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



Test Report No.	: ELES/RNC/2024/7037	Report Release Date	: 02.12.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400004906F			
CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name Address Mines Status	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302 : Operational	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure	: ELES/RNC/2024/AA/8243 : Near Mine Block-B, Quarry No.3 Pakhar Bauxite Mine (115.13 ha) : 23.11.2024 to 24.11.2024 : 25.11.2024 : Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 25.11.2024 to 02.12.2024	<ul> <li>Sampling Done By Sample Condition</li> </ul>	: ELES Pvi. Ltd. : Sealed & Preserved	

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

Discipline : Chemic	- al	Group :	Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part- 23): 2022	68	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	39	60 (24hrs)	
Sulphur Di-Oxide (SO2)	µg/m³	IS 5182 (Part- 2/Sec1): 2023	7.2	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m <sup>3</sup>	IS 5182 (Part- 6): 2022	24.5	80 (24hrs)	
Ozone (O <sub>3</sub> )	µg′m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH2)	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m*	IS 5182 (Part- 10): 2019 (NDIR Method)	1.15	2 (8hrs)	
Lead (Pb)	µg/m³	IS 5182 (Part- 22): 2019	0.012	1 (24hrs)	
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	
Benzene (CsH6)	μg/m <sup>2</sup>	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m <sup>3</sup>	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

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

Page 1 of 1 The Discussion is some in the new in the new in the Laboratory under General Terms and Conditions, only on Company hence head in pre-opproval former. The results shown in the Terr Report offer or relates only to in explority on Sile is the Laboratory only. The information strated on the Terr Report within the limits of after a field term. The advectory is responsible for all the information of data provided on the report, except the information which is provided by the claboratory. The Report control be reproduced except to full and any part of the report is use taken out of context, without prior written approval of the Caboratory. The Report in full or or part shell not be published. advertue, used for my legal actions unless prior permission has been secured from the Management of the Laboratory. Attention is drawn in the Report of the United in the permission and periafication in the permission are permission and periafication. Any unauthorized alternation of Rability, compensation and periafication in the permission are permission and periafication in the permission are permission and periafication of the Contract of the Contract of an end of the Contract of the Laboratory. Attention is drawn in the Rability, compensation and periafication in the period and offenders may be prosented to the fidelest extent of the law. All the samples are retained for Midays from the Date of release tone of the Test Report. The annyles from Report stored period stated before, we complete with the second of Date of Compliants regarding the Report shall be drive within 15 days from the Date of Test Report released innov. After the time period stated before, we complete with the second of the anney to another the date of the Date of Test Report released innov. After the time period stated before, we complete with the second of the anney test released innoval. Report to in 24hours format: Althousing word: N/A (Not Applicable), BDC (Below Detection Limit), LDE (Lower Detection Limit).



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 No.	: ELES/RNC/2024/7038	Report Release Date	: 02.12.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400004907F		
CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name Address Mines Status	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302 : Operational	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure	: ELES/RNC/2024/AA/8244 : Near Mine Block-B, Quarry No.4 Pakhar Bauxite Mine (115.13 ha) : 23.11.2024 to 24.11.2024 : 25.11.2024 : Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	of Analysis : 25.11.2024 to 02.12.2024 Sampling Done By Sample Condition		: ELES Pvt. Ltd. : Sealed & Preserved

11000	Average Temperature (°C)	: 25	2	Barometric Pressure (mmHg)	: 740
3	Relative Humidity (%)	: 48	4	Weather Condition	: Clear

Discipline : Chemie	cal	Group :	Atmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part- 23): 2022	71	100 (24hrs)
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	38	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	IS 5182 (Part-2/Sec1): 2023	11.8	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m <sup>3</sup>	IS 5182 (Part- 6): 2022	33.3	80 (24hrs)
Ozone (O <sub>3</sub> )	µg/m <sup>5</sup>	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part- 10): 2019 (NDIR Method)	1.15	2 (8hrs)
Lead (Pb)	µg/m <sup>1</sup>	IS 5182 (Part- 22): 2019	0.012	1 (24hrs)
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)
Benzene (C <sub>5</sub> H <sub>4</sub> )	µg/m"	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m <sup>3</sup>	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

Authorised Signatory \*\*\*\*End of Report\*\*\*\* Akash Kumar

**Ovality Manager** 

Page 1 of 1

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53 Page 1 of 1 The Document stand as Test broat, there are the monotory ander General Terms and Conditions, only on Company least hand is pre-approval format. The results shown in the Test Report refer at relates only in the job and the information of the Laboratory and Company in the Test Report information which is pre-approval format. The results shown in the Test Report solution in the finance of chain's scattering of the region of the region of the region of the laboratory at the time of involvement only and solution the finance of chain's scattering of the region of the region is not taken and a sourcest, without provided on the region, exampt the information which is previded by the clasming of the laboratory. The Report is full and any part of the region is not taken and a sourcest, without provided on the region, assault the finance, The Report is full and any part of the region is not taken and a sourcest, without provided on the taken and is the laboratory. The Report is full we taken and jorishilation advertise, used for any legisl actions allows prior permission has been assauld from the Managament of the Laboratory. Another is the Imitation of flability, compensation and jorishilation instance. Any unsubscript is the Date of relations of the canter or appearance of the Test Report is unlively and offenders may be presented to the fullist extent of the law. All the samples are retained for 200 performs the Date of relations on the Test Report The samples from the print and offenders may be presented in the fullist extent of the law. All the samples are retained for the labor within 15 days from the Date of reference instant of the tree Report is under the form the date, no compliants will be accepted. The annue Tone schedule mentional in Test Reports is 240 cms from a Alberviation used. N.A. (Not Application, Officiant Limit), LDL (Lower Demetion 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@gmail.com Phone no.: 0651-2290103 Website : www.elespl.co.in



Test Report No.	: ELES/RNC/2024/7039	Report Release Date	: 02.12.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400004908F			
CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name Address Mines Status	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302 : Operational	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure	: ELES/RNC/2024/AA/8245 : Near Mine Block-B, Quarry No.6 Pakhar Bauxite Mine (115.13 ha) : 23.11.2024 to 24.11.2024 : 25.11.2024 : Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 25.11.2024 to 02.12.2024	<ul> <li>Sampling Done By Sample Condition</li> </ul>	: ELES Pvt. Ltd. : Sealed & Preserved	

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

Discipline : Chemic	al	Group :	Group : Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part- 23): 2022	66	100 (24hrs)		
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	35	60 (24hrs)		
Sulphur Di-Oxide (SO2)	µg/m <sup>3</sup>	IS 5182 (Part- 2/Sec1): 2023	10.8	80 (24hrs)		
Nitrogen Di-Oxide (NO2)	µg/m <sup>3</sup>	IS 5182 (Part- 6): 2022	24.3	80 (24hrs)		
Ozone (O <sub>3</sub> )	µg/m²	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)		
Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part- 10): 2019 (NDIR Method)	1.18	2 (8hrs)		
Lead (Pb)	µg/m³	IS 5182 (Part- 22): 2019	0.018	1 (24hrs)		
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)		
Benzene (C <sub>6</sub> H <sub>4</sub> )	µg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)		
Benzo-(a)-Pyrene	ng/m <sup>k</sup>	ELES/GC/SOP/05: 2023	<0.5	01(Annual)		

Authorised Signatory \*\*\*\*End of Report\*\*\*\* Akash Kumar Quality Managor

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Page 1 of 1 The Distances stated as Dischargers is transfer to be below of the Laboratory and Conditions, only on Company letter hand in pre-approval format. This results shown in the Tast Report refer to exhans only to the polynomial data one part of the report in not taken and of context, without price solition approval of the Laboratory. The Report in full and one part of the report is not taken and of context, without price solition approval of the Laboratory. The Report in full and one part of the report is not taken and of context, without price solition approval of the Laboratory. The Report in full and one part of the report is not taken and of context, without price solition approval of the Laboratory. The Report in full or in part shall sol be published, advertise, used for any legit actions unless price permission has been secured from the Management of the Laboratory. Attention is drawn to the familiation of bability, compensations and persistence sources. Any simultaneous distances are familiated in a presentation of the Laboratory balances are to the retained as apported to the familiation of the barry actions on the source of the Test Report is unleveling the familiant of the familiant of the source of the Test Report is unleveling to the retained as apported to the familiant of the laboratory of the source of the take source of the Test Report is unleveling to the apportance of the Test Report is unleveling to the retained as apported. Any type of Observations of Compliants segments of the Test Report to the familiant of the accepted. The attime Time schedule meanined is Tast Report is in 20 June function. Althore within (Mary Steen form the Observation Long). LOC (Lewer Distontes Long).



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 No.	: ELES/RNC/2024/7040	Report Release Date	: 02.12.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400004909F		
CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name Address Mines Status	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302 : Operational	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure	: ELES/RNC/2024/AA/8246 : Near Mine Block-B, Quarry No.7 Pakhar Bauxite Mine (115.13 ha) : 23.11.2024 to 24.11.2024 : 25.11.2024 : Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 25.11.2024 to 02.12.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

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

Discipline : Chemic	cal	Group :	Group : Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part- 23): 2022	73	100 (24hrs)		
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	37	60 (24hrs)		
Sulphur Di-Oxide (SO <sub>2</sub> )	µg/m <sup>1</sup>	IS 5182 (Part- 2/Sec1): 2023	12.4	80 (24hrs)		
Nitrogen Di-Oxide (NO2)	µg/m <sup>3</sup>	IS 5182 (Part- 6): 2022	23.7	80 (24hrs)		
Ozone (O3)	µg/m <sup>3</sup>	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)		
Ammonia (NH3)	µg/m <sup>3</sup>	1S 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part- 10): 2019 (NDIR Method)	1.26	2 (8hrs)		
Lead (Pb)	µg/m <sup>3</sup>	IS 5182 (Part- 22): 2019	0.022	1 (24hrs)		
Nickel (Ni)	ng/m <sup>5</sup>	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)		
Benzene (C <sub>4</sub> H <sub>4</sub> )	µg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)		
Benzo-(a)-Pyrene	ng/m*	ELES/GC/SOP/05: 2023	<0.5	01(Annual)		

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treat Authorised Signatory Akash Kumar

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Page 1 of 1

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

### ENGINEERING SERVICES PVT. LTD.

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



Test Report No.	: ELES/RNC/2024/7041	Report Release Date	: 02.12.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400004910F			
CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name Address Mines Status	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302 : Operational	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure	: ELES/RNC/2024/AA/8247 : Near Bunglapart Village Pakhar Bauxite Mine : 23.11.2024 to 24.11.2024 : 25.11.2024 : Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 25.11.2024 to 02.12.2024 Sampling Done By Sample Condition		: ELES Pvt. Ltd. : Sealed & Preserved	

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

Discipline : Chemic	al l	Group :	Group : Atmospheric Pollution				
Parameter Unit		Test Protocol	Result	Regulatory Limit			
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part- 23): 2022	60	100 (24hrs)			
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	32	60 (24hrs)			
Sulphur Di-Oxide (SO2)	µg/m <sup>3</sup>	IS 5182 (Part- 2/Sec1): 2023	11.4	80 (24hrs)			
Nitrogen Di-Oxide (NO2)	µg/m <sup>3</sup>	IS 5182 (Part- 6): 2022	22.8	80 (24hrs)			
Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)			
Ammonia (NH3)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)			
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)			
Lead (Pb)	µg/m³	IS 5182 (Part- 22): 2019	0.016	1 (24hrs)			
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)			
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)			
Benzene (C <sub>5</sub> H <sub>4</sub> )	µg/m <sup>3</sup>	ELES/GC/SOP/06: 2023	<2.5	05(Annual)			
Benzo-(a)-Pyrene	ng/m <sup>3</sup>	ELES/GC/SOP/05: 2023	<0.5	01(Annual)			

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Authorised Signatory Akash Kumar **Ogelity Managor** 

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

Page 1 of 1 The Document rated as Ten Conjuncts in the next because under General Terms and Conditions, only on Company latter head in pre-approval format. The results shown in the Test Report refer or rations only to the just the interaction where the choratory only. The information stand on the Test Report reflects the feedangs dose by the Laboratory at the time of involvement only and within the limits of chert's mercellular over Caboratory is responsible for all the information or data provided on the report, except the information which or follow the field on the distribution. termine do district to their distriction of the report is not taken out of context, within a provided on the report, except the information which is provided by the chief. The Report extends he reproduced everyt in full and any part of the report is not taken out of context, within a price worker approved of the Laboratory. The Report in full or is part shall on the published, advertue, read for any legal actions minimipore permission has been secured from the Management of the Laboratory. Attention is drawn to the Institution of fubbility, componention and jurishlation more: Any unsufficient decision A foldations of the context of appartness of the Test Report is activability and effective may be presented to the folder extent of the issues and jurishlation secured for 1004ys from the Date of releasestance of the Test Report. The samples from Regulatory bodies are to be contained as specified. Any type of Observations of Compliants equations Report also before within 15days from the Date of releasestance of Test Report releasestance with the folder activity of the antice Time schedule members of the restored of the Date of releasestance of Test Report releasestance within 15days from the Date of Test Report releasestance of the transmittened of the test and to the folder activity. The antice Time schedule members of the restored of the Report releasestance of the test releasestance of the test releasestance of the test releasestance of the test of test releasestance of the test releasestance of the test releasestance of the test releasestance test of test releasestance of the test releasestance of the test releasestance of the test releasestance of test releasestance of test releasestance of the test releasestance of test releasestance of the test releasestance of test releasestance of the test releasestance of test releasestance of test releasestance of test releasestance of the test releasestance of test releasestance of the test releasestance of test releasestance of test releasestance of test releasestance



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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 No.	: ELES/RNC/2024/7042	Report Release Date	: 02.12.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400004911F			
CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name Address Mines Status	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302 : Operational	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure	: ELES/RNC/2024/AA/8248 : Yatri Shed (Near K-10) Pakhar Bauxite Mine : 23.11.2024 to 24.11.2024 : 25.11.2024 : Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 25.11.2024 to 02.12.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

	Parameter	Unit	Test	Protocol	Result	Regulatory L
	Discipline : Chemi	cal		Group : A	tmospheric	Pollution
3	Relative Humidity (%)	: 48	4	Weather Condition	:0	Clear
-	treade terripermine ( c	1		Datometric Pressure (	mmrig) -	190

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Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part- 23): 2022	64	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	32	60 (24hrs)	
Sulphur Di-Oxide (SO3)	µg/m <sup>3</sup>	IS 5182 (Part- 2/Sec1): 2023	10.8	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m <sup>3</sup>	IS 5182 (Part- 6): 2022	22.2	80 (24hrs)	
Ozone (O <sub>1</sub> )	µg/m <sup>3</sup>	1S 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH <sub>2</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part- 10): 2019 (NDIR Method)	1.08	2 (8hrs)	
Lead (Pb)	µg/m³	IS 5182 (Part- 22): 2019	<0.002	1 (24hrs)	
Nickel (Ni)	ng/m <sup>1</sup>	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m <sup>2</sup>	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	
Benzene (CsHs)	µg/m <sup>3</sup>	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m <sup>1</sup>	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	
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Authorised Signatory Akash Kumar

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Page 1 of 1
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information of class 1 information of the upper is not taken out of context, without provided on the report the information of the laboratory. The Report is find in a part shall not be published,
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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 20AAECE9713D124

#### ENGINEERING SERVICES PVT. LTD.

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



Test Report No.	: ELES/RNC/2024/7043	Report Release Date	: 02.12.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400004912F		
CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/8249 : Near Utkarmit Rajkiya Prathmik Vidyalaya Bunglapart Village Pakhar Bauxite Mine
Address Mines Status	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 23.11.2024 to 24.11.2024 : 25.11.2024 : Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 25.11.2024 to 02.12.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

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

Discipline : Chemic	al	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part- 23): 2022	63	100 (24hrs)		
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	35	60 (24hrs)		
Sulphur Di-Oxide (SO2)	µg/m³	IS 5182 (Part- 2/Sec1): 2023	9.7	80 (24hrs)		
Nitrogen Di-Oxide (NO2)	µg/m <sup>3</sup>	1S 5182 (Part- 6): 2022	22.1	80 (24hrs)		
Ozone (O <sub>2</sub> )	µg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)		
Ammonia (NH3)	µg/m <sup>7</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)		
Lead (Pb)	µg/m <sup>3</sup>	IS 5182 (Part- 22): 2019	0.008	1 (24hrs)		
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)		
Benzene (C <sub>6</sub> H <sub>4</sub> )	µg/m <sup>3</sup>	ELES/GC/SOP/06: 2023	<2.5	05(Annual)		
Benzo-(a)-Pyrene	ng/m <sup>3</sup>	ELES/GC/SOP/05: 2023	<0.5	01(Annual)		

Authorised Signatory

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

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Page 1 of 1
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remained for 30 does from the Date of released uses of the Test Bapont is unlawful and offenders may be prostation to the failest estimat of the low. All the samples are
remained for 30 does from the Date of released uses of the Test Bapont is unlawful and thereines as appendixed. Any type of Observations of Complexes regarding the
remained for 30 does from the Date of released uses of the Test Bapont is being to be as a posting to the failest estimates of the laboratory. retained for 30deys from the Date of relating lossing of the Tool Report. The samples from Regulatory bodies are to be retained as specified. Any type of Observations or Compliants regarding the Reports shall be done within 15days from the Date of Test Report volcandrianeed. After the time period stated before, no compliants will be assigned. The annual Time schedule mentioned in Test Report is in 34hours format. Addressment used: NA(Net Applicable), BDL (Helew Detection Lines); LDL (Lower Detection Lines).



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 No.	: ELES/F	LES/RNC/2024/7044		Rep	ort Release Date	: 02.12.2024	1
Work Order No.	: 13612312113		Wo	rk Order Date	: 28.03.2024		
ULR No.	: TC135872400004913F						
CUSTOMER DET	AILS			SAM	APLE DETAILS		
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302		Loci Sam	ple Ref. No. ation pling Date ple Received Date a of Sample	: ELES/RNC/2024/AA/8250 : Near Utkarmit Rajkiya Prathmil Vidyalaya Dumrapart Village Pakhar Bauxite Mine : 23.11.2024 to 24.11.2024 : 25.11.2024 : Ambient Air		
Mines Status	: Operatio	nal		100000	pling Procedure	: ELES/DOC	C/SMPL/02
Period of Analysis	: 25.11.20	24 to 02.12.202	24	1.000	pling Done By ple Condition	: ELES Pvt. : Scaled & P	
METEOROLOGI	CAL INFO	RMATION					
I Average Temp	erature (°C)	: 25		2	Barometric Pressure	(mmHg) :	740
3 Relative Humidity (%) :48			4 Weather Condition		: Clear		
Discipline	e : Chemica	d			Group :	Atmospheric ]	Pollution
Parameter Unit		Test Protocol		Result	Regulatory Limit		
Particulate Matter (I	PM10)	µg/m <sup>1</sup>	IS 51	5182 (Part- 23): 2022		66	100 (24hrs)
Particulate Matter (I	PM2.5)	µg/m <sup>3</sup>	IS 5	182 (Pa	urt- 24): 2019	38	60 (24hrs)
Sulphur Di-Oxide (S	SO <sub>2</sub> )	µg/m <sup>3</sup>	IS 518	2 (Part-	- 2/Sec1): 2023	9.7	80 (24hrs)
Nitrogen Di-Oxide (	NO <sub>2</sub> )	µg/m <sup>3</sup>	18.5	182 (P	art- 6): 2022	20.2	80 (24hrs)
Ozone (O <sub>3</sub> )		µg/m <sup>3</sup>	IS 5	182 (Pa	art- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH3)		µg/m <sup>3</sup>	15 51	182 (Pa	rt- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (	CO)	mg/m <sup>3</sup>		and the second	rt- 10): 2019 Method)	<1.0	2 (8hrs)
Lead (Pb)		µg/m <sup>1</sup>	1S 5182 (Part- 22): 2019		0.009	1 (24hrs)	
Nickel (Ni)		ng/m <sup>3</sup>	18 51	182 (Pa	rt- 26): 2020	<6.0	20 (Annual)
Arsenic (As)		ng/m <sup>9</sup>	ELES	JAIR/S	SOP/01: 2021	<2.0	06 (Annual)
Benzene (C <sub>s</sub> H <sub>s</sub> )		µg/m²	ELES	GC/S	OP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	Nories & Eng	ng/m <sup>8</sup>	ELES	S/GC/S	OP/05: 2023	<0.5	01(Annual)

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Reviewed by

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#### Akash Kumar

Authorised Signatory

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

### ENGINEERING SERVICES PVT. LTD.

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



#### TEST REPORT

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Test Report No.	: ELES/RNC/2024/7051	Report Release Date	: 02.12.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400004920F		
CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Sampling Date Sample Received Date Type of Sample Source of Sample Location of Sample	: ELES/RNC/2024/DW/8257 : 24.11.2024 : 25.11.2024 : Drinking Water : Tap Water : Mines Site (Pakhar-115.13 Bauxite Mine)
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/01
Period of Analysis	: 25.11.2024 to 02.12.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

Discipline : Chemical		Croup	Water	Regulatory Limit		
washing a curintin		Group	Group : Water		as per IS 10500:2012	
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit	
pH (at 24.8 °C)		APHA 24th Ed.2023, 4500-H'	6.71	6.5-8.5	No Relaxation	
Turbidity	NTU	APHA 24th Ed.2023, 2130 B	0.09	1.0	5.0	
Taste	14	APHA 24 <sup>th</sup> Ed.2023, 2160 C	Agreeable	Agreeable	Agreeable	
Odour	4	1S 3025 (Part-5) :2018	Agreeable	Agreeable	Agreeable	
Colour	Hazen	APHA 24th Ed.2023, 2120B&D	1.4	5.0	15	
Total Dissolved Solids (TDS)	mg/L	APHA 24th Ed.2023, 2540B,C&D	52.0	500	2000	
Chloride (as Cl)	mg/L	APHA 24th Ed.2023, 4500 CI B	8.0	250	1000	
Fluoride (as F)	mg/L	APHA 24 <sup>th</sup> Ed.2023, 4500 F-D	BDL (DL: 0.1)	1.0	1.5	
Total Alkalinity (as CaCO <sub>3</sub> )	mg/L	APHA 24th Ed.2023, 2320 B	12.6	200	600	
Total Hardness (as CaCO <sub>3</sub> )	mg/L	APHA 24th Ed.2023, 2340 C	18.4	200	600	
Sulphate (as SO <sub>4</sub> )	mg/L	APHA 24th Ed.2023, 4500 SO4-2-E	2.86	200	400	
Nitrate (as NO <sub>3</sub> )	mg/L	APHA 24 <sup>th</sup> Ed.2023, 4500 NO <sub>37</sub> B	1.39	45	No Relaxation	

#### Page 1 of 4

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (IHARKHAND) GST NO:- 20A4ECE9713D124 NGINEERING SERVICES PVT. LTD.

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



#### TEST REPORT

Test Report No.	: ELES/RNC/2024/7051	Report Release Date	: 02.12.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400004920F		

Discipline : Chemic	al	Gro	up : Water	and the second sec	ory Limit 10500:2012
Parameter	Unit	Test Protocol	Result	Acceptable	Permissible
Phenolic Compound (as C6H3OH)	mg/L	IS 3025 (Part 43/Sec1): 2022	BDL (DL: 0.001)	0.001	0.002
Free Residual Chlorine (RFC)	mg/L	IS 3025 (Part-26); 2021	BDL (DL: 0.1)	0.2(Min)	1.0(Min)
Calcium (as Ca)	mg/L	APHA 24th Ed.2023, 3500 Ca B	4.6	75	200
Anionic Surfactants (as MBAS)	mg/L	APHA 24th Ed.2023, 5540-C	BDL (DL: 0.025)	0.2	1.0
Discipline : Chemic	cal	Gra	oup : Residues i	n Water	
Aluminum (as Al)	mg/L	IS 3025 (Part-55) :2003; RA2019	BDL (DL: 0.02)	0.03	0.2
Arsenic (as As)	mg/L	1S 3025 (Part-37): 2022	BDL (DL: 0.005)	0.01	No Relaxation
Boron (as B)	mg/L	IS 3025 (Part-57) : 2021	BDL (DL: 0.2)	0.5	1.0
Cadmium (as Cd)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL: 0.003)	0.003	No Relaxation
Total Chromium (as Cr)	mg/L	APHA 24 <sup>th</sup> Ed.2023; 3111B	BDL (DL: 0.03)	0.05	No Relaxation
Copper (as Cu)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL: 0.03)	0.05	1.5
Cyanide (as CN)	mg/L	APHA 24th Ed.2023, 4500 CN-E	BDL (DL: 0.012)	0.05	No Relaxation
Iron (as Fe)	mg/1.	APHA 24 <sup>th</sup> Ed.2023; 3111B	0.081	1.0	No Relaxation
Lead (as Pb)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL: 0.01)	0.01	No Relaxation
Manganese (as Mn)	mg/L	APHA 24 <sup>th</sup> Ed.2023; 3111B	BDL (DL: 0.05)	0.1	0.3
Mercury (as Hg)	mg/L	IS 3025 (Part-48): 2019	BDL (DL: 0.001)	0.001	No Relaxation
Selenium (as Se)	mg/L	IS 3025 (Part-56): 2019	BDL (DL: 0.01)	0.01	No Relaxation

#### Page 2 of 4

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

PUT: 17

CIN: U749991H2018PTC011125

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#### TEST REPORT

Test Report No.	: ELES/RNC/2024/7051	Report Release Date	: 02.12.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400004920F		

Discipline : Chemical		Group : Resid	lues in Water	Regulatory Limit as per IS10500:2012	
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
Zinc (as Zn)	mg/L	APHA 24 <sup>th</sup> Ed.2023; 3111B	BDL (DL: 0.1)	5.0	15
Polynuclear Aromatic Hydrocarbons (PAH)	μg/L.	ELES/GC/SOP/04: 2023	BDL (DL: 0.05)	0.1	No Relaxation
Polychlorinated biphenyls (PCB)	μg/L	ELES/GC/SOP/03: 2023	BDL (DL; 0,1)	0,5	No Relaxation
Pesticides				Li	mit
Alachlor	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	1	20
Atrazine	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	2	.0
Butachlor	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	1	25
Chlorpyriphos	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	30	
Ethion	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	3.0	
Malathion	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	1	90
Methyl parathion	µg/l.	ELES/GC/SOP/01: 2023	BDL (DL: 0.1)	0.	30
Monocrotophos	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	I	.0
Phorate	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	2.0	
Phorate Sulphone	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)		
Dieldrin	µg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.01)	0.	03
Alpha HCH	µg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.006)	0.	01
Beta HCH	µg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.02)	0,	04

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#### TEST REPORT

Test Report No.	: ELES/RNC/2024/7051	Report Release Date	: 02.12.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400004920F		

Pesticides				
Parameter	Unit	Test Protocol	Result	Limit
Delta HCH	μg/L	ELES/GC/SOP/02: 2023	BDL (DL; 0.02)	0.04
Gamma HCH (Lindane)	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.02)	2.0
Endosulfan (alpha, beta and sulphate)	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.05)	0.40
DDT(0,p and p,p-isomers of DDT) ( DDE and DDD)	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.05)	1.0
Discipline : Biological		Grou	p: Water	
Total Coliform (Qualitative)	Per 100 mL	IS 15185: 2021	Not Detected	Chall age he derated
Escherichia coli (Qualitative)	Per 100 mL	IS 15185: 2021	Not Detected	Shall not be detected

Reviewed by Akash Kumar Geality Manager

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

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

#### Page 4 of 4

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#### TEST REPORT

Test Report No.	: ELES/RNC/2024/7051	Report Release Date	: 02.12.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Sampling Date Sample Received Date	: ELES/RNC/2024/DW/8257 : 24.11.2024 : 25.11.2024	
Address	: Lohardaga, Jharkhand-835302	Type of Sample Source of Sample Location of Sample	: Drinking Water : Tap Water : Mines Site	
Mines Status	: Operational	Sampling Procedure	(Pakhar-115.13 Bauxite Mine) : ELES/DOC/SMPL/01	
Period of Analysis	: 25.11.2024 to 02.12.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

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

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

Reviewed by Akash Kumar Quality Manager

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

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

#### Page 1 of 1

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#### TEST REPORT

Test Report No.	: ELES/RNC/2024/7054	Report Release Date	: 02.12.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	_
ULR No.	: TC135872400004923F			

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2024/EF/8260	
		Sampling Date	: 24.11.2024	
		Sample Received Date	: 25.11.2024	
Address	: Lohardaga, Jharkhand-835302	Type of Sample	: Effluent Water	
1000000	- Advinisinga, marknanu-655502	Source of Sample	: Near Mine Block-B, Quarry No.3	
			Pakhar Bauxite Mine (115.13 ha)	
	24 CC3 0	Sampling Procedure	: ELES/DOC/SMPL/01	
Mines Status	: Operational	Sampling Done By	: ELES Pvt. Ltd.	
Period of Analysis	: 25.11.2024 to 02.12.2024	Sample Condition	: Sealed & Preserved	

Discipline : Chemical		Group : Pollution & Environment		Discharge Limits - CPCB EPR, 1986 Schedule V1	
Parameter	Unit	Test Protocol	Result	Inland Surface Water	Land for Irrigation
pH (at 24.7 °C)		APHA 24th Ed.2023,4500-H	8.24	5.5-9.0	5.5-9.0
Total Dissolved Solids (TDS)	mg/L	IS 3025 (Part-16): 2023	340		
Total Suspended Solids (TSS)	mg/L	IS 3025 (Part-17): 2022	36.2	100	200
Dissolved Oxygen (DO)	mg/L	IS 3025 (Part-38): 2019	5.2		
Biochemical Oxygen Demand (BOD) (at 27 °C for 3 days)	mg/L	IS 3025 (Part-44): 2023	22.0	30	100
Chemical Oxygen Demand (COD)	mg/L	IS 3025 (Part-58): 2023	179	250	
Dissolved Phosphate (as P)	mg/L	IS 3025 (Part-31/Sec-1): 2022	2.80	5.0	
Fluoride (as F)	mg/L	IS 3025 (Part-60): 2019	BDL (DL: 0.1)	2.0	1.5
Sulphide (as S)	mg/L	IS 3025 (Part-29) : 2019	BDL (DL: 0.04)	2,0	, <b>1</b> 00
Oil & Grease	mg/L	IS 3025 (Part-39): 2021	2.8	10	10

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#### TEST REPORT

Test Report No.	: ELES/RNC/2024/7054	Report Release Date	: 02.12.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400004923F		

Discipline : Chemical		Group : Resis	Group : Residues in Water		its – CPCB bedule VI
Parameter Unit		Test Protocol	Result	Inland Surface Water	Land for Irrigation
Lead (as Pb)	mg/L	APHA 24th Ed.2023, 3111 B	BDL (DL: 0.01)	0.1	
Manganese (as Mn)	mg/1.	APHA 24th Ed.2023, 3111 B	0.182	2.0	-
Mercury (as Hg)	mg/L	IS 3025(Part-48): 1994; RA2019	BDL (DL: 0.001)	0.01	-
Nickel (as Ni)	mg/L	APHA 24 <sup>th</sup> Ed.2023, 3111 B	BDL (DL: 0.01)	3.0	**
Zinc (as Zn)	mg/L	APHA 24 <sup>th</sup> Ed.2023, 3111 B	BDL (DL: 0.1)	5.0	

Reviewed by

Akash Kumar Quality Manager

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

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

#### Page 2 of 2

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### ENVIRONMENTAL LABORATORIES & ENGINEERING SERVICES PVT. LTD.

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

Pakhar (115.13) Bauxite Mine-Environmental Monitoring Report

December 2024



#### CONTENT

	Hindalco Industries : Pakhar (115.13) Environmental Monitoring Report	December 2024
	Pakhar (115.13)	
	AMBIENT AIR QUALITY- CORE ZONE	
1	Near Mine Block-B, Quarry No.3	
2	Near Mine Block-B, Quarry No.4	
3	Near Mine Block B, Quarry No - 6	
4	Near Mine Block-B, Quarry No.7	
	AMBIENT AIR QUALITY- BUFFER ZONE	
1	Near Bunglapart Village	
2	Yatri Shed (Near K-10)	
3	Near Utkarmit Rajkiya Prathmik Vidyalaya Bunglapart Village	
4	Near Utkarmit Rajkiya Prathmik Vidyalaya Dumrapart Village	





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

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Test Report No.	: ELES/RNC/2024/7622	Report Release Date	: 24.12.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400005474F		
CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name Address Mines Status	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302 : Operational	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure	: ELES/RNC/2024/AA/8960 : Near Mine Block-B, Quarry No.3 Pakhar Bauxite Mine (115.13 ha) : 16.12.2024 to 17.12.2024 : 18.12.2024 : Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 18.12.2024 to 24.12.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

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

Discipline : Chemie	cal	Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PMI0)	µg/m <sup>3</sup>	IS 5182 (Part- 23): 2022	74	100 (24hrs)
Particulate Matter (PM2.5)	μg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	43	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m <sup>3</sup>	IS 5182 (Part- 2/Sec1); 2023	8.9	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m <sup>3</sup>	IS 5182 (Part- 6): 2022	27.2	80 (24hrs)
Ozone (O <sub>1</sub> )	µg/m²	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH3)	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>2</sup>	IS 5182 (Part- 10): 2019 (NDIR Method)	1.19	2 (8hrs)
Lead (Pb)	µg/m³	IS 5182 (Part- 22): 2019	0.025	1 (24hrs)
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)
Benzene (CsHa)	µg/m <sup>3</sup>	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m <sup>3</sup>	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

50-00 Reviewed by Akesh Kumar

1ht

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

Stan Advances

Dr. Deependra Kumar Sinha

Authorised Signatory

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1	And a second sec	TREPORT	
Test Report No.	: ELES/RNC/2024/7623	Report Release Date	: 24.12.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400005475F		
CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name Address Mines Status	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302 : Operational	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure	: ELES/RNC/2024/AA/8961 : Near Mine Block-B, Quarry No.4 Pakhar Bauxite Mine (115.13 ha) : 16.12.2024 to 17.12.2024 : 18.12.2024 : Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 18.12.2024 to 24.12.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

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

Discipline : Chemic	al	Group :	Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part- 23): 2022	79	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	46	60 (24hrs)	
Sulphur Di-Oxide (SO2)	µg/m <sup>3</sup>	IS 5182 (Part- 2/Sec1): 2023	13.6	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m <sup>3</sup>	1S 5182 (Part- 6): 2022	35.1	80 (24hrs)	
Ozone (O <sub>3</sub> )	µg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m²	1S 5182 (Part- 10); 2019 (NDIR Method)	1.28	2 (8hrs)	
Lead (Pb)	µg/m <sup>3</sup>	IS 5182 (Part- 22): 2019	0.019	1 (24hrs)	
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	
Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>*</sup>	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m <sup>3</sup>	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

in Reviewed by Akash Kumar Quality Manager

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Page 1 of 1 The Document stated as Test Report, is issued by the Laboratory under General Terms and Conditions, only on Company latter hand is pre-approved format. The results shows in the Test Report refer or relates only to the jubianalysis done by the Laboratory only. The information stand on the Test Report inffects the findings date by the Laboratory at the time of iscoloweness only and eithin the limits of client's instructions. The Eutocomy is traponalitle for all the information stand on the Test Report inffects the findings date by the Laboratory at the time of iscoloweness only and eithin the limits of client's instructions. The Eutocomy is traponalitle for all the information or fain provided on the report, escept the information which is provided by the alient. The Report constant he reproduced escept in full and any part of the report is not taken and of centers, without prior written approval of the Laboratory. The Report is full or is part shall on the publiched advertise, and for any legal actions unless prior permittees has been senared from the Management of the Laboratory. Attention is drawn to the fullest estept of the first laboratory of the fullest estept of the too the publiched isotrones. Any montherized shutches & fabriched on the content or appending is from Report is unlostful and offenders may be protected of the fabric shut has complex are statised for Meleys from the Date of release issue of the Test Report. The samples from Report is used attend to be available. The amine traperties are shall be done write: Meleys from the Date of release specifies from the laboratory to be appending to the time period atted before no complete will be an exampted. The amine Time schedule menioned in Test Report is in 2010 attended to 2010 (Lower Detection Limit)



3 Relative Humidity (%)

## ENVIRONMENTAL LABORATORIES &

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

: 48

#### ENGINEERING SERVICES PVT. LTD.

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



	TES	T REPORT		
Test Report No.	: ELES/RNC/2024/7624	Report Release Date	: 24.12.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400005476F	hilling have been have		
CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name Address Mines Status	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302 : Operational	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure	: ELES/RNC/2024/AA/8962 : Near Mine Block-B, Quarry No Pakhar Bauxite Mine (115.13 h : 16.12.2024 to 17.12.2024 : 18.12.2024 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 18.12.2024 to 24.12.2024	Sampling Done By Sample Condition	: Sealed & Preserved	
METEOROLOGI	CAL INFORMATION			
1 Average Temp	erature (°C) : 20	2 Barometric Pressure	(mmHg) : 725	

4 Weather Condition

Discipline : Chemie	cal	Group :	Atmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part- 23): 2022	73	100 (24hrs)
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24); 2019	32	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m <sup>3</sup>	IS 5182 (Part- 2/Sec1): 2023	12.7	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m <sup>3</sup>	IS 5182 (Part- 6): 2022	28.2	80 (24hrs)
Ozone (O <sub>7</sub> )	µg/m <sup>3</sup>	1S 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH3)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part- 10): 2019 (NDIR Method)	1.23	2 (8hrs)
Lead (Pb)	µg/m <sup>1</sup>	1S 5182 (Part- 22): 2019	0.028	1 (24hrs)
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part+26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m <sup>2</sup>	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)
Benzene (C <sub>s</sub> H <sub>s</sub> )	µg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m <sup>3</sup>	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

170 Reviewed by Akash Kumar Quality Manager

Authorised Signatory Dr. Deependra Kumar Sinha

Ph. D. Environmental Engg.

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TEST DEDODT

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 No.	: ELES/RNC/2024/7625	Report Release Date	: 24.12.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400005477F	The reserves a second large	
CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name Address Mines Status	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302 : Operational	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure	: ELES/RNC/2024/AA/8963 : Near Mine Block-B, Quarry No.7 Pakhar Bauxite Mine (115.13 ha) : 16.12.2024 to 17.12.2024 : 18.12.2024 : Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 18.12.2024 to 24.12.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

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

Discipline : Chemic	al	Group :	Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part- 23): 2022	67	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	32	60 (24hrs)	
Sulphur Di-Oxide (SO2)	µg/m <sup>3</sup>	IS 5182 (Part- 2/Sec1): 2023	10.2	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m <sup>3</sup>	IS 5182 (Part- 6): 2022	22.8	80 (24hrs)	
Ozone (O <sub>3</sub> )	µg/m³	IS 5182 (Part- 9); 2019	<20.0	100 (8hrs)	
Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	μg/m <sup>3</sup>	IS 5182 (Part- 22): 2019	0.018	1 (24hrs)	
Nickel (Ni)	ng/m³	IS 5182 (Part-26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m <sup>1</sup>	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	
Benzene (C6H6)	µg/m <sup>2</sup>	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m <sup>3</sup>	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

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Authorised Signatory

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Dr. Deependra Kumnr

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Technical Manager

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

### ENGINEERING SERVICES PVT. LTD.

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



Test Report No.	: ELES/RNC/2024/7626	Report Release Date	: 24.12.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No. : TC135872400005478F			
CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name Address Mines Status	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302 : Operational	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure	: ELES/RNC/2024/AA/8964 : Near Bunglapart Village Pakhar Bauxite Mine : 16.12.2024 to 17.12.2024 : 18.12.2024 : Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 18.12.2024 to 24.12.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

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

Discipline : Chemic	al	Group :	Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m³	IS 5182 (Part- 23); 2022	68	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	37	60 (24hrs)	
Sulphur Di-Oxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 2/Sec1): 2023	12.7	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m <sup>3</sup>	IS 5182 (Part- 6): 2022	24.2	80 (24hrs)	
Ozone (O <sub>1</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 9); 2019	<20.0	100 (8hrs)	
Ammonia (NH3)	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	µg/m³	1S 5182 (Part- 22): 2019	0.019	1 (24hrs)	
Nickel (Ni)	ng/m <sup>3</sup>	15 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	
Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m <sup>3</sup>	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

Reviewed by Akeeh Kumar Quality Manager

Authorised Signatory Dr. Deependra Kumar Sinha

Ph. D. Environmental From

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



Test Report No.	: ELES/RNC/2024/7627	Report Release Date	: 24.12.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400005479F		
CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name Address Mines Status	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302 : Operational	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure	: ELES/RNC/2024/AA/8965 : Yatri Shed (Near K-10) Pakhar Bauxite Mine : 16.12.2024 to 17.12.2024 : 18.12.2024 : Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 18.12.2024 to 24.12.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

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

Discipline : Chemic	al	Group :	Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part- 23): 2022	71	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	38	60 (24hrs)	
Sulphur Di-Oxide (SO2)	µg/m <sup>3</sup>	IS 5182 (Part- 2/Sec1): 2023	12.1	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m <sup>3</sup>	15 5182 (Part- 6): 2022	25.4	80 (24hrs)	
Ozone (O <sub>3</sub> )	µg/m <sup>8</sup>	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH3)	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part- 10): 2019 (NDIR Method)	1.18	2 (8hrs)	
Lead (Pb)	µg/m³	1S 5182 (Part- 22): 2019	0.019	1 (24hrs)	
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m <sup>1</sup>	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	
Benzene (C <sub>a</sub> H <sub>a</sub> )	µg/m <sup>2</sup>	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m <sup>2</sup>	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	
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Reviewed by Akash Kumar Quality Manager

Dr. Deuthorised Signatory Ph. D. Environmental Engg.

Page 1 of 1

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

#### ENGINEERING SERVICES PVT. LTD.

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



Test Report No.	: ELES/RNC/2024/7628	Report Release Date	: 24.12.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No. : TC135872400005480F				
CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure	: ELES/RNC/2024/AA/8966 : Near Utkarmit Rajkiya Prathmik Vidyalaya Bunglapart Village Pakhar Bauxite Mine : 16.12.2024 to 17.12.2024 : 18.12.2024 : Ambient Air : ELES/DOC/SMPL/02	
Mines Status	: Operational	- Sampling Done By	: ELES Pvt. Ltd.	
Period of Analysis	: 18.12.2024 to 24.12.2024	Sample Condition	: Sealed & Preserved	

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

Discipline : Chemic	al	Group : Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part- 23): 2022	77	100 (24hrs)		
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	42	60 (24hrs)		
Sulphur Di-Oxide (SO2)	µg/m <sup>3</sup>	IS 5182 (Part- 2/Sec1): 2023	11.3	80 (24hrs)		
Nitrogen Di-Oxide (NO2)	µg/m <sup>3</sup>	IS 5182 (Part- 6): 2022	26.7	80 (24hrs)		
Ozone (O <sub>2</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)		
Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m <sup>1</sup>	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)		
Lead (Pb)	µg/m³	IS 5182 (Part- 22): 2019	0.013	1 (24lus)		
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)		
Benzene (C <sub>8</sub> H <sub>4</sub> )	µg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)		
Benzo-(a)-Pyrene	ng/m <sup>3</sup>	ELES/GC/SOP/05: 2023	<0.5	01(Annual)		



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### ENVIRONMENTAL LABORATORIES &

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

#### ENGINEERING SERVICES PVT. LTD.

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ES/RNC/2024/7629	Report Release Date	: 24.12.2024	
12312113	111 A. 10 A. 10 A.		
	Work Order Date	: 28.03.2024	
135872400005481F			
	SAMPLE DETAILS		
dalco Industries Limited ardaga, Jharkhand-835302 rational	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure	: ELES/RNC/2024/AA/8967 : Near Utkarmit Rajkiya Prathmi Vidyalaya Dumrapart Village Pakhar Bauxite Mine : 16.12.2024 to 17.12.2024 : 18.12.2024 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
2.2024 to 24.12.2024	Sample Condition	: ELES PVI. Ltd. : Sealed & Preserved	
	dalco Industries Limited ardaga, Jharkhand-835302 rational	ardaga, Jharkhand-835302 rational SAMPLE DETAILS Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure Sampling Done By	

3 Relative Humidity (%)	: 48	4 Weather Condition	n ::	Clear
Discipline : Chemic	al	Group	: Atmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part- 23): 2022	69	100 (24hrs)
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	43	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m <sup>3</sup>	IS 5182 (Part- 2/Sec1): 2023	12.7	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>1</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 6): 2022	20.2	80 (24hrs)
Ozone (O <sub>3</sub> )	µg/m"	IS 5182 (Part- 9); 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>2</sub> )	µg/m <sup>3</sup>	1S 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>1</sup>	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m'	1S 5182 (Part- 22): 2019	0.009	1 (24hrs)
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m <sup>1</sup>	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)
Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m <sup>1</sup>	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

417-21 Reviewed by

Authorised Signatory Dr. Deependra Rumar Sinha

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

# Akash Kumar

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### ENVIRONMENTAL LABORATORIES & ENGINEERING SERVICES PVT. LTD.

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

Pakhar (115.13) Bauxite Mine-Environmental Monitoring Report

January- 2025



### CONTENT

	Hindalco Industries : Pakhar (115.13) Environmental Monitoring Report	January 2025
	Pakhar (115.13)	
	AMBIENT AIR QUALITY- CORE ZONE	
1	Near Mine Block-B, Quarry No.3	
2	Near Mine Block-B, Quarry No.4	
3	Near Mine Block B, Quarry No - 6	
4	Near Mine Block-B, Quarry No.7	
	AMBIENT AIR QUALITY- BUFFER ZONE	
1	Near Bunglapart Village	
2	Yatri Shed (Near K-10)	
3	Near Utkarmit Rajkiya Prathmik Vidyalaya Bunglapart Village	
4	Near Utkarmit Rajkiya Prathmik Vidyalaya Dumrapart Village	
	Surface Water	
	Soil	En





TEST DEPODT

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) 65T NO:- 20AAECE9713D124

#### ENGINEERING SERVICES PVT. LTD.

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



	165	I REPORT		
Test Report No.	: ELES/RNC/2025/0447	Report Release Date	: 20.01.2025	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC1358725000000439F			
CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name Address Mines Status	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302 : Operational	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure	: ELES/RNC/2025/AA/0266 : Near Mine Block-B, Quarry No.3 Pakhar Bauxite Mine (115.13 ha) : 11.01.2025 to 12.01.2025 : 13.01.2025 : Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 13.01.2025 to 20.01,2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

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

Discipline : Chemic	al	Group :	Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part- 23): 2022	77	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	46	60 (24hrs)	
Sulphur Di-Oxide (SO2)	µg/m <sup>3</sup>	IS 5182 (Part- 2/Sec1): 2023	11.2	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m <sup>3</sup>	IS 5182 (Part- 6): 2022	32.8	80 (24hrs)	
Ozone (O <sub>2</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 9): 2019	<20.0	100 (Shrs)	
Ammonia (NH3)	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m <sup>8</sup>	IS 5182 (Part- 10): 2019 (NDIR Method)	1.22	2 (8hrs)	
Lead (Pb)	µg/m <sup>3</sup>	IS 5182 (Part- 22); 2019	0.031	1 (24hrs)	
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	
Benzene (C <sub>s</sub> H <sub>4</sub> )	µg/m <sup>3</sup>	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m <sup>3</sup>	ELES/GC/SOP/05: 2023	< 0.5	01(Annual)	

Reviewed by Akash Kumar Quality Manager

Dr. Orkening SkullapSinha Ph. D. Environmental Engg.

Page L of L

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

Technical Manager

The Decoment stated to Test Report, is torend by the Laboratory under General Terms and Conditions, only on Company letter hand in pre-approval format. The territo shown in the Test Report refer or relates only to the informations. The Laboratory only. The information stated on the Test Report reflects the findings date by the Laboratory at the tance of involvement only and within the latities of class?'s instructions. The Laboratory is reagonable for all the information or data provided on the report, except the information which is provided by the class. The Report cannot be reported accept in full and any part of the report is not taken out of context, without prior written approval of the Laboratory. The Report is full and any part of the report is not taken out of context, without prior written approval of the Laboratory. The Report cannot be reported accept in full and any part of the report is not taken out of context, without prior written approval of the Laboratory. The Report is full or in part shall such be patholical, advertise, used for any legal actions unless prior permittions has been secured from the Management of the Laboratory. Attention is drown to the Institution of Eability, componenties and periodication issues. Any anotherized duration & Education of the content or appearance of the Test Report is unleschal and effective may be preserved to the fuller extent of the law. All the samples have revised for 30 days from the Date of relations from the part released issued. After the time period stated before, no compliants will be accepted. The annee Time schedule mentioned as specified. Any type of Observations of Compliants regarding the Report is in 24 brane format. Also accepted to the laboratory Alternation Limit). 1.01. (Lower Enternat. Limit)



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

#### ENGINEERING SERVICES PVT. LTD.

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



Test Report No.	: ELES/RNC/2025/0448	Report Release Date	: 20.01.2025	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC1358725000000440F			
CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name Address Mines Status	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302 : Operational	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure	: ELES/RNC/2025/AA/0267 : Near Mine Block-B, Quarry No.4 Pakhar Bauxite Mine (115.13 ha) : 11.01.2025 to 12.01.2025 : 13.01.2025 : Ambient Air : ELES/DOC/SMPL/02 - ELES/DOC/SMPL/02	
Period of Analysis	: 13.01.2025 to 20.01.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

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

Discipline : Chemic	al	Group :	Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part- 23): 2022	75	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	42	60 (24hrs)	
Sulphur Di-Oxide (SO2)	µg/m <sup>3</sup>	IS 5182 (Part- 2/Sec1); 2023	12.4	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m <sup>3</sup>	IS 5182 (Part- 6): 2022	32.8	80 (24hrs)	
Ozone (O <sub>1</sub> )	µg/m <sup>3</sup>	1S 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH3)	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part- 10); 2019 (NDIR Method)	1.31	2 (8hrs)	
Lead (Pb)	µg/m <sup>1</sup>	IS 5182 (Part- 22): 2019	0.023	1 (24hrs)	
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	
Benzene (C6H6)	µg/m <sup>3</sup>	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m <sup>3</sup>	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

Reviewed by Akash Kumar Quality Manager

Authorised Signatory Dr. Deependra Kumar Sinha \*\*\*\*End of Report\*\*\*\* Ph. D. Environmental Engg.

Technical Manager

Page 1 of 1
Page 1



PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (IHARKHAND) GST ND:- 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 No.	: ELES/RNC/2025/0449	Report Release Date	: 20.01.2025
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC1358725000000441F		
CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name Address Mines Status	<ul> <li>Hindalco Industries Limited</li> <li>Lohardaga, Jharkhand-835302</li> <li>Operational</li> </ul>	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure	: ELES/RNC/2025/AA/0268 : Near Mine Block-B, Quarry No.6 Pakhar Bauxite Mine (115.13 ha) : 11.01.2025 to 12.01.2025 : 13.01.2025 : Ambient Air : ELES/DOC/SMPL/02 ELES/DOC/SMPL/02
Period of Analysis	: 13.01.2025 to 20.01.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

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

Discipline : Chemic	al	Group :	Atmospheric l	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part- 23): 2022	78	100 (24hrs)
Particulate Matter (PM2,5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	36	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 2/Sec1): 2023	14.1	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m <sup>3</sup>	IS 5182 (Part- 6): 2022	33.5	80 (24hrs)
Ozone (O <sub>3</sub> )	µg/m <sup>2</sup>	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH3)	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part- 10): 2019 (NDIR Method)	1.28	2 (8hrs)
Lead (Pb)	μg/m <sup>2</sup>	IS 5182 (Part- 22): 2019	0.031	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)
Benzene (C <sub>4</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m <sup>3</sup>	ELES/GC/SOP/05: 2023	<0.5	01(Annual)
				-

Reviewed by Augsh Kumar Quality Manager

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

Page 1 of 1

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

Technical Mamager

The Disconcent stated as Test Report, is issued by the Laboratory under General Terms and Conditions, only on Company letter hand in pre-approved format. The results shown in the Test Report infor or volutes only to the jobrandysis done by the Laboratory only. The antiomation stated on the Test Report atflacts the findings done by the Laboratory at the time of involvement only and works the limits of client's instructions. The Laboratory is responsible for all the information or data provided in the report, except the information which is provided by the almost. The Report name to reports of the integration of fill and any part of the responsible for all the information or data provided in the report, except the Report is full or in part shall on the patient advective, used for any legal actions inferse price permission has been secured that the Management of the Laboratory. Attention is drawn to the formation of fill-filly, compression and provided for a particulation integration. It foldierties of the context or opperature of the Test Report is unlessful and disenters may be possibled. Any type of Observations or Compliants regarding the Reports shall be done within 15 days from the Data of Test Report integration and All the samples new to the related and effective, will be done within 15 days from the Data of Test Report integration laberts that the state of the Laboratory of the accepted in Test Report is under stated before, no compliants will be accepted. The ratio challes mentioned or Test Reports shall be done within 15 days from the Data of Test Report integration laberts. BUE (Below Determine Limit) LOL (Lawor Determine Limit) LOL (Lawor Determine Limit)



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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) 65T NO:- 20AAECE9713D124

#### ENGINEERING SERVICES PVT. LTD.

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



Test Report No.	: ELES/RNC/2025/0450	Report Release Date	: 20.01.2025
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC1358725000006442F		
CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name Address Mines Status	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302 : Operational	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure	: ELES/RNC/2025/AA/0269 : Near Mine Block-B, Quarry No.7 Pakhar Bauxite Mine (115.13 ha) : 11.01.2025 to 12.01.2025 : 13.01.2025 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 13.01.2025 to 20.01.2025	Sampling Done By Sample Condition	: Sealed & Preserved

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METEOROLOGICAL INFORMATION	
1 American Tampanature (W.5) + 10	1

1	Average Temperature ("C)	: 19	2	Barometric Pressure (mmHg)	: /25
3	Relative Humidity (%)	: 50	4	Weather Condition	: Clear

Discipline : Chemic	al	Group :	Group : Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit			
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part- 23): 2022	75	100 (24hrs)			
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	38	60 (24hrs)			
Sulphur Di-Oxide (SO2)	µg/m <sup>3</sup>	1S 5182 (Part-2/Sec1); 2023	11.6	80 (24hrs)			
Nitrogen Di-Oxide (NO2)	µg/m <sup>1</sup>	15 5182 (Part- 6): 2022	25.1	80 (24hrs)			
Ozone (O <sub>3</sub> )	µg/m³	IS 5182 (Part-9): 2019	<20.0	100 (8hrs)			
Ammonia (NH <sub>2</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)			
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part- 10): 2019 (NDIR Method)	1.18	2 (8hrs)			
Lead (Pb)	µg/m <sup>3</sup>	1S 5182 (Part- 22): 2019	0.024	1 (24hrs)			
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)			
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)			
Benzene (CsH6)	µg/m*	ELES/GC/SOP/06: 2023	<2.5	05(Annual)			
Benzo-(a)-Pyrene	ng/m <sup>3</sup>	ELES/GC/SOP/05; 2023	<0.5	01(Annual)			

Reviewed by Akash Kumar Quality Manager

Dr. Authorisch Signato Sinha

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

Ph. D. Environmental Engg. Teeningen Washington

Page 1 of 1

The Disagrami statut as Test Report, is issued by the Laboratory under General Terms and Conditions, unity on Company letter head in pro-approved former. The results shown in the Test Report refir revelues only to the job maryon done by the Laboratory only. The information stated on the Test Report inflicts the findings done by the Laboratory of the time of involvement only and writer the limits of done by the Laboratory of the time of involvement only and writer the limits of done by the Laboratory of the time of involvement only and writer the limits of done by the Laboratory of the time of an only and the automation of data provaled on the report, except the information which is provided by the client. The Report cannot be repeating to negative transmission of an other provided on the report, except the information which is provided by the client. The Report cannot be repeating to any legal actions only and any point of the report of the report of the taboratory. Attention is drawn to the fourthism of fubbley, competitions and periods on periods on the taboratory. insues. Any assurbnessed alteration & fahislication of the current or appearment of the Too Report is unlawful and offendate may be protected to the failest extent of the law. All the samples are retunned for Milays from the Data of retunned/some of the Text Report. The samples from Regulatory bodies are to be retained as qualified. Any type of Observations or Compliants regarding the Report shall be done within 15days from the Data of Text Report relevablement. After the time period stand before, no compliants will be accepted. The anitor Time schedule mentioned in Text Report is in 24brors format. Abbreviation used: N:A (Not Applicable), HDL (Relow Detection Limit), LEL (Lower Detection Limit).



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

#### ENGINEERING SERVICES PVT. LTD.

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



Test Report No.	: ELES/RNC/2025/0451	Report Release Date	: 20.01.2025
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC1358725000000443F		
CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name Address Mines Status	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302 : Operational	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure Sampling Date Date	: ELES/RNC/2025/AA/0270 : Near Bonglapart Village Pakhar Bauxite Mine : 11.01.2025 to 12.01.2025 : 13.01.2025 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 13.01.2025 to 20.01.2025	Sampling Done By Sample Condition	: Sealed & Preserved

1.441	LIEDROLOGICAL INFOR	1111111111				
1	Average Temperature (°C)	: 19	2	Barometric Pressure (mmHg)	: 725	
3	Relative Humidity (%)	: 50	4	Weather Condition	: Clear	Ī

Discipline : Chemic	al	Group :	Group : Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit			
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part-23): 2022	73	100 (24hrs)			
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	42	60 (24hrs)			
Sulphur Di-Oxide (SO2)	µg/m <sup>3</sup>	1S 5182 (Part- 2/Sec1): 2023	13.4	80 (24hrs)			
Nitrogen Di-Oxide (NO2)	µg/m <sup>3</sup>	IS 5182 (Part- 6): 2022	26.1	80 (24hrs)			
Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)			
Ammonia (NH3)	µg/m <sup>2</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)			
Carbon Monoxide (CO)	mg/m <sup>3</sup>	[S 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)			
Lead (Pb)	µg/m	IS 5182 (Part- 22): 2019	0.022	1 (24hrs)			
Nickel (Ni)	ng/m³	1S 5182 (Part- 26): 2020	<6.0	20 (Annual)			
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)			
Benzene (C <sub>4</sub> H <sub>4</sub> )	'ug/m <sup>3</sup>	ELES/GC/SOP/06: 2023	<2.5	05(Annual)			
Benzo-(a)-Pyrene	ng/m <sup>2</sup>	ELES/GC/SOP/05: 2023	<0.5	01(Annual)			

AL Reviewed by Quality Manager

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

Page 1 of 1

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

Technical Manager

The Discession nated as Tex Report, is toosed by the Laboratory under Ganaral Terms and Confinents, only on Company lefter based in pro-approval format. The results down in the Test Report refer or relates only to the just analysis down by the Laboratory only. The information stand on the Test Report reflects the findings down by the Laboratory on the New Origination at and on the Test Report reflects the findings down by the Laboratory on the New Origination at and on the Test Report reflects the findings down by the Laboratory on the New Origination at any provided on the report, except the information which is provided by the client. The Report autors he reproduced except in full and any part of the report is not taken out of annual, without provided on the report, accept the information of full or in part chall not be published advertise, used for any legal actions using part of the report is not taken out of annual, without provided on the report, accept the laboratory. The Report is full or in part chall not be published advertise, used for any legal actions using part of the report is not taken out of annual, without provide the taboratory. Annution is drawn to the faultation of liability, compensation and jurisdiction issues. Any unattherned attention of the lower principal of the Competence of the Test Report is universitial and offenders may be preserved to the faultest extend of the law. All the samples are retained for Moleys from the Date of relation lower of the Test Report. The samples from Regularity bottes are to be retained as operated. Any type of Observations or Complaint regarding the Report shall be done within 15 days from the Date of Test Report relation. After the time parted stand taken are to be retained as operated. The onite Tost sebalate segmented in Test Report is in 2016 attacts with the target and the required retained target dates from the retained as operated. The onite Tost sebalate segmented in Test Report is in 2016 attaction and NA (New Application, REE, (Below Depending L



TEST DEPODT

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

#### ENGINEERING SERVICES PVT. LTD.

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Test Report No.	: ELES/RNC/2025/0452	Report Release Date	: 20.01.2025	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC1358725000000444F			
CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name Address Mines Status	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302 : Operational	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure	: ELES/RNC/2025/AA/0271 : Yatri Shed (Near K-10) Pakhar Bauxite Mine : 11.01.2025 to 12.01.2025 : 13.01.2025 : Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 13.01.2025 to 20.01.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

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

Discipline : Chemic	al .	Group :	Group : Atmospheric Pollution			
Parameter Unit		Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part- 23); 2022	76	100 (24hrs)		
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part- 24): 2019	43	60 (24hrs)		
Sulphur Di-Oxide (SO2)	µg/m <sup>3</sup>	IS 5182 (Part- 2/Sec1): 2023	13.7	80 (24hrs)		
Nitrogen Di-Oxide (NO2)	µg/m <sup>3</sup>	IS 5182 (Part- 6): 2022	28.1	80 (24hrs)		
Ozone (O <sub>3</sub> )	µg/m <sup>0</sup>	1S 5182 (Part- 9): 2019	<20.0	100 (Shrs)		
Ammonia (NH2)	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part- 10): 2019 (NDIR Method)	1.23	2 (8hrs)		
Lead (Pb)	µg/m²	IS 5182 (Part- 22): 2019	0.024	1 (24hrs)		
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)		
Benzene (C <sub>s</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	ELES/GC/SOP/06: 2023	<2.5	05(Annual)		
Benzo-(a)-Pyrene	ng/m <sup>3</sup>	ELES/GC/SOP/05: 2023	<0.5	01(Annual)		

Reviewed by Akash Kumar Quality Manager

Authorised Signatory Dr. Deependra Kumar Sinha

Ph. D. Environmental Engg

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

**Technical Manager** 

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				TEST	REP	2	DRT		
Test Report No. : ELES/RNC/2025/0453			Re	p	ort Release Date	: 20.01.2025			
Wo	Vork Order No. : 13612312113			We	01	k Order Date	: 28.03.2024		
UL.	JLR No. : TC1358725000000445F								
cu	STOMER DET	AILS			SA	1	IPLE DETAILS		- Commences
CUSTOMER DET Customer Name Address Mines Status Period of Analysis		Hindalco Industries Limited     : Lohardaga, Jharkhand-835302     : Operational     : 13.01.2025 to 20.01.2025			Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure Sampling Done By Sample Condition		ation pling Date ple Received Date c of Sample pling Procedure	: ELES/RNC/2025/AA/0272 : Near Utkarmit Rajkiya Prathmik Vidyalaya Bunglapart Village Pakhar Bauxite Mine : 11.01.2025 to 12.01.2025 : 13.01.2025 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd. : Sealed & Preserved	
ME	TEOROLOGI				2	1	Para Para	free line of	20.5
3	Average Tempo Relative Humic		: 19 : 50		2	+	Barometric Pressure Weather Condition		725 Clear
	har contribution of the second				-	-			
_		e: Chemica			-			Atmospheric	and the second s
100	Paramet	No. 11 Con	Unit	011104	Test Protocol			Result	Regulatory Limit
_	ticulate Matter (I	in a sor	µg/m³		IS 5182 (Part- 23): 2022		72	100 (24hrs)	
Par	ticulate Matter (I	PM2.5)	µg/m³	IS 5182 (Part- 24): 2019		35	60 (24hrs)		
Sulphur Di-Oxide (SO2)		µg/m <sup>3</sup>	IS 5182 (Part- 2/Sec1): 2023		13.1	80 (24hrs)			
Nitrogen Di-Oxide (NO2)		µg/m <sup>3</sup>	IS 5182 (Part- 6): 2022		28.1	80 (24hrs)			
Ozone (O <sub>1</sub> )		µg/m <sup>2</sup>	IS 5182 (Part- 9): 2019		<20.0	100 (8hrs)			
Am	amonia (NH <sub>1</sub> )		µg/m³	IS 5182 (Part- 25): 2018		<10.0	400 (24hrs)		
Car	bon Monoxide (	CO)	mg/m*	18.51	82 (1	Pi	art- 10): 2019 Method)	<1.0	2 (Shrs)
-									

_	Adada
	Reviewed by

Lead (Pb)

Nickel (Ni)

Arsenic (As)

Benzene (C H<sub>6</sub>)

Benzo-(a)-Pyrene

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

Authorised Signatory Dr. Deependra Kumar Sinha

0.015

<6.0

<2.0

<2.5

<0.5

Quality Manager

µg/m

ngim

ng/m<sup>2</sup>

ue/m

ne/m

Page I of I

IS 5182 (Part- 22): 2019

1S 5182 (Part- 26): 2020

ELES/AIR/SOP/01: 2021

ELES/GC/SOP/06: 2023

ELES/GC/SOP/05: 2023

n. D. Environmental Engg.

1 (24hrs)

20 (Annual)

06 (Annual)

05(Annual)

01(Annual)

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			TEST RE	PORT			
Test Report No.	: ELES/R	NC/2025/0454	R	eport Relea	se Date	: 20.01.2025	
Work Order No.	: 13612312	2113	V	Vork Order	Date	: 28.03.2024	
ULR No. : TC1358725000000446F			s				
CUSTOMER DET	AILS		S	AMPLE DE	TAILS		
Customer Name Address Mines Status	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302 : Operational		5302 S S T S	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure Sampling Done By		: ELES/RNC/2025/AA/0273 : Near Utkarmit Rajkiya Prathmik Vidyalaya Dumrapart Village Pakhar Bauxite Mine : 11.01.2025 to 12.01.2025 : 13.01.2025 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 13.01.202	15 to 20.01.2025		Sample Condition		: Sealed & Preserved	
METEOROLOGI	CAL INFOR	MATION					
1 Average Temp	erature (°C)	: 19	2	2 Barometric Pressure (mmHg) : 725			725
3 Relative Humidity (%) : 50			4	4 Weather Condition : Clear			Jear
Disciplin	e : Chemica	l			Group :	Atmospheric I	Pollution
Paramet	er	Unit	Te	st Protocol		Result	Regulatory Limit
Particulate Matter (PM10) µg/m <sup>3</sup> IS 51		µg/m <sup>1</sup>	IS 5182	1S 5182 (Part- 23): 2022		72	100 (24hrs)

Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m <sup>1</sup>	1S 5182 (Part- 23): 2022	72	100 (24hrs)
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	46	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	1S 5182 (Part- 2/Sec1): 2023	14.1	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m <sup>3</sup>	IS 5182 (Part- 6): 2022	24.8	80 (24hrs)
Ozone (O <sub>2</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	1.23	2 (8hrs)
Lead (Pb)	µg/m <sup>3</sup>	1S 5182 (Part- 22); 2019	0.015	1 (24hrs)
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part-26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m <sup>9</sup>	ELES/AfR/SOP/01: 2021	<2.0	06 (Annual)
Benzene (C <sub>4</sub> H <sub>4</sub> )	µg/m <sup>3</sup>	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m <sup>3</sup>	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

Reviewed by Akash Kumar Quality Managor

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

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#### TEST REPORT

Test Report No.	: ELES/RNC/2025/0503	Report Release Date	: 22.01.2025	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC1358725000000494F			

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Sampling Date Sample Received Date	: ELES/RNC/2025/SW/0275 : 11.01.2025 : 13.01.2025
Address	: Lohardaga, Jharkhand-835302	Type of Sample Location of Sample	: Surface Water : Near Quarry No 3- Pakhar Bauxite Mine (115.13 ha)
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/01
Period of Analysis	: 13.01.2025 to 22.01.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

Discipline : Chemical		Group : '	Group : Water	
Parameter	Unit	Test Protocol	Result	as per 1S 2296-1992 Class C (Inland Surface Water)
pH (at 24.7 °C)	÷	IS 3025 (Part-11) : 2022	6.58	6.5-8.5
Temperature	°C	IS 3025 (Part 9): 2023	18.0	
Chemical Oxygen Demand (COD)	mg/L	IS 3025 (Part-58): 2023	9.1	
Biochemical Oxygen Demand (BOD) (@ 20°C for 5 days)	mg/L	APHA 24 <sup>th</sup> Ed.2023; 5210B	1.8	3,0
Total Dissolved Solids (TDS)	mg/L	IS 3025 (Part-16): 2023	112	1500
Total Suspended Solids (TSS)	mg/L	IS 3025 (Part-17): 2022	109	
Oil & Grease	mg/L	IS 3025 (Part-39): 2021	BDL (DL: 0.1)	0.1
Calcium (as Ca)	mg/L	1S 3025 (Part-40): 2019	5.2	

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Test Report No.	: ELES/RNC/2025/0503	Report Release Date	: 22.01.2025
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC1358725000000494F		

Discipline : Chemical		Group : Residues in	Group : Residues in Water	
Parameter	Unit	Test Protocol	Result	as per IS 2296-1992 Class C (Inland Surface Water
Aluminum (as Al)	mg/L	IS 3025 (Part-55) :2003; RA2019	BDL (DL: 0.02)	-
Iron (as Fe)	mg/L	APHA 24th Ed.2023; 3111B	1.266	50

Remarks: pH & Temperature done at site.

Reviewed by Akash Kuntur Quality Manager

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

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

#### Page 2 of 2

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#### TEST REPORT

Test Report No.	: ELES/RNC/2025/0506	Report Release Date	: 22.01.2025
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC1358725000000497F		

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Sampling Date Sample Received Date Type of Sample Location of Sample	: ELES/RNC/2025/SL/0278 : 12.01.2025 : 13.01.2025 : Soil : Near Mine Block-B, Quarry No.7- Pakhar Bauxite Mine (115.13ha
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/05
Period of Analysis	: 13.01.2025 to 22.01.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed

Discipline : Chemical		Group : Pollution & I	Environment
Parameter	Unit	Test Protocol	Result
pH (1:2) at 24.4 °C	· ·	IS 2720 (Part-26): 2021	6.76
Conductivity (1:2) at 24.4 °C	µS/cm	IS 14767: 2021	178
Total Organic Carbon (TOC)	%	Soil Testing in India: 2011 (Walkley & Black Method)	0.53
Available Phosphorus (as P)	kg/ha	Soil Testing in India; 2011	BDL (DL: 2.0)
Potassium (as K)	mg/kg	IS 9497; 2020	1250
Available Nitrogen	96	Soil Testing in India; 2011	6.44
Chloride (as Cl) (1:2)	%	ELES/SOIL/SOP/01: 2021	0.014
Arsenic (as As)	mg/kg	ELES/SOIL/SOP/28: 2023	BDL (DL: 0.01)
Cadmium (as Cd)	mg/kg	US EPA 3050 A&B : 1996	BDL (DL: 0.1)
Lead (as Pb)	mg/kg	US EPA 3050 A&B : 1996	BDL (DL: 0.1)

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#### TEST REPORT

Test Report No.	: ELES/RNC/2025/0506	Report Release Date	: 22.01.2025	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC1358725000000497F			

Discipline : Chemica	4	Group : Pollution &	Environment
Parameter	Unit	Test Protocol	Result
Magnesium (as Mg)	mg/kg	Soil Testing in India; 2011	3195
Mercury (as Hg)	mg/kg	US EPA 7473 : 2007	BDL (DL: 0.01)

Reviewed by Akash Kumar Quality Managor

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

Authorised Signatory

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

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#### TEST REPORT

Test Report No.	: ELES/RNC/2025/0506	Report Release Date	: 22.01.2025
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Sampling Date Sample Received Date Type of Sample Location of Sample	: ELES/RNC/2025/SL/0278 : 12.01.2025 : 13.01.2025 : Soil : Near Mine Block-B, Quarry No.7- Pakhar Bauxite Mine (115.13ha)	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/05	
Period of Analysis	: 13.01.2025 to 22.01.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed	

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

Reviewed by Akash Kumar Quality Manager

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

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

#### Page 1 of 1

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### ENVIRONMENTAL LABORATORIES & ENGINEERING SERVICES PVT. LTD.

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

Pakhar (115.13) Bauxite Mine-Environmental Monitoring Report

February 2025



### CONTENT

	Hindalco Industries : Pakhar (115.13) Environmental Monitoring Report	February 2025
	Pakhar (115.13)	
	AMBIENT AIR QUALITY- CORE ZONE	
1	Near Mine Block-B, Quarry No.3	
2	Near Mine Block-B, Quarry No.4	
3	Near Mine Block B, Quarry No - 6	
4	Near Mine Block-B, Quarry No.7	
	AMBIENT AIR QUALITY- BUFFER ZONE	
1	Near Bunglapart Village	
2	Yatri Shed (Near K-10)	
3	Near Utkarmit Rajkiya Prathmik Vidyalaya Bunglapart Village	
4	Near Utkarmit Rajkiya Prathmik Vidyalaya Dumrapart Village	
	Drinking Water	
	Effluent Water	





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



	TES	TREPORT	
Test Report No.	: ELES/RNC/2025/1315	Report Release Date	: 28.02.2025
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC1358725000001286F		
CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name Address Mines Status	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302 : Operational	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure	: ELES/RNC/2025/AA/1345 : Near Mine Block-B, Quarry No.3 Pakhar Bauxite Mine (115.13 ha) : 19.02.2025 to 20.02.2025 : 21.02.2025 : Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 21.02.2025 to 28.02.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

	Average Temperature (°C)	:21	2	Barometric Pressure (mmHg)	: 722
3	Relative Humidity (%)	: 58	4	Weather Condition	: Clear

Discipline : Chemie	al .	Group :	Atmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part- 23): 2022	82	100 (24hrs)
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24); 2019	51	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m <sup>3</sup>	IS 5182 (Part- 2/Sec1): 2023	13.6	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m <sup>3</sup>	IS 5182 (Part- 6): 2022	36.1	80 (24hrs)
Ozone (O <sub>3</sub> )	µg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH3)	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part- 10): 2019 (NDIR Method)	1.34	2 (8hrs)
Lead (Pb)	µg/m³	IS 5182 (Part- 22): 2019	0.036	1 (24hrs)
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)
Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m <sup>3</sup>	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

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Page 1 of 1

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA 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 No.	: ELES/RNC/2025/1316	Report Release Date	: 28.02.2025
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC1358725000001287F		
CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name Address Mines Status	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302 : Operational	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure	: ELES/RNC/2025/AA/1346 : Near Mine Block-B, Quarry No.4 Pakhar Bauxite Mine (115.13 ha) : 19.02.2025 to 20.02.2025 : 21.02.2025 : Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 21.02.2025 to 28.02.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

and the second	Average Temperature (°C)		2	Barometric Pressure (mmHg)	: 720	_
3	Relative Humidity (%)	: 58	4	Weather Condition	: Clear	

Discipline : Chemic	al	Group :	Atmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part- 23): 2022	78	100 (24hrs)
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	47	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m³	IS 5182 (Part- 2/Sec1): 2023	15.1	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m <sup>3</sup>	IS 5182 (Part- 6): 2022	30.4	80 (24hrs)
Ozone (O <sub>3</sub> )	µg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH3)	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part- 10): 2019 (NDIR Method)	1.23	2 (8hrs)
Lead (Pb)	µg/m²	IS 5182 (Part- 22): 2019	0.028	1 (24hrs)
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)
Benzene (C <sub>a</sub> H <sub>6</sub> )	pg/m <sup>3</sup>	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m <sup>3</sup>	ELES/GC/SOP/05: 2023	< 0.5	01(Annual)

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Page 1 of 1

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

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Test Report No.	: ELES/RNC/2025/1317	Report Release Date	: 28.02.2025
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC1358725000001288F		
CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name Address Mines Status	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302 : Operational	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure	: ELES/RNC/2025/AA/1347 : Near Mine Block-B, Quarry No.6 Pakhar Bauxite Mine (115.13 ha) : 19.02.2025 to 20.02.2025 : 21.02.2025 : Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 21.02.2025 to 28.02.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

TEST DEPODT

	Average Temperature (°C) : 21	2	Barometric Pressure (mmHg	2 720	
3	Relative Humidity (%) : 58	4	Weather Condition	: Clear	

Discipline : Chemic	al	Group :	Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part- 23); 2022	74	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	40	60 (24hrs)	
Sulphur Di-Oxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 2/Sec1): 2023	12,2	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m <sup>3</sup>	IS 5182 (Part- 6): 2022	26.2	80 (24hrs)	
Ozone (O <sub>3</sub> )	µg/m®	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH <sub>2</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part- 10): 2019 (NDIR Method)	1.33	2 (8hrs)	
Lead (Pb)	µg/m <sup>3</sup>	IS 5182 (Part- 22): 2019	0.035	1 (24hrs)	
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	
Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>8</sup>	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m <sup>3</sup>	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

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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 No.	: ELES/RNC/2025/1318	Report Release Date	: 28.02.2025
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No. : TC1358725000001289F			
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	: ELES/RNC/2025/AA/1348 : Near Mine Block-B, Quarry No.7 Pakhar Bauxite Mine (115.13 ha) : 19.02.2025 to 20.02.2025 : 21.02.2025 : Ambient Air
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02
Period of Analysis	: 21.02.2025 to 28.02.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

1	Average Temperature (°C) : 21	2	Barometric Pressure (mmHg)	: 720	
3	Relative Humidity (%) : 58	4	Weather Condition	: Clear	

Discipline : Chemic	al	Group :	Group : Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part- 23): 2022	79	100 (24hrs)		
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	44	60 (24hrs)		
Sulphur Di-Oxide (SO2)	µg/m³	IS 5182 (Part- 2/Sec1): 2023	16.1	80 (24hrs)		
Nitrogen Di-Oxide (NO2)	µg/m <sup>3</sup>	IS 5182 (Part- 6): 2022	28.8	80 (24hrs)		
Ozone (O <sub>1</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)		
Ammonia (NH3)	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m <sup>2</sup>	IS 5182 (Part- 10): 2019 (NDIR Method)	1.22	2 (8hrs)		
Lead (Pb)	µg/m <sup>3</sup>	IS 5182 (Part- 22): 2019	0.025	1 (24hrs)		
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part-26): 2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)		
Benzene (C6H6)	µg/m <sup>2</sup>	ELES/GC/SOP/06: 2023	<2.5	05(Annual)		
Benzo-(a)-Pyrene	ng/m <sup>3</sup>	ELES/GC/SOP/05: 2023	<0.5	01(Annual)		

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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 No.	: ELES/RNC/2025/1319	Report Release Date	: 28.02.2025	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC1358725000001290F			
CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name Address Mines Status	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302 : Operational	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure	: ELES/RNC/2025/AA/1349 : Near Bunglapart Village Pakhar Bauxite Mine : 19.02.2025 to 20.02.2025 : 21.02.2025 : Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 21.02.2025 to 28.02.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

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

Discipline : Chemic	al	Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part- 23): 2022	78	100 (24hrs)
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	47	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m <sup>3</sup>	IS 5182 (Part- 2/Sec1): 2023	12.8	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m <sup>3</sup>	IS 5182 (Part- 6): 2022	27.5	80 (24hrs)
Ozone (O <sub>1</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH3)	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m <sup>3</sup>	IS 5182 (Part- 22): 2019	0.015	1 (24hrs)
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)
Benzene (CsHa)	µg/m <sup>3</sup>	ELES/GC/SOP/06: 2023	<2.5	05(Annuai)
Benzo-(a)-Pyrene	ng/m <sup>2</sup>	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

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

#### ENGINEERING SERVICES PVT. LTD.

Email: info@elespl.co.in, eles.ranchi@gmail.com Phane na.: 0651-1290103 Website : www.elespl.co.in



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

TEST REPORT

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

Discipline : Chemic	al	Group :	Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part- 23): 2022	80	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24); 2019	49	60 (24hrs)	
Sulphur Di-Oxide (SO2)	µg/m <sup>3</sup>	IS 5182 (Part- 2/Sec1): 2023	12.3	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m <sup>3</sup>	IS 5182 (Part- 6): 2022	31.7	80 (24hrs)	
Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH3)	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part- 10); 2019 (NDIR Method)	1.25	2 (8hrs)	
Lead (Pb)	µg/m <sup>3</sup>	IS 5182 (Part- 22): 2019	0.029	1 (24hrs)	
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	
Benzene (C <sub>6</sub> H <sub>4</sub> )	µg/m <sup>3</sup>	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m <sup>3</sup>	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

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Page I of 1

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

#### ENGINEERING SERVICES PVT. LTD.

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



	TES	T REPORT		
Test Report No.	: ELES/RNC/2025/1321	Report Release Date	: 28.02.2025	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC1358725000001292F			
CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample	: ELES/RNC/2025/AA/1351 : Near Utkarmit Rajkiya Prathm Vidyalaya Bunglapart Village Pakhar Bauxite Mine : 19.02.2025 to 20.02.2025 : 21.02.2025 : Ambient Air	
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 21.02.2025 to 28.02.2025	Sample Condition	: Sealed & Preserved	
METEOROLOGI	CAL INFORMATION			
1 Average Temp	erature (°C) : 21	2 Barometric Pressure	(mmHg) : 725	
3 Relative Humic	fity (%) : 56	4 Weather Condition	: Clear	

Discipline : Chemic	cal	Group :	Group : Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part- 23): 2022	76	100 (24hrs)		
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	42	60 (24hrs)		
Sulphur Di-Oxide (SO2)	µg/m <sup>3</sup>	IS 5182 (Part- 2/Sec1): 2023	13.3	80 (24hrs)		
Nitrogen Di-Oxide (NO2)	µg/m <sup>3</sup>	15 5182 (Part- 6): 2022	26.3	80 (24hrs)		
Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)		
Ammonia (NH3)	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part- 10): 2019 (NDIR Method)	1.28	2 (8hrs)		
Lead (Pb)	µg/m <sup>3</sup>	IS 5182 (Part- 22): 2019	0.018	1 (24hrs)		
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)		
Benzene (CtH <sub>6</sub> )	µg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)		
Benzo-(a)-Pyrene	ng/m <sup>3</sup>	ELES/GC/SOP/05: 2023	<0.5	01(Annual)		
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Authorised Signatory Quality Manar

Page 1 of 1

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

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

#### ENGINEERING SERVICES PVT. LTD.

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



Test Report No.	: ELES/RNC/2025/1322	Report Release Date	: 28.02.2025	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC1358725000001293F			
CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name Address Mines Status	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302 : Operational	Sample Ref. No, Location Sampling Date Sample Received Date Type of Sample Sampling Procedure Sampling Done By	: ELES/RNC/2025/AA/1352 : Near Utkarmit Rajkiya Prathmil Vidyalaya Dumrapart Village Pakhar Bauxite Mine : 19.02.2025 to 20.02.2025 : 21.02.2025 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 21.02.2025 to 28.02.2025	Sample Condition	: Sealed & Preserved	

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

Discipline : Chemic	al	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part- 23): 2022	72	100 (24hrs)		
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part- 24): 2019	46	60 (24hrs)		
Sulphur Di-Oxide (SO2)	µg/m³	IS 5182 (Part- 2/Sec1): 2023	14.1	80 (24hrs)		
Nitrogen Di-Oxide (NO2)	µg/m <sup>3</sup>	IS 5182 (Part- 6): 2022	24.8	80 (24hrs)		
Ozone (O <sub>1</sub> )	µg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)		
Ammonia (NH3)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part- 10): 2019 (NDIR Method)	1.23	2 (8hrs)		
Lead (Pb)	µg/m²	IS 5182 (Part- 22): 2019	0.015	1 (24hrs)		
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part- 26); 2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)		
Benzene (C <sub>5</sub> H <sub>6</sub> )	µg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)		
Benzo-(a)-Pyrene	ng/m <sup>1</sup>	ELES/GC/SOP/05: 2023	<0.5	01(Annual)		

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Authorised Signatory

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### ENGINEERING SERVICES PVT. LTD.

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



### TEST REPORT

Test Report No.	: ELES/RNC/2025/1349	Report Release Date	: 01.03.2025
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC1358725000001320F		

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2025/DW/1335	
		Sampling Date	: 20.02.2025	
Address		Sample Received Date	: 21.02.2025 : Drinking Water	
	: Lohardaga, Jharkhand-835302	Type of Sample		
		Source of Sample	: TAP Water	
		Location of Sample	: Mines Site	
	no-etal asa		(Pakhar-115.13 Bauxite Mine)	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/01	
Period of Analysis	: 21.02.2025 to 01.03.2025	Sampling Done By	: ELES Pvt. Ltd.	
	- 23.02.2025 00 01.03.2023	Sample Condition	: Sealed & Preserved	

Discipline : Chemical Group : Wat			: Water		ory Limit 10500:2012
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible
pH (at 24.7 °C)	*	APHA 24 <sup>th</sup> Ed.2023, 4500-H*	6.67	6.5-8.5	No Relaxation
Turbidity	NTU	APHA 24th Ed.2023, 2130 B	0.75	1.0	5.0
Taste	-	APHA 24th Ed.2023, 2160 C	Agreeable	Agreeable	Agreeable
Odour	1	IS 3025 (Part-5) :2018	Agreeable	Agreeable	Agreeable
Colour	Hazen	APHA 24th Ed.2023, 2120B&D	1.2	5.0	15
Total Dissolved Solids (TDS)	mg/L	APHA 24th Ed.2023, 2540B,C&D	304	500	2000
Chloride (as Cl)	mg/L	APHA 24th Ed.2023, 4500 CI B	19.9	250	1000
Fluoride (as F)	mg/L	APHA 24 <sup>th</sup> Ed.2023, 4500 F-D	BDL (DL: 0.1)	1.0	L.5
Total Alkalinity (as CaCO3)	mg/L	APHA 24 <sup>th</sup> Ed.2023, 2320 B	123	200	600
Total Hardness (as CaCO <sub>2</sub> )	mg/L	APHA 24th Ed.2023, 2340 C	146	200	600
Sulphate (as SO4)	mg/L	APHA 24th Ed.2023, 4500 SO4-2-E	7.12	200	400
Nitrate (as NO <sub>3</sub> )	mg/L	APHA 24 <sup>th</sup> Ed.2023, 4500 NO <sub>3</sub> -B	2.82	45	No Relaxation

#### Page 1 of 4

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

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CIN: UT49950H2016PTC011125

ENGINEERING SERVICES PVT. LTD.

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

TC-15507

#### TEST REPORT

Test Report No.	: ELES/RNC/2025/1349	Report Release Date	: 01.03.2025
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC1358725000001320F		

Discipline : Chemical Group : Water				Regulatory Limit as per IS10500:2012	
Parameter	Unit	Test Protocol	Result	Acceptable	Permissible
Phenolic Compound (as C <sub>6</sub> H <sub>5</sub> OH)	mg/L	IS 3025 (Part 43/Sec1): 2022	BDL (DL: 0.001)	0.001	0.002
Free Residual Chlorine (RFC)	mg/L	IS 3025 (Part-26): 2021	BDL (DL: 0.1)	0.2(Min)	1.0(Min)
Calcium (as Ca)	mg/L	APHA 24 <sup>th</sup> Ed.2023, 3500 Ca B	38.8	75	200
Anionic Surfactants (as MBAS)	mg/L	APHA 24 <sup>th</sup> Ed.2023, 5540-C	BDL (DL: 0.025)	0.2	1.0
Discipline : Chemic	al	Gro	oup : Residues i	n Water	
Aluminum (as Al)	mg/L	IS 3025 (Part-55) :2003; RA2019	BDL (DL: 0.02)	0.03	0.2
Arsenic (as As)	mg/L	IS 3025 (Part-37): 2022	BDL (DL: 0.005)	0.01	No Relaxation
Boron (as B)	mg/L	IS 3025 (Part-57) : 2021	BDL (DL: 0.2)	0.5	1.0
Cadmium (as Cd)	mg/L	APHA 24 <sup>th</sup> Ed.2023; 3111B	BDL (DL: 0.003)	0.003	No Relaxation
Total Chromium (as Cr)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL: 0.03)	0.05	No Relaxation
Copper (as Cu)	mg/L	IS 3025 (Part 42): 2019	BDL (DL: 0.03)	0.05	1.5
Cyanide (as CN)	mg/L	APHA 24 <sup>th</sup> Ed.2023, 4500 CN-E	BDL (DL: 0.012)	0.05	No Relaxation
Iron (as Fe)	mg/L	APHA 24 <sup>th</sup> Ed.2023; 3111B	0.049	1.0	No Relaxation
Lead (as Pb)	mg/L	APHA 24 <sup>th</sup> Ed 2023; 3111B	BDL (DL: 0.01)	0.01	No Relaxation
Manganese (as Mn)	mg/L	APHA 24 <sup>th</sup> Ed.2023; 3111B	BDL (DL: 0.05)	0.1	0.3
Mercury (as Hg)	mg/L	IS 3025 (Part-48): 2019	BDL (DL: 0.001)	0.001	No Relaxation
Selenium (as Se)	mg/L	IS 3025 (Part-56): 2019	BDL (DL: 0.01)	0.01	No Relaxation

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

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



#### TEST REPORT

Test Report No.	: ELES/RNC/2025/1349	Report Release Date	: 01.03.2025
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC1358725000001320F		

Discipline : Chemical		Group : Resid	lues in Water	and the second se	ory Limit 10500:2012
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
Zinc (as Zn)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL: 0.1)	5.0	15
Polynuclear Aromatic Hydrocarbons (PAH)	μg/L	ELES/GC/SOP/04: 2023	BDL (DL: 0.05)	0.1	No Relaxation
Polychlorinated biphenyls (PCB)	μg/L	ELES/GC/SOP/03: 2023	BDL (DL: 0.1)	0.5	No Relaxation
Pesticides	·			Li	mit
Alachlor	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	2	20
Atrazine	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	2	.0
Butachlor	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	125	
Chlorpyriphos	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	30	
Ethion	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	3.0	
Malathion	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	190	
Methyl parathion	μg/l,	ELES/GC/SOP/01: 2023	BDL (DL: 0.1)	0.30	
Monocrotophos	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	1.0	
Phorate	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	2.0	
Phorate Sulphone	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	340	
Dieldrin	µg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.01)	0.03	
Alpha HCH	µg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.006)	0.	01
Beta HCH	µg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.02)	0.	04

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) 657 NO:- 20AAECE9713D124 ENGINEERING SERVICES PVT. LTD.

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11.51	REPORT
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Test Report No.	: ELES/RNC/2025/1349	Report Release Date	: 01.03.2025
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC1358725000001320F		

Pesticides					
Parameter	Unit	Test Protocol	Result	Limit	
Delta HCH	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.02)	0.04	
Gamma HCH (Lindane)	µg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.02)	2.0	
Endosulfan (alpha, beta and sulphate)	µg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.05)	0.40	
DDT(0,p and p,p-isomers of DDT) ( DDE and DDD)	µg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.05)	1.0	
Discipline : Biological		Grou	p: Water		
Total Coliform (Qualitative)	Per 100 mL	IS 15185: 2021	Not Detected	Shall and by Jacobs	
Escherichia coli (Qualitative)	Per 100 mL	IS 15185: 2021	Not Detected	Shall not be detected	

Remarks: pH done at Site.

Reviewed by Akash Numer Quality Managar

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

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

#### Page 4 of 4

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### ENGINEERING SERVICES PVT. LTD.

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

#### Test Report No. : ELES/RNC/2025/1349 **Report Release Date** : 01.03.2025 Work Order No. : 13612312113 Work Order Date : 28.03.2024 CUSTOMER DETAILS SAMPLE DETAILS Customer Name : Hindalco Industries Limited Sample Ref. No. : ELES/RNC/2025/DW/1335 Sampling Date : 20.02.2025 Sample Received Date : 21.02.2025 Type of Sample : Drinking Water Address : Lohardaga, Jharkhand-835302 Source of Sample : TAP Water Location of Sample : Mines Site (Pakhar-115.13 Bauxite Mine) Mines Status : Operational Sampling Procedure : ELES/DOC/SMPL/01 Sampling Done By : ELES Pvt. Ltd. Period of Analysis : 21.02.2025 to 01.03.2025 Sample Condition : Sealed & Preserved

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

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

Reviewed by Akash Numar Quality Managa;

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

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

#### Page 1 of 1

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### TEST REPORT



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

### ENGINEERING SERVICES PVT. LTD.

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### TEST REPORT

Test Report No.	: ELES/RNC/2025/1350	Report Release Date	: 01.03.2025
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC1358725000001321F		

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2025/EF/1336	
		Sampling Date	: 20.02.2025	
		Sample Received Date	: 21.02.2025	
Address	: Lohardaga, Jharkhand-835302	Type of Sample	: Effluent Water	
Address	. Lonardaga, marknand-655502	Source of Sample	: Near Mine Block-B, Quarry No.3	
			Pakhar Bauxite Mine (115.13 ha)	
		Sampling Procedure	: ELES/DOC/SMPL/01	
Mines Status	: Operational	Sampling Done By	: ELES Pvt. Ltd.	
Period of Analysis	: 21.02.2025 to 01.03.2025	Sample Condition	: Sealed & Preserved	

Discipline : Chemical		Group : Pollution & Environment		Discharge Limits - CPCB EPR, 1986 Schedule VI	
Parameter	Unit	Test Protocol	Result	Inland Surface Water	Land for Irrigation
pH (at 24.7 °C)	1	APHA 24 <sup>th</sup> Ed.2023,4500-H*	6.53	5.5-9.0	5.5-9.0
Total Dissolved Solids (TDS)	mg/L	IS 3025 (Part-16); 2023	235		
Total Suspended Solids (TSS)	mg/L	IS 3025 (Part-17): 2022	82,4	100	200
Dissolved Oxygen (DO)	mg/L	IS 3025 (Part-38): 2019	5.7	72	
Biochemical Oxygen Demand (BOD) (at 27 °C for 3 days)	mg/L	IS 3025 (Part-44): 2023	19	30	100
Chemical Oxygen Demand (COD)	mg/L	IS 3025 (Part-58): 2023	173	250	
Dissolved Phosphate (as P)	mg/L	IS 3025 (Part-31/Sec-1): 2022	2.4	5.0	
Fluoride (as F)	mg/L	IS 3025 (Part-60): 2019	BDL (DL: 0.1)	2.0	
Sulphide (as S)	mg/L	1S 3025 (Part-29) : 2019	BDL (DL: 0.04)	2.0	
Oil & Grease	mg/L	IS 3025 (Part-39): 2021	5.2	10	10

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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/2025/1350	Report Release Date	: 01.03.2025
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC1358725000001321F	11-	

Discipline : Chemical		Group : Residues in Water		Discharge Limits – CPCB EPR, 1986 Schedule V1	
Parameter	Unit	Test Protocol	Result	Inland Surface Water	Land for Irrigation
Lead (as Pb)	mg/L	APHA 24th Ed.2023, 3111 B	BDL (DL: 0.01)	0.1	-
Manganese (as Mn)	mg/L	APHA 24th Ed.2023, 3111 B	0.643	2.0	
Mercury (as Hg)	mg/L	IS 3025(Part-48): 1994; RA2019	BDL (DL; 0.001)	0.01	
Nickel (as Ni)	mg/L	APHA 24th Ed.2023, 3111 B	0.122	3.0	-
Zine (as Zn)	mg/L	APHA 24th Ed.2023, 3111 B	0.202	5.0	

Remarks: pH & DO done at Site.

Reviewed by Akash Kumar Duality Managar

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

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

#### Page 2 of 2

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### ENVIRONMENTAL LABORATORIES & ENGINEERING SERVICES PVT. LTD.

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

Pakhar (115.13) Bauxite Mine-Environmental Monitoring Report

March 2025



### CONTENT

	Hindalco Industries : Pakhar (115.13) Environmental Monitoring Report March 2025
	Pakhar (115.13)
	AMBIENT AIR QUALITY- CORE ZONE
1	Near Mine Block-B, Quarry No.3
2	Near Mine Block-B, Quarry No.4
3	Near Mine Block B, Quarry No - 6
4	Near Mine Block-B, Quarry No.7
	AMBIENT AIR QUALITY- BUFFER ZONE
1	Near Bunglapart Village
2	Yatri Shed (Near K-10)
3 .	Near Utkarmit Rajkiya Prathmik Vidyalaya Bunglapart Village
4	Near Utkarmit Rajkiya Prathmik Vidyalaya Dumrapart Village
	AMBIENT NOISE
	WORKZONE NOISE





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

### ENGINEERING SERVICES PVT. LTD.

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



	TES	T REPORT	
Test Report No.	: ELES/RNC/2025/1644	Report Release Date	: 17.03.2025
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC1358725000001608F		
CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name Address Mines Status	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302 : Operational	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure Sampling Done By	: ELES/RNC/2025/AA/1837 : Near Mine Block-B, Quarry No.3 Pakhar Bauxite Mine (115.13 ha) : 07.03.2025 to 08.03.2025 : 10.03.2025 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 10.03.2025 to 17.03.2025	Sample Condition	: Sealed & Preserved

1 Average Temperature (%C) : 25	2	Barometric Pressure (mmHg)	: 720
3 Relative Humidity (%) : 59	4	Weather Condition	: Clear

Discipline : Chemic	al	Group :	Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part- 23): 2022	88	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	1S 5182 (Part- 24): 2019	53	60 (24hrs)	
Sulphur Di-Oxide (SO2)	µg/m <sup>3</sup>	1S 5182 (Part- 2/Sec1): 2023	10.2	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m <sup>3</sup>	IS 5182 (Part- 6): 2022	44.6	80 (24hrs)	
Ozone (O <sub>1</sub> )	µg/m <sup>3</sup>	15 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH2)	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part- 10): 2019 (NDIR Method)	1.23	2 (8hrs)	
Lead (Pb)	µg/m <sup>3</sup>	IS 5182 (Part- 22): 2019	0.025	1 (24hrs)	
Nickel (Ni)	ng/m	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	
Benzene (C <sub>4</sub> H <sub>6</sub> )	µg/m²	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m <sup>3</sup>	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

- Frank Reviewed by anh Rumar Douilty Manko

Authorised Signatory

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

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

Page I of 1

The Decimient stated as Test Report, is issued by the Laboratory under General Terms and Conditions, only on Company letter head in pay-apTRCADIGALMANAGEC as the Test Report utie or relates only to the job analysis denie by the Laboratory only. The information stated on the Text Report reflects the findings done by the Laboratory at the time of incoherence only and within the limits of class's instructions. The Laboratory is responsible for all the information or data provided on the report, except the information which is previded by the class. The Report cannot be reported except in full and any port of the capacit is not taken out of contrast, without prior written apported of the Laboratory. The Report in full are in part shall not be published. advertise, used for any legal autions utilities prior permission has been second from the Management of the Laboratory. Attention is drawn to the Intitation of Baltility, compensation and jurisdiction usars. Any unsucharized alteration & information of the annum or approximate of the Test Report to unlawful and offendars may be prosecuted to the fallest event of the fast. All the complex inte rotatent for 30daux from the Data of releaser tonas of the Tast Report. The samples from Regulatory budies are to be rotatend as specified. Any type of Observations or Compliants regarding the Reports shall be done within 15days from the Data of Tast Report released/leased. After the time period stated before, to compliants will be accepted. The entire Tana subshale mentioned in Tast Report is in 248-nes former. Abbreviation used 5% A (Not Applicable). BDR (Below Detection Limit). LDI, (Lower Detection Limit).



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

### ENGINEERING SERVICES PVT. LTD.

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	TES	TREPORT		
Test Report No.	: ELES/RNC/2025/1645	Report Release Date	: 17.03.2025	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC1358725000001609F			
CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name Address Mines Status	: Hindalco Industries Limited : Lohardaga, Iharkhand-835302 : Operational	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure Sampling Done By	: ELES/RNC/2025/AA/1838 : Near Mine Block-B, Quarry No.4 Pakhar Bauxite Mine (115.13 ha) : 07.03.2025 to 08.03.2025 : 10.03.2025 : Ambient Air : ELES/DOC/SMPL/02 : U.ES. Pag. Ltd	
Period of Analysis	: 10.03.2025 to 17.03.2025	Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

1	Average Temperature ("C)	: 25	2	Barometric Pressure (mmHg)	: 720
3	Relative Humidity (%)	: 59	4	Weather Condition	: Clear

Discipline : Chemic	al	Group :	Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part- 23): 2022	83	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24); 2019	44	60 (24hrs)	
Sulphur Di-Oxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 2/Sec1): 2023	13.3	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m <sup>3</sup>	IS 5182 (Part- 6): 2022	27.1	80 (24hrs)	
Ozone (O <sub>3</sub> )	µg/m)	15 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH1)	µg/m <sup>3</sup>	15 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part- 10): 2019 (NDIR Method)	1.30	2 (8hrs)	
Lead (Pb)	µg/m³	IS 5182 (Part- 22): 2019	0.031	1 (24hrs)	
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	
Benzene (C4H4)	µg/m <sup>3</sup>	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m <sup>3</sup>	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

Reviewed by Akash Kumar ite in mayor

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Authorised Signatory

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

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

Page 1 of 1

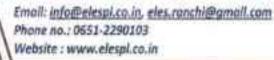
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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 20AAECE9713D1Z4

### ENGINEERING SERVICES PVT. LTD.





	TES	TREPORT	
Test Report No.	: ELES/RNC/2025/1646	Report Release Date	: 17.03.2025
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC1358725000001610F		
CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name Address Mines Status	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302 : Operational	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure Sampling Done By	: ELES/RNC/2025/AA/1839 : Near Mine Block-B, Quarry No.6 Pakhar Bauxite Mine (115.13 ha) : 07.03.2025 to 08.03.2025 : 10.03.2025 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 10.03,2025 to 17.03,2025	Sample Condition	: Sealed & Preserved

-	Average Temperature (*C)	2.42		Barometric Pressure (mmHg)	2.120
3	Relative Humidity (%)	: 59	4	Weather Condition	: Clear
		1112.00			

Discipline : Chemic	al	Group :	Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part- 23): 2022	79	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	37	60 (24hrs)	
Sulphur Di-Oxide (SO2)	µg/m <sup>3</sup>	IS 5182 (Part- 2/Sec1): 2023	14.4	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m <sup>3</sup>	IS 5182 (Part-6): 2022	30.9	80 (24hrs)	
Ozone (O <sub>2</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH <sub>2</sub> )	μ <u>μ</u> /m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part- 10); 2019 (NDIR Method)	1.24	2 (8hrs)	
Lead (Pb)	µg/m²	IS 5182 (Part- 22): 2019	0.028	1 (24hrs)	
Nickel (Ni)	ng/m <sup>3</sup>	1S 5182 (Part- 26); 2020	<6.0	20 (Annual)	
Arsenîc (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	
Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m <sup>3</sup>	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

Reviewed by Akash Kumzr

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#### Authorised Signatory Dr. Deependra Kumar Sinha Environmental Eng 0 A

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

Page 1 of 1
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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 20AAECE9713D124

#### ENGINEERING SERVICES PVT. LTD.

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



			TEST	REP	ORT				
Test Report No.	: ELES/R	NC/2025/1647		Re	port Release Date	: 17.03.20	025		
Work Order No.	: 13612312	2113		We	ork Order Date	: 28.03.20	024		
ULR No.	: TC13587	250000016111	P						
CUSTOMER DET	AILS			SA	MPLE DETAILS				
Customer Name Address Mines Status Period of Analysis	: Lohardag	Industries Lim a, Jharkhand-8 al 5 to 17.03.202	35302	SAMPLE DETAILS Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure Sampling Done By		: ELES/RNC/2025/AA/1840 : Near Mine Block-B, Quarry No.7 Pakhar Bauxite Mine (115.13 ha) : 07.03.2025 to 08.03.2025 : 10.03.2025 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.			
METEOROLOGI	CAL INFOR	MATION		1	nple Condition	t Sealed &	-		
1 Average Temp	Contract of the second second	:25		2	Barometric Pressur	e (mmHg)	: 720	)	
3 Relative Humi	and the second se	: 59		4	Weather Condition	1	: Clear		
Disciplin	e : Chemica	I			Group :	Atmospher	ric Po	llution	
Paramet	er	Unit	1	Test	Protocol	Resul	t	Regulatory Limit	
Particulate Matter (	PM10)	µg/m <sup>3</sup>	IS 5	82 (	Part- 23): 2022	84		100 (24hrs)	
n al de traces	10 415 EL	1	Viera	10-1	Due 249-2010	40	- 1	201/2016-01	

µg/m <sup>3</sup>	IS 5182 (Part-23): 2022	84	100 (24hrs)
µg/m <sup>3</sup>	IS 5182 (Part- 24); 2019	40	60 (24hrs)
µg/m <sup>3</sup>	IS 5182 (Part- 2/Sec1): 2023	13.3	80 (24hrs)
µg/m <sup>3</sup>	IS 5182 (Part- 6): 2022	31.6	80 (24hrs)
µg/m <sup>3</sup>	15 5182 (Part- 9): 2019	<20.0	100 (8hrs)
µg/m²	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
mg/m <sup>3</sup>	IS 5182 (Part- 10): 2019 (NDIR Method)	1.28	2 (8hrs)
µg/m <sup>5</sup>	IS 5182 (Part- 22): 2019	0.022	1 (24hrs)
ng/m <sup>3</sup>	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
ng/m <sup>2</sup>	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)
µg/m3	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
ng/m <sup>3</sup>	ELES/GC/SOP/05: 2023	<0.5	01(Annual)
	μg/m <sup>3</sup> μg/m <sup>3</sup> μg/m <sup>3</sup> μg/m <sup>3</sup> μg/m <sup>3</sup> μg/m <sup>3</sup> ng/m <sup>3</sup> ng/m <sup>3</sup> ηg/m <sup>3</sup>	μg/m³         IS 5182 (Part- 24); 2019           μg/m³         IS 5182 (Part- 2/Sec1); 2023           μg/m³         IS 5182 (Part- 6); 2022           μg/m³         IS 5182 (Part- 6); 2022           μg/m³         IS 5182 (Part- 9); 2019           μg/m³         IS 5182 (Part- 9); 2019           μg/m³         IS 5182 (Part- 25); 2018           mg/m³         IS 5182 (Part- 10); 2019           μg/m³         IS 5182 (Part- 10); 2019           μg/m³         IS 5182 (Part- 22); 2019           ng/m³         IS 5182 (Part- 26); 2020           ng/m³         IS 5182 (Part- 26); 2020	μg/m³         IS 5182 (Part- 24); 2019         40           μg/m³         IS 5182 (Part- 2/Sec1): 2023         13.3           μg/m³         IS 5182 (Part- 6): 2022         31.6           μg/m³         IS 5182 (Part- 6): 2022         31.6           μg/m³         IS 5182 (Part- 9): 2019         <20.0

17-1 Reviewed by Akash Kumar 111

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

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	TES	TREP	ORT		
Test Report No.	: ELES/RNC/2025/1648	Re	port Release Date	: 17.03.2025	
Work Order No.	: 13612312113	We	ork Order Date	: 28.03.2024	
ULR No.	: TC1358725000001612F				
CUSTOMER DET	AILS	SA	MPLE DETAILS		
Customer Name Address Mines Status	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302 : Operational	SAMPLE DETAILS Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure Sampling Done By Sample Condition		: ELES/RNC/2025/AA/1841 : Near Bunglapart Village Pakhar Bauxite Mine : 07.03.2025 to 08.03.2025 : 10.03.2025 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd. : Sealed & Preserved	
Period of Analysis	: 10.03.2025 to 17.03.2025				
METEOROLOGI	CAL INFORMATION				
1 Average Temperature (°C) : 25		2 Barometric Pressure (mmHg) : 720			
3 Relative Humidity (%) : 58			4 Weather Condition : Clear		

Discipline : Chemic	al	Group :	Atmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part-23): 2022	83	100 (24hrs)
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	51	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m³	IS 5182 (Part- 2/Sec1): 2023	13.6	80 (24hrs)
Nitrogen Di-Oxide (NO1)	µg/m <sup>3</sup>	IS 5182 (Part- 6): 2022	29.2	80 (24hrs)
Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	1S 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m <sup>3</sup>	IS 5182 (Part- 22): 2019	0.020	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)
Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m²	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m <sup>8</sup>	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

Reviewed by Akash Kumar itty-Manney

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

	TES	T REPORT		
Test Report No.	: ELES/RNC/2025/1649	Report Release Date	: 17.03.2025	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC1358725000001613F			
CUSTOMER DET	TAILS	SAMPLE DETAILS		
Customer Name Address Mines Status	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302 : Operational	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure Sampling Done By	: ELES/RNC/2025/AA/1842 : Yatri Shed (Near K-10) Pakhar Bauxite Mine : 07.03.2025 to 08.03.2025 : 10.03.2025 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 10.03.2025 to 17.03.2025	Sample Condition	: Sealed & Preserved	

 I
 Average Temperature (%)
 :25
 2
 Barometric Pressure (mmHg)
 :720

 3
 Relative Humidity (%)
 :58
 4
 Weather Condition
 : Clear

Discipline : Chemic	al	Group :	Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part- 23): 2022	75	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	43	60 (24hrs)	
Sulphur Di-Oxide (SO2)	µg/m³	IS 5182 (Part- 2/Sec1): 2023	11.8	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m <sup>3</sup>	IS 5182 (Part- 6): 2022	29.3	80 (24hrs)	
Ozone (O <sub>2</sub> )	ug/m <sup>1</sup>	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH3)	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part- 10): 2019 (NDIR Method)	1.31	2 (8hrs)	
Lead (Pb)	µg/m <sup>3</sup>	IS 5182 (Part- 22): 2019	0.032	1 (24hrs)	
Nickel (Ni)	ng/m³	IS 5182 (Part- 26); 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	
Benzene (C <sub>0</sub> H <sub>0</sub> )	µg/m <sup>3</sup>	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m <sup>3</sup>	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

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	TES	T REPORT	
Test Report No.	: ELES/RNC/2025/1650	Report Release Date	: 17.03.2025
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC1358725000001614F		
CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2025/AA/1843 : Near Utkarmit Rajkiya Prathmik Vidyalaya Bunglapart Village Pakhar Bauxite Mine
Address Mines Status	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 07.03.2025 to 08.03.2025 : 10.03.2025 : Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 10.03.2025 to 17.03.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

### METEOROLOGICAL INFORMATION

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

Discipline : Chemic	al	Group :	Group : Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limi			
Particulate Matter (PM10)	µg/m <sup>®</sup>	IS 5182 (Part- 23): 2022	76	100 (24hrs)			
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	37	60 (24hrs)			
Sulphur Di-Oxide (SO2)	µg/m <sup>3</sup>	IS 5182 (Part- 2/Sec1): 2023	14.2	80 (24hrs)			
Nitrogen Di-Oxide (NO2)	µg/m <sup>3</sup>	IS 5182 (Part- 6): 2022	27.7	80 (24hrs)			
Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	15 5182 (Part- 9): 2019	<20.0	100 (8hrs)			
Ammonia (NH3)	µg/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)			
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)			
Lead (Pb)	µg/m <sup>3</sup>	IS 5182 (Part- 22): 2019	0.013	1 (24hrs)			
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part- 26); 2020	<6.0	20 (Annual)			
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)			
Benzene (C <sub>s</sub> H <sub>e</sub> )	µg/m <sup>1</sup>	ELES/GC/SOP/06: 2023	<2.5	05(Annual)			
Benzo-(a)-Pyrene	ng/m <sup>2</sup>	ELES/GC/SOP/05: 2023	< 0.5	01(Annual)			



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K Olizia Authorised Signatory

Dr. Deependra Kumar Sinha

Ph. D. Environmental Energy

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	TES	TREPORT	
Test Report No.	: ELES/RNC/2025/1651	Report Release Date	: 17.03.2025
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC1358725000001615F		
CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2025/AA/1844 : Near Utkarmit Rajkiya Prathmik Vidyalaya Dumrapart Village Pakhar Bauxite Mine
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 07.03.2025 to 08.03.2025 : 10.03.2025 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Operational	- Sampling Done By	: ELES Pvt. Ltd.
Period of Analysis	: 10.03.2025 to 17.03.2025	Sample Condition	: Sealed & Preserved

# METEOROLOGICAL INFORMATION 1 Average Temperature (°C) : 25

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

Discipline : Chemic	al	Group :	Group : Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit			
Particulate Matter (PM10)	µg/m <sup>3</sup>	1S 5182 (Part-23): 2022	71	100 (24hrs)			
Particulate Matter (PM2.5)	µg/m <sup>3</sup>	15 5182 (Part- 24): 2019	40	60 (24hrs)			
Sulphur Di-Oxide (SO2)	µg/m <sup>3</sup>	IS 5182 (Part- 2/Sec1): 2023	12.9	80 (24hrs)			
Nitrogen Di-Oxide (NO2)	µg/m³	1S 5182 (Part- 6): 2022	29.1	80 (24hrs)			
Ozone (O <sub>3</sub> )	µg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)			
Ammonia (NH3)	µg/m <sup>1</sup>	15 5182 (Part- 25): 2018	<10.0	400 (24hrs)			
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part- 10): 2019 (NDIR Method)	1.24	2 (8hrs)			
Lead (Pb)	µg/m³	IS 5182 (Part- 22): 2019	0.022	1 (24hrs)			
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)			
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)			
Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)			
Benzo-(a)-Pyrene	ng/m <sup>3</sup>	ELES/GC/SOP/05: 2023	<0.5	01(Annual)			

Reviewed by

Authorised Signatory

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

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### TEST REPORT

Test Report No.	: ELES/RNC/2025/1662	Report Release Date	: 17.03.2025
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC1358725000001626F		

CUSTOMER DE	TAILS	SAMPLE DETAILS			
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sampling Date Sampling Received Date Type of Sample Sampling procedure Sampling Done By	: 07.03.2025 to 08.03.2025 : 10.03.2025 : Ambient Noise : ELES/DOC/SMPL/03 : ELES Pvt. Ltd.		
Mines Status	: Operational	Period of Analysis	: 10.03.2025 to 13.03.2025		

M	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 25	2	Barometric Pressure (mm	Hg) : 720
3	Relative Humidity (%) : 59	4	Weather Condition	: Clear

<b>Discipline : Chemical</b>		Group : Atmospheric Pollution			
Location	Unit	Test Protocol	Rest	Regulatory Limit (Industrial Zone)	
Quarry Mines Pit, Pakhar Bauxite Mine (115.13 ha)	dB(A)	1S 9989: 2020	Time	Leq	
			Day Time	66	75 dB(A) Day Time
Sample ID: ELES/RNC/2025/AN/1855			Night Time	48	70 dB(A) Night Time

Reviewed by Akash Kumar Quality Managor

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

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

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### Sava Environment, Sava Furnite''



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Test Report No.	: ELES/RNC/2025/1657	Report Release Date	: 17.03.2025
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC1358725000001621F		

CUSTOMER DE	TAILS	SAMPLE DETAILS			
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sampling Date Sampling Received Date Type of Sample Sampling procedure Sample Drawn By	: 08.03.2025 ; 10.03.2025 : Workzone Noise : ELES/DOC/SMPL/03 : ELES Pvt. Ltd.		
Mines Status	: Operational	Period of Analysis	: 10.03.2025 to 13.03.2025		

M	ETEOROLOGICAL INFORMATIC	ON		
1	Average Temperature (°C) : 28	2	Barometric Pressure (mmH	lg) : 720
3	Relative Humidity (%) : 60	4	Weather Condition	: Clear

Location	Unit	Test Protocol	Result		Regulatory Limit (Industrial Zone)
Quarry No.7 -			Time	Leq	
Pakhar Bauxite Mine (115.13 ha)	dB(A)	IS 4758: 2017	Day Time	77	90 dB(A)
Sample ID: ELES/RNC/2025/WN/1850					

Reviewed by Quality Managor

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

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

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### "Save Environment, Save Future"



### Annexure 3

Date - 01.05.2025

### <u>Office Order</u>

Environmental Cell has been re-constituted for Pakhar Group of Mines (Pakhar – 115.13 ha, Pakhar – 35.12 ha and Pakhar – 8.09 ha Bauxite Mines). This cell consists of the following team members who will ensure compliance with the Environment Acts, Rules & Regulations in respect of the said mines of Hindalco Industries Limited.

- 1. Mr. Sanjay Kumar (Coordinator)
- 2. Mr. Chandan Kumar (Geologist)
- 3. Mr. Girija Tamrakar (Environment Engineer)
- 4. Mr. Anand Prakash Tiwari (Environment Engineer)

The Undersigned is the in charge of above Environment Management Cell constituted for the purpose of ensuring compliances of environmental acts, rules and regulations for the above mines.

Basudev Gangopadhyay AVP (Planning, Environment & Compliance)

#### Annexure 4

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

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

\*Static information about the mines included in the above table

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#### Annexure-5

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

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

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

\*\*Part of OB removed cost

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