

HIL/LHD/ENV/MoEF/ 987

Date: 20.11.2024

To,

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

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

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

Sir,

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

The lease detail is a	s below.	
Lease area (ha)	Production Capacity (MT)	Lease Period
12.14 ` ′	50000	16.10.1974 to 31.03.2030

Hope you will find the same in order.

Thanking You

Yours Sincerely FOR HINDALCO INDUSTRIES LIMITED

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

Enclosure: - As Above

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

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

M/s Hindalco Industries Limited

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

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

Specific Conditions

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

Reply: - Implementations of the stipulated conditions in NOC are fulfilled after which Consent to Operate (CTO) has been obtained from time to time. The current CTO is valid up to 31/03/2027. Production of bauxites is within limits specified in Consent to Operate.

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

Reply: - Land acquisition is being done with the permission of competent authority of State Government i.e. concerned Deputy Commissioner (D.C.) under CNT Act. The land lease agreement is being done with raiyat (Landowner) after permission of State Govt with provision of returning the land as per the norms set by D.C. The compensation and facilities are being provided as per norms set in agreement. Thus, land acquisition has the approval of the State Government.

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

Reply: - Since shallow depth mining is being carried out, hence there is no intersection with the groundwater table. In future also, working zones will be restricted to above ground water table. We undertake that no mining is/was carried out below ground water table and the same status will be maintain in future also.

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

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

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

Condition v: - Topsoil shall be stacked properly with proper slope with adequate measures and should be used for reclamation and rehabilitation of mined out areas.

Reply: Topsoil is being stacked properly with proper slope as and when required for its use for reclamation and rehabilitation. Sequential backfilling and reclamation of the mined-out area are being exercised during

mining operation. The mining is being carried out as per the approved mining plan. Monitoring and management of rehabilitated areas is being done through effective supervision. Data pertaining to backfilling is enclosed as **Annexure 4**.



Reclamation of the mined-out

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

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

Condition vii: - Catch drains and siltation ponds of appropriate size should be constructed to arrest silt and sediment flows from mine working. The water so collected should be utilized for watering the mine area, roads, green belt development etc. The drains should be regularly desilted particularly after monsoon and maintained properly.

Garland drain (size, gradient and length) shall be constructed for mine pit and sump capacity should be designed keeping 50% safety margin over and above peak sudden rainfall (based on 50 years data) and maximum discharge in the area adjoining the mine site. Sump capacity should also provide adequate retention period to allow proper setting of silt material. Sedimentation pits should be constructed at the corners of the garland drains and desilted at regular intervals.

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

into the agricultural field and water bodies, if applicable. Sump of adequate capacity is being provided and maintained as required. Photographs of the same is attached below.



Garland drains & Siltation Pond

Condition viii: - Plantation shall be raised in an area of 10.58 ha including a green belt of adequate width by planting the native species around the ML area, roads, reclaimed area etc. in consultation with the local DFO / Agriculture Department. The density of the trees should be around 1500 plants per ha.

Reply: - Progressive plantation of native species is being carried out in consultation with local forest department within mining lease, reclaimed area etc. Total 2000 nos. saplings have been planted in the period from April'24 to September'24 within the lease. Total 5.35 ha areas have been planted till date. Green belt development program is in progress with progress of mining activities in a phased manner.







Plantation at Mines

Condition ix: - The project proponent shall ensure that there shall be no discharge from the mine.

Reply: - Ensured. There is no discharge from the mine.

Condition x: - The project proponent shall carry out regular monitoring of spring discharge and its quality near Shrengdag village on long term basis.

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

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

Reply: - A detailed plan to augment groundwater has been prepared, and suitable measures like the creation of water harvesting ponds, etc., are being taken for the augmentation of groundwater in our adjacent mine at Sherengdag Plateau, in consultation with the Central Ground Water Board.



Rainwater Harvesting Pond

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

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



Piezometer

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

Reply: - We are not using any water from natural streams/ ground water for mining operation. Rainwater harvesting ponds with proper fencing have been already constructed in our adjacent mine of Sherengdag

Plateau. Rainwater harvested during rainy season is being used for sprinkling on haul roads and raising plantation.

However, we have obtained NOC for extraction of ground water from CGWA/ CGWB for drinking purpose only. The copy of same NOC and photographs of Rainwater harvesting ponds are attached

below.



NOC for Ground Water

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

Reply: - To keep vehicular emissions under control, vehicles are periodically checked & repaired. All measures are being taken to control vehicular emission. All vehicles are covered with tarpaulins, and non-overloading guidelines are being followed during transportation of mineral.



Tarpaulin covered Vehicle

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

Reply: - Wet drilling is in practice.



Wet Drilling

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

Reply: - Blasting time is fixed during Lunch Time i.e. 1.00 PM-2.00 PM. We have control blasting permission. Controlled blasting method is in practice. Ground vibration study has been conducted periodically. Efforts and mitigative measures are being taken to reduce the impact of the blast.

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

Reply: - We have already obtained the Consent to Operate for Bauxite Ore as per production capacity mentioned in EC.

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

Reply: - As of now there is no colony within the lease hold. However, Domestic Wastewater generated from mine office area is being collected through individual Septic Tank and followed by Soak Pit. No wastewater is generated from our mining operation. However, only negligible amount of effluent is being generated from workshop and Oil & grease trap system is already installed for Sherengdag group of mines to treat this effluent. The treated water is in close circuit and being reused for washing of vehicle in the workshop.

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



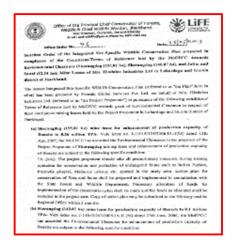
Washing Ramp and Oil and Grease Trap

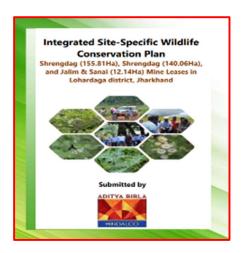
Condition xix: - The project proponent should take all precautionary measures during mining operation for conservation and protection of endangered fauna such as Indian Python, <u>Presbytis phayrei</u> etc. Spotted in the study area. Action plan for conservation of flora and fauna shall be prepared and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

Reply: - Safeguard Measures already implemented and being implemented as suggested by forest department are as follows:

- 1. Minimum level of Noise during Mining.
- 2. Permanent pillars are established within in the mine lease area at 7.5m from the forest boundary.
- 3. Daily water sprinkling on haul road.
- 4. Transportation is carried out during daytime only.
- 5. Maintenance of mineral transportation road is being done regularly.
- 6. Social activities are being undertaken in nearby areas etc.

We have also prepared Integrated Site-specific Wildlife Conservation in consultation with State Forest Department and obtained approval letter from Principal Chief Conservator of Forest, Wildlife & Chief Wildlife Warden, Jharkhand via Office Order No.26 dated 26.05.2023 for conservation and protection of flora and fauna in the core and buffer zone for Sherengdag Group of Mines.





Integrated Site-specific Wildlife Conservation Plan for Sherengdag Group of Mines

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

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

GENERAL CONDITIONS: -

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

Reply: - Noted.

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

Reply: - Calendar plan including excavation, quantum of mineral bauxite and waste is being done as per IBM approved mining scheme and in scientific manner. Data pertaining to excavation, quantum of mineral bauxite etc. are mentioned in report attached as **Annexure 4.**

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

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

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

Reply: - Being adhered to. Monitoring Reports for the reporting period are attached as **Annexure-2**. Now, the Regional office of MoEF&CC is in Ranchi.

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

Reply: - Mobile water tanker with sprinkling facility has been provided along haul roads, at loading and unloading areas, and at transfer points to control dust emissions.



Water sprinkling through Tanker

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

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

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

Reply: - No wastewater is generated from our mining operation. However, only negligible amount of effluent is being generated from workshop. Also, Oil & grease trap system is already installed for Sherengdag group of mines to treat this effluent. The treated water is in close circuit and being reused for washing of vehicle in the workshop.

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



Washing Ramp and Oil and Grease Trap

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

Reply: - All the workers have been provided with PPEs including dust mask and dust respirators. Apart from PPEs distribution to all workers, we are also providing adequate safety training and conducting awareness session on Safety and health aspects on regular basis. Periodical Occupational health surveillance program of the workers is being carried out and records maintained as per statute.

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

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

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

Reply: - This is an operating mine and hence the provision related to financial closure is not applicable. Now, the Regional office of MoEF&CC is in Ranchi.

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

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

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

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

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

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

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

Reply: - Complied. A copy of clearance letter has already been submitted.

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

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

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

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

Jal	Jalim Sanai Bauxite Mine (12.14 Ha)						
	Piezometer Reading						
S No Month Depth (meter)							
1	Apr-24	35.50					
2	May-24	36.10					
3	Jun-24	36.05					
4	Jul-24	36.55					
5	Aug-24	36.60					
6	Sep-24	36.40					

ENVIROCHECK

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

Jalim&Sanai Bauxite Mine-Environmental Monitoring Report

April 2024





TEST REPORT

Test Report No.	: ENVJK/1151/APR/TR(W)24-25	Report Release Date	: 28.04.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	:Hindulco Industries Limited	Sample Ref. No. Location	: ENVJK/2024/AA/1676 : Mine Pit Quarry No 2, Jalim& Sanai Bauxite Mine (12,14ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 14.04.2024 to 15.04.2024 : 22.04.2024
Mines Status	: Operational	Type of Sample Sampling Procedure Sampling Done By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 22.04.2024 to 28.04.2024	Sample Condition	: Sealed & Preserved

M	ETEOROLOGICAL INFOR	RMATION			
I.	Average Temperature (°C)	:32	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	: 58	4	Weather Condition	: Clear

	Disciplin	e: ChemicalGroup: Atmospheric Pollut	ion	
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part 23): 2006	73	100 (24hrs)
Particulate Matter (PM2.5)	µg/m³	USEPA 1997a,40 CFR Part 50, Appendix L; 2006	34	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m ³	IS 5182 (Part 2): 2001	11.1	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m³	1S 5182 (Part 6): 2006	24.6	80 (24hrs)
Ozone (O ₃)	µg/m³	(S 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₁)	μg/m ³	IS 5182 (Part-25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ¹	1S 5182 (Part- 10); 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m*	IS 5182 (Part- 22): 2019	0.007	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m²	USEPA Method – IO-3,5 (ICP-MS Method)	<2.0	06 (Annual)
Benzene (CoHo)	µg/m³	USEPA Method – TO-3 (GC-MS Method)	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m ^T	USEPA Method – TO-3A (GC-MS Method)	<0.5	01(Annual)

Reviewed by :

(Saswata Rurman Roy, Dy. Quality Manager)

Anthorised Signatory:

(Bapan Das, Dy. Technical Manager)

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Jharkhand

Housing 1

895001



Lab : MIG. R-3 Housing Colony, Bhantratt, Pin - 826901, State : Blackhand & 9830067044 / & 9304519737



TEST REPORT

Test Report No.	: ENVJK/1152/APR/FR(W)24-25	Report Release Date	: 28.04.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	:Hindalco Industries Limited	Sample Ref. No. Location	; ENVJK/2024/AA/1677 ; Nava PrathmikVidyalay(DhankaToli) Jalim&SanaiBauxite Mine (12.14ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 14.04.2024 to 15.04.2024 : 22.04.2024 : Ambient Air : ELES/DOC/SMPL/02	
Mines Status	. Operational	Sampling Procedure Sampling Done By	: ELES Pvt. Ltd.	
Period of Analysis	: 22.04.2024 to 28.04.2024	Sample Condition	: Sealed & Preserved	

M	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) = 31	2	Barometric Pressure (mm	Hg) : 736
3	Relative Humidity (%) : 58	4	Wenther Condition	: Clear

	Disciplin	e: ChemicalGroup: Atmospheric Polluti	ion	
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m ⁵	IS 5182 (Part 23): 2006	58	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	USEPA 1997a,40 CFR Part 50, Appendix L; 2006,	37	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part 2): 2001	8.5	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part 6): 2006	26.1	80 (24hrs)
Ozone (O ₁)	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	μg/m³	IS 5182 (Part- 22): 2019	0.007	1 (24hrs)
Nickel (Ni)	ng/m²	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m²	USEPA Method - IO-3,5 (ICP-MS Method)	<2.0	06 (Annual)
Benzene (CaHa)	μg/m²	USEPA Method – TO-3 (GC-MS Method)	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m¹	USEPA Method – TO-3A (GC-MS Method)	<0.5	01(Annual)

Reviewed by :

(Saswata Burman Roy, Dy. Quality Manager

Authorised Signatory:

(Bapan Das, Dy. Technical Manager)

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Housitat

Jharkhand

826007



TE-11501

Lab : Mill. # 9 Housing Colony, Dhumbul, Pin - 826001, State - Thirkhand \$ 9830067044 / \$ 9304515737

TEST REPORT

Test Report No.	: ENVJK/1153/APR/TR(W)24-25	Report Release Date	: 28.04.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	:Hindalco Industries Limited	Sample Ref. No. Location	: ENVJK/2024/AA/1678 : Mine Pit Quarry No 3, Jalim& Sanai Bauxite Mine (12.14ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 14.04,2024 to 15.04,2024 : 22,04,2024 : Ambient Air	
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 22.04.2024 to 28.04.2024	Sample Condition	: Scaled &Preserved	

MI	ETEOROLOGICAL INFORM.	ATION			
1	Average Temperature (°C) ::	32	2	Barometric Pressure (mmHg)	. 736
3	Relative Humidity (%)	58	4	Weather Condition	: Clear

	Discipli	ne: ChemicalGroup: Atmospheric Pollu	ition	
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m³	IS 5182 (Part 23): 2006	67	(00 (24hrs)
Particulate Matter (PM2.5)	μg/m ³	USEPA 1997a,40 CFR Part 50, Appendix L: 2006	40	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m ³	IS 5182 (Part 2): 2001	12.7	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m ³	1S 5182 (Part 6): 2006	25,1	80 (24hrs)
Ozone (O ₁)	µg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ¹	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part- 22); 2019	0.006	1 (24hrs)
Nickel (Ni)	ng/m)	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	USEPA Method – IO-3.5 (ICP-MS Method)	<2.0	06 (Annual)
Benzene (C ₆ H ₆)	h8/m3	USEPA Method - TO-3 (GC-MS Method)	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m³	USEPA Method – TO-3A (GC-MS Method)	< 0.5	03(Annual)

Reviewed by :

Bert

(Saswata Burman Roy, Dy. Quality Manager)

Authorised Signatory:

San

(Bapan Das, Dy. Technical Manager)

Page 1 of 1

J. Housing

826001





Lab., MIG. R-3 Housing Colony, Dhardrad, Pin - 926001. State - Iharkhand & 9830967044 / & 9304513737

TEST REPORT

Test Report No.	: ENVJK/1154/APR/TR(W)24-25	Report Release Date	± 28.04.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	

CUSTOMER DETA	MLS	SAMPLE DETAILS		
Customer Name	:Hindalco Industries Limited	Sample Ref. No.	: ENVJK/2024/AA/1679	
		Location	: Near Colony: Jalim&Sanai	
			Bauxite Mine (12.14ha)	
	The second second	Sampling Date	: 14.04.2024 to 15.04.2024	
Address	: Lohardaga, Jharkhand-835302	Sample Received Date	: 22,04,2024	
		Type of Sample	: Ambient Air	
		Sampling Procedure	: ELES/DOC/SMPL/02	
Mines Status	: Operational	Sampling Done By	: ELES Pvt. Ltd.	
Period of Analysis	: 22.04.2024 to 28.04,2024	Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFORMATION				
1	Average Temperature (°C) ; 21	1.2	Barometric Pressure (mml	lfg) : 736	
3	Relative Humidity (%) : 58	.4.	Weather Condition	: Clear	

	Discipli	ne: ChemicalGroup: Atmospheric Pollu	rtion	
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m³	IS 5182 (Part 23): 2006	59	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	USEPA 1997a,40 CFR Part 50, Appendix L: 2006	31	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m ³	15 5182 (Part 2): 2001	8.6	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m³	1S 5182 (Part 6): 2006	26.5	80 (24hrs)
Ozone (O ₁)	μg/m ¹	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	μg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10); 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	μg/m³	IS 5182 (Part-22): 2019	0.012	1 (24hrs)
Nickel (Ni)	ng/m ³	1S 5182 (Part- 26); 2020	<6.0	20 (Annual)
Arsenie (As)	ng/m ¹	USEPA Method - IO-3.5 (ICP-MS Method)	<2.0	06 (Annual)
Benzene (C _a H _b)	μg/m ¹	USEPA Method – TO-3 (GC-MS Method)	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m ³	USEPA Method - TO-3A (GC-MS Method)	<0.5	01(Annual)

Reviewed by:

Bear !

(Saswata Burman Roy, Dy. Quality Manager)

Authorised Signatory:

(Bapan Das, Dy. Technical Manager)

Page 1 of 1





TEST REPORT

Test Report No.	= ENV4K/1189/APR/TR(W)24-25	Report Release Date	28.04.2024
Work Order No.	13612312113	Work Order Date	: 28.03.2024

CUSTOMER DET	AllS	SAMPLE DETAILS	
Customer Name	Hindalco Industries Limited	Sample Ref. No. Location	- ENVJK/2024/AA/1705 Near Banjarl VillageSerengdeg-/ Baussin Mines (155.81ha)
Address	Lolinrdaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 16.04.2024 to 17.04.2024 : 22.04.3024 : Ambiest Air
Mines Status	; Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 22.04.2024 to 28.04.2024	Sample Condition	Senied & Preserved

METEOROLOGICAL INFORMATION			
Average Temperature (°C) : 31	2	Barometric Pressure (mmHg)	- 736
Relative Humidity (%) : 59		Weather Condition	Clear

	Disciplin	se: ChemicalGroup: Atmospheric Pollu	tion	
Parameter	Unit.	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10).	μg/m ³	IS 5182 (Part 23): 2006	52	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	USEPA 1997a,40 CFR Part 50, Appendix L: 2006	30	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m²	IS 5182 (Part 2); 2001	6.5	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m ¹	IS 5182 (Part 6): 2006	25.4	80 (24hrs)
Ozone (O _t)	μg/in ³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH _I)	μg/in ³	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 ³	IS 5182 (Part- 22): 2019	< 0.002	1 (24firs)
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenić (As)	ng/m ¹	USEPA Method – 10-3.5 (ICP-MS Method)	<2.0	06 (Annual)
Benzene (C ₆ H ₆)	µg/m ⁷	USEPA Method – TO-3 (GC-MS Method)	<2.5	05(Annual)
Henzo-(u)-Pyrene	ng/m³	USEPA Method - TO-3A (GC-MS Method)	<0.5	(linual)

Reviewed by :

7000

(Secreta Burman Roy, Dy. Quality Manager)

Thankhand 826001

Authorised Signatory:

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(Bapin Day, Dy. Technical Manager)

Page 1 of 1





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TEST REPORT

Test Report No.	: ENVJK/THI/APR/TR(W)24-25	Report Release Date	: 28,04,2024
Wark Order No.	: 13612312113	Work Order Date	: 28.03.2024

CUSTOMER DETAILS		SAMPLE DETAILS		
Custonser Name	:Hindalco Industries Limited	Sample Ref. No. Location	: ENVIK/2024/AA/1706 : Near Pauri VIIIage Sevengdag-A Bauxite Mines (185,8/im)	
Address	: Lohardaga, Jharkhund-935302	Sampling Date Sample Received Date Type of Sample	16.04.2024 to 17.04.2024 ; 22.04.2024 ; Amblent Ale	
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt, Ltd.	
Period of Analysis	: 27.04,2024 to 28,04,2024	Sample Condition	, Sonied & Preserved	

MI	TEOROLOGICAL INFORMATION			
1	Average Temperature (°C) ;31	2	Barometric Pressure (mmHg)	736
3	Relative Hamidity (%) : 59		Weather Condition	: Clear

	Disciplia	se: ChemicalGroup: Atmospheric Pollut	fon	
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m³	(S 5182 (Part 23): 2006	52	100 (24hrs)
Particulate Matter (PM2.5)	μg/m ¹	USEPA 1997a,40 CFR Part 50, Appendix L: 2006	33	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	118/121 ³	IS 5182 (Part 2): 2001	8.1	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m ³	15 5182 (Part 6): 2006	20.8	80 (24hrs)
Ozone (O ₃)	μg/m ³	(S 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₁)	μg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8frs)
Lead (Pb)	jag/m²	IS 5182 (Part- 22): 2019	0.011	1 (24hrs)
Nickel (NI)	ng/m³	IS 5182 (Part- 26): 2020	<6,0	20 (Annual)
Arsenic (As)	ng/m³	USEPA Method – IO-3.5 (ICP-MS Method)	<2.0	06 (Annual)
Benzene (CaFl ₀)	μg/m³	USEPA Method – TO-3 (GC-MS Method)	<2.5	05(Aimust)
Benzo-(a)-Pyrene	ng/m³	USEPA Method – TO-3A (GC-MS Method)	<0.5	91(Annul)

Reviewed by :

(Saswata Burman Roy, Dy. Omlity Manager)

Authorized Signatory :

(Bapan Day, Dy. Technical Manager)

Page 1 of 1

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TEST REPORT

Test Report No.	: ENVJE/1182/AFR/TR(W)24-25	Report Release Date	: 28.04.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	:Hindaleo Industries Limited	Sample Ref. No. Location	: ENVDC3024/AA/1707 Near Harup Village Serengdag-A Bauxite Mines (155.81ha)
Address	: Lohardega. Juarkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 16.64.2024 to 17.64.2024 ; 22.64.2024 ; Ambient Afr ; ELES/DGC/SMPL/02
Mines Status	: Operational	Sampling Done By	ELES For Lot.
Period of Analysis	: 22.04.2024 to 28.04.2024	Sample Condition	Seniod & Preserved

MI	ETEOROLOGICAL INFORMATION				
1	Average Temperature (°C) : 31	2	Barometric Pressure (nun	Hg) = 736	
3	Relative Humidity (%) : 59	4	Weather Condition	: Clear	

	Disciplin	e; ChemicalGroup; Atmospheric Pollui	ion	
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part 23): 2006	58	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	USEPA 1997a,40 CFR Part 50, Appendix L: 2006	32	50 (24hrs)
Sulphur Di-Oxide (SO ₁)	µg/m²	1S 5182 (Part 2): 2001	7	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m ³	IS 5182 (Part 6): 2006	25.4	80 (24hrs)
Ozone (O _i)	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (Shrs)
Ammonia (NH ₅)	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (Shrs)
Lend (Pb)	μg/m³	IS 5182 (Part- 22): 2019	< 0.002	(24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	USEPA Method - IO-3.5 (ICP-MS Method)	<2.0	06 (Annual)
Benzene (CoHo)	μg/m³	USEPA Method – TO-3 (GC-MS Method)	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m²	USEPA Method – TO-3A (GC-MS Method)	<0.5	01(Amual)

Reviewed by :

(Spirit

(Selwata Borman Roy, Dy. Quality Manager)

Jharkhand 826001 Spring Co

Authorised Signatory:

(Bapan Das, Dy. Terlinical Manager)

Page 1 of 1

: Operational

22.04.2024 to 28.04.2024



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FEST REPORT

Test Report No.	: ENVJK/1183/APR/TR(W)24-25	Report Release Date	: 28.04.2024
Work Order No.	: 13612312113	Work Order Date	: 28,03,2024
CUSTOMER DE	TAILS	SAMPLE DETAILS	
Comomer Name	:Hindaico Industries Limited	Sample Ref. No. Location	: ENVJK/2024/AA/1708 : Neur Paintoli VilingeSerengdag-A Bandle Mines (155.81)a)
Address	Lohardaga, Harkhand-835302	Sampling Date Sample Received Date Type of Sample	= 16,04.2024 to 17.04.2024 = 22,04.2024 = Amblem Ah

MI	ETEOROLOGICAL INFORMATION			
	Average Temperature (°C) : 31	2	Barometric Pressure (mmH	g) 736
3	Relative Humidity (%) :: 59	- 4	Weather Condition	Clear

Sampling Procedure

Sampling Done By

Sample Condition

	Disciplin	se: ChemicalGroup: Atmospheric Pollut	lon	
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m³	1S 5182 (Part 23); 2006	.58	100 (24hrs)
Particulate Matter (PM2.5)	µg/m³	USEPA 1997a,40 CFR Part 50, Appendix L: 2006	31	50 (24hrs)
Sulphur Di-Oxide (SO ₁)	μg/m³	IS 5182 (Part 2): 2001	8.2	80 (24his)
Nitrogen Di-Oxide (NO2)	$\mu g/m^3$	1S 5182 (Part 6): 2006	23.8	80 (24hrs)
Oxone (O ₃)	µg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	pg/m/	IS 5182 (Part- 25); 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	ug/m³	IS 5182 (Part-22): 2019	0.007	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	USEPA Method – IO-3.5 (ICP-MS Method)	<2,0	06 (Annual)
Benzene (C ₄ H _e)	$\mu g/m^3$	USEPA Method – TO-3 (GC-MS Method)	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m²	USEPA Method - TO-3A (GC-MS Method)	<0.5	01(Ammal)

Reviewed by :

Mirror Sintus

Period of Analysis

(Hasware Baraman Roy, Dy. Deelity Manager)

Anthorised Signatory :

EAT

(Bayan Das, Dy. Feelmical Manager)

: ELES/DOC/SMPL/02

: Senied & Preserved

ELES PVL Ltd.

Page | of |

Housing

CONTENT

minu:	alco Industries : Jalim & Sanai Bauxite Mine Environmental Monitoring Report May202
	Jalim & Sanai Bauxite Mine
	AMBIENT AIR QUALITY- CORE ZONE
I	Mine Pit Quarry No 2
2	Nava PrathmikVidyalay (DhankaToli)
3	Mine Pit Quarry No 3
4	Near Colony
	AMBIENT AIR QUALITY- BUFFER ZONE
1	Near Banjari Village
2	Near Pauri Village
3	Near Harup Village
4	Near Paintoli Village
	Drinking Water



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



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



TEST REPORT

Test Report No.	: ELES/RNC/2024/2814	Report Release Date	: 27.05.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400000780F		

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/3154 : Mine Pit Quarry No 2, Jalim & Sanai Bauxite Mine (12.14ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 17.05.2024 to 18.05.2024 : 21.05.2024 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Operational	Sampling Done By	: ELES PVL Ltd.
Period of Analysis : 21.05.2024 to 27.05.2024 Sample C		Sample Condition	: Sealed & Preserved

MI	TEOROLOGICAL INFORMATION			
	Average Temperature (°C) : 34	2	Barometric Pressure (mmHg)	: 742
	Relative Humidity (%) : 62	4	Weather Condition	; Clear

Discipline: (hemical	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/m³	IS 5182 (Part- 24); 2019	32	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m³	15 5182 (Part- II/Sec- 1): 2023	9.8	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part- 6): 2022	26.1	80 (24hrs)	
Ozone (O ₃)	μg/m¹	1S 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH ₃)	μg/m ⁵	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	0.009	J (24hrs)	
Nickel (Ni)	ng/m³	1S 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Anmal)	

Page 1 of 2

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 20A4ECE9713DLZ4

ENGINEERING SERVICES PVT. LTD

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TE-13067

TEST REPORT

Test Report No. : ELES/RNC/2024/2814 Report Release Date : 27.05.2024

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC135872400000780F

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C _s H ₄)	μg/m ⁷	ELES/GC/SOP/06: 2023	2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m ⁵	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

AKASIP KOMAR Quality Manager ELES PVT LTD

****End of Report****

Authorised Signatory

Dr. Deependra Kumar Sinita Ph. D Environmental Frag. ELES Pvt. Ltd. Teannion (January)

Page 2 of 2

The Document stated as Test Report, is issued by the Laboratory under General Terms and Conditions, only on Company letter head in pre-approved format. The results shown in the Test Report refer or relates only so the jubianalysis done by the Laboratory and The indominion stated on the Test Report reflects the findings done by the Laboratory at the time of involvement only and within the limits of client's instructions. The Laboratory is responsible for all the information of data provided on the report, except the information which is provided by the client. The Report cannot be reproduced except in full and any part of the report is not taken our of context, without print written approval of the Laboratory. The Report is find or in part shall not be published, advertise, used for any legal actions unless prior permission has been secured from the Management of the Laboratory. Attention is distant to the limitation of liability, compensation and jurisdiction issues. Any unusuborized alteration & falsification of the content of appearance of the Test Report is unlawful and offenders may be prosecuted to the fallest extent of the law. All the samples are returned for 30days from the Date of release/issaie of the Test Report. The samples from Regulatory bodies are to be returned as specified. Any type of Observations or Compliants regarding the Reports shall be done within 15days from the Date of Test Report released/issaied. After the time period stated before, no compliants will be accepted. The enter Time substitute mentioned in Test Report is in 24hours format. Abbreviation used' N/A (Not Applicable), BDL (Below Detection Limit), LDL (Lawar Detection Limit).



PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARRHAND) GST NO:- 26AAECE9713D124

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TC/1988

TEST REPORT

Test Report No.	: ELES/RNC/2024/2815	Report Release Date	: 27.05.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400000781F			

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/3155 : Nava Prathmik Vidyalay (DhankaToli Jalim & Sanai Bauxite Mine (12.14ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 17.05,2024 to 18.05,2024 : 21.05,2024 : Ambient Air	
Mines Status	; Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 21.05.2024 to 27.05.2024	Sample Condition	: Sealed & Preserved	

MI	TEOROLOGICAL INFORMATION			
	Average Temperature (°C) : 34	2	Barometric Pressure (mmHg)	: 742
_	Relative Humidity (%) : 62	4	Weather Condition	: Clear

Discipline: (hemical	Group: Atm	ospheric Pollu	tion
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	62	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	35	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part- II/Sec- 1): 2023	7.9	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	1S 5182 (Part- 6): 2022	25.3	80 (24hrs)
Ozone (O ₃)	μg/m ²	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₁)	μg/m ^a	1S 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/m³	IS 5182 (Part- 22): 2019	0.009	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)

Page 1 of 2

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

ENGINEERING SERVICES PVT. LTD.

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TC-12582

TEST REPORT

ULR No.	: TC135872400000781F		
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
Test Report No.	: ELES/RNC/2024/2815	Report Release Date	: 27.05.2024

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₆ H ₆)	μg/m³	ELES/GC/SOP/06: 2023	2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m²	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

Reviewed by

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

Authorised Signatory

Ph. Deependra Kurner Sinha
Ph. Denvironmental Engg.
ELES PVL Ltd. Technical Manaria

Page 2 of 2

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

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TE-1250

TEST REPORT

Test Report No.	: ELES/RNC/2024/2816	Report Release Date	: 27.05.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400000782F		

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/3156 : Mine Pit Quarry No 3, Jalim & Sanai Bauxite Mine (12.14ha)	
Address	Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 17.05.2024 to 18.05.2024 : 21.05.2024 : Ambient Air : ELES/DOC/SMPL/02	
Mines Status	: Operational	Sampling Done By	: ELES Pvi. Lid.	
Period of Analysis	; 21.05.2024 to 27.05.2024	Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFORMATIO	N		
1	Average Temperature (°C) ; 34	2	Barometric Pressure (mmHg)	: 742
3	Relative Humidity (%) : 62	4	Weather Condition	: Clear

Discipline: Chemical		Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m ³	IS 5182 (Part- 23): 2022	63	100 (24hrs)
Particulate Matter (PM2.5)	µg/m³	1S 5182 (Part- 24): 2019	37	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-II/Sec- 1): 2023	11.5	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part- 6): 2022.	26,3	80 (24hrs)
Ozone (O ₃)	µg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	μg/m³	1S 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ¹	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m³	IS 5182 (Part- 22): 2019	0.009	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)

Page 1 of 2

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Benzo-(a)-Pyrene

ENVIRONMENTAL LABORATORIES

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

ng/m"

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TEST REPORT

Test Report No.	: ELES/RNC/2024/2816	Report Release Date	: 27.05.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03,2024	
ULR No.	: TC135872400000782F			

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

ELES/GC/SOP/05: 2023

AKASH KUMAR Quality Manager ELES PVT. LTD.

****End of Report****

Authorised Signatory

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Dr. Deependra Kumar Sinha Ph. D Environments) Engg. ELES PVI. Ltd. Technical Manny

Page 2 of 2

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



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

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TEST REPORT

Test Report No.	: ELES/RNC/2024/2817	Report Release Date	; 27.05.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400000783F		

CUSTOMER DET	CUSTOMER DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/3157 : Near Colony; Jalim & Sanai Bauxite Mine (12.14ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 17.05.2024 to 18.05.2024 : 21.05.2024 : Ambient Air
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 21.05.2024 to 27.05.2024	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 34	2	Barometric Pressure (mmHg	:742
3	Relative Humidity (%) : 62	4	Weather Condition	: Clear

Discipline: Chemical		Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	57	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	33	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-11/Sec-1): 2023	7.8	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m ³	IS 5182 (Part- 6): 2022	25.3	80 (24hrs)
Ozone (O ₃)	μg/m³	1S 5182 (Part- 9): 2019	<20.0	100 (Shrs)
Ammonia (NH ₃)	μg/m²	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	1S 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m²	IS 5182 (Part- 22): 2019	0.01	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)

Page 1 of 2

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

ENGINEERING SERVICES PVT. LTD

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TEST REPORT

Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
Test Report No.	: ELES/RNC/2024/2817	Report Release Date	: 27.05.2024	

ULR No.	: TC135872400000783F

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

AKASH KUMAR Quality Manager ELES PVT, LTD

****End of Report****

Authorised Signatory
Dr. Deependra Kumar Sinju
Ph. Denvironmental Engl
ELES Pvt. Ltd. Technical Mann

Page 2 of 2

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (IHARNHAND) 037 NO-20AAECES713D124



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TEST REPORT

Test Report No.	: ELES/RNC/2024/2785	Report Release Date	: 23.05.2024
Work Order No.	13612312113	Work Order Date	28.03.2024
ULR No.	-TC135872400000751F		

CUSTOMER DET	CUSTOMER DETAILS		
Customer Name	: Hindalco Industries Limited.	Sample Ref. No. Location	: ELES/RNC/2024/AA/3054 : Near Banjari Village Serengdag-A Bauxite Mines (155:81ha)
Address	: Lohardaga, Hurkhand-835302	Sample Received Date Type of Sample	: 14.05.2024 to 15.05.2024 : 18.05.2024 : Ambient Air
Mines Status	- Operational	Sampling Procedure	: ELES/DOC/SMPL/02
Period of Analysis	: 18.05.2024 to 23.05.2024	Sampling Done By Sample Condition	: ELES Pvt. Etd. : Sealed & Preserved

METEOROLOGICAL INFORMATION	DN .	
I Average Temperature (°C) : 33	2 Barometric Pressure (mmHg)	: 742
3 Relative Humidity (%) : 59	4 Weather Condition	Clinar

Discipline: (hemical	Group: Atm	ospheric Pollu	ition
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ¹	IS 5782 (Part- 23): 2022	59	100 (24hrs)
Particulate Matter (PM2.5)	µg/m²	1S 5182 (Part- 24): 2019	35	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m³	IS 5182 (Part- II/Sec- 1); 2023	7.8	80 (24hrs)
Nitrogen Di-Oxide (NO ₁)	µg/m³	IS 5182 (Part- 6): 2022	27.5	80 (24hrs)
Ozone (O ₃)	μg/m²	1S 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (MII ₂)	μg/m ⁴	15 5182 (Part- 25); 2018	<10.0	400 (24lirs)
Curbon Monoxide (CO)	mg/m"	IS 5182 (Part- 10); 2019 (NDIR: Method)	<1.0	2 (8hrs)
Lead (Pb)	pg/m	IS 5182 (Part- 22): 2019	0.01	1 (24hrs)
Nickel (Ni)	ng/m	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ing/im*	TLES/ATIUSOP/01: 2021	<1.0	06 (Annual)

Page 1 of 2

The Discussion of the Language of the partners and the parameters of the parameters



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



TEST REPORT

Test Report No.	ELES/RNC/2024/2785	Report Release Date	23.05.2024
Work Order No.	: 13612312113	Work Order Date	: 28,03.2024
ULR No.	: TC135872400000751F		

Discipline: Chemical		Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (CaHa)	prg/m²	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo (a)-Pyrene	ng/m ¹	ELES/GC/SOP/05: 2023	⊲0.5	01(Annual)

AKASH KUNIAR Quality Managur ELES PVT LTD.

****End of Report****

Authorised Signatory

Ph. Deependra Kuma Shina Ph. Denvironmento E. Igg. ELES Pvt. Ltd. Technical Language

Page 2 of 2

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



TEST REPORT

Test Report No.	: ELES/RNC/2024/2786	Report Release Dute	: 23.05.2024
Work Order No.	13612312113	Work Order Date	28.03.2024
ULR No.	: TC135872400000752F		

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	a Hindalco Industries Limited	Sample Ref. No. Location	ELES/RNC/2024/AA/3055 Near Pauri Village Screngdag-A Bauxite Mines (155.81fia)
Address	: Lohardaga, thurkhand-835302	Sampling Date Sample Received Date Type of Sample	± 14.05,2024 to 15.05,2024 = 18.05,2024 ± Ambient Air
Mines Status	Operational	Sampling Procedure	: ELES/DOC/SMPL/02
Period of Analysis	: 18.05.2024 to 23.05,2024	Sampling Done By Sample Condition	+ ELES Pvt. Ltd. - Sealed & Preserved

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

Discipline: 0	Chemical	Group: Atm	ospheric Pollu	rtion
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m³	IS 5182 (Part- 23): 2022	57	100 (24hes)
Particulate Matter (PM2.5)	HR/m3	15 5182 (Part- 24): 2014	30	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m [®]	15 5182 (Part- II/Sec- 1): 2023	9,8	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μμ/m³	IS 5182 (Part- 6): 2022	23.4	80 (24hrs)
Ozone (O ₃))ag/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₁)	μg/m³	IS 5182 (Part-25): 2018	<10.0	400 (24ltrs)
Carbon Monoxide (CO)	mg/m ⁴	15 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m ²	IS 5182 (Part-22): 2019	0.005	1 (24hrs)
Nickel (Ni)	ng/m²	15 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (An)	ng/m²	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)

Page 1 of 2

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TEST REPORT

Test Report No.	: ELES/RNC/2024/2786	Report Release Date	23.05.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
	Contract to the second second second			

ULR No. : TC135872400000752F

Discipline: Chemical		Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (Calla)	ug/m ¹	ELES/GC/SOP/05: 2023	<2.5	Q5(Armonl)
Benzo-(a)-Pyrene	ng/m²	ELES/GC/SOP/05: 2023	<0.5	OI(Annual)

AKASH KUMAR Quality Managur ELES PVT, LTD.

**** End of Report****

Authorised Signatory
Dr. Deependra Kuntar String
Ph. D Environmental English
ELES Put. Ltd. Technical Meno

Page 2 of 2

The Doparties moved on Test Report, is usual by the Laboratory under General Terms and Conditions usts on Languary learn band on pre-appeared format. The resum photos is the Test Report reflects the findings done by the Laboratory as the instead on the Test Report reflects the findings done by the Laboratory as the instead on the Test Report reflects the findings done by the Laboratory as the provided on the report used in the information of data provided on the report used in the information which is provided by the claim. The deport cannot be reproduced except in full and any part of the report is not taken on of context, without price without appropriate of the Laboratory. Attention to the himself-we had allocated in the deport of the Content of the Laboratory of the Content of the Laboratory of the Content of the Laboratory of the deport is individed on the finite content of the first Report is individed on the finite content of the first Report is individed to the finite section of the law. As the transfer of the Galage from the Report of the Re



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TEST REPORT

Fest Report No.	: ELES/RNC/2024/2787	Report Release Date : 23,05,2024
Work Order No.	: 13612312113	Work Order Date : 28.03.2024
ULR No.	: TC135872400000753F	

CUSTOMER DET	CUSTOMER DETAILS		
Customer Name	: Hindulco Industries Limited	Sample Ref. No. Location	ELFS/RNC/2024/AA/3056 Near Harup Village Screngdag-A Bauxite Mines (155.81ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	± 14.05.2024 to 15.05.2024 ± 18.05.2024 = Ambient Air
Mines Status	; Operational	Sampling Procedure	: ELES/DOC/SMPL/02
Period of Analysis	: 18.05.2024 to 23.05.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

MI	TEOROLOGICAL INFORMATION				
1	Average Temperature (°C) : 33	2	Barometric Pressure (mmH	(a) :742	
	Relative Humidity (%) : 59	4	Weather Condition	Clear	

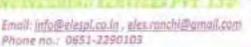
Discipline: 0	Themical	Group: Atm	ospheric Pollu	tion
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	ug/m³	IS 5182 (Part- 23): 2022	58	100 (247us)
Particulate Matter (PM2.5)	μg/m ^T	15 5182 (Part- 24): 2019	32	60 (24hrs)
Sutphur Di-Oxide (SO ₂)	µg/m	IS 5182 (Part- II/Sec- 1): 2023	6.7	80 (24hrs)
Nitrogen Di-Oxide (NO ₃)	µg/m³	IS 5182 (Part- 6): 2022	23,9	80 (24hrs)
Ozone (O ₃)	uu/m³	IS 5182 (Part- 9); 2019	<20.0	100 (Bhrs):
Ainmonia (NH ₃)	µg/m³	15 5182 (Part- 25): 2018	< (0.0)	400 (24hrs)
Carbon Monoxide (CO)	mg/m²	IS 5182 (Part-10); 2019 (NDIR Method)	<1.0	2 (8hos)
Lead (Pb)	hīn/m)	IS 5182 (Part- 22): 2019	<0.002	1 (24hrs)
Nickal (Ni)	ng/m ³	TS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m²	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)

Page 1 of 2

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (IHARKHAND) GST NO:- 204AECE97130124



Website: www.elespl.co.in

TEST REPORT

Test Report No.	: ELES/RNC/2024/2787	Report Release Date	: 23.05,2624
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400000753F		

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

AKASH KUMAR Quality Manager ELES PVT LTD:

End of Report

Ph. D Environmental Engl.

ELES Pvt. Ltd. Technical Disposition

Page 2 of 2

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TEST REPORT

Test Report No.	: FLES/RNC/2024/2788	Report Release Date	: 23.05.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400000754E			

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	- Hindalco Industries Limited	Sample Ref. No. Location	ELES/RNC/2024/AA/3057 Near Paintoli Village Serengdag-A Bauxite Mines (155.81ha)	
Address	Lobardaga, Jharichand-855302	Sampling Date Sample Received Date Type of Sample	14.05.2024 to 15.05.2024 18.05.2024 : Ambient Air	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02	
Period of Analysis	18.05.2024 to 23.05.2024	Sampling Done By Sample Condition	ELES Pvt. Ltd. Sealed & Preserved.	

MI	TEOROLOGICAL INFORMATION				
-	Average Temperature (°C) : 33	2	Barometric Pressure (mm	Hg) =742	
y	Relative Humidity (%) : 59	4	Weather Condition	1 Clear	

Discipline: (Chemical	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	µg/m³	15 5182 (Part- 23): 2022	65	100 (24hrs)		
Particulate Matter (PM2.5)	µg/m³	1S 5182 (Part- 24): 2019	34	60 (24hrs)		
Sulptur Di-Oxide (SO ₂)	μg/m³	1S 5182 (Part-11/Sec- 1): 2023	10.8	80 (24hrs)		
Nitrugea Di-Oxide (NO ₂)	µg/m [†]	IS 5182 (Part- 6): 2022	26.1	80 (24hrs)		
Ozm)e (O ₃)	µg/m ⁵	IS 5182 (Part- 9): 2019	<2.0.0	100 (#hrs)		
Ammonia (NH ₃)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hm)		
Carbon Monoxide (CO)	mg/m³	15 5182 (Part-10): 2019 (NDIR Method)	<1.0	2 (8brs)		
Lead (Pb)	µg/m	IS 5182 (Part-21); 2019	0.012	1 (24hn)		
Nickel (Ni)	ng/m	IS 5182 (Part- 26): 2020	<6.0	30 (Amual)		
Arsenic (As)	ng/m³	ELES/AIR/SOP/01-2021	<2.0	06 (Annual)		

Page 1 of 2

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TEST REPORT

Test Report No.	ELES/RNC/2024/2788	Report Release Date	: 23.05.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400000754F		

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Henzene (C _a H _a)	µgim*	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(u)-Pyriene	ng/m	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

AKASH KUMAR Quality Managar ELES PVT LTD.

****End of Report

Authorised Signatury

Page 2 of 2

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TG-13865

TEST REPORT

Test Report No.	: ELES/RNC/2024/2900	Report Release Date	: 28.05.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03,2024
ULR No.	: TC135872400000860F		

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	Hindalco Industries Limited	Sample Ref. No. Sampling Date Sample Received Date	: ELES/RNC/2024/DW/3172 : 17.05.2024 : 21.05.2024	
Address	: Lohardaga, Jharkhand-835302	Type of Sample Source/Location of Sample	: Drinking Water : Near Jalim Village, Jalim & Sanai(12.14ha) Bauxite Mine	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/01	
Period of Analysis	: 21.05.2024 to 28.05.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

Discipline : Chemical		Conn	Water		ory Limit
Discipline Caemical		Group :	Water	And in contrast of the Contrast of Contrast	10500:2012
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
pH (at 25,2°C)	-	APHA 24th Ed.2023, 4500-H	6.53	6.5-8.5	No Relaxation
Turbidity	NTU	APHA 24th Ed.2023, 2130 B	1.41	1.0	5.0
Taste	2	APHA 24 th Ed.2023, 2160 C	Agrecable	Agreeable	Agreeable
Odour	~	IS 3025 (Part-5) :2018	Agreeable	Agreeable	Agreeable
Colour	Hazen	APHA 24th Ed.2023, 2120B&D	1.0	5	15
Total Dissolved Solids (TDS)	mg/L	APHA 24th Ed.2023, 2540B,C&D	70	500	2000
Chloride (as Cl)	mg/L	APHA 24th Ed.2023, 4500 Cl B	6.74	250	1000
Fluoride (as F)	mg/L	APHA 24 th Ed.2023, 4500 F-D	BDL (DL: 0.1)	1.0	1.5
Total Alkalinity (as CaCO ₁)	mg/L	APNA 24th Ed.2023, 2320 B	16.4	200	600
Total Hardness (as CaCO ₁)	mg/L	APHA 24th Ed.2023, 2340 C	24.5	200	600
Sulphate (as SO ₆)	mg/L	APHA 24th Ed.2023, 4500 SO ₄ 2-E	1.52	200	400
Nitrate (as NO ₂)	mg/L	APHA 24th Ed.2023, 4500 NO ₃ -B	BDL (DL: 0.5)	45	No Relaxation

Page 1 of 4

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CIN: U74999/H2018PTC011125

TEST REPORT

Test Report No. : ELES/RNC/2024/2900 Report Release Date : 28.05.2024

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC135872400000860F

Work Order Date	: 28.03.2024	

Discipline : Chemic	al	Gro	ap: Water	Regulatory Limit as per IS10500:201	
Parameter	Unit	Test Protocol	Result	Acceptable	Permissible Limit
Phenolic Compound (ns C ₆ H ₅ OH)	mg/L	IS 3025 (Part 43/Sec1): 2022	BDL (DL: 0.001)	0.001	0.002
Free Residual Chlorine (RFC)	mg/L	IS 3025 (Part-26): 2021	BDL (DL: 0.1)	0.2	1.0
Calcium (as Ca)	mg/L	APHA 24th Ed.2023, 3500 Ca B	6.5	75	200
Anionic Surfactants (as MBAS)	mg/L	APHA 24th Ed.2023, 5540-C	BDL (DL: 0.025)	0.2	1.0
Discipline : Chemie	cal	Gre	oup : Residues i	n Water	
Aluminum (as Al)	mg/L	15 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	18 3025 (Part-57) : 2021	BDL (DL: 0.2)	0,5	2.4
Cadmium (as Cd)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL: 0.003)	0.003	No Relaxation
Total Chromium(as Cr)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL: 0.03)	0.05	No Relaxation
Copper (as Cu)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL: 0.03)	0.05	1.5
Cyanide (as CN)	mg/L	APHA 24 ⁶ Ed.2023, 4500 CN-E	BDL (DL: 0.012)	0.05	No Relaxation
Iron (as Fe)	mg/L	APHA 24th Ed.2023; 3111B	0.091	1.0	1.0
Lead (as Pb)	mg/L	APHA 24 th Ed.2023; 3111B	BDL (DL: 0.01)	0.01	No Relaxation
Manganese (as Mn)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL: 0.05)	0.1	0.3
Mercury (as Hg)	mg/L	IS 3025 (Part-48): 2019	BDL (DL: 0.001)	0.001	No Relaxation
Selenium (as Se)	mg/L	1S 3025 (Part-56): 2019	BDL (DL: 0.01)	0.01	No Relaxation

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TC-INST

TEST REPORT

Test Report No. : ELES/RNC/2024/2900 Report Release Date : 28.05.2024

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC135872400000860F

Discipline : Chemical Group : Residues in Water			ues in Water	er Regulatory Lit as per IS10500:2		
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit	
Zinc (as Zn) mg/L		APHA 24th Ed.2023; 3111B	BDL (DL: 0.1)	5	15	
Polynuclear Aromatic Hydrocarbons (PAH)	μg/L	ELES/GC/SOP/04; 2023	BDL (DL: 0.05)	0.1	No Relaxation	
Polychlorinated 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)		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	125	
Chlorpyriphos	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	- 1	30	
Ethion	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	ġ	.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)	П	.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 E		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	

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CIN: U74999JH2018P7C011125

TEST REPORT

Test Report No.	: ELES/RNC/2024/2900	Report Release Date	: 28.05.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
11 200 4000	100000000000000000000000000000000000000	1 2 3 3 4 4 2 6 5 6 7 7 7 7 7 7 7 7	7.71.720.720.72	

ULR No. : TC135872400000860F

Unit	Test Protocol	Result	Limit	
μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.02)	0.04	
amma HCH (Lindane) µg/L ELES		BDL (DL: 0.02)	2.0	
µg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.05)	0.40	
μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.05)	1.0	
	Group	: Water		
Per 100 mL	IS 15185: 2021	Not Detected	Shall not be detected	
Per 100 mL	IS 15185: 2021	Not Detected		
	μg/L μg/L μg/L μg/L μg/L Per 100 mL	μg/L ELES/GC/SOP/02: 2023 μg/L ELES/GC/SOP/02: 2023 μg/L ELES/GC/SOP/02: 2023 μg/L ELES/GC/SOP/02: 2023 Group Per 100 mL IS 15185: 2021	μg/L ELES/GC/SOP/02: 2023 BDL (DL: 0.02) μg/L ELES/GC/SOP/02: 2023 BDL (DL: 0.05) μg/L ELES/GC/SOP/02: 2023 BDL (DL: 0.05) μg/L ELES/GC/SOP/02: 2023 BDL (DL: 0.05) Group: Water Per 100 mL IS 15185: 2021 Not Detected Not Not	

Remarks; L. pH and RFC done at Lab.

Reviewed by AKASH KUMAR Quality Managor

ELES PVT LTD.

****End of Report****

Authorised Signatory

Ph. Deependra Kumar Sinnu Ph. D Environmental Eopg ELES Pvt. Ltd. Technical Month

Page 4 of 4

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TEST REPORT

Test Report No.	: ELES/RNC/2024/2900	Report Release Date	: 28.05,2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03,2024	

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Sampling Date	: ELES/RNC/2024/DW/3172 : 17.05.2024	
Address	: Lohardaga, Jharkhand-835302	Sample Received Date Type of Sample Source/Location of Sample	: 21.05.2024 : Drinking Water : Near Jalim Village, Jalim &	
Mines Status	: Operational	Sampling Procedure	Sanai(12.14ha) Bauxite Mine : ELES/DOC/SMPL/01	
Period of Analysis	: 21.05.2024 to 28.05.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

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

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

Reviewed by AKASH KUMAR Quality Managar

ELES PVT LTD.

****End of Report****

Authorised Signatory

Dr. Deependra Kumar Sinilia Ph. D Environmental Engg. ELES Pvt. Ltd. Technical Mannel

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CONTENT

Hind	alco Industries : Jalim & Saaai Bauxite Mine Environmental Monitoring Report June2024
	Jalim & Sanai Bauxite Mine
	AMBIENT AIR QUALITY- CORE ZONE
1	Mine Pit Quarry No 2
2	Nava Prathmik Vidyalay (Dhanka Toli)
3	Mine Pit Quarry No 3
4	Near Colony Near Colony
	AMBIENT AIR QUALITY- BUFFER ZONE
1	Near Banjari Village
2	Near Pauri Village
3	Near Harup Village
4	Near Paintoli Village







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

ENGINEERING SERVICES PVT. LTD.

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

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



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TEST REPORT

Test Report No.	: ELES/RNC/2024/3510	Report Release Date	; 29.06.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400001461F		

CUSTOMER DET.	CUSTOMER DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/4018 : Mine Pit Quarry No 2, Jalim & Sanai Bauxite Mine (12,14ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 19.06,2024 to 20.06,2024 : 24.06,2024 : Ambient Air
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt, Ltd.
Period of Analysis	: 24.06.2024 to 29.06.2024	Sample Condition	: Sealed & Preserved

Mi	ETEOROLOGICAL INFORMATION	-		
1	Average Temperature (°C) : 32	2	Barometric Pressure (mmHg)	; 742
3	Relative Humidity (%) :58	4	Weather Condition	: Partly Cloudy

Discipline: (hemical	Group: Atm	ospheric Pollu	ition
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ¹	(S 5182 (Part- 23): 2022	70	[00 (24hrs)
Particulate Matter (PM2.5)	µg/m³	1S 5182 (Part- 24): 2019	38	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	1S 5182 (Part- II/Sec- 1): 2023	9.1	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part- 6): 2022	25,7	80 (24hrs)
Ozone (O ₃)	µg/m²	1S 5182 (Part- 9): 2019	<20.0	100 (Shrs)
Ammonia (NH ₁)	μg/m ^y	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ¹	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	μg/m³	IS 5182 (Part- 22): 2019	0.008	1 (24hrs)
Nickel (Ni)	ng/m1	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ⁵	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)

Page 1 of 2

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

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TC-1380

TEST REPORT

Test Report No.	: ELES/RNC/2024/3510	Report Release Date	: 29.06.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400001461F		

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₆ H ₆)	μg/m³	ELES/GC/SOP/06; 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05: 2023	<0.5	O1(Annual)	

AKASH KUMAR Quality Manager ELES PVT LTD

****End of Report****

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

Page 2 of 2

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

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TEST REPORT

Test Report No.	: ELES/RNC/2024/3511	Report Release Date	: 29.06.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400001462F			

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/4019 : Nava Prathmik Vidyalay (DhankaTofi) Jalim & Sanai Bauxite Mine (12,14ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 19.06.2024 to 20.06.2024 : 24.06.2024 : Ambient Air	
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	24.06.2024 to 29.06.2024	Sample Condition	Sealed & Preserved	

M	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 32	2	Barometric Pressure (mmHg)	: 742
3	Relative Humidity (%) : 58	4	Weather Condition	: Partly Cloudy

Discipline: (Chemical	Group: Atm	ospheric Pollu	ition
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	59	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	.33	60 (24hrs)
Sulphur Di-Oxide (SO ₁)	μg/m³	IS 5182 (Part- II/Sec- 1): 2023	7.5	80 (24hrs)
Nitrogen Di-Oxide (NO ₇)	μg/m³	IS 5182 (Part- 6): 2022	24.9	80 (24hrs)
Ozone (O ₂)	μg/m³	IS 5182 (Part- 9); 2019	<20.0	100 (8hrs)
Ammonia (NH ₂)	μg/m³	IS 5182 (Part- 25); 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.9	2 (8hrs)
Lead (Pb)	μg/m [*]	IS 5182 (Part- 22): 2019	0.012	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m²	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)

Page 1 of 2

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

ENGINEERING SERVICES PVT. LTD.

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

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



TEST REPORT

Test Report No.	: ELES/RNC/2024/3511	Report Release Date	: 29.06.2024	
Work Order No.	: 13612312113	Work Order Date	; 28.03.2024	

ULR No. : TC135872400001462F

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

Reviewed by

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

Authorised Signatory

Ph. D Environmental Engg.

ELES Pvt. Ltd. Technical Manager

Page 2 of 2

The Document states at Test Report, a issued to the Laborators under General Terms and Conditions, only on Company latter head in pre-approved format. The results shown in the Test Report select or classic only in the jobranalism done by the Laboratory only. The information stated on the Test Report reflects the fundings done by the Laboratory is responsible for all the information or data provided on the report, except the information which is provided by the claim. The Report cannot be reported except in full and any part of the report is not taken out of context, websaut prior written approved of the Laboratory. The Report in full or in part shall not be published, advertise, used for any legal actions unless prior permission has been secured from the Management of the Laboratory. Accusion is drawd to the laboratory of the Laboratory Accusion is drawd to the immunant of liability, compensation and jurisdiction issues. Any unauthorized statistical of Management of the Test Report is unlawful and offesidess may be prosecuted to the fullest extent of the law. All the samples are retained for Malays from the Data of release/issues of the Test Report. The samples from Regulatory bothes are to be retained as specified. Any type of Observations will be accepted. The entire Time schedule mentioned in Test Report is in 24hours format. Abbreviation used. N.A. (Not Applicable), BOL (Below Detection Limit), LDL (Lower Detection Limit).



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

ENGINEERING SERVICES PVT. LTD.

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TEST REPORT

Test Report No.	: ELES/RNC/2024/3512	Report Release Date	: 29.06,2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400001463F			

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/4020 : Mine Pit Quarry No 3, Jalim & Sanai Bauxite Mine (12.14ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 19.06.2024 to 20.06.2024 : 24.06.2024
Mines Status	: Operational	Type of Sample Sampling Procedure Sampling Done By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 24.06.2024 to 29.06.2024	Sample Condition	: Sealed & Preserved

Mi	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 32	2	Barometric Pressure (mmHg)	:742
3	Relative Humidity (%) : 58	4	Weather Condition	: Partly Cloudy

Discipline: 0	Themical	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m³	IS 5182 (Part- 23); 2022	60	100 (24hrs)
Particulate Matter (PM2.5)	μg/m ¹	15 5182 (Part- 24); 2019	35	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m ³	IS 5182 (Part-II/Sec-1); 2023	9.9	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m ³	IS 5182 (Part- 6): 2022	26.4	80 (24hrs)
Ozone (O ₁)	µg/m³	1S 5182 (Part- 9); 2019	<20.0	100 (8hrs)
Ammonia (NH ₁)	μg/m ⁷	IS-5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m²	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.7	2 (8hrs)
Lead (Pb)	µg/m³	IS 5182 (Part- 22); 2019	0.007	1 (24hrs)
Nicket (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m*	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)

Page 1 of 2

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

ENGINEERING SERVICES PVT. LTD.

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



TO TABLE

TEST REPORT

Test Report No.	: ELES/RNC/2024/3512	Report Release Date	: 29.06.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400001463F			

Discipline: Chemical		Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (C _u H ₆)	µg/m²	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Велго-(а)-Рутепе	ng/m*	ELES/GC/SOP/05: 2023	< 0.5	01(Annual)

Reviewed by

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

Authorised Signatory

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

Page 2 of 2

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

ENGINEERING SERVICES PVT. LTD.

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TEST REPORT

Test Report No.	: ELES/RNC/2024/3513	Report Release Date	: 29.06.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400001464F		

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	Hindalco Industries Limited	Sample Ref. No. Location	ELES/RNC/2024/AA/4021 Near Colony: Jalim & Sanai Bauxite Mine (12.14ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 19,06,2024 to 20,06,2024 : 24,06,2024
		Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Operational	Sampling Done By	: ELES Pvt. Ltd.
Period of Analysis	: 24.06.2024 to 29.06,2024	Sample Condition	Sealed & Preserved

MI	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 32	2	Barometric Pressure (nunHg)	⇒742
3	Relative Humidity (%) : 58	4	Weather Condition	Partly Cloudy

Discipline: 0	Chemical	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	61	100 (24hrs)
Particulate Matter (PM2.5)	μg/m ³	IS 5182 (Part- 24): 2019	35	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m³	IS 5182 (Part-11/Sec-1): 2023	8.1	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m ³	IS 5182 (Part- 6): 2022	24.9	80 (24hrs)
Ozone (O ₃)	ug/m³	IS 5182 (Part- 9); 2019	<20.0	100 (8hrs)
Ammonia (NH ₁)	μg/m³	IS 5182 (Part- 25): 2018	<10,0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	μg/m³	IS 5182 (Part- 22): 2019	0.009	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part- 26); 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)

Page 1 of 2

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

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TEST REPORT

Test Report No.	: ELES/RNC/2024/3513	Report Release Date	: 29.06.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400001464F		

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₆ H ₆)	μg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m ⁵	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

Reviewed by

AKASH KUMAR Quality Managar ELES PVT, LTD ****End of Report****

Authorised Signatory

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

Page 2 of 2

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CONTENT

**********	alco Industries : Jalim & Sanai Bauxite Mine Environmental Monitoring Report	July2024
	Jalim & Sanai Bauxite Mine	
	AMBIENT AIR QUALITY- CORE ZONE	
1	Mine Pit Quarry No 2	
2	Nava Prathmik Vidyalay (DhankaToli)	
3	Mine Pit Quarry No 3	
4	Near Colony	
	AMBIENT AIR QUALITY- BUFFER ZONE	
1	Near Banjari Village	
2	Near Pauri Village	
3	Near Harup Village	
4	Near Paintoli Village	





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

ENGINEERING SERVICES PVT. LTD.

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



TEST REPORT

Test Report No.	: ELES/RNC/2024/4192	Report Release Date	; 29.07.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400002127F			

CUSTOMER DET	CUSTOMER DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/4855 : Mine Pit Quarry No 2, Jalim & Sanai Bauxite Mine (12.14ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 18.07.2024 to 19.07.2024 : 23.07.2024 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Operational	Sampling Done By	: ELES PVL Ltd.
Period of Analysis	: 23.07,2024 to 29,07,2024	Sample Condition	: Sealed & Preserved

M	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 30	2	Barometric Pressure (mml	lg) : 741
3	Relative Humidity (%) : 64	4	Weather Condition	; Partly Cloudy

Discipline: (Chemical	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m³	1S 5182 (Part- 23); 2022	65	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part- 24): 2019	34	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-11/Sec-1); 2023	8.9	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	μg/m³	IS 5182 (Part- 6): 2022	25.3	80 (24hrs)	
Ozone (O ₁)	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH ₁)	µg/m¹	1S 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	μg/m³	IS 5182 (Part- 22): 2019	0.009	1 (24hrs)	
Nickel (Ni)	ng/m¹	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m²	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	

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

ENGINEERING SERVICES PUT, LTD.

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TEST REPORT

Test Report No.	: ELES/RNC/2024/4192	Report Release Date	: 29.07.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024

ULR No. : TC135872400002127F

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₆ H ₆)	µg/m²	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m ³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

AKASH KUMAR Quality Managur FLES PVT LTD

****End of Report****

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

Page 2 of 2

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TEST REPORT

Test Report No.	: ELES/RNC/2024/4193	Report Release Date	: 29.07.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400002128F			

CUSTOMER DET	TAILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2024/AA/4856
		Location	: Nava Prathmik Vidyalay (DhankaToli)
		7	Jalim & Sanai Bauxite Mine (12.14ha)
		Sampling Date	: 18.07.2024 to 19.07.2024
Address	: Lohardaga, Jharkhand-835302	Sample Received Date	: 23.07.2024
	7-3-4-2-1	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
Mines Status	: Operational	Sampling Done By	; ELES Pvr. Ltd.
Period of Analysis	: 23.07.2024 to 29.07.2024	Sample Condition	; Sealed & Preserved

M	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 30	2	Barometric Pressure (mmH	(g) =741
3	Relative Humidity (%) : 64	4	Weather Condition	: Partly Cloudy

Discipline: 0	Chemical	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m ¹	1S 5182 (Part- 23): 2022	53	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m [†]	IS 5182 (Part- 24): 2019	28	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-II/Sec-1): 2023	6.9	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	µg/m¹	IS 5182 (Part- 6): 2022	22.7	80 (24hrs)	
Ozone (O ₃)	µg/m³	1S 5182 (Part- 9); 2019	<20.0	100 (8hrs)	
Ammonia (NH ₅)	µg/m³	1S 5182 (Part- 25): 2018	<10.0	400 (24lus)	
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	щg/m³	IS 5182 (Part- 22): 2019	0.009	1 (24hrs)	
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	

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TEST REPORT

Test Report No.	: ELES/RNC/2024/4193	Report Release Date	: 29.07.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
III D No.	· TC135877400002128F			

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₆ H ₆)	μg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05: 2023	<0,5	01(Aromat)	

Reviewed by AKASH KUMAR Quality Manager

ELES PVT LTD

****End of Report****

Dr. Deependra Kumar Sinha
Ph. D Environmental Engg.

#LES Pvt. Ltd. Technical Manager

Page 2 of 2

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10-1106

TEST REPORT

Test Report No.	; ELES/RNC/2024/4194	Report Release Date	: 29.07.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400002129F		

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/4857 : Mine Pit Quarry No.3, Jalim & Sanai Bauxite Mine (12.14ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 18.07.2024 to 19.07,2024 : 23.07.2024 : Ambient Air	
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 23.07.2024 to 29.07.2024	Sample Condition	: Sealed & Preserved	

M	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 30	2	Barometric Pressure (mmH	g) = 741
3	Relative Humidity (%) : 64	4	Weather Condition	: Partly Cloudy

Discipline: Chemical		Group: Atm	ospheric Pollu	ition
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	59	100 (24hrs)
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part- 24): 2019	32	60 (24hrs)
Sulphur Dî-Oxîde (SO ₂)	μg/m ³	IS 5182 (Part-11/Sec-1): 2023	10.8	80 (24hrs)
Nitrogen Di-Oxide (NO ₁)	μg/m³	IS 5182 (Part- 6): 2022	26.4	80 (24hrs)
Ozone (O ₅)	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	μg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Curbon Monoxide (CO)	mg/m ^x	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	μg/m³	IS 5182 (Part- 22): 2019	0.008	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m²	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)

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

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TEST REPORT

Test Report No.	: ELES/RNC/2024/4194	Report Release Date	; 29.07.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400002129F		

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

Reviewed by

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

Authorised Signatory

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

Page 2 of 2

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

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TEST REPORT

Test Report No.	: ELES/RNC/2024/4195	Report Release Date	: 29.07.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400002130F		

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	; Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/4858 : Near Colony; Jalim & Sanai Bauxite Mine (12,14ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 18,07,2024 to 19,07,2024 : 23,07,2024 : Ambient Air	
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 23.07.2024 to 29.07.2024	Sample Condition	: Sealed & Preserved	

M	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 30	2	Barometric Pressure (mml	(g) : 741
3	Relative Humidity (%) : 64	4	Weather Condition	: Partly Cloudy

Discipline: (hemical	Group: Atm	ospheric Pollu	tion
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	54	100 (24hrs)
Particulate Matter (PM2.5)	μg/m ¹	IS 5182 (Part- 24): 2019	26	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m ¹	IS 5182 (Part-11/Sec-1): 2023	7.5	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part- 6): 2022	20.8	80 (24hrs)
Ozone (O ₁)	μg/m ^b	IS 5182 (Part- 9); 2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	μg/m²	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	μg/m³	TS 5182 (Part- 22): 2019	0.007	1 (24hrs)
Nickel (Ni)	ng/m²	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01; 2021	<2.0	06 (Annual)

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

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TO-MINIT

TEST REPORT

Test Report No.	: ELES/RNC/2024/4195	Report Release Date	: 29.07.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400002130F		

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

AKASH KUMAR Quality Manager ELES PVT. LTD.

****End of Report****

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

Page 2 of 2

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ALOT NO-30, MANSARDVAR ENCLAVE, TUPVIDANA HATIA, RANICHI-834003 (IHARKHAND) 08T NO-30AA87297130124

ENGINEERING SERVICES PVT, LTD

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

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



TEST REPORT

Test Report No.	: ELES/RNC/2024/4141	Report Release Date	: 24.07.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400002076F		

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/4740 : Near Banjari Village Serengdag-A Bauxite Mines (155.81ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 16.07.2024 to 17.07.2024 : 19.07.2024 : Ambient Air	
Mines Status			: ELES/DOC/SMPL/02	
Period of Analysis	: 19.07.2024 to 24.07.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

	Average Temperature (°C) : 29	2	Barometric Pressure (mmHg)	±740
3	Relative Humidity (%) : 66	4	Weather Condition	Cloudy

Discipline: 0	Chemical	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m³	IS 5182 (Part- 23); 2022	55	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24); 2019	29	60 (24trs)	
Sulphur Di-Oxide (SO ₂)	µg/m³	IS 5182 (Part-II/Sec-1); 2023	8.3	80 (24hrs)	
Nitrogen Di-Oxide (NO ₁)	μg/m³	18 5182 (Part- 6): 2022	22.7	80 (24hrs)	
Ozone (O ₂)	µg/m³	IS 5182 (Part-9): 2019	<20.0	100 (8hrs)	
Ammonia (NH ₃)	µg/n) ^T	IS 5182 (Part- 25); 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	(NDIR Method)	<1.0	2 (8hrs)	
Lead (Ph)	μg/m ²	JS 5182 (Part- 22): 2019	0.007	1 (24hrs)	
Nickel (Ni)	ng/m*	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Aysenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	D6 (Annual)	

Page 1 of 2

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA NATIA, RANCHI-834003 (IMARKAND) UST NO.-30AAFCE97130124 ENGINEERING SERVICES PIT. LTD

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TOHISHT

TEST REPORT

Test Report No.	: ELES/RNC/2024/4141	Report Release Date	: 24.07.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03,2024
III.R No:	- TC135877400002076F		

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₁ H ₄)	μg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m ³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

Reviewed by

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

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

Page 2 of 2

The Discussion stated as Test Report, is instead by the Laboratory under General Terms and Conditions only in Company letter hand in pre-approved from the shows in the Test Report reflects only to the job/analysis show by the Laboratory only. The information mixed on the Test Report reflects due findings done by the Laboratory is responsible for all the information or data provided to the report, except the information which is provided by the client. The Report cannot be repudated except 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 not be published, advertise, used for any legal actions unless prior partnesses has been excured from the Management of the Laboratory Attention to these to the less than the Calebratory Attention to the full and officially compensation and particles is some. Any complete some secured for discinciant or appropriate of the Test Report is unlawful and officialers may be prospected to the filler extent of the law All the sumples are retained for Ridges from the Date of releases the Test Report. The samples from Regulatory bodies are so be retained as specified. Any type of Observations of Compliants regarding the Reports shall be done within 15days from the Date of Test Report informal/based. After the time period stated before, on noneplants will be accepted. The units Time exhaustion and at the Report of the Report of



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TEST REPORT

Test Report No.	: ELES/RNC/2024/4142	Report Release Date	: 24.07.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400002077F		

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	ELES/RNC/2024/AA/4741 Near Pauri Village Serengdag-A Bauxite Mines (155.81ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	16,07,2024 to 17,07,2024 19,07,2024 Ambient Air	
Mines Status Coperational Samplin		Sampling Procedure	ELES/DOC/SMPL/02	
Period of Analysis	19.07.2024 to 24.07.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

MI	ETEOROLOGICAL INFORMATION			
1	Average Temperature (*C) ±29	2	Barometric Pressure (mmHg)	740
3	Relative Humidity (%) : 66	4	Weather Condition	; Cloudy

Discipline: (Chemical	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m ¹	IS 5182 (Part- 23): 2022	59	100 (24hrs)	
Particulate Matter (PM2.5)	na/m ₁	IS 5182 (Part- 24): 2019	32	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	ug/m'	IS 5182 (Part- II/Sec- 1): 2023	9.4	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	ttB/m ₁	IS 5182 (Part- 6): 2022	22.8	80 (24hrs)	
Ozone (O ₁)	μg/m ⁷	IS 5182 (Part- 9); 2019	<20.0	100 (8hrs)	
Ammonia (NH ₂)	μg/m ³	IS 5182 (Part- 25); 2018	<10.0	400 (24hrs)	
Curbon Monoxide (CO)	mg/m²	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2.(8hrs)	
Lead (Pb)	µg/m ⁵	IS 5182 (Part- 22): 2019	0.007	1 (24hrs)	
Nickel (Ni)	ng/m²	15 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Amenic (As)	ng/m ³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	

Page | of 2

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TEST REPORT

Test Report No.	: ELES/RNC/2024/4142	Report Release Date	: 24.07.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400002077F		

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

AKASH KUMAR Quality Managur ELES PVT LTD

****End of Report****

Authorised Signatory

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

Page 2 of 2

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TEST REPORT

Test Report No.	: ELES/RNC/2024/4143	Report Release Date	: 24.07.2024
Work Order No.	: 13612312113	Work Order Date	± 28.03.2024
ULR No.	: TC135872400002078F		

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	- Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/4742 : Near Harup Village Serengday-A Bauxite Mines (155.81ha)
Address	Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 16.07.2024 to 17.07.2024 : 19.07.2024 : Ambient Air
Mines Status	Operational	Sampling Procedure	: ELES/DOC/SMPL/02
Period of Analysis	: 19.07.2024 to 24.07.2024	Sampling Done By Sample Condition	ELES Pvt. Ltd. Sealed & Preserved

MI	ETEOROLOGICAL INFORMATION			
1	Average Temperature (*C) ; 29	2	Barometric Pressure (mmHg)	= 740
3	Relative Humidity (%) : 66	4	Weather Condition	± Cloudy

Discipline: 0	Chemical	Group: Atm	aspheric Pollu	tion
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m³	IS 5182 (Part- 23): 2022	51	100 (24hrs)
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part- 24); 2019	25	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m²	IS 5182 (Part- II/Sec- 1): 2023	6.5	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part- 6): 2022	18.1	80 (24hrs)
Ozone (O ₃)	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hs)
Ammonia (NH _z)	ug/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)	ug/m²	1S 5182 (Part- 22): 2019	<0,002	J (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part- 26); 2020	<6.0	20 (Annual)
Arjenic (As)	ng/m²	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)

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TEST REPORT

Test Report No.	: ELES/RNC/2024/4143	Report Release Date	: 24.07.2024
Work Order No.	1 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400002078F		

Discipline: Chemical		Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Benzene (C ₄ H ₈)	ug/m	ELES/GC/SOP/06; 2023	<2.5	05(Annual)		
Benzo-(a)-Pyrene	ng/m ¹	ELES/GC/SOP/05; 2023	< 0.5	01(Annual)		

AKASTIKUWAR Quality Managur FLES PVT LTD

****End of Report****

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

Page 2 of 2

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PLDT NO-BE MANSAROVAR ENCLAVE, TUPUDANA NATTA, RANCHI-534003 (JHARKHANO) EIT NO - 20A40CE97310124

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RE LEGAL

TEST REPORT

Test Report No.	: ELES/RNC/2024/4144	Report Release Date	: 24.07.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400002079F		

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/4743 : Near Paintoll Village Serengdag-A Bauxite Mines (155.81ha)	
Address	: Lohardaga, Harkhand-835302	Sampling Date Sample Received Date Type of Sample	16.07.2024 to 17.07.2024 19.07.2024 Ambient Air	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02	
Period of Analysis	: 19.07.2024 to 24:07.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

MI	ETEOROLOGICAL INFORMATION				
1.	Average Temperature (%C) : 29	-2	Barometric Pressure (mm)	Hg) 1740	
3	Relative Humidity (%) : 66	4	Weather Condition	: Cloudy	

Discipline: (Chemical	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m³	1S 5182 (Part- 23): 2022	61	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part- 24): 2019	32	60 (24hra)	
Sulphur Di-Oxide (SO ₂)	µg/m³	IS 5182 (Part- II/Sec- 1): 2023	8.9	80 (24hrs)	
Nitrogen Di-Oxide (NO ₃)	µg/m²	IS 5182 (Part- 6): 2022	22.1	80 (24hrs)	
Ozone (O ₁)	µg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH ₂)	jug/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/m³	IS-5182 (Part-22): 2019	0.008	1 (24hra)	
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenić (Ali)	ng/m²	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	

Page 1 of 2

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TEST REPORT

Test Report No.	3 ELES/RNC/2024/4144	Report Release Date	: 24.07.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400002079F			

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

Reviewed by AKASH KUMAR Quality Managur ELES PVT, LTD

****End of Report****

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

Page 2 of 2

The Deciment wind as Test Report, a issued by the Laboratory under General Terms and Conditions, only on Company latter hand in pre-approved forms. The results about in the relation of the test support of the test support of the report is now of invariant and an interest of the first support of the suffermental which is provided by the claims. The Report cannot be reported except in full and any part of the report is not taken out of context, without price written approved of the Laboratory. The Report is full or or part shall not be published, advertise, used for any legal actions unless price permission has been returned from the Management of the Laboratory. According to the locations of the laboratory. According to the locations of the laboratory of the Test Report is analysis and estimates of the laboratory of the Test Report is analysis and estimates of the first surface of the Test Report is analysis and estimates any permission of the surprise are retained in McDates from the Date of results and the first surface of the Test Report The samples from Regulatory better as the follows section for law All the samples are retained in McDates from the Date of resistance in the Laboratory in a law within the date within the date of the laboratory in the Report of the samples from Regulatory better the line partied stand before, no complained will be accorded. The samples from the school of the laboratory in its Report of the samples from the laboratory and the laboratory in the Report of the samples from the school of the laboratory in its Report of the samples from the Report of the samples from the laboratory and the laboratory in the Report of the samples from the laboratory and the laboratory and the laboratory in the Report of the samples from the laboratory and laboratory and laboratory and laboratory and the laboratory and lab

CONTENT

Hind	alco Industries : Jalim & Sanai Bauxite Mine Environmental Monitoring Report	August 2024	
Jalim & Sanai Bauxite Mine			
	AMBIENT AIR QUALITY- CORE ZONE		
1	Mine Pit Quarry No 2		
2	Nava PrathmikVidyalay (DhankaToli)		
3	Mine Pit Quarry No 3		
4	Near Colony		
	AMBIENT AIR QUALITY- BUFFER ZONE		
1	Near Banjari Village		
2	Near Pauri Village	1	
3	Near Harup Village		
4	Near Paintoli Village		
	Drinking Water		





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TEST REPORT

Test Report No.	: ELES/RNC/2024/4797	Report Release Date	: 23.08.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400002716F		

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/5490 : Mine Pit Quarry No 2, Jalim & Sanai Bauxite Mine (12.14ha)	
Address.	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 13.08.2024 to 14.08.2024 : 16.08.2024 : Ambient Air	
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 16.08.2024 to 23.08.2024	Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 28	2	Barometric Pressure (mmHg)	: 741
3	Relative Humidity (%) : 66	4	Weather Condition	: Cloudy

Discipline: 0	Chemical	Group: Atm	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	μg/m ⁸	IS 5182 (Part- 23): 2022	56	100 (24hrs)		
Particulate Matter (PM2.5)	μg/m³	1S 5182 (Part- 24): 2019	29	60 (24hrs)		
Sulphur Di-Oxide (SO ₂)	μg/m ³	IS 5182 (Part- II/Sec- 1): 2023	7.3	80 (24hrs)		
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part- 6): 2022	21.8	80 (24hrs)		
Ozone (O ₃)	µg/m	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)		
Ammonia (NH ₃)	μg/m³	IS 5182 (Part- 25); 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m³	1S 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)		
Lead (Pb)	μg/m ¹	IS 5182 (Part- 22): 2019	0.007	I (24hrs)		
Nickel (Ni)	ng/m ³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m³	ELES/AIR/SOP/01; 2021	<2.0	06 (Annual)		

Page I of 2

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TEST REPORT

 Test Report No.
 : ELES/RNC/2024/4797
 Report Release Date
 : 23.08.2024

 Work Order No.
 : 13612312113
 Work Order Date
 : 28.03.2024

ULR No. : TC135872400002716F

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

AKASHKUMAR Quality Managar ELES PVT. LTD.

****End of Report****

Authorised Signatory

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

Page 2 of 2

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

ENGINEERING SERVICES PVT. LTD.

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TEST REPORT

Test Report No.	: ELES/RNC/2024/4798	Report Release Date	: 23.08.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400002717F		

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/5491 : Nava Prathmik Vidyatay (DhankaToti) Jalim & Sanai Bauxite Mine (12.14ha)	
Address	Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 13,08,2024 to 14,08,2024 : 16,08,2024 : Ambient Air	
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	= 16.08.2024 to 23.08.2024	Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFO	RMATION				
1	Average Temperature (°C)	: 28	2	Barometric Pressure (mmHg)	: 741	
3	Relative Humidity (%)	: 66	4	Weather Condition	: Cloudy	

Discipline: 0	Chemical	Group: Atm	ospheric Pollu	ition
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m ¹	IS 5182 (Part- 23): 2022	46	100 (24hrs)
Particulate Matter (PM2,5)	μg/m³	IS 5182 (Part- 24): 2019	23	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-II/Sec-1): 2023	5.7	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part- 6): 2022	19.1	80 (24hrs)
Ozone (O3)	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10); 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	μg/m³	IS 5182 (Part- 22): 2019	0.011	1 (24hrs)
Nickel (Ni)	ng/m ²	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)

Page 1 of 2

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

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TEST REPORT

Test Report No. : ELES/RNC/2024/4798 Report Release Date : 23.08.2024

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC135872400002717F

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₄ H ₄)	μg/m³.	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

Reviewed by

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

Authorised Signatory

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

Page 2 of 2

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) 6ST NO: 20AAECE9713D124

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



TEST REPORT

Test Report No.	: ELES/RNC/2024/4799	Report Release Date	: 23.08.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400002718F		

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	= Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/5492 : Mine Pit Quarry No 3, Jalim & Sanai Bauxite Mine (12,14ha)	
Address	± Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 13.08.2024 to 14.08.2024 : 16.08.2024 : Ambient Air	
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	= 16.08.2024 to 23.08.2024	Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	28	2	Barometric Pressure (mmHg)	: 741
3	Relative Humidity (%)	; 66	4	Weather Condition	: Cloudy

Discipline: 0	Chemical	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23); 2022	51	100 (24hrs)		
Particulate Matter (PM2,5)	μg/m³	1S 5182 (Part- 24): 2019	27	60 (24hrs)		
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part- II/Sec- 1): 2023	7.4	80 (24hrs)		
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part- 6): 2022	21.9	80 (24hrs)		
Ozone (O ₃)	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)		
Ammonia (NH ₁)	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10); 2019 (NDIR Method)	<1,0	2 (8hrs)		
Lead (Pb)	μg/m [†]	IS 5182 (Part- 22): 2019	<0.002	1 (24hrs)		
Nickel (Ni)	ng/m	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)		

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

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TEST REPORT

Test Report No. : ELES/RNC/2024/4799 Report Release Date : 23.08.2024

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC135872400002718F

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

Reviewed by

AKASH KUMAR Quality Managor ELES PVT, LTD ****End of Report****

Dr. Deependra Kumar Sinha
Ph. D Environmental Engg.

ELES Pvt. Ltd. Technical Manager

Page 2 of 2

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

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TEST REPORT

Test Report No.	: ELES/RNC/2024/4800	Report Release Date	: 23,08,2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400002719F			

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/5493 : Near Colony; Jalim & Sanai Bauxite Mine (12.14ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 13.08.2024 to 14.08.2024 : 16.08.2024 : Ambient Air
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvl. Ltd.
Period of Analysis	: 16.08.2024 to 23.08.2024	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 28	2	Barometric Pressure (mmH	(g) : 741
3	Relative Humidity (%) : 66	4	Weather Condition	: Cloudy

Discipline:	Chemical	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m³	IS 5182 (Part- 23): 2022	43	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	21	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part- II/Sec- 1): 2023	5.2	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m³	1S 5182 (Part- 6): 2022	17.8	80 (24hrs)	
Ozone (O ₃)	µg/m ³	IS 5182 (Part- 9); 2019	<20.0	100 (8hrs)	
Ammonia (NH ₃)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10); 2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	μg/m³	IS 5182 (Part- 22); 2019	0.005	1 (24hrs)	
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m²	ELES/AIR/SOP/01: 2021	<2.0	06 (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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TC-1358

TEST REPORT

Test Report No. : ELES/RNC/2024/4800 Report Release Date : 23.08.2024

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC135872400002719F

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

Reviewed by AKASH KUMAR Quality Manager ELES PVT. LTD.

****End of Report****

Authorised Signatory

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

Page 2 of 2

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATTA, RANCHI-834003 (JHARKHAND) GST NO:- 20AAECE9733D124



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TEST REPORT

Test Report No.	: ELES/RNC/2024/4765	Report Release Date	: 22.08.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400002684F	-1-	

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/5448 : Near Banjari Village Serengdag-A Bauxite Mines (155.81ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	12,08.2024 to 13.08.2024 14.08.2024
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	14.08.2024 to 22.08.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

MI	TEOROLOGICAL INFO	RMATION			
.1	Average Temperature (°C)	: 27	2	Barometric Pressure (mmHg)	: 740
3	Relative Humidity (%)	: 69	4	Weather Condition	: Cloudy

Discipline:	Chemical	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m³	IS 5182 (Part- 23): 2022	47	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	24	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m³	15 5182 (Part- II/Sec- 1): 2023	7.5	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	µg/m³	IS 5182 (Part- 6): 2022	19.3	80 (24hrs)	
Ozoné (O _z)	µg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH ₃)	µg/m³	IS-5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Curbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	μg/m³	IS 5182 (Part- 22); 2019	0.006	((24hrs)	
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	< 6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	

Page 1 of 2

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TEST REPORT

Test Report No.	: ELES/RNC/2024/4765	Report Release Date	: 22,08.2024
Work Order No.	13612312113	Work Order Date	: 28.03,2024
ULR No.	: TC135872400002684F		

Discipline: Chemical		Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (C ₈ H ₆)	μg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05: 2023	< 0.5	01(Annual)

AKASHIROWAR Quality Manager ELES PVT LTD

****End of Report****

Authorised Signatory Dr. Deependra Kumar Sinha Ph. D Environmental Engo. ILES Pvt. Ltd. Technical Mannor

Page 2 of 2

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PLOT NO-30, MANSAROVAR ENCLAVE, TURUDANA HATTA, RANCHI-834003 (JHARKHAND) G57 NO:- 20AAECE9713D1Z4

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TEST REPORT

Test Report No.	; ELES/RNC/2024/4766	Report Release Date	: 22.08.2024	
Work Order No.	± 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400002685F			

CUSTOMER DET	CUSTOMER DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/5449 : Near Pauri Village Serengdag-A Bauxite Mines (155.81ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 12.08.2024 to 13.08.2024 : 14.08.2024
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 14.08.2024 to 22.08.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

METEOROLOGICAL INFORMATION			
Average Temperature (°C) : 27	2	Barometric Pressure (mmHg)	. 740
Relative Humidity (%) : 69		Weather Condition	: Cloudy

Discipline: Chemical		Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	53	L00 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	26	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m³	1S 5182 (Part-11/Sec-1): 2023	7.8	80 (24hrs)
Nitrogen Di-Oxide (NOz)	µg/m³	IS 5182 (Pari- 6): 2022	20.1	80 (24hrs)
Ozone (U ₁))4g/m3	IS 5182 (Part-9); 2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	(Jug/in ³	IS 5182 (Part- 22): 2019	0.005	1 (24hrs)
Nickel (Ni)	ng/m*	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m	ELES/AIR/SOP/01:2021	<2.0	06 (Annual)

Page 1 of 2

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TEST REPORT

Test Report No. : ELES/RNC/2024/4766 Report Release Date : 22.08.2024
Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC135872400002685F

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

Reviewed by AKASH KUMAR Quality Manager ELES PVT LTD

****End of Report****

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

Page 2 of 2

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TEST REPORT

Test Report No.	: ELES/RNC/2024/4767	Report Release Date	: 22.08.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400002686F			

CUSTOMER DET	CUSTOMER DETAILS		
Customer Name	= Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/5450 : Near Harup Village Serengdag-A Bauxite Mines (155,81ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 12.08.2024 to 13.08.2024 : 14.08.2024
Mines Status	Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 14.08.2024 to 22.08.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

Average Temperature (°C) : 27	2 Barometric Pressure (mmHg) : 740	
Relative Humidity (%) : 69	4 Weather Condition : Cloude	

Discipline: Chemical		Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	44	100 (24hrs)
Particulate Matter (PM2.5)	μg/m ²	IS 5182 (Part- 24); 2019	21	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part- II/Sec- 1); 2023	5.5	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m ¹	IS 5182 (Part- 6): 2022	15.2	80 (24hrs)
Ozone (O ₂)	ug/in ³	IS 5182 (Part- 9); 2019	<20.0	100 (8hrs)
Ammonia (NH ₄)	µg/m³	IS 5182 (Part- 25); 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ^T	IS 5182 (Part- 10); 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m	15 5182 (Part- 22): 2019	<0.002	1 (24hrs)
Nickel (NI)	ng/m ³	(S 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m²	FLES/AIR/SOP/01: 2021	<2.0	06 (Annual)

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TEST REPORT

Test Report No. : ELES/RNC/2024/4767 Report Release Date : 22.08.2024
Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC135872400002686F

Discipline: Chemical		Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (C ₀ H ₀)	μg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05: 2023	< 0.5	01(Annual)

AKASH KUMAR Quality Manager ELES PVT LTD

****End of Report****

Authorised Signatory
Dr. Deependra Kumar Singe
Ph. D Environmental Engg.
ELES Pvt. Ltd. Technical Magazin

Page 2 of 2

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TEST REPORT

Test Report No.	: ELES/RNC/2024/4768	Report Release Date	: 22.08.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400002687F		

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/5451 : Near Paintoli Village Serengdag-A Bauxite Mines (155,81ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 12.08.2024 to 13.08.2024 : 14.08.2024	
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 14.08.2024 to 22.08.2024	Sampling Done By Sample Condition	; ELES Pvt. Ltd. ; Sealed & Preserved	

METEOROLOGICAL INFORMATION			
1 Average Temperature (°C) : 27	2	Barometric Pressure (mmHg)	- 740
3 Relative Humidity (%) : 69		Weather Condition	: Cloudy

Discipline:	Chemical	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	нg/m ³	IS 5182 (Part- 23); 2022	53	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24); 2019	26	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-II/Sec- 1): 2023	7.4	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m³	(\$ 5182 (Part- 6); 2022	19.6	80 (24hrs)	
Ozone (O ₃)	μg/m³	IS 5182 (Part- 9): 2019	<20.6	100 (Shrs)	
Ammonia (NH ₁)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m ¹	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	μg/m³	IS 5 (82 (Part- 22); 2019	0.006	J (24hrs)	
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m²	ELES/AIR/SOP/01: 2021	<2,0	06 (Annual)	

Page 1 of 2

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TEST REPORT

Test Report No. : ELES/RNC/2024/4768 Report Release Date : 22.08.2024

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC135872400002687F

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₀ H ₆)	μg/m²	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05: 2023	< 0.5	01(Annual)	

Reviewed by

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

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

Page 2 of 2

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TEST REPORT

Test Report No.	: ELES/RNC/2024/4814	Report Release Date	: 24.08.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400002733F			

CUSTOMER DET	FAILS	SAMPLE DETAILS		
Customer Name	; Hindalco Industries Limited	Sample Ref. No. Sampling Date Sample Received Date	: ELES/RNC/2024/DW/5502 : 13.08.2024 : 16.08.2024	
Address	: Lohardaga, Jharkhand-835302	Type of Sample Source of Sample Location of Sample	: Drinking Water : Tap Water : Jalim Village	
Mines Status	: Operational	Sampling Procedure	(Jalim & Sanai Bauxite Mine) : ELES/DOC/SMPL/01	
Period of Analysis	: 16.08.2024 to 24.08.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

Discipline : Chemical		Group	: Water	The second second	ory Limit 10500:2012
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
pH (at 24.6°C)	200	APHA 24 ^a Ed.2023, 4500-H	6.64	6.5-8.5	No Relaxation
Turbidity	NTU	APHA 24th Ed.2023, 2130 B	0.96	0.1	5.0
Taste		APHA 24th Ed.2023, 2160 C	Agreeable	Agreeable	Agreeable
Odour	*	IS 3025 (Part-5) :2018	Agreeable	Agreeable	Agreeable
Colour	Hazen	APHA 24th Ed.2023, 2120B&D	2.0	5.0	15
Total Dissolved Solids (TDS)	mg/L	APHA 24th Ed.2023, 2540B,C&D	88	500	2000
Chloride (as Cl)	mg/L	APHA 24th Ed.2023, 4500 Cl B	7.6	250	1000
Fluoride (as F)	mg/L	APHA 24th Ed.2023, 4500 F-D	BDL (DL: 0,1)	1.0	1.5
Total Alkalinity (as CaCO ₃)	mg/L	APHA 24th Ed.2023, 2320 B	30.9	200	600
Total Hardness (as CaCO ₃)	mg/L	APHA 24th Ed.2023, 2340 C	38.7	200	600
Sulphate (as SO ₄)	mg/L	APHA 24 ^a Ed.2023, 4500 SO ₄ ⁻² -E	2.48	200	400
Nitrate (as NO ₃)	mg/L	APHA 24th Ed.2023, 4500 NO ₃ -B	1.46	45	No Relaxation

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TC-13587

TEST REPORT

Test Report No. : ELES/RNC/2024/4814 Report Release Date : 24.08.2024

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC135872400002733F

Discipline: Chemic	al	Gro	op: Water		ory Limit 10500:2012
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
Phenolic Compound (as C ₆ H ₅ OH)	mg/L	IS 3025 (Part 43/Sec1): 2022	BDL (DL: 0.001)	0.001	0.002
Free Residual Chlorine (RFC)	mg/L	1S 3025 (Part-26); 2021	0.21	0.2(Min)	1.0(Min)
Calcium (as Ca)	mg/L	APHA 24th Ed.2023, 3500 Ca B	10.8	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	Gre	oup : Residues i	n Water	
Aluminum (as Al)	mg/L	IS 3025 (Part-55) :2003; RA2019	BDL (DL: 0.02)	0.03	0.2
Arsenic (as As)	mg/L	IS 3025 (Part-37): 2022	BDL (DL: 0.005)	0.01	No Relaxation
Boron (as B)	mg/L	IS 3025 (Part-57): 2021	BDL (DL: 0.2)	0.5	1.0
Cadmium (as Cd)	mg/L	APHA 24 th Ed.2023; 3111B	BDL (DL: 0.003)	0.003	No Relaxation
Total Chromium (as Cr)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL: 0.03)	0.05	No Relaxation
Copper (as Cu)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL: 0.03)	0.05	1.5
Cyanide (as CN)	mg/L	APHA 24 th Ed.2023, 4500 CN-E	BDL (DL: 0.012)	0.05	No Relaxation
Iron (as Fe)	mg/L	APHA 24th Ed.2023; 3111B	0.068	1.0	No Relaxation
Lead (as Pb)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL: 0.01)	0.01	No Relaxation
Manganese (as Mn)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL: 0.05)	0,1	0.3
Mercury (as Hg)	mg/l.	IS 3025 (Part-48): 2019	BDL (DL: 0.001)	0.001	No Relaxation
Selenium (as Se)	mg/L	IS 3025 (Part-56): 2019	BDL (DL: 0.01)	0.01	No Relaxation

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TC-13587

TEST REPORT

Test Report No. : ELES/RNC/2024/4814 Report Release Date : 24.08.2024

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC135872400002733F

Discipline : Chemical		Group: Resid	lues in Water	the state of the s	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)		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)	j	25
Chlorpyriphos	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	30	
Ethion	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	3.0	
Malathion	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	190	
Methyl parathion	pg/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)		
Dieldrin	µg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.01)	0.	.03
Alpha HCH	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.006)	0.	.01
Beta HCH	μg/L.	ELES/GC/SOP/02: 2023	BDL (DL: 0.02)	0.	04

Page 3 of 4

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GINEERING SERVICES PVT. LTD.

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

: 28.03.2024

Website: www.elespl.co.in



TEST REPORT

Work Order Date

Test Report No. : ELES/RNC/2024/4814 Report Release Date : 24.08.2024 Work Order No. : 13612312113

ULR No. : TC135872400002733F

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)	μ <u>μ</u> /Ι.	ELES/GC/SOP/02: 2023	BDL (DL: 0.05)	0.40
DDT(o,p and p,p-isomers of DDT) (o,p DDE and p,p DDD)	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.05)	1.0
Discipline : Biological		Group	: Water	
Total Coliform (Qualitative)	Per 100 mL	IS 15185: 2021	Not Detected	SATE PIRE
Escherichia coli (Qualitative)	Per 100 mL	IS 15185: 2021	Not Detected	Shall not be detected

Remarks: 1. pH and RFC done at Lab.

AKASH KUMAR Quality Managar ELES PVT. LTD.

****End of Report****

Authorised Signatory Dr. Deependre Kumar Sinha Ph. D Environmental Engg. ELES Pvt. Ltd. Technical Man

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

Test Report No.	: ELES/RNC/2024/4814	Report Release Date	: 24.08.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	

CUSTOMER DET	TAILS	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	: ELES/RNC/2024/DW/5502 : 13.08.2024 : 16.08.2024 : Drinking Water : Tap Water
Mines Status Period of Analysis	: Operational : 16.08.2024 to 24.08.2024	Location of Sample Sampling Procedure Sampling Done By Sample Condition	: Jalim Village (Jalim & Sanai Bauxite Mine) : ELES/DOC/SMPL/01 : ELES Pvt. Ltd. : Sealed & Preserved

Discipline : Che	mical	Group: Wa	iter	The second secon	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

ELES PVT. LTD

****End of Report****

Authorised Signatory

Dr. Deependra Kumar Sinina Ph. D Environmental Engg

ELES PVL Ltd. Technical Manny

Page 1 of 1

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CONTENT

Hind	alco Industries : Jalim & Sanai Bauxite Mine Environmental Monitoring Report	September 2024
	Jalim & Sanai Bauxite Mine	aproxime and a second
	AMBIENT AIR QUALITY- CORE ZONE	
1	Mine Pit Quarry No 2	
3	Nava Prathmik Vidyalay (Dhanka Toli)	
3	Mine Pit Quarry No 3	
4	Near Colony	
	AMBIENT AIR QUALITY- BUFFER ZONE	
1	Near Banjari Village	
2	Near Pauri Village	
3	Near Harup Village	
4	Near Paintoli Village	
	AMBIENT NOISE	
	WORKZONE NOISE	





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TEST REPORT

Test Report No.	: ELES/RNC/2024/5596	Report Release Date	: 30.09.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400003494F		

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/6492 : Mine Pit Quarry No 2, Jalim & Sanai Bauxite Mine (12.14ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 19.09.2024 to 20.09.2024 : 23.09.2024 : Ambient Air
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02
Period of Analysis	: 23.09.2024 to 30.09.2024	Sampling Done By Sample Condition	: ELES Pvt, Ltd. : Sealed & Preserved

MI	ETEOROLOGICAL INFORMA	TION		
1	Average Temperature (*C) : 3	2	Barometric Pressure (mmHg)	: 740
3	Relative Humidity (%) : 5	4	Weather Condition	: Clear

Discipline : Chemic	at	Group:	Atmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m³	IS 5182 (Part- 23): 2022	59	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	31	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m³	IS 5182 (Part- 2/Sec1): 2023	7.8	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m ¹	IS 5182 (Part- 6): 2022	22.2	80 (24hrs)
Ozone (O ₁)	μg/m³	15 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₂)	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ⁴	IS 5182 (Part- 10); 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Ph)	μg/m ³	1S 5182 (Part- 22): 2019	0.007	1 (24hrs)
Nickel (Ni)	ng/m)	1S 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 202)	<2.0	06 (Annual)
Benzene (C _n H _n)	µg/m²	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05: 2023	<0.5	OI(Annual)
				V

Reviewed by Akush Kumar

****End of Report****

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

Page I of I

rechnical Manager

The Decement stand in Test Septem, is assend by the Laboratory under General Torres and Conditions, only on Company letter head to pre-approved format. The results above as the Test Report refer or relaxes only to the privatelying does by the Laboratory and a The information armed on the Tast Report reflects the findings does by the Laboratory at the time of involvement only and solling the limits of class a metaspacers. The Laboratory is responsible for all the information of data privated on the organic except the information which is provided by the attent. The Report cases to reproduced except in full and any part of the report in our taken, our of decision, without prior notions approved of the Laboratory. The Report in full or in part shall not be published. absence, used for my logal across enforcement per per mission has been second from the Management of the Laboratory. Attention is descent to improve on the law and of the content or appearance of the Ton Report is unlessful and offenders may be presented to the following of the law. All the content of the law all the content of the law. retained for Bibliog from the Daw of release town of the York Report. The complex from Regulatory bridges are to be rememd at apendical Any type of Observations or Completes requesting the fugurate that be from colline 15 lays from the Date of Text Report released broad in the pound many before, no completes will be accepted. The antite Time schedule esemanted to I we Righest to in 1-Stream format. Abstractions used. Not (Not Applicable), BER. (Bakks Described Limit). 1.10. (Lower Described Comit).



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TC-13587

TEST REPORT

Test Report No.	: ELES/RNC/2024/5597	Report Release Date	: 30.09.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400003495F			

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/6493 : Nava Prathmik Vidyalay(DhankaToli) Jalim & Sanai Bauxite Mine (12.14ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 19.09.2 <mark>024 to 2</mark> 0.09,2024 : 23.09.2024
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 23.09.2024 to 30.09.2024	Sampling Done By Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature ("C)	: 30	2	Barometric Pressure (mmHg)	: 740
3	Relative Humidity (%)	: 59	4	Weather Condition	: Clear

Discipline : Chemic	al	Group:	Atmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m³	IS 5182 (Part- 23): 2022	51	100 (24hrs)
Particulate Matter (PM2,5)	μg/m³	IS 5182 (Part- 24): 2019	27	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part- 2/Sec1): 2023	6,2	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m³	IS 5182 (Part- 6): 2022	21.7	80 (24hrs)
Ozone (O ₁)	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₂)	pg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m ²	IS 5182 (Part- 22): 2019	0.006	1 (24hrs)
Nickel (Ni)	ng/m ²	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)
Benzene (C ₆ H ₆)	µg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m ⁴	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 Enga

Page 1 of 1

Technical Manager

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TEST REPORT

Test Report No.	: ELES/RNC/2024/5598	Report Release Date	: 30.09.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03,2024	
ULR No.	: TC135872400003496F			

CUSTOMER DET	TAILS	SAMPLE DETAILS		
Customer Name	: Hindaico Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/6494 : Mine Pit Quarry No 3, Jalim & Sanai Bauxite Mine (12.14ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 19.09.2024 to 20.09.2024 : 23.09.2024	
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 23.09.2024 to 30.09.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

M	ETEOROLOGICAL INFORMA	ATION			
1	Average Temperature (°C)	50	2	Barometric Pressure (mmHg)	:740
3	Relative Humidity (%)	59	4	Weather Condition	: Clear

Discipline : Chemic	al	Group:	Atmospheric l	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m³	IS 5182 (Part- 23): 2022	55	100 (24hrs)
Particulate Matter (PM2,5)	μg/m³	IS 5182 (Part- 24): 2019	25	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part- 2/Sec1): 2023	8.4	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m³	IS 5182 (Part- 6): 2022	23.1	80 (24hrs)
Ozone (O ₃)	μy/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m³	1S 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m³	IS 5182 (Part- 22): 2019	<0.002	1 (24hrs)
Nickel (Ni)	ng/m³	1S 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m*	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)
Benzene (C ₆ H ₆)	μg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m ³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

Reviewed by

****End of Report****

Authorised Signatory Dr. Deependra Kumar Sinha

Ph. D. Environmental Enga

Akash Kumat

Page I of 1

Technical Manager

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ENGINEERING SERVICES PVT. LTD.

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TEST REPORT

Test Report No.	: ELES/RNC/2024/5599	Report Release Date	: 30.09.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400003497F			

CUSTOMER DET	CUSTOMER DETAILS		and the same of the same of the same
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/6495 : Near Colony; Jalim & Sanai
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	Bauxite Mine (12.14ha) : 19.09.2024 to 20.09.2024 : 23.09.2024
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	; 23,09.2024 to 30.09.2024	Sampling Done By Sample Condition	ELES Pvt. Ltd.

M	ETEOROLOGICAL INFOR	MATION				
1	Average Temperature (°C)	: 30	2	Barometric Pressure (mmHg)	: 740	
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/m³	IS 5182 (Part- 23): 2022	51	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	1S 5182 (Part- 24): 2019	24	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m³	[S-5182 (Part- 2/Sec1): 2023	5.9	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part- 6): 2022	15.2	80 (24hrs)	
Ozone (O ₂)	μg/m [‡]	1S 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH ₃)	μg/m ¹	IS 5182 (Part- 25); 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	μg/m³	IS 5182 (Part- 22); 2019	0.005	1 (24hrs)	
Nickel (Ni)	ng/m ¹	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	
Benzene (C _n H _n)	μg/m ⁵	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m ³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

Reviewed by Akash Kumar

****End of Report****

Dr. Deependra Kumar Sinha Ph. D. Environmental Foon

Page I of I

Technical Manager

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TEST REPORT

Test Report No.	: ELES/RNC/2024/5509	Report Release Date	: 28.09.2024	
Werk Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400003414F			

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindako industries Limited	Sample Ref. No. Location	; ELES/RNC/2024/AA/6355 New Bunjari Village Screngdag-A Bauxite Mines (155,61ha)	
Address	Lohardega, Thershand-835302	Sampling Date Sample Received Date Type of Sample	: 16.09.2024 to 17.09.2024 : 20.09.2024 Ambient Al:	
Mines Status	: Operational	Sampling Procedure	ELES/DOC/SMPL/02	
Period of Analysis	: 20.09.2024 to 28.09.2024	Sampling Done By Sample Condition	Sealed & Preserved	

M	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) = 29	2	Barometric Pressure (mm]	ig) = 740
3	Relative Humidity (%) : 61	4	Weather Condition	Clear

Discipline: Chemie	cal	Group:	Atmospherie	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m³	(S 5182 (Part- 23): 2022	51	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	21	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	15.5182 (Part-2/Sec1): 2023	5.2	80 (24hrs)
Nitrogen Di-Oxide (NO ₁)	pg/m³	(S 5182 (Part- 6): 2022	16.7	80 (24hrs)
Ozone (O ₁)	µg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	hE(m)	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carban Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	μg/m²	IS 5182 (Part- 22); 2019	0.006	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)
Benzene (C ₄ H ₆)	µg/m²	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m ³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

Reviewed by

****End of Report****

Authorised Signutury Dr. Deependra Kumar Sinha

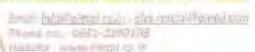
Ph. D. Environmental Engg. Technical Manager

Page 1 of I

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TEST REPORT

Test Report No.	: ELES/RNC/2024/5510	Report Release Date	: 28.09.2024
Work Order No.	: 13612312113	Work Order Date	: 28:03.2024
ULR No.	: TC135872400003415F		

CUSTOMER DEL	AILS	SAMPLE DETAILS	
Customer Name	- Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/6356 : Near Pauri Village Serengdag-A Bauxite Mirtes (155.8 (ks))
Astres	Lohardaga, Iharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 16.09.2024 in 17.09.2024 : 20.09.2024 Ambient Alir
Mines Status	: Operational	Sampling Procedure	ELES/DOC/SMPL/02
Period of Analysis	: 20.09.2024 to 28.09.2024	Sampling Done By Sample Condition	Senied & Preserved

M	ETEOROLOGICAL INFOR	MATION				
T	Average Temperature (°C)	: 29	2	Barumetric Pressure (mmHg)	: 740	
3	Average Temperature (°C) Relative Humidity (%)	: 61	4	Weather Condition	: Clear	

Discipline : Chemie	cal	Group:	Atmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m³	IS 5182 (Part- 23): 2022	58	100 (24hrs)
Particulate Matter (PM2.5)	μg/m ^T	IS 5182 (Part- 24): 2019	24	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m	IS 5182 (Part- 2/Sec1): 2023	6.1	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m³	IS 5182 (Part- 6): 2022	18.4	80 (24frs)
Ozone (O ₃)	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₁)	µg/m ³	15 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	0.004	1 (24hrs)
Nickel (Ni)	ng/in³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)
Benzene (C _s H _n)	µg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m²	ELES/GC/SOP/05; 2023	<0.5	01(Annual)

Reviewed by

****End of Report****

Dr. Deependra Kumar Sinha

Ph. D. Environmental Enga. Technical Manager

Page | of 1

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TEST REPORT

Test Report So.	: ELESARNC/2024/5511	Report Release Date	: 38.09.2024
Wayle Order No.	: 13612312113	Work Order Date	1.28,03,2024
ULR No.	: TC135872400003416F		

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	Hindalco Industries Limited	Sample Ref. No. Location	(ELES/RNC/2024/AA/6357 (Neur Harup Village Serengdag-A Bauxite Muss (155.81ha)
Address	Lohardaga, Jharlchand-835302	Sampling Date Sample Received Date Type of Sample	± (6.09.2024 to 17.09.2024 ± 20.09.2024 - Ambiem Ali
Mines Stanu	: Operational	Sampling Procedure	ELES/DOC/SMPL/02
Period of Analysis	; 20.09.202) to 28.09,2024	Sampling Done By Sample Condition	Sealed & Preserved

MI	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	= 29	2	Barometric Pressure (mmřig)	-740
3	Relative Humidity (%)	161		Weather Condition	: Clear

Discipline: Chemia	rat l	Group:	Atmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ²	IS 5182 (Pari- 23), 2022	50	100 (24hrs)
Particulate Matter (PM2.5)	μg/m [±]	IS 5182 (Part- 24): 2019	25	50 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part- 2/Sec1): 2023	5.1	80 (24hrs)
Nitrogen Di-Oxide (NO ₁)	µg/m ²	IS 5182 (Part- 6): 2022	17.5	80 (24hrs)
Ozone (O ₃)	μg/m ⁴	IS 5182 (Part- 9); 2019	<20.0	100 (8hrs)
Ammonia (NHs)	ug/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m [∓]	15 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (Shrs)
Lead (Pb)	μg/m ³	IS 5182 (Part- 22): 2019	< 0.002	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	< 6.0	20 (Annual)
Arsenic (Ar)	ng/m²	ELES/AJR/SOP/01; 2021	<2.0	96 (Annual)
Benzene (C ₄ H ₄)	µg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)
Benzene (C _s H _s)	µg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annu

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****End of Report****

Dr. Deepeliara William Sinha Ph. D. Environmental Engg.

Technical Manager

Page I of I

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TEST REPORT

Test Report No.	: ELES/RNC/2024/5512	Report Release Date	: 28.09.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400003417F		

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/635# : Near Paintoll Village Serengdag-A Bauxite Mines (155.81ha)
Address	: Lohardaga, Jiparkhand-835302	Sampling Date Sample Received Date Type of Sample	: 16.09 2024 to 17.09.2024 ; 20.09 2024 Ambient Air
Mines Status	: Operational	Sampling Procedure	ELES/DOC/SMPL/03
Period of Analysis	: 20.09,2034 to 28.09,2024	Sampling Done By Sample Condition	ELES Pvt. Ltd. Sealed & Preserved

Mi	ETEOROLOGICAL INFORMATION				
T	Average Temperature (°C) : 29	2	Barometric Pressure (mmHg	: 740	
3	Relative Humidity (%) :61	4	Weather Condition	.: Clear	

al	Group:	Atmospheric !	Pollution
Unit	Test Protocol	Result	Regulatory Limit
μg/m ^T	IS 5182 (Part- 23): 2022	.57	100 (24hrs)
μg/m³	1S 5182 (Part- 24): 2019	28	60 (24hrs)
µg/m [†]	15 5182 (Part- 2/Sec1): 2023	6,1	80 (24hrs)
µg/m³	15 5182 (Part- 6): 2022	17.3	80 (24hrs)
µg/m [®]	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
mg/m²	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
μg/m³	IS 5182 (Part- 22): 2019	0.005	1 (24hrs)
ng/m²	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
ng/m²	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)
µg/m	ELES/GC/SOP/06; 2023	<2.5	05(Annual)
ng/m²	ELES/GC/SOP/05: 2023	<0.5	01(Annual)
	Unit µg/m³ µg/m³	Unit Test Protocol μg/m ³ 15 5182 (Part- 23): 2022 μg/m ³ 18 5182 (Part- 24): 2019 μg/m ³ 18 5182 (Part- 2/Sec1): 2023 μg/m ³ 18 5182 (Part- 6): 2022 μg/m ³ 18 5182 (Part- 9): 2019 μg/m ³ 18 5182 (Part- 25): 2018 Ing/m ³ 18 5182 (Part- 10): 2019 (NDIR Method) μg/m ³ 18 5182 (Part- 22): 2019 ηg/m ³ 18 5182 (Part- 22): 2019 ηg/m ³ 18 5182 (Part- 26): 2020 ηg/m ³ 18 5182 (Part- 26): 2020 ηg/m ³ ELES/AIR/SOP/01: 2021 μg/m ³ ELES/GC/SOP/06: 2023	Unit Test Protocol Result μg/m³ 15 5182 (Part- 23): 2022 57 μg/m³ 15 5182 (Part- 24): 2019 28 μg/m³ 15 5182 (Part- 2/Sec1): 2023 6.1 μg/m³ 15 5182 (Part- 6): 2022 17.3 μg/m³ 15 5182 (Part- 6): 2022 17.3 μg/m³ 15 5182 (Part- 9): 2019 <20.0

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****End of Report***

Authorised Signatory Dr. Deependra Kumar Sinha

Ph. D. Environmental Engg. Technical Manager

Page 1 of 1

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

ENGINEERING SERVICES PVT, LTD.

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

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



TEST REPORT

Test Report No.	: ELES/RNC/2024/5601	Report Release Date	: 30.09.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
	CONTRACTOR AND			

ULR No. : TC135872400003499F

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	: 19.09.2024 to 20.09.2024 : 23.09.2024 : Ambient Noise : ELES/DOC/SMPL/03 : ELES Pvt. Ltd.	
Mines Status	: Operational	Period of Analysis	: 23.09.2024 to 30.09.2024	

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 30	2,	Barometric Pressure (mmHg)	: 740
3	Relative Humidity (%)	: 59	4	Weather Condition	; Clear

Discipline: Chemical	Pollution				
Location	Unit	Test Protocol	Result		Regulatory Limit (Industrial Zone)
View from the second			Time	$-L_{inj}$	
Jalim & Sanai Bauxite Mines (12.14ha)	dB(A)	IS 9989: 2020	Day Time	67	75 dB(A) Day Time
Sample ID: ELES/RNC/2024/AN/6497			Night Time	49	70 dB(A) Night Time



**** End of Report****

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

Page 1 of 1

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

ENGINEERING SERVICES PVT. LTD.

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

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



TO/TEST

TEST REPORT

Test Report No.	: ELES/RNC/2024/5603	Report Release Date	: 30.09.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400003501F		

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	: 20.09.2024 : 23.09.2024 : Workzone Noise : ELES/DOC/SMPL/03 ELES Pvt. Ltd.	
Mines Status	: Operational	Period of Analysis	: 23.09.2024 to 30.09.2024	

MI	ETEOROLOGICAL INFORMATION			
Ŧ	Average Temperature (°C) : 30	2	Barometric Pressure (mmH	lg) ±740
3	Relative Humidity (%) : 61	4	Weather Condition	: Clear

Location	Unit	Test Protocol	ol Result		Regulatory Limit (Industrial Zone)	
Near Loader -			Time	Leq		
Jalim & Sanai Bauxite Mine (12.14ha)	dB(A)	IS 4758: 2017	D. W.	- 2	90 dB (A)	
Sample ID: ELES/RNC/2024/WN/6499	-		Day Time	70		



****End of Report****

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

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Annexure 3

Date - 22.11.2024

Office Order

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

- 1. Mr. Satyabrat Behera(Coordinator)
- 2. Mr. Debjyoti Das (Geologist)
- 3. Ms. Abhilasha Singh-Environment Engineer
- 4. Mr. Anand Prakash Tiwari Environment Engineer

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

Basudev Gangopadhyay

AVP (Planning, Environment & Compliance)

Annexure 4

	Producti	on, Mined Out	, Back Filled and	d Over Burden rem	oval from Apr	il'24 to Sep	tember'24	
S No	Name of the Mines	Mining lease area (ha)	Production Capacity (MT)*	Lease Period*	Production (MT)	Mined out area (ha)	Back filled area (ha)	Over burden (Cu.M)
1	Bagru Bauxite Mine	75.41	85000	22.01.1974 to 31.03.2030	NIL	NIL	NIL	NIL
2	Bhusar Bauxite Mine	65.31	280000	11.07.1981 to 31.03.2030	82481	0.25	0.57	191521.65
3	Hisri (New) Bauxite Mine	14.55	100000	19.07.1981 to 31.03.2030	63197	0.45	0.35	26905.95
4	Pakhar (8.09) Bauxite Mine	8.09	80000	16.05.1973 to 31.03.2030	NIL	NIL	NIL	NIL
5	Pakhar (35.12) Bauxite Mine	35.12	200000	17.04.1975 to 31.03.2030	NIL	NIL	NIL	NIL
6	Pakhar (115.13) Bauxite Mine	115.13	300000	19.07.1996 to 31.03.2030	96744	4.29	8.89	365249.34
7	Sherangdag-A Bauxite Mine	155.81	260000	16.10.1974 to 31.03.2030	6200	0.23	0.2	10200.00
8	Serangdag-B Bauxite Mine	77.89	100000	04.10.1978 to 31.03.2030	49850	0.96	0.85	104303.82
9	Jalim & Sanai Bauxite Mine	12.14	50000	16.10.1974 to 31.03.2030	12450	0.14	0.12	13050.63
10	Gurdari Bauxite Mine	584.19	325000	23.03.1985 to 22.03.2035	96115	4.69	2.46	185023.98
11	Kujam - I Bauxite Mine	80.87	150000	13.03.2006 to 12.03.2056	7175	0.97	0.43	21377.24
12	Kujam - II Bauxite Mine	157.38	300000	24.03.2006 to 23.03.2056	49120	5.28	3.56	137098.55
13	Amtipani Bauxite Mine	190.95	150000	13.03.2006 to 12.03.2056	87109	2.153	0.987	225462.85

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

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

Basudev Cangopadhyay
AVP (Planning, Environment and Compliance)

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

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

S No	Budget (in Rupees) Description FY 2024-25 (From Apr'24 to Sep'24)		Actual (in Rupees) FY 2024-25 (From Apr'24 to Sep'24)
1	Pollution Control & Environment monitoring	61,35,000.00	53,47,442.83
2	Reclamation/ Back filing & Rehabilitation**	5,62,80,000.00	5,60,24,564.93
3	Green belt, Plantation & Water sprinkling arrangement	73,42,000.00	69,41,114.17
4	Rural Development	2,75,00,000.00	2,05,55,592.67

^{**}Part of OB removed cost.

Basudev Gangopadhyay AVP (Planning, Environment & Compliance)