

Date: 25.11.2024

HIL/LHD/ENV/MoEF/KUJAM-I/1017

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 Kujam-I Bauxite Mining project of M/s Hindalco Industries Limited located in Dist- Gumla, Jharkhand for the period April'24 to September'24.

Ref: Environmental Clearance Identification no EC23B001JH143302 dated 21st August 2023

Sir,

With reference to the above, we are submitting herewith the Compliance status report of EC conditions for **Kujam-I (80.87 ha)** Bauxite Mining project of **M/s Hindalco Industries Limited** located in Gumla, Jharkhand for the period April'24 to September'24.

The lease details are below:

Lease area (ha)	Production Capacity (MT)	Lease Period		
80.87	150000	13.03.2006 to 12.03.2056		

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>, zokolkatta.cpcb@nic.in, ranchijspcb@gmail.com, roranchi47@gmail.com

Name of the Project : Kujam I Bauxite Mine (80.87 ha)

M/s Hindalco Industries Ltd

EC Identification No & date : EC23B001JH143302, dated 21.08.2023.

Period of compliance Report : From 1st April 2024 to 30th September 2024

A. Specific Conditions

Condition 1-This Environmental Clearance is valid subject to the fallowing condition below-That this project has

- a. Obtained all legal rights to operate at concerned place.
- b. Complied with all existing concerned laws of the land and
- c. Complied with the decisions of SEIAA on the issue of Environmental Clearance till date.

Reply to Condition 1 – Agreed. All the legal rights and concerned laws are already complied with. The decision of SEIAA on the issue of **Environmental Clearnce** are being/ will be complied with.

Condition 2- Gabion Planation work in the safety zone (7.5 m width around the proposed lease boundary and on either side of approach road in two rows with the spacing of 3x3m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, morality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Clime Change. Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Reply to Condition 2- Being adhered to. Progressive plantation is being carried out in consultation with local forest Dept. Total 2900 nos. of saplings have been planted during Apr'24 to Sep'24 within this lease. Cumulative 7.32 ha areas have been planted till date. In addition to these, agricultural activities (bio plantation) is going on reclaimed land as per the consent from landowners.

Safety Zone planation work is already being carried out. Plant survival rate is being taken care of by regular watering and manuring. Protection of saplings by fencing pillar and chain link fencing is being done. Photographs of plantation and chain link fencing are attached below:



Plantation and Agriculture activities in Safety zone and Reclaimed Area

Condition 3- Since this is an existing mine located adjacent to the notified forest land. Therefore 7.5-meter safety zone should be maintained as a special precautionary measure protect the adjoining forest.

Reply to Condition 3- Noted and Being adhered. 7.5-meter safety zone is being maintained and no mining activity is being carried out in this zone.

Condition 4- No mining/activity shall be undertaken in the forest land or deemed forest without obtaining requisite prior forestry clearance.

Reply to Condition 4- Noted. However, there is no forest area in our mining lease area. Therefore, we are not doing any mining/activity in the forest area.

Condition 5- The project proponent may apply simultaneously for forest and NBWL clearance in order to complete the formalities without undue delay which till process on their respective merits, no rights will vest in or accrue to them unless all clearance are obtained, if applicable.

Reply to Condition 5- Noted. However, there is no forest land within the lease hold area. Therefore, there is no need for forest clearance. This mine is also located beyond the ESZ boundary. Hence, NBWL is not applicable for this mine.

B. Statutory Compliance

Condition 1-This Environmental Clearance (EC) is subject to orders/ judgment of Hon'ble Supreme Court of India, Hon'ble High Court, Hon'ble NGT and any other Court of Law. Common Cause Conditions as may be applicable.

Reply to Condition 1 – Noted. However common cause conditions are not applicable for this mine.

Condition 2- In the writ petition (Civil) no. 202/1995, T.N. Godaverman Thirumulpad vs union of India and Ors. the Hon'ble Supreme Court passed an order dated 03.06.2022 "National Park or Wildlife Sanctuary must have an ESZ of minimum 01 km in which the activities prescribed and prescribed in the guidelines of 09th February 2011 shall be strictly adhered to".

Reply to Condition 2- Noted. However, this mine is approximately 9 km away from the Mahuadanr ESZ boundary.

Condition 3- The Project proponent complies with all the statutory requirements and judgement of Hon'ble Supreme Court dated 2 August 2017 in Writ Petition (Civil) No. 114 of 2014 in matter of common cause versus Union of India & Ors before commencing the mining operations.

Reply to Condition 3- Noted. However common cause conditions are not applicable for this mine.

Condition 4- The Hon'ble Supreme Court vide order dated 08.01.2020 in W.P. (Civil) No. 114/2014 in the mater of Common Cause vs. Union of India has directed that the area which has been mined should be restored so that grass and other vegetation including trees can grow in the mining area for the benefit of animals.

"The mining lease holders shall, after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to their mining activities and restore the land to a condition which is fil for growth of fodder, flora, fauna etc."

Reply to Condition 4- Noted and agreed. This is a running mine and reclamation in the mined-out area are being done simultaneously as per the approved mining plan and progressive mine closure plan. However, at the end of the final closure of the mine the entire mined out area will be backfilled and reclaimed for the purpose of plantation, re-grassing, constructing rainwater harvesting pond and agricultural activities as per final mine closure plan.

Condition 5- The State Government concerned shall ensure that mining operation shall not be commenced till the entire compensation levied, if any, for illegal mining paid by the Project Proponent through their respective Department of Mining & Geology in strict compliance of

Judgement of Hon'ble Supreme Court dated 2nd August. 2017 in Writ Petition (Civil) No. I14 of 2014 in matter of Common Cause versus Union of India & Ors.

Reply to Condition 5- There had been no illegal mining involved. Hence, there is no demand from the State Government regarding common cause matter for Kujam I bauxite mine.

Condition 6- This Environmental Clearance shall become operational only after receiving formal NBWL Clearance from MoEF&CC subsequent to the recommendations of the Standing Committee of National Board for Wildlife. if applicable to the Project.

Reply to Condition 6- Noted. However, this mine is located beyond the ESZ boundary. Hence, NBWL Clearance is not applicable for this mine.

Condition 7- This Environmental Clearance shall become operational only after receiving formal Forest Clearance (FC) under the provision of the Forest Conservation Act, 1980. If applicable to the Project.

Reply to Condition 7- Noted. However, no forest area is involved in the lease area. Hence, this condition is not applicable for this mine.

Condition 8- Project Proponent (PP) shall obtain Consent to Operate after grant of EC and effectively implement all the conditions stipulated therein. The mining activity shall not commence prior to obtaining Consent to Establish / Consent to Operate from the concerned State Pollution Control Board.

Reply to Condition 8- Noted. Valid CTE and CTO have already been received from JSPCB, Ranchi.

Condition 9- The PP shall adhere to the provision of the Mines Act, 1952, Mines and Mineral (Development & Regulation) Act, 2015 and rules & regulations made there under. PP shall adhere to various circulars issued by Directorate General Mines Safety (DGMS) and Indian Bureau of Mines from time to time.

Reply to Condition 9- This is an operative mine and all the provisions and regulations made under Mines Act, 1952 and MMDR Act, 2015 and various circulars issued by Directorate General Mines Safety (DGMS) and Indian Bureau of Mines are being adhered to.

Condition 10- The Project Proponent shall obtain consent from all the concerned landowners. Before mining operations, as per the provisions of the MMDR Act, 1957 and rules made there under in respect of lands which are not owned by it.

Reply to Condition 10- Agreed. This is an operative mine. Therefore, the land is acquired for mining purposes only after getting the written consent from the respective landowners followed by the DC's order.

Condition 11- The Project Proponent shall follow the mitigation measures provided in MoEF & CC's Office Memorandum No. Z-| 1013/57/2014-IAJI (M), dated 29th October, 2014 titled "Impact of mining activities on Habitations-Issues related to the mining Projects wherein

Habitations and villages are the part of mine lease areas or Habitations and villages are surrounded by the mine lease area".

Reply to Condition 11- Noted and being adhered to.

Condition 12- The Project Proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of surface water and from CGWA for withdrawal of ground water for the project.

Reply to Condition 12- Noted. We have obtained NOC for withdrawal of groundwater from CGWA/CGWB for drinking purposes only. The Scan copy of the same NOC is attached below.

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NOC for Ground water Extraction

Condition 13- A copy of EC letter will be marked to concerned Panchayat / local NGO etc. if any from whom suggestion / representation has been received while processing the proposal.

Reply to Condition 13- Noted. The EC letter has been submitted to DC Office, DIC office, RO, MoEF & CC, concerned Panchayat office, MS, JSPCB. Acknowledgment copy of the same is attached herewith as **Annexure-9.**

Condition 14- State Pollution Control Board/Committee shall be responsible for display of this EC letter at its Regional office, District Industries Centre, and Collector's office/Tehsildar's Office for 30 days.

Reply to Condition 14- Noted. The EC Letter has been submitted to JSPCB for display of same at its Regional office and other government offices. Acknowledgment copy of the same is attached herewith as **Annexure-9.**

Condition 15- The Project Authorities should widely advertise about the grant of this EC letter by printing the same in at least two local newspapers, one of which shall be in vernacular language of the concerned area. The advertisement shall be done within 7 days of the issue of the clearance letter mentioning that the instant project has been accorded EC and copy of the EC letter is available with the State Pollution Control Board/Committee and website of the Ministry of Environment, Forest and Climate Change (www.Environment clearance.nic.in). A copy of the advertisement may be forwarded to the concerned MoEF & CC Regional Office for compliance and record.

Reply to Condition 15- Noted and complied. The information regarding grant of EC has been published in two local newspapers, namely "Hindustan" and "Hindustan Times." Copies of the advertisement in local newspapers have already been submitted to the Regional Office of MoEF&CC, Ranchi and JSPCB, Ranchi along with the Six-monthly EC compliance report, vide letter no. HIL/LHD/ENV/MoEF/433 dated 25.11.2023. The copy of the same advertisement in the newspapers is attached below.



Advertisement in the "Hindustan Times" Newspaper



Advertisement in the "Hindustan Times" Newspaper

Condition 16- The Project Proponent shall inform the MoEF & CC for any change in ownership of the mining lease. In case there is any change in ownership or mining lease is transferred then mining operation shall only be carried out after transfer of EC as per provisions of the para 11 of EIA Notification. 2006 as amended from time to time.

Reply to Condition 16- Noted and it will be informed if applicable.

Condition 17- In all Stone Mining projects, depending upon the air pollution estimates based upon fuel Use in operations and activities of the respective projects; required monitoring station-based air quality monitoring shall be done in the influence area of the project with

needed mitigation conditions to ensure sustainable Stone mining as per guidelines, circulars and norms of MOEFCC $\!\!\!/$ Hon'ble NGT or any other directives of regulatory $\!\!\!/$ statutory bodies and competent Courts.

PP to take preventive steps to avoid flash flood conditions arising from mining operations and probably run off in rainy season conditions.

Reply to Condition 17- This is not a stone mine. It is a bauxite mine and all the mitigation measures are being taken to prevent air pollution in Kujam I Bauxite Mine. As shallow depth mining is being carried out, there is no chance of flash flood conditions arising from mining operations.

Condition 18- PP shall maintain minimum distance from Reserved / Protected Forests as stipulated in applicable guidelines.

Reply to Condition 18- Noted and being adhered to.

Condition 19- All statutory clearances shall be obtained before the start of mining operations. Reply to Condition 19- All statutory clearances have already been obtained as it is a running mine.

C. Air Quality monitoring and preservation

Condition 1- The Project Proponent shall install a minimum of 3 (three) online Ambient Air Quality Monitoring Stations with 1 (one) in upwind and 2 (two) in downwind direction based on long term climatological data about wind direction such that an angle of I20° is made between the monitoring locations to monitor critical parameters. relevant for mining operations, of air pollution viz. PM₁₀, PM_{2.5}, NO₂, CO and SO₂ etc. as per the methodology mentioned in NAAQS Notification No. B-2901 6/20/90/PCUI, dated 18.11.2009, covering the aspects of transportation and use of heavy machinery in the impact zone. The ambient air quality shall also be monitored at prominent places like office buildings, canteen etc. as per the site condition to ascertain the exposure characteristics at specific places. The above data shall be digitally displayed within 03 months in front of the main Gate of the mine site.

Reply to Condition 1- We have 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.** A display board is already installed in front of mine gate office. We have already installed an online PM10 analyzer at mine site.

Condition 2- Effective safeguard measures for prevention of dust generation and subsequent Suppression (like regular water sprinkling, metaled road construction etc.) shall be carried out in areas prone to air pollution wherein high levels of PM10 and PM2.5 are evident such as haul road, loading and unloading point and transfer points. Fugitive dust emissions from all sources shall be regularly controlled by installation of required equipment/ machineries and preventive maintenance. Use of suitable water-soluble chemical dust suppressing agents may be explored for better effectiveness of dust control system. It shall be ensured that the air

pollution level conforms to the standards prescribed by the MoEF&CC/ Central Pollution Control Board.

Reply to Condition 2- Continuous water sprinkling is being done for dust suppression on haul road. Online PM10 analyser has been installed for regular monitoring purposes. Suitable water-soluble chemical dust suppressing agents will be used in future if required. The photograph of Water Sprinkler is already attached below.



Water Sprinkling on Haul Road

Condition 3-Approved devices for dust suppression shall be installed.

Reply to Condition 3- USEPA approved online PM10 analyzer has been installed in mine as per the directives of JSPCB. However, dust suppression is also being done by sprinkling water through mobile water tankers.

The photograph of Water Sprinkler is already attached in reply to condition no. 2 of Section-C Air Quality monitoring and preservation.

Condition 4- Personnel working in dusty areas should be provided with protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed, A detailed report shall be sent to the Pollution Control Board periodically.

Reply to Condition 4- 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. IME & PME report is attached as **Annexure 6.**

Condition 5- The proponent shall upload the status of compliance of the environmental clearance conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to Jharkhand State Pollution Control Board and its concerned Regional Office. The criteria pollutant levels are namely SPM, RSPM, SO2, NOx (ambient levels) or critical sectoral parameters, indicated for the project shall be monitored and displayed at a convenient location near the project shall be monitored and displayed at a convenient location near the main gate of the company in the company in the public domain.

Reply to Condition 5- Six-monthly EC compliance along with Environmental monitoring reports is being uploaded on company website regularly. The same is also being submitted to the Regional Office of MoEF&CC, Ranchi and JSPCB, Ranchi. An Environmental Display board is already installed at the Mine Main Gate.

D. Water quality monitoring and preservation:

Condition 1- In case, immediate mining scheme envisages intersection of ground water table, then Environmental Clearance shall become operational only after receiving formal clearance from CGWA. In case, mining operation involves intersection of ground water table at a later stage, then PP shall ensure that prior approval from CGWA and MoEF&CC is in place before such mining operations. The permission for intersection of ground water table shall essentially be based on detailed hydro-geological study of the area.

Reply to Condition 1- Noted. As shallow depth mining is being carried out in Kujam I Bauxite Mine. Therefore, Mining operation does not involve intersection of ground water table. However, we are regularly monitoring the ground water table through installation of piezometer. The copy of the same report is attached herewith as **Annexure-1.**

As the water table is not intersecting during mining operation, the detailed hydro-geological study is not applicable for this mine.

Condition 2- Regular monitoring of the flow rate of the springs and perennial nallahs flowing in and around the mine lease shall be carried out and records maintained. The natural water bodies and or streams which are flowing in and around the village, should not be disturbed. The Water Table should be nurtured so as not to go down below the pre-mining period. In case of any water scarcity in the area, the Project Proponent has to provide water to the villagers for their use. A provision for regular monitoring of water tables in open dug wall located in village should be incorporated to ascertain the impact of mining over ground Water table. The Report on changes in Ground water level and quality shall be submitted on a sixmonthly basis to the Regional Office of the Ministry, CGWA and State Groundwater Department / State Pollution Control Board.

Reply to Condition 2- Noted. Regular monitoring of drinking water along with stream and spring water is being carried out. As 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. A piezometer has been installed in mine for monitoring of ground water level. Drinking water is being provided to nearby villages regularly.

The 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.**

Condition 3-Project Proponent shall regularly monitor and maintain records w.r.t. ground water level and quality in and around the mine lease by establishing a network of existing wells as well as new piezo-meter installations during the mining operation in consultation with Central Ground Water Authority/ State Ground Water Department. The Report on changes in Ground water level and quality shall be submitted on a six-monthly basis to the Regional Office of the Ministry. CGWA and State Groundwater Department / State Pollution Control Board.

Reply to Condition 3- We are not using ground water for any mining purposes. As 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. A piezometer has been installed for monitoring of ground water level. The 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 at Kujam I Mine

Condition 4- The Project Proponent shall undertake regular monitoring of natural water course/ water resources/ springs and perennial nallahs existing/ flowing in and around the mine lease and maintain its records. The project proponent shall undertake regular monitoring of water quality upstream and downstream of water bodies passing within and nearby/ adjacent to the mine lease and maintain its records. Sufficient number of gullies shall be provided at appropriate places within the lease for management of water. PP shall carry out regular monitoring w.r.t. pH and included the same in the monitoring plan. The parameters to be monitored shall include their water quality vis-à-vis suitability for usage as per CPCB criteria and flow rate. It shall be ensured that no obstruction and/ or alteration be made to water bodies during mining operations without justification and prior approval of MoEF&CC. The monitoring of water courses/ bodies existing in lease area shall be carried out four times in a year viz. pre- monsoon (April-May), Monsoon (August), post-monsoon (November) and winter (January) and the record of monitored data may be sent regularly to Ministry of Environment, Forest and Climate Change and is Regional Office, Central Ground Water Authority and Regional Director, Central Ground Water Board, State Pollution Control Board and Central Pollution Control Board. Clearly showing the trend analysis on a six-monthly basis.

Reply to Condition 4- Regular monitoring of water quality parameters of natural water course/ water resources/ springs and perennial nallahs existing/ flowing in and around the mine lease is being carried. There are no watercourses/bodies existing in the mining lease area. No natural water bodies are being / will be obstructed due to any mining operations.

Monitoring Reports are being sent regular to regional office of Ministry, CGWA and JSPCB on sixmonthly basis. The same are attached herewith as **Annexure 2**.

Condition 5- Quality of polluted water generated from mining operations which include Chemical Oxygen Demand (COD) in mines run-off acid mine drainage and metal contamination in runoff shall be monitored along with Total Suspended Solids (TDS). Dissolved Oxygen (DO). pH and Total Suspended Solids (TSS). The monitored data shall be uploaded on the website of the company as well as displayed at the project site in public domain, on a display board, at a suitable location near the main gate of the Company. The circular No. J- 20012/1/2006-AJI (M) dated 27.05.2009 issued by Ministry of Environment. Forest and Climate Change may also be referred to in this regard.

Reply to Condition 5- There is no polluted water generated during mining operations. However, a negligible amount of wastewater is generated in the workshop from washing vehicles, and an 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 all water parameters are within permissible limits. The monitoring report is attached herewith as **Annexure-2**

The monitoring report is being uploaded on company website along with Six-monthly EC Compliance report regularly. An Environmental Display board is already installed at the Mine Main Gate.

Condition 6- Project Proponent shall plan, develop and implement rainwater harvesting measures on long term basis to augment ground water resources in the area consultation with Central Ground Water Board/ State Groundwater Department. A report on amount of water recharged needs to be submitted to Regional Office MoEF&CC annually.

Reply to Condition 6- Rainwater harvesting pond with proper fencing has been already constructed on long term basis to augment ground water in the area, in consultation with Central Ground Water Board. Photographs of the same have been attached below. Water Positivity study of Kujam I and Kujam II bauxite mines has been carried out recently. Total amount of water recharge has been found 24,186.09 m³/annum.





Condition 7- Industrial wastewater (workshop and wastewater from the mine) should be properly collected and treated so as to conform to the notified standards prescribed from time to time. The standards shall be prescribed through Consent to Operate (CTO) issued by concerned State Pollution Control Board (SPCB). The workshop effluent shall be treated after its initial passage through Oil and grease trap.

Reply to Condition 7- There is no industrial wastewater generation from mining operation. We are not discharging any wastewater outside the mine lease area. However, negligible amount of wastewater is generated in workshop from washing of vehicles and Oil & grease trap system is already installed for treatment of this effluent. The treated water is in close circuit and being reused for washing of vehicles in the workshop.

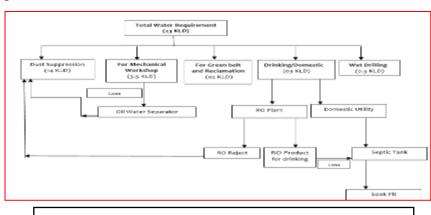
Furthermore, the quality of this treated water is being monitored regularly and all water parameters are within permissible limits. The monitoring report is attached herewith as **Annexure-2**



Washing ramp with Oil and Grease Trap

Condition 8- The water balance/water auditing shall be carried out and measures for reducing the consumption of water shall be taken up and reported to the Regional Office of the MoEF&CC and State Pollution Control Board/Committee.

Reply to Condition 8- Noted. The water balance for the mine is given below. We are taking water from rainwater harvesting pond for sprinkling and other activities. However, we have obtained NOC from CGWA/CGWB for drinking purposes only. However, we have conducted water study for Netarhat group of mines and prepared a report. Based on the water study this mine has been turned out to be a water positive mine.



Water Balance

Condition 9- The mining operations shall be restricted to ground above the water table, and it should not intersect the groundwater table. In case of working below the ground water table. Prior approval of the Ground Water Directorate. Government of Jharkhand / Central Ground Water Board shall be obtained. Benches height and slope shall be maintained as per approved Mining Plan. The Mining Plan has to be got approved by concerned authorities as per IBM or equivalent agencies. Safety measures shall be adopted in line with DGMS Guidelines.

Reply to Condition 9- Noted. We are not using ground water for any mining purposes. There is no chance of intersection of ground water table during mining operation at present and in future as we are practicing shallow depth mining operation. A piezometer has been installed for monitoring of ground water level.

The Mining Plan has already been approved by IBM, Ranchi and safety measures like benches height and slope are being maintained as per the guideline by DGMS.

Condition 10- The project proponent shall ensure that no natural watercourse and / or water resources shall be obstructed / diverted due to any mining operations. Adequate measures shall be taken for conservation and protection of the first order and the second order streams. If any emanating / passing through the mine lease area during the course of mining operation. Reply to Condition 10- There is no natural watercourse and / or water resources within the mining lease area. As Shallow depth mining methodology is adopted for mining process, therefore, there is no impact of mining operation on natural water course.

Condition 11- The project proponent shall implement approved conservation measures to augment ground water resources in the area in consultation with the Ground Water Directorate, Government of Jharkhand/ Central Ground Water Board.

Reply to Condition 11- A detailed plan to augment groundwater has been prepared, and suitable measures like creation of water harvesting ponds etc., are being taken for the augmentation of groundwater in the area, in consultation with Central Ground Water Board.

Condition 12- The project proponent shall, if required, obtain necessary prior permission/NOC from the competent authorities for drawl of requisite quantity of water required from the source for the project.

Reply to Condition 12- No Objection Certificate (NOC) for ground water abstraction for Kujam I mine has been obtained for drinking purposes only. The Scan copy of the same NOC is already attached in reply to condition no. 12 of Section - B Statutory compliance.

However, rainwater harvesting pond has been created and used for sprinkling on haul roads and raising plantation. No natural water resource/ground water is being used for mining purposes.

Condition 13- Suitable rainwater harvesting measures shall be planned and implemented in consultation with the Ground Water Directorate, Government of Jharkhand / Central Ground Water Board.

Reply to Condition 13- Suitable measures such as creation of rainwater harvesting ponds, etc., are implemented in the area, in consultation with the Central Ground Water Board.

E. Noise and vibration monitoring and prevention

Condition 1- The peak particle velocity at 500 m distance or within the nearest habitation, whichever is closer shall be monitored periodically as per applicable DGMS Guidelines. Reply to Condition 1- Noted and being adhered to. Blast vibration monitoring is being carried out at regular interval and the report is attached herewith as Annexure 8.

Condition 2- The illumination and sound at night at project sites disturb the villages in respect of both human and animal population. Consequent sleeping disorders and stress may affect the health in the villages located close to mining operations. Habitations have a right for darkness and minimal noise levels at night. PPs must ensure that the biological clock of the villages is not disturbed: by orienting the floodlights/ masks away from the villagers and keeping the noise levels well within the prescribed limits for day /night hours.

Reply to Condition 2- Noted. Mining operation is restricted to daytime only. So, there is no disturbance created in the nearby villages regarding illumination and sound.

Condition 3-The Project Proponent shall take measures for control of noise levels below 85 dBA in the work environment. The workers engaged in operations of HEMM. etc. should be provided with ear plugs /muffs. All personnel including labours working in dusty area shall be provided with protective respiratory devices along with adequate training, awareness and information on safety and health aspects. The PP shall be held responsible in case it has been found that workers/ personals/ labours are working without personal protective equipment.

Reply to Condition 3- Noted. The noise level monitoring is being conducted at a regular interval. The noise level is below the prescribed norms. Report has been attached as **Annexure 2.** All workers engaged in operation have been provided with PPEs. Training in Health and safety is being imparted by the respective officials.

F. Mining Plan:

Condition 1- The Project Proponent shall adhere to the working parameters of the mining plan which was submitted at the time of EC appraisal wherein year-wise plan was mentioned for total excavation i.e. quantum of mineral, waste. over burden, inter burden and topsoil etc. No change in basic mining proposal like mining technology, total excavation, mineral & waste production, lease area and scope of working (viz. method of mining, overburden & dump management, O.B & dump mining, mineral transportation mode. ultimate depth of mining etc.) shall not be carried out without prior approval of the Ministry of Environment Forest and Climate Change which entail adverse environmental impacts even if it is a part of approved mining plan modified after grant of EC or granted by State Govt. in the form to Short Term Permit (STP), Query license or any other name.

Reply to Condition 1- Noted and being adhered.

Condition 2- . The Project Proponent shall get the Final Mine Closure Plan along with Financial Assurance approved from Indian Bureau of Mines/Department of Mining & Geology as required under the Provision of the MMDR Act. 1957 and Rules/ Guidelines made there under. A copy of approved final mine closure plan shall be submitted within 2 months of the approval of the same from the competent authority to the concerned Regional Office of the Ministry of Environment, Forest and Climate Change for record and verification.

Reply to Condition 2- The Final Mine Closure Plan (FMCP) has been approved by the Indian Bureau of Mines and subsequently submitted to the regional office of the Ministry of Environment, Forest and Climate Change (MoEFCC).

Condition 3-The land-use of the mine lease area at various stages of the mining scheme as well as at the end-of-life shall be governed as per the approved Mining Plan. The excavation vis-à-vis backfilling in the mine lease area and corresponding afforestation to be raised in the reclaimed area shall be governed as per the approved mining plan. PP shall ensure the monitoring and management of rehabilitated areas until the vegetation becomes self-sustaining. The compliance status shall be submitted half-yearly to the MoEF&CC and its concerning the Regional Office.

Reply to Condition 3- Noted. The excavated area is being back filled concurrently and back filled area is used for afforestation/agricultural activity as required. Monitoring and management of rehabilitated areas is continuing through supervision. Photograph is attached below.



Reclaimed area

Condition 4- No change in mining technology and scope of working should be made without prior approval of the Statutory authorities / Department of Mines, Government of Jharkhand / Jharkhand State Pollution Control Board, Ranchi during the EC period.

Reply to Condition 4- Noted

Condition 5- No change in the calendar plan including excavation, quantum of mineral and waste should be made.

Reply to Condition 5- 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 6- The Project proponent shall make all internal roads pucca as per approved specification of Govt. of Jharkhand and shall maintain a good housekeeping by regular cleaning and wetting of the haul roads and the premises.

Reply to Condition 6- Internal haul road has been provided as per approved specifications. Regular housekeeping and water sprinkling is being carried out for fugitive dust suppression.

Condition 7- The Project proponent shall maintain register for production and dispatch and submit return to the Board.

Reply to Condition 7- Noted and is being complied with, as per the requirement. Moreover, monthly as well as annual return is being submitted to IBM and District Mining office at stipulated timeframe.

Condition 8- Dispensary facilities for First Aid shall be provided at site.

Reply to Condition 8- Dispensary facilities is available for Kujam -I Bauxite Mine. Photographs are attached below.



Dispensary Facility inside mine premises

G. Land Reclamation

Condition 1- The Overburden (O.B.) generated during the mining operations shall be stacked at earmarked OB dump site(s) only and it should not be kept active for a long period of time. The physical parameters of the OB dumps are like height, width and angle of slope shall be governed as per the approved Mining Plan as per the guidelines/circulars issued by D.G.M.S w.r.t safety in mining operations shall be strictly adhered to maintain the stability of topsoil/OB dumps. The topsoil shall be used for land reclamation and plantation.

Reply to Condition 1- Overburden is being used for concurrent backfilling, and topsoil is being spread on the backfilled area for reclamation and plantation. Currently, there is no OB dump present in the mine lease area.

The mining is being carried out as per the approved mining plan by IBM and the guidelines/circulars issued by DGMS with respect to safety in mining operations is being adhered to. Monitoring and management of rehabilitated areas is being done through effective supervision. Data pertaining to backfilling is enclosed as **Annexure 4.**

Condition 2- The reject/ waste generated during the mining operations shall be stacked at earmarked waste dump site(s) only. The physical parameters of the waste dumps are like height. Width and angle of slope shall be governed as per the approved Mining Plan as per the guidelines/circulars issued by DGMS w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of waste dumps.

Reply to Condition 2- Overburden and waste rock are being used for concurrent backfilling, and topsoil is being spread on the backfilled area for reclamation as per mining plan approved by IBM. All Safety measures are being adhered to the guidelines/circulars issued by DGMS. Monitoring and management of rehabilitated areas is being done through effective supervision. Data pertaining to backfilling is enclosed as **Annexure 4**.

Condition 3- The reclamation of waste dump sites shall be done in scientific manner as per the Approved Mining Plan cum Progressive Mine Closure Plan.

Reply to Condition 3- The land reclamation of OB dumps is being done after concurrent backfilling as per approved mining plan scientifically. Photographs of the same are attached in reply to condition 3 of Section F Mining Plan.

Condition 4- The slope of dumps shall be vegetated in a scientific manner with suitable native species to maintain the slope stability, prevent erosion and surface run off. The selection of local species regulates local climatic parameters and helps in adaptation of plant species to the microclimate. The gullies formed on slopes should be adequately taken care of as it impacts the overall stability of dumps. The dump mass should be consolidated with the help of dozer/compactors thereby ensuring proper filling/leveling of dump mass. In critical areas, use of geo textiles/ geo-membranes / clay liners / Bentonite etc. shall be undertaken for stabilization of the dump.

Reply to Condition 4- Noted. Currently, there is no OB dump present in the mine lease area as we are following concurrent backfilling and reclamation process in scientific manner.

Condition 5- The Project Proponent shall carry out slope stability study in case the dump height is more than 30 meters. The slope stability report shall be submitted to concerned regional office of MoEF& CC.

Reply to Condition 5- Noted. There is no dump present currently on site as we are following concurrent reclamation process. Therefore, this condition is not applicable for this mine.

Condition 6- Catch drains, settling tanks and ponds of appropriate size shall be constructed around the mine working, mineral yards and Topsoil/OB/Waste dumps to prevent run off of water and flow of sediments directly into the water bodies (Nallah/ River/ Pond etc.). The collected water should be utilized for watering the mine area, roads, green belt development, plantation etc. The drains/ sedimentation sumps, etc. shall be de-silted regularly, particularly after monsoon season, and maintained properly.

Reply to Condition 6- 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.





Retaining wall and Garland drain around mine pit.

Condition 7- Check dams of appropriate size, gradient and length shall be constructed around mine pit and OB dumps to prevent storm run-off and sediment flow into adjoining water bodies. A safety margin of 50% shall be kept for designing of sump structures over and above peak rainfall (based on 50 years data) and maximum discharge in the mine and its adjoining which shall also help in providing adequate retention time period thereby allowing proper settling of sediments/ silt material. The sedimentation pits/ sumps shall be constructed at the corners of the garland drains.

Reply to Condition 7- 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.



Retaining wall to prevent solid wash-off.

Condition 8- The topsoil, if any, shall temporarily be stored at earmarked site(s) within the mine lease only and should not be kept unutilized for long. The physical parameters of the topsoil dumps are like height, width and angle of slope shall be governed as per the approved mining Plan and as per the guidelines framed by DGMS w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of dumps. The topsoil shall be used for land reclamation and plantation purposes.

Reply to Condition 8- Topsoil is being used for reclamation and rehabilitation simultaneously. Temporary soil is being stacked separately in the mining premises, if required and the same is being used for reclamation purpose within a month. There is no external OB dump. The excavated area is being back filled and reclaimed concurrently. The reclaimed area is used for afforestation/agricultural activity as required. Monitoring and management of rehabilitated areas is continuing through supervision.

H. Transportation

Condition 1- No Transportation of the minerals shall be allowed in case of roads passing through villages habitations. In such cases, PP shall construct a 'bypass' road for the purpose of transportation of the minerals leaving an adequate gap (say at least 200 meters) so that the adverse impact of sound and dust along with chances of accidents could be mitigated. All costs resulting from widening and strengthening of existing public road network shall be borne by the PP in consultation with nodal State Govt. Department. Transportation of minerals through road movement in case of existing village/ rural roads shall be allowed in consultation with nodal State Govt. Department only after required strengthening such that the carrying capacity of roads is increased to handle the traffic load. The pollution due to transportation load on the environment will be effectively controlled and water sprinkling will also be done regularly. Vehicular emissions shall be kept under control and regularly monitored. Project should obtain Pollution Under Control (PUC) certificate for all the vehicles from authorized pollution testing centers.

Reply to Condition 1- Haul road has been constructed for transportation of minerals. Mobile water tankers with sprinkling facilities have been provided along-haul roads, loading, unloading & at

transfer points to arrest dust emission. Regular maintenance of vehicles is undertaken to minimize vehicular emission. All measures are being taken to control vehicular emission. The vehicles are being covered with tarpaulin while transportation of mineral. PUC Certificates have been attached as **Annexure 7.** Photographs are attached below:



Tarpaulin covered truck for transportation of bauxite

Condition 2- The Main haulage road within the mine lease should be provided with a permanent water sprinkling arrangement for dust suppression. Other roads within the mine lease should be wetted regularly with tanker-mounted water sprinkling system. The other areas of dust generation like crushing zone, material transfer points. material yards etc. should invariably be provided with dust suppression arrangements. The air pollution control equipment like bag filters, vacuum suction hoods. dry fogging system etc. shall be installed in Crushers, belt-conveyors, and other areas prone to air pollution. The belt conveyor should be fully covered to avoid generation of dust while transportation. PP shall take necessary measures to avoid generation of fugitive dust emissions.

Reply to Condition 2- Haul road has been constructed for transportation of minerals. Mobile water tankers with sprinkling facilities have been provided on along-haul roads, loading, unloading & at transfer points to arrest dust emission. Regular maintenance of vehicles is undertaken to minimize vehicular emission. All measures are being taken to control vehicular emission. The vehicles are being covered with tarpaulin while transportation of mineral.



Water Sprinkling on Haul Road

Condition 3- Vehicular emissions shall be kept under control by regular repairing of transport roads and regular air quality monitoring. Measures shall be taken for maintenance of vehicles used in mining operations and in transportation of minerals. The mineral transportation shall be carried out through the covered trucks only and the vehicles carrying the mineral shall not be overloaded. No transportation of stone / sand outside the mine lease area shall be carried out after sunset.

Reply to Condition 3- 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 minerals. No transportation of minerals outside the mine lease area is carried out after sunset.

I. Greenbelt

Condition 1-The Project Proponent shall develop greenbelt in 7.5m wide safety zone all along the mine lease boundary as per the guidelines of CPCB in order to arrest pollution emanating from mining operations within the lease. The whole Green belt shall be developed within the first 5 years starting from the windward side of the active mining area. The development of greenbelt shall be governed as per the EC granted by the Ministry irrespective of the stipulation made in approved mine plan.

Reply to Condition 1- Green belt development work is being carried out in safety zone of mine lease. Plantation work is being governed as per approved mining plan and as per EC condition. The photographs of the same are already attached in reply to condition no. 1 of section – A Specific conditions.

Condition 2- The Project Proponent shall carry out plantation/ afforestation in backfilled and reclaimed area of mining lease, around water body, along the roadsides, in community areas etc. by planting the native species in consultation with the State Forest Department/ Agriculture Department/ Rural development department/ Tribal Welfare Department/ Gram Panchayat is such that only those species be selected which are of use to the local people. The CPCB guidelines in this respect shall also be adhered to. The density of the trees should be around 2500 saplings per Hectare. Adequate budgetary provision shall be made for the protection and care of trees.

Reply to Condition 2- . Progressive plantation is being carried out in consultation with local forest Dept. Total 2900 nos. of saplings have been planted during Apr'24 to Sep'24 within this lease. Cumulative 7.32 ha areas have been planted till date. In addition to these agricultural activities (bio plantation) is going on reclaimed land as per the consent from landowners.

The Green belt development program is in progress with the progress of mining activities.









Greenbelt Plantation and Agricultural activities

Condition 3- The Project Proponent shall make necessary alternative arrangements for livestock feed by developing grazing land with a view to compensating those areas which are coming within the mine lease. The development of such grazing land shall be done in consultation with the State Government. In this regard, Project Proponent should essentially implement the directions of the Hon'ble Supreme Court with regard to acquisition of grazing land. The sparse trees on such grazing ground, which provide mid-day shelter from the scorching sun, should be scrupulously guarded/ protected against felling and plantation of such trees should be promoted.

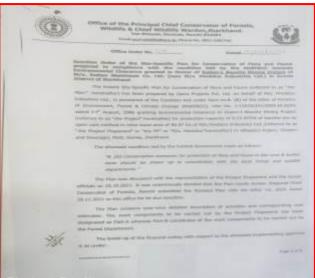
Reply to Condition 3- As per the agreement by DC, we are acquiring land on the lease basis in consultation with the State Government and with the consent of the landowner. After completing mining operation followed by reclamation and topsoil spreading, we return the land to the landowners for agriculture purpose or plantation whichever is desired by them (landowners /villagers). Hence, we do not deteriorate the quality of the land and there is no need to create grazing land. No cutting of trees/ felling of trees are involved in the mining process.

Condition 4- The Project Proponent shall undertake all precautionary measures for conservation and protection of endangered flora and fauna and Schedule-1 species during mining operation. A Wildlife Conservation Plan shall be prepared for the same clearly delineating action to be taken for conservation of flora and fauna. The Plan shall be approved by Chief Wildlife Warden of the State Govt.

Reply to Condition 4- We have prepared Site-Specific Wildlife Conservation Plan (WLCP) 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. 50 dated 03.12.2021 for conservation and protection of flora and fauna in the core and buffer zone for Kujam I Bauxite Mine. However, Mine is located outside the eco-sensitive zone.





Site-Specific Wildlife Conservation Plan

Condition 5- And implemented in consultation with the State Forest and Wildlife Department. A copy of the Wildlife Conservation Plan and its implementation status (annual) shall be submitted to the Regional Office of the Ministry.

Reply to Condition 5- Noted and complied with.

Condition 6- The Project proponent shall not cut trees / carry out tree felling in leased out area without the permission of competent authority.

Reply to Condition 6-No cutting of trees/ felling of trees are involved in the mining process.

J. Public hearing and human health issues:

Condition 1- The Project Proponent shall appoint an Occupational Health Specialist for Regular as well as Periodical medical examination of the workers engaged in the mining activities. as per the DGMS guidelines. The records shall be maintained properly. PP shall also carry out Occupational health check-ups in respect of workers which are having ailments, like BP, diabetes, habitual smoking. etc. The check-ups shall be undertaken once in six months and necessary remedial/ preventive measures be taken. A status report on the same may be sent to MoEF&CC Regional Office and DGMS on a half-yearly basis.

Reply to Condition 1- Being adhered to. Regular and periodical medical examination of the workers engaged in the project is being carried out and records are being maintained by Medical Officer. IME/PME record is attached in compliance report as **Annexure 6.**

Condition 2-. The Project Proponent must demonstrate commitment to work towards 'Zero Harm' from their mining activities and carry out Health Risk Assessment (HRA) for identification workplace hazards and assess their potential risks to health and determine appropriate control measures to protect the health and wellbeing of workers and nearby community. The proponent shall maintain accurate and systematic records of the HRA. The HRA for neighborhood has to focus on Public Health Problems like Malaria, Tuberculosis, HIV, Anaemia, Diarrhea in children under five, respiratory infections due to biomass cooking. The proponent shall also create awareness and educate the nearby community and workers for Sanitation. Personal Hygiene, Hand washing, not to defecate in the open, Women Health and Hygiene (Providing Sanitary Napkins), hazard of tobacco and alcohol use. The Proponent shall carry out base line HRA for all the categories of workers and thereafter every five years.

Reply to Condition 2- Regular awareness programs are being conducted to educate the local community on healthcare, sanitation, hygiene, and related topics. We organized an awareness drive on heat waves at the Kujam Mines operational areas and distributed ORS packets to workers and staff and distributed the "Poshan Kit" to TB patient to enhance their nutrition and support recovery. Additionally, rural medical camps are being organized every Friday.

Bathrooms have been repaired to improve hygiene, and awareness campaigns have been conducted on sanitation, personal hygiene, and handwashing. Educational programs are also regularly provided to local villagers, focusing on women's health and hygiene, as well as the hazards of tobacco and alcohol use.

All workers and company staff are provided with appropriate PPE. We continue to conduct IME/PME to ensure the health and well-being of workers in the mines.













Repairing of Bathrooms in nearby villages

Condition 3- The Proponent shall carry out Occupational health surveillance which be a part of HRA and include Biological Monitoring where practical and feasible, and the tests and investigations relevant to the exposure (e.g. for Dust X-Ray chest: For Noise Audiometric: for Lead Exposure Blood Lead. For Welders Full Ophthalmologic Assessment: for Manganese Miners a complete Neurological Assessment by a Certified Neurologist and Manganese (Mn) Estimation in Blood: For Inorganic Chromium- Fortnightly skin inspection of hands and forearms by a responsible person. Except routine tests all tests would be carried out in a Lab accredited by NABH. Records of Health Surveillance must be kept for 30 years, including the results of and the records of Physical examination and tests. The record of exposure due to materials like Asbestos, Hard Rock Mining, Silica, Gold, Kaolin, Aluminum, Iron, Manganese, Chromium, Lead, Uranium needs to be handed over to the Mining Department of the State in case the life of the mine is less than 30 years. It would be obligatory for the State Mines Departments to make arrangements for the safe and secure storage of the records including X-Ray. Only conventional X-Ray will be accepted for recording purposes and not the digital one). X-Ray must meet ILO criteria (17 x14 inches and of good quality).

Reply to Condition 3- Occupational health surveillance is being conducted in regular intervals by specialized doctors and nurses. Rural medical camps are being organized every Friday. Periodical medical examination of the workers engaged in the project is being carried out and records are being maintained by Medical Officer. IME/PME record is attached in compliance report as **Annexure 6.**









Medical Camp in nearby villages and schools

Condition 4- The Proponent shall maintain a record of performance indicators for workers which includes. (a) there should not be a significant decline in their Body Mass Index, and it should stay between 18.5 -24.9, (b) the Final Chest X-Ray compared with the base line X-Ray should not show any capacities (c) At the end of their leaving job there should be no Diminution in their Lung Functions Forced Expiratory Volume in one second (FEV1), Forced Vital Capacity (FVC), and the ratio) unless they are smokers which has to be adjusted, and the effect of age, (d) their hearing should not be affected. As a proof an Audiogram (first and last need to be presented), (c) they should not have developed any Persistent Back Pain, Neck Pain, and the movement of their Hip, Knee and other joints should have a normal range of movement. (f) they should not have suffered loss of any body part. The record of the same should be submitted to the Regional Office, MoEF&CC annually along with details of the relief and compensation paid to workers having the above indications.

Reply to Condition 4- Noted and being complied with. However, Regular and periodical medical examination of the workers engaged in the project is being carried out and records are being maintained. IME/PME record is attached herewith as **Annexure 6.**

Condition 5-The Project Proponent shall ensure that Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects.

Reply to Condition 5- Personnel working in dusty areas are provided with proper respiratory devices. Regular training is being conducted on occupational health and work safety environments.

Condition 6-Project Proponent shall make provision for the housing for workers/labours or shall construct labor camps within/outside (company owned land) with necessary basic infrastructure/ facilities like fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche for kids etc. The housing may be provided in the form of temporary structures which can be removed after the completion of the project-related infrastructure. The domestic wastewater should be treated with STP in order to avoid contamination of underground water.

Reply to Condition 6- Temporary rest shelters have been constructed for laborers. As most of the workers/labors are from local village, there is no need for labor camps.

Condition 7- The activities proposed in the Action plan prepared for addressing the issues raised during the Public Hearing shall be completed as per the budgetary provisions mentioned in the Action Plan and within the stipulated time frame. The Status Report on

implementation of Action Plan shall be submitted to the concerned Regional Office of the Ministry along with District Administration.

Reply to Condition 7- Noted. The issues raised during the Public Hearing are being implemented as per the budgetary provisions.

Condition 8- Measures should be taken for control of noise levels below prescribed norms in the work environment. Workers engaged in operations of HEMM, etc. should be provided with ear plugs /muffs.

Reply to Condition 8- Noise level is maintained below prescribed norms and is being monitored by NABL accredited laboratory. The report is attached as **Annexure 2.** All the workers engaged in operations of HEMM are provided with earplugs.

K. Corporate Environment Responsibility (CER):

Condition 1- The activities and budget earmarked for Corporate Environmental Responsibility (CER) as per Ministry's O.M No 22-65/20 1 7-IA. II (M) dated 01.05.2018 or as proposed by EAC should be kept in a separate bank account. The activities proposed for CER shall be implemented in a time bound manner and annual report of implementation of the same along with documentary proof viz. photographs, purchase document, latitude & longitude of infrastructure developed & road constructed needs to be submitted to Regional Office MoEF&CC annually along with audited statement.

Reply to Condition 1- Every year, the funds earmarked for corporate environmental responsibility is being budgeted separately and its expenditure is being reported to the regional office of Ministry. The copy of the same is attached as **Annexure 5.**

Condition 2-Project Proponent shall keep the funds earmarked for environmental protection measures in a separate account and refrain from diverting the same for other purposes. The Year wise expenditure of such funds should be reported to the MoEF&CC and its concerned Regional Office.

Reply to Condition 2- Every year, the funds earmarked for environmental protection measures is being budgeted separately and its expenditure is being reported to the regional office of Ministry. The copy of the same is attached as **Annexure 5.**

Condition 3- The funds earmarked for environmental protection measures should be kept in a separate account and should not be diverted for other purposes. Year wise expenditure should be reported to the Jharkhand State Pollution Control Board. Ranchi. PP shall carry out CSR activities as per Government Guidelines (% of Profit / turnover) or at least Rs 1 per ton whichever is higher.

Reply to Condition 3- Every year, the funds earmarked for CSR measures is being budgeted separately as per the govt. guidelines and its expenditure is being reported to the Ministry and JSPCB. The copy of the same is attached as **Annexure 5**.

Condition 4- The environmental statement for each financial year ending 31st March in Form-V as is mandated to be submitted by the project proponent to the Jharkhand State Pollution

Control Board as prescribed under the Environment (Protection) Rules. 1986, as amended subsequently, shall also be put on the website of the company along the status of compliance of EC conditions and shall also be sent to the concerned Regional Office of JSPCB by e-mail.

Reply to Condition 4- Environment statement is being submitted regularly to Member Secretary, JSPCB. Also, the status of compliance of EC conditions is uploaded on the website of the company on regular basis.

L. Miscellaneous:

Condition 1- The Project Proponent shall prepare a digital map (land use & land cover) of the entire lease area once in five years for the purpose of monitoring land use pattern and submit a report concerned Regional Office of the MoEF & CC.

Reply to Condition 1 – Noted and will be complied with. However, Digital Map of land use and land cover is being prepared every year and is being submitted to IBM Ranchi. The same is attached herewith as $\mathbf{Annexure}\ \mathbf{10}$.

Condition 2- The Project Authorities should inform the Regional office regarding the date of financial closures and final approval of the project by the concerned authorities start of land development work.

Reply to Condition 2- The Final Mine Closure Plan (FMCP), along with the Financial Assurance, has been approved by the Indian Bureau of Mines and subsequently submitted to the Regional Office of the Ministry of Environment, Forest and Climate Change (MoEF&CC). The financial closure is planned for 31st March 2026.

Condition 3- It shall be mandatory or the project management to submit six (06) monthly compliance report in respect of the stipulated prior environmental clearance terms and conditions in hard copies and soft copies to the regulatory authority concerned Regional office of MoEF & CC at Ranchi and Jharkhand State Pollution Control Board (J.S.P.C.B.). Ranchi JCPCB SEIAA.

Reply to Condition 3- Six monthly reports on the status of the EC are being submitted regularly.

Condition 4- A separate 'Environmental Management Cell' with suitable qualified manpower should be set-up under the control of a Senior Executive. The Senior Executive shall report directly to the Head of the Organization. An adequate number of qualified Environmental Scientists and Mining Engineers shall be appointed and submit a report to RO, MoEF&CC. Reply to Condition 4- 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 attached herewith as Annexure 3.

Condition 5- The concerned Regional Office of the MoEF&CC shall randomly monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the MoEF&CC officer(s) by furnishing the requisite data / information /monitoring reports.

Reply to Condition 5- Noted and Agreed.

Condition 6- Concealing factual data or submission of false/fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act. 1986.

Reply to Condition 6- Noted.

Condition 7- The Ministry / SEIAA / SEAC may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.

Reply to Condition 7- Noted.

Condition 8- The Ministry /SEIAA /SEAC reserves the right to stipulate additional conditions if found necessary. The Company in a time-bound manner shall implement these conditions. Reply to Condition 8- Noted & Agreed.

Condition 9- No blasting shall be carried out after sunset. Blasting operation shall be carried out only during Daytime, Controlled blasting shall be practiced. The mitigative measures for control of ground vibrations and to arrest fly rocks and boulders should be implemented. Reply to Condition 9- Blasting time is fixed during Lunch Time i.e. 1.00 PM -2.00 PM. Controlled blasting method is in practice. Ground vibration study has been conducted periodically. Efforts and mitigative measures are being taken to reduce the impact of the blast.

Condition 10- Drilling shall either be operated with dust extractors or equipped with a water injection system.

Reply to Condition 10- Wet Drilling practice is adopted at our mines.



Condition 11- Pre-placement medical examination and periodical medical examination of the workers engaged in the project conducted by a Registered Medical Officer shall be carried out and records maintained.

Reply to Condition 11- Pre-placement medical examination and periodical medical examination of the workers engaged in the project are being carried out and records maintained as per statute. IME/PME report is attached as **Annexure-6.**

Condition 12- Provision shall be made for the housing of construction labor at a suitable place away from the site with all necessary infrastructure and facilities such as fuel for cooking,

mobile toilets / septic tanks, safe drinking water, medical health care, etc. The housing may be in the form of temporary structures to be removed after the completion of the project.

Reply to Condition 12- This is an existing mine, and all the necessary basic facilities has been provided to the workers. Also, as most of the workers/laborers are from local village, so there is no need of housing infrastructure/ labor camps.

Condition 13-Proper Safety measures as per statutory requirement shall be implemented around the mined-out Pit prior to closure of site.

Reply to Condition 13- Noted and being adhered to.

Condition 14- The Project Proponent shall submit six monthly report on the expenditure incurred on environmental management plan submitted by them.

Reply to Condition 14- Environmental Expenditure is being submitted six-monthly. The report is attached as **Annexure 5.**

Condition 15- Since blasting and mining on Hillock / Rock out crop may also be carried out. Suitable scheme for access / ramp to the highest elevation with gradient shall be submitted for approval from competent authorities.

Reply to Condition 15- We are doing mining operations in a very shallow depth of plateau areas. During mining operations, we carry out drilling and blasting for the production of bauxite. After removing OB, we extract bauxite from the mine pit. However, there are no outcrops of rock in surrounding areas of our mines, hence this is not applicable for our mine.

Condition 16- A separate environmental management /monitoring 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 to Condition 16- 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 17- The Jharkhand State Pollution Control Board, Ranchi directly or through its Regional Office shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) by furnishing the requisite data information /monitoring reports.

Reply to Condition 17- Noted and Agreed.

Condition 18- A copy of the clearance letter shall be sent by the project proponent to concerned Panchayat, Zila Parishad / Municipal Corporation, Urban Local Body and the Local NGO if any from whom suggestions/ representations, if any were received while processing the proposal. The clearance letter shall also be put on the website of the company by the project proponent.

Reply to Condition 18- A copy of the clearance letter has been submitted to panchayat office and Zila parishad. The acknowledgment copy is attached as **Annexure 9**. No suggestions were received from urban bodies/ local NGOs while processing the proposal. The clearance letter has been uploaded on the company website.

Condition 19- It shall be mandatory for the project management to submit six (06) monthly compliance report in respect of the stipulated prior environmental clearance terms and

conditions in hard copies and soft copies to the regulatory authority concerned Regional Office of MoEF & CC at Ranchi and Jharkhand State Pollution Control Board (J.S.P.C.B.) Ranchi/SEIAA/CPCB.

Reply to Condition 19- Six monthly reports on the status of the EC are being submitted regularly.

Condition 20- Concealing factual data or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act. 1986.

Reply to Condition 20- Noted.

Condition 21- The Authority reserves the right to add any new condition or modify the above conditions to revoke the clearance if conditions stipulated above are not implemented to the satisfaction of Authority or for that matter for any other Administrative reason.

Reply to Condition 21- Noted and agreed.

Condition 22- In case of any deviation or alteration in the project proposed from those submitted to SEIAA, Jharkhand for clearance, a fresh reference should be made to SEIAA to assess the adequacy of the conditions imposed and to incorporate any new conditions if required.

Reply to Condition 22- Noted and agreed.

Condition 23- The above stipulations would be enforced among others under the Water (Prevention & Control of Pollution) Act, 1974. the Air (Prevention & Control of Pollution) Act. 1981 the Environment (Protection) Act, 1986. Hazardous and other Wastes (Management and Transboundary Movement) Rules. 2016 and the Public Liability Insurance Act. 1991 along with their amendments and rules made there under and also any other orders passed by the Hon'ble Supreme Court of India/ High Court of Jharkhand and another Court of Law relating to the subject matter.

Reply to Condition 23- Noted.

Condition 24- The SEIAA. Jharkhand or any other competent Authority may alter modify the above conditions or stipulate any further condition in the interest of Environment protection. Reply to Condition 24- Noted and agreed.

Condition 25-The Environmental Clearance accorded shall be valid for the period of lease of the mine. The PP shall not increase production rate and alter lease area during the validity of Environmental Clearance.

Reply to Condition 25- Noted and agreed.

Condition 26-Any Appeal against this Environmental Clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.

Reply to Condition 26- Noted.

Annexure 1

Piezometer Reading - Kujam -I Bauxite Mine							
S No	Month	Depth (meter)					
1	Apr-24	33.56					
2	May-24	34.14					
3	Jun-24	33.86					
4	Jul-24	32.89					
5	Aug-24	32.47					
6	Sep-24	32.18					

ENVIROCHECK

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

KujamI Bauxite Mine-Environmental Monitoring Report

April 2024

CONTENT

	Hindulco Industries: Kujam-I Barxite Mine Lavironmental Monitoring Report. April 2024	
	Kujam-I Bauxite Mine	
	AMBIENT AIR QUALITY- CORE ZONE	
1	Kujam Quarry 449	
2	Talabkhania 4A13	
3	4 ATT Football Ground	
4	Camp	
	AMBIENT AIR QUALITY- BUFFER ZONE	
T.	Near PakriGuda Village	
2	Near Pol Pol Village	
3	Near Shakhuaponi Village	
4	Near DipaKujam Village	





TEST REPORT

Test Report No.	: ENVJK/1155/APR/TR(W)24-25	Report Release Date	: 28.04.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024

CUSTOMER DETA	AILS .	SAMPLE DETAILS			
Customer Name	: Hindukeo Industries Limited	Sample Ref. No. Location	: ENVJK/2024/AA/1680 : Kujam Quarry- 449 Kujam-I Bauxite Mine (80.87ha)		
Address	: Loharduga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 15.04.2024 to 16.04.2024 : 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	: Senled & Preserved		

Mi	ETEOROLOGICAL INFORMATION			17.7	
.1	Average Temperature (°C) : 31	2	Barometric Pressure (mmH	(g) : 734	
3	Relative Humidity (%) : 60	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	65	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	6.9	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m ³	IS 5182 (Part 6): 2006	26.2	80 (24hrs)
Ozone (O ₁)	µg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NHs)	µg/m ⁵	1S 5182 (Part- 25); 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ¹	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.6	2 (8hrs)
Lead (Pb)	jig/m³	IS 5182 (Part- 22): 2019	110.0	T (24hrs)
Nickel (Ni)	ng/m ⁵	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)	µg/m³	USEPA Method - TO-3 (GC-MS Method)	<2.5	05(Annual)
Benzu-(a)-Pyrene	ng/m ¹	USEFA 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)

Page 1 of 1





Test Report No.	ENVJK/1156/APR/TR(W)24-25	Report Release Date	: 28.04.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	

CUSTOMER DET/	CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ENVJK/2024/AA/1681 : Talabkhanta 4A13 Kujam-I Bauxite Mine (80.87ha)		
Address	: Lohurdaga, 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 Done By	: ELES Pvt. Ltd.		
Period of Analysis	: 22.04.2024 to 28.04.2024	Sample Condition	: Sealed & Preserved		

METEOROLOGICAL INFORMATION			
1 Average Temperature (°C) :31	2	Barometric Pressure (mm)	(g) : 734
3 Relative Humidity (%) : 59	4	Weather Condition	: Clear

	Disciplin	e: ChemicalGroup: Atmospheric Pollut	ion	
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	1S 5182 (Part 23): 2006	63	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	USEPA 1997a,40 CFR Part 50, Appendix L: 2006	35	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m³	1S 5182 (Part 2): 2001	6.9	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m³	IS 5182 (Part 6): 2006	22.4	80 (24hrs)
Ozone (O ₃)	pg/m ³	IS 5183 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₁)	µg/m ⁵	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/m²	IS 5182 (Part- 22): 2019	6.011	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 (C ₀ H ₀)	μg/m³	USEPA Method – TO-3 (GC-MS Method)	<2.5	05(Annual)
Венго-(а)-Ругено	ng/m³	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)

Page 1 of 1

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Test Report No.	: ENVJK/1157/APR/TR(W)24-25	Report Release Date	: 28.04,2024	=1
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	

CUSTOMER DETA	CUSTOMER DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ENVJK/2024/AA/1682 : 4 A11 Foothall Ground Kujam-I Bauxite Mine (80.87ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 15.04.2024 to 16.04.2024 : 22.04.2024 : Ambient Air : 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	: Scaled & Preserved

ME	TEOROLOGICAL INFORMATION				
1	Average Temperature (°C) : 31.	2	Barometric Pressure (mmf	lg) : 734	
3	Relative Humidity (%) : 59	4	Weather Condition	; Clear	

	Disciplin	e: ChemicalGroup: Atmospheric Pollut	ion	
Parameter	Unit	Test Protocul	Result	Regulatory Limi
Particulate Matter (PM10)	μg/m ³	1S 5182 (Part 23): 2006	62	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/m³	IS 5182 (Part 2): 2001	7.1	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m³	15 5182 (Part 6); 2006	23.8	80 (24hrs)
Ozone (O ₂)	ag/m²	15 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NHs)	µg/m²	15 5182 (Part- 25); 2018	<10.0	400 (24hrx)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part- 22): 2019	0.012	1 (24brs)
Nickel (Ni)	ng/m ⁴	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 ₀ H ₆)	μg/m²	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(Annual)

Reviewed by :

(Saswata Burman Roy, Dy. Quality Manager)

Authorised Signatury:

- Entry

(Bapan Das, Dy. Technical Manager)

Page 1 of 1

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Test Report No.	: ENVJK/1158/APR/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	: Hindalco Industries Limited	Sample Ref. No. Location	ENVJK/2024/AA/1683 Camp; Kujam-I Bauxite Mine (80.87ha)	
Address	: Lolundaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 15.04.2024 to 16.04.2024 : 22.04.2024 : Ambient Air : 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 INFORMA	TION		
1	Average Temperature (*C) : 3	0 2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%) : 59	9 4	Weather Condition	: Clear

	Disciplin	e: ChemicalGroup: Atmospheric Pollut	ion	
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m³	1S 5182 (Part 23): 2006	68	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	USEPA 1997a,40 CFR Part 50, Appendix L: 2006	35	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m³	IS 5182 (Part 2): 2001	7.7	80 (24hni)
Nitrogen Di-Oxide (NO ₁)	µg/m³	IS 5182 (Part 6); 2006	22.3	80 (24hrs)
Ozone (O ₁)	µg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NHs)	µg/m ¹	IS 5182 (Part- 25): 2018	<10.0	400 (24lus)
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/m²	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Amenic (As)	ng/m1	USEPA Method - IO-3.5 (ICP-MS Method)	<2.0	06 (Annual)
Benzene (CsHs)	µg/m³	USEPA Method – TO-3 (GC-MS Method)	<2.5	05(Annual)
Венго-(а)-Рутепе	ng/m²	USEPA Method – TO-3A (GC-MS Method)	<0.5	Ol(Annual)

Reviewed by :

(Saswata Burman Roy, Dy. Quality Manager)

Authorised Signatory:

(Bapan Das, Dy. Technical Manager)



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TEST REPORT

Test Report Na.	: ENVJK/1139/APR/TR(W)24-25	Report Referse Oste	28.04.2034
Wark Order No.	173412312113	Work Order Date	: 28.03.2024

CUSTOMER DET.	ULE	SAMPLE DETAILS	
Curromer Nama	: Hindoles-Todatries Limited	Sample Ref. No. Location: Sampling Class	: BNV/X/2034 (AAT) 664 T New PskekCode V Mage 17.04.2034 to 18.04.2024
Address	: Letterbye: Pranchend-655302	Sample Received Date Type of Sample Sampling Proceibate	- 22,04,2034 LANGERI AII - BLES/DOC/SNIPL/92
Mines Status	: Operational	Sampling Done By	: ELES Pir. Lin.
Period of Analysis	±22.04.3024 to 28.04.3524	Semple Condition	- Sex od &Prospried

METEOROLOGICAL INFORMATION	
1 Average Temperorare (*C) : 29	2 Eurometric Pressure (mmHg) : 742
3 Robins Hymlity (%) (A)	4 Washin Condition Clear

	Disciplin	e: ChendealGroup: Atmospheric Pattut	Son	
Parameter	L/mit	Test Protectal	Result	Regulatory Limit
Particulate Matter (PM 10)	pg/m	15:5132 (7nn 23): 2006	63	100 (24hrs)
Particulais Metter (1942.5)	ingin [†]	USEPA 1997s.40 CFR Part 50. Appendix L; 2006	:34	60 (24bs)
Seighlur (7)-Oxide (50)	ug'm'	15 5182 (Pmt 2): 290/	9,1	80 (24bm)
Nimogan (N-Oxide (NO ₂)	pg'm'	IS 5182 (Part 6): 2006	36.5	10 (24hs)
Ozone (Ci-)	ppin'	15 5182 (Pact-9): 2019	<26.0	300 (5hn)
Ammonia (NH)	yann'	IS-5192 (Pars-25); 2018	<10.0	400 (24km)
Curbon Monurolle (CO)	mgcm ²	15:50(2 (Part-10): 2919 (NDIR Mathed)	<1.0	2(800)
Lenf (Ph)	120	15 5182 (Fan- 22): 2019	<0.661	1 (24hn))
Nielai (Ni)	PIE/PI	15 5162 (Part-26): 2020	<5.9	20 (Amenta)
Americ (Au)	ru/m²	USEPA Method - IO-3.5 (ICP-M5: Method)	<2.5	Un (Admost)
Beraze (C.H.)	FERR	USEPA Method - TO-3 (GC-NS Method)	<4.5	05(Amount)
Bears-(a)-Pyrene	10pm ³	USEPA Method - TO-3A (GC-MS Method)	4.0	03(Amust)

Staviewed by t

(Second Burner Ray, Dy. Quality Mininger)

Authorised Styrower: 1

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officers Day, Dy. Textorical Managery





Test Report No.	: ENVJK/1140/AFIUTH/W)24-25	Rapper Release Date	: 20,04,2024
Work Order No.	: 33612312113	Work Order Date	: 28.83.2024

CUSTOMER DETA	ALES	SAMPLE DETAILS	
Custamer Nome	: Hinduico Intjutties Elmited	Sample Ref. No. Location Sampling Date	: ENVIK/1024/AA/1665 : Near Pol Pol Villege : 17.04.2024 to 18.64.2024
Address	: Lobardaga, Jharkhand-835302	Sample Received Date Type of Sample Sampling Procedure	: 22.64.2024 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Opentional	Sampling Done By	: ELES Pvt. Ltd.
Period of Analysis	: 22.64.2024 to 28.04.2024	Sample Condition	: Souled & Preserved

M	ETEOROLOGICAL INFORMATION				
1	Average Temperature (°C) : 29	2	Barometric Pressure (mmH)	0 : 742	
3	Relative Humidity (%) : 61	4	Weather Condition	Clear	

	Disciplin	e: ChemicalGroup: Atmospheric Poliut	don	
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM19)	μg/m³	15 5182 (Part 23): 2006	56	100 (24hm)
Particulate Matter (PM2.5)	pg/m³	USEPA 1997a,40 CFR Part SQ, Appendix L; 2006	32	60 (24hn)
Solphur Di-Onide (SO ₂)	pg/m³	IS 5182 (Part 2): 2001	8.5	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m²	15 5182 (Purt 6): 2005	24.1	80 (24hrs)
Gzone (O ₂)	µg/m ³	35 5182 (Part- 9): 2019	<20.	100 (thrs)
Ammonia (NFE)	pg/m²	1S 5182 (Part-25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m²	IS 51H2 (Part- 10): 2019 (NDIR Method)	<1.8	2 (8hrs)
Lend (Pb)	pg/m3	IS 5182 (Part+22): 2019	<0.0	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenia (As)	ng/m ³	USEPA Method – IO-3.5 (ICP-MS Method)	<2.6	05 (Annual)
Beizzene (CoHo)	pg/m²	USEPA Method – TO-3 (GC-MS Method)	<2.5	95(Annual)
Вения-(а)-Ругини	ng/m²	USEPA Method – TO-3A (GC-MS Method)	<0.1	91(Annual)

Reviewed by :

(Saswatta Burman Roy, Dy. Quality Manager)

ger) Jhatkhand

Authorised Signatory:

(Bapan Dus, Dy. Technical Manager)





Test Report No.	: ENVJK/141/APR/TR(W)14-15	Report Release Date	: 28.94,2874
Work Order No.	113612312113	Work Order Date	: 25/03.2924

CUSTOMER DET	CUSTOMER DETAILS		
Costonier Name	2 Hindules Industries Limited	Sample Ref. No. Location Sampling Date	23/V38/2024/AA/1665 : Neur Shaldruspani Village : 17.04,2024 to 18.04,2024
Address	: Letherings, Americhand-833302	Sample Received Date Type of Sample Sampling Procedure	: 23.04.2034 : Ambient Abr : ELES/DOC/SMPL/02
Mines Smith	: Operations)	Sampling Done By	: ELES Por. Ltd.
Period of Austysis	: 22 U4 2034 to 28 U4 2024	Sample Condition	: Social diliverence

MI	ETEOROLOGICAL INFORMATION				
1	Average Temperature (*C) : 38	- 2	Barometric Pressure (mmiri	g) :742	
3	Rolstive Humidity (%) : 62	- 4	Weather Condition	: Clear	

		e: ChemicalGroup: Atmospheric Pollut	19.10.1	
Parameter	Unit	Test Protucol	Result	Regulatory Limit
Particulate Matter (PM10)	pag/m²	1S 5182 (Part 23): 2006	68	100 (24hrs)
Particulate Matter (PM2.5)	µg/m³	USEPA 1997a,40 CFR Part 50, Appendix L; 2006	36	60 (24hrs)
Sulpfoir Di-Oxide (SO ₂)	µg/m²	(S 5182 (Part 2): 200)	7.4	88 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m³	IS 5182 (Part 6): 2006	24.1	80 (24hrs)
Ozone (Ch)	µg/m²	IS 5182 (Part- 9); 2019	<20.0	100 (Shra)
Ammonia (NH ₂)	ug/m³	IS 5182 (Part- 25): 2018	<10.0	400 (34hrs)
Carbon Monoxida (CO)	mg/m ¹	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8brs)
Lead (Pb)	pg/m ³	IS 5182 (Part- 22): 2019	0.009	1 (24brs)
Nickel (Ni)	ng/m³	FS 5182 (Part+ 26): 2020	<6.0	20 (Anoual)
Amonio (As)	ng/m²	USEPA Method – 10-3.5 (ICP-MS Method)	<2.0	06 (Annual)
Benzene (Cdf4)	µghn³	USEPA Method - TO-3 (GC-MS Method)	<2.5	05(Annual)
Henro-(a)-Pyrene	ng/m³	USEPA Method - TO-JA (GC-MS Method)	<0.5	01(Annual)

Reviewed by 2

(Saswata Burmon Roy, Dy. Quality Manager)

ngur) Shirihand

Authorised Signatory 1

Santar

(Bapan Das, Dy. Technical Manager)





Test Report No.	: ENVJK/1142/APR/TR(W)24-25	Report Release Dute : 28.04.2024
Work Onter No.	: 13612312113	World Order Date 128,03,2024

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Windulco Industries Limited	Sample Ref. No. Location Sampling Date	: ENVIK/2024/AA/1667 : Near Dipakujum Village : 17.04.2924 to 18.04.2924
Actives	: Lethardaga, Pharkhand-835302	Sample Received Date Type of Sample Sampling Procedure	: 23.04.2024 : Amblent Alv : ELES/DOC/EMPL/02
Mines Status	: Operational	Sampling Done By	: ELES Pvr. Lnt.
Period of Analysis	; 22.64.2024 to 28.64.2024	Sample Condition	: Scaled & Preserved

141	ETEOROLOGICAL INFORMAT	ON		
1	Average Temperature (*C) : 31	.2	Berometric Pressure (nun)fig)	:142
3	Relative Humidity (%) 59	4	Weather Condition	: Clear

	Disciplin	e: ChemicalGroup: Atmospheric Pollut	fon	
Parameter	Unit	Test Pratuoal	Result	Regulatory Limit
Particulare Matter (PM10)	jug/m ⁵	15 5182 (Part 23): 2006	58	100 (24hni)
Particulate Mutter (PM2.5)	µg/m³	USEPA 1997a;40 CFR Part 50, Appendix L: 2006	33	60 (24hrx)
Sulphur Di-Oxide (SO ₂)	µg/m³	(S 5182 (Part 2): 2001	7.2	80 (24hrs)
Nitrogen Di-Oside (NO ₁)	µg/m³	IS 5182 (Part 6): 2006	23.1	80 (24hrs)
Ozome (O ₁)	ug/m³	IS 5182 (Pars- 9): 2019	<20.0	100 (8hrs)
Ammonia (NHz)	jág/m²	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 (Shrs)
Leed (Pb)	jig/m²	IS 5182 (Fart- 22): 2019	0.011	1 (24hn)
Nickel (Ni)	ng/m ¹	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenie (As)	ng/m ³	USEPA Method – IO-3,5 (ICP-MS Method)	<2.0	06 (Annual)
Benzeno (CeHe)	pg/m³	USEPA Method - TU-J (GC-MS Method)	<2.5	05(Annual)
Henri-Co)-Pyrone	og/m³	USEPA Method – TO-3A (GC-MS Method)	<0.5	01(Annual)

Reviewed by z

(Saswota Burman Roy, Dy. Quality Manager)

Junkhand sandi

Authorized Signatory :

-

(Hapan Das, Dy. Technical Manager).

ENVIRONMENTAL LABORATORIES & ENGINEERING SERVICES PVT.LTD.

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

Kujaml Bauxite Mine-Environmental Monitoring Report

May 2024



CONTENT

	Hindako Industries : Kajaus-4 Barxite Mine Favironmental Monitoring Report May2024
	Kujam-I Bauxite Mine
	AMBIENT AIR QUALITY- CORE ZONE
ti .	Kujam Quarry 449
2	Talabkhama 4A13
3	4 A11 Football Ground
4	Camp
	AMBIENT AIR QUALITY- BUFFER ZONE
1	Near PakriGada Village
2	Near Pol Pol Village
3	Near Shakhuupani Village
4	Near DipaKujam Village
	Drinking Water





PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) IST NO- 20AARCEST13D124

ENGINEERING SERVICES PVT. LTD.

Email: Info@elespi.co.in , eles.ranchi@gmail.com Phone na.: 0651-2290103

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



TEST REPORT

Test Report No.	: ELES/RNC/2024/2704	Report Release Date	: 20.05.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400000673F	110.000.000.000.000.000.000		

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindulco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/3010 : Kujam Quarry- 449 Kujam-I Bauxite Mine (80.87ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 13.05.2024 to 14.05.2024 : 15.05.2024 : Ambient Air	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02	
Period of Analysis	: 15.05.2024 to 20.05.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Scaled & Preserved	

MI	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 33	2	Barometric Pressure (mmHg)	: 742
3	Relative Fumidity (%) : 61	4.	Weather Condition	: Clear

Discipline: Chemical		Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ²	IS 5182 (Part- 23): 2022	61	100 (24hrs)
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part- 24): 2019	34	60 (24hrs)
Sulphur Dî-Oxîde (SO ₂)	μg/m ³	15 5182 (Part- II/Sec- 1): 2023	7.2	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part- 6): 2022	21.7	80 (24hrs)
Ozone (O ₃)	μg/m³	1S 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₁)	ρg/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/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-834083 (DIARKHANO) BST NO-20ARCESTISDIZE

ENGINEERING SERVICES PVT. LTD.

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TEST REPORT

Test Report No.	: ELES/RNC/2024/2704	Report Release Date	: 20.05.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400000673F			

Discipline: Chemical		Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (C ₆ H ₆)	ag/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrane	ng/m ⁴	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 fings ELES Pvt. Ltd. Technical Manager

Page 2 of 2

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PLOT NO-30, MANSAROVAN ENCLAVE, TUPUDANA HATIA, NANCHI-834009 (IHANKHAND) GST NO-20A8ECFSTLIDLER

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TEST REPORT

Test Report No.	: ELES/RNC/2024/2705	Report Release Date	: 20,05,2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400000674F		

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/3011 : Talabkhanta 4A13 Kujam-I Bauxite Mine (80.87ha)	
Address	: Lohardaga, Jhurkhand-835302	Sampling Date Sample Received Date Type of Sample	: 13.05.2024 to 14.05.2024 : 15.05.2024 : Ambient Air	
Mines Status	: Operational	Sampling Procedure	- ELES/DOC/SMPL/02	
Period of Analysis	: 15.05.2024 to 20.05.2024	Sampling Done By Sample Condition	ELES Pvt. Ltd. Sealed & Preserved	

ME	TEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 33	2	Barometric Pressure (mml	łg) : 742
3	Relative Humidity (%) : 61	.4	Weather Condition	: Closr

Discipline: Chemical		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	32	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m [§]	IS 5182 (Part- II/Sec- 1): 2023	6.5	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part- 6): 2022	21.9	80 (24hrs)
Ozone (O ₂)	μg/m³	1S 5182 (Part- 9): 2019	<20.0	100 (Shrs)
Ammonia (NH ₁)	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)	hth/m ₃	1S 5182 (Part- 22): 2019	0.009	1 (24hrs)
Nickel (Ni)	rig/m ³	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- 20AAFCE97130124



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TEST REPORT

Test Report No.	: ELES/RNC/2024/2705	Report Release Date	: 20,05,2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	- TC135822400000674E		12 Upon Library

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)
Benzu-(a)-Pyrene	ng/m³	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 Environment Entry ELES Pvt. Ltd. Technical Menning

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PLOT NO-30, MANSAROVAN ENCLAVE, TUPUDANA HATIA, HANCH-934003 (JHARKHAND) GST NO-20A4E059713D124

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TEST REPORT

Test Report No.	: ELES/RNC/2024/2706	Report Release Date	; 20.05.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400000675F	The second secon	

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindulco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/3012 : 4 A11 Football Ground Kujam-I Bauxite Mine (80.87ha)	
Address	: Lohardaga, Thurkhand-835302	Sampling Date Sample Received Date Type of Sample	: 13.05.2024 to 14.05.2024 : 15.05.2024 : Ambient Air	
Mines Status	: Operational	Sampling Procedure	ELES/DOC/SMPL/02	
Period of Analysis	: 15.05.2024 to 20.05.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

MI	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (*C)	: 33	2	Barometric Pressure (mmHg)	±742
3	Relative Humidity (%)	:61	4	Weather Condition	: Clear

Discipline: 0	Chemical	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	67	100 (24hrs)
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part- 24): 2019	36	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m³	15 5182 (Part- II/Sec- 1): 2023	7.8	80 (24brs)
Nitrogen Di-Oxide (NO ₂)	µg/m³	15 5182 (Part- 6): 2022	24.3	80 (24hrs)
Ozone (O ₂)	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	pg/m²	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/m²	IS 5182 (Part- 22); 2019	0.009	1 (24hrs)
Nickel (Ni)	ng/m ¹	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/2024/2706	Report Release Date	; 20.05,2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
III P No	- TC135872400000675F	1.0000000000000000000000000000000000000		

Discipline: Chemical		Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (C ₄ H ₆)	µg/m ¹	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Beszo-(a)-Pyrene	ng/m³	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 Enha ELES Pvr. Ltd. Technical Manner

Page 2 of 2

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PLOT NO-30, MANSAROVAN ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (IHARKHAND). BST NO:- 20AAFEE97150124

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TC-HINET

TEST REPORT

Test Report No.	: ELES/RNC/2024/2707	Report Release Date	: 20.05.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400000676F		

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/3013 : Camp; Kujam-1 Bauxite Mine (80.87ba	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 13.05.2024 to 14.05.2024 : 15.05.2024	
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 15.05.2024 to 20.05.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Senled & Preserved	

ME	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 33	2	Barometric Pressure (mmHg)	: 742
3	Relative Humidity (%) : 61	4	Weather Condition	: Clear

Discipline: 0	Chemical	Group: Atm	aspheric Polls	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/m ¹	IS 5182 (Part- 24): 2019	33	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m³	1S 5182 (Part-11/Sec- 1): 2023	7.9	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m³	IS 5182 (Part- 6): 2022	23.6	80 (24hrs)
Ozone (O ₃)	μg/m³	1S 5182 (Part-9): 2019	<20.0	100 (8hrs)
Ammonia (NH _t)	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 (Pb)	ρg/m ⁸	IS 5182 (Part- 22): 2019	0.008	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5382 (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, MANSARDVAR ENCLAVE, TUPUDANA HATIA, KANCHI-854003 (JHARKHAND) GST NO:-28AAECE9713D128 ENGINEERING SERVICES PVT. LTD.

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TEST REPORT

Test Report No. : ELES/RNC/2024/2707 Report Release Date : 20.05.2024

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC135872400000676F

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C _s 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	OI(Annual)	

Reviewed by

AKASH KUMAR Quality Managor ELES PVT LTD

****End of Report****

Authorised Signatory

Dr. Deependra Kumar Sinha Ph. D Environmental Bogg. BLES Pvt. Ltd. Technical Marinostr.

Page 2 of 2

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATSA, RANCHI-834003 (JHARKHANDI GST NO:- 20AAECE97130124

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



TEST REPORT

Test Report No.	: ELES/RNC/2024/2680	Report Release Date	: 18.05.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400000649F		711311111111111111111111111111111111111	

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2024/AA/2971
	A STANDARD SECTION OF A STANDARD SECTION OF STANDARD SECTION S	Location	: Near Pakri Gada Village
		Sampling Date	: 10.05.2024 to 11.05.2024
Address	: Lohardaga, Jharkhand-835302	Sample Received Date	: 13.05.2024
	Description Tayson Charles and Section	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
Mines Status	: Operational	Sampling Done By	; ELES Pvt Ltd.
Period of Analysis	; 13.05.2024 to 18.05.2024	Sample Condition	: Sealed & Preserved

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

Discipline: 0	Chemical	Group: Atm	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/m²	IS 5182 (Part- 24): 2019	32	60 (24brs)		
Sulphur Di-Oxide (SO ₂)	µg/m³	IS 5182 (Part-11/Sec- 1): 2023	8.5	80 (24hrs)		
Nimigen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part- 6): 2022	24.9	80 (24hm)		
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 Monoside (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	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, MANSARONAN ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) DST NO- 20A4ECE9718D1Z4

Email: infa@elesal.co.in , eles.ranchi@gmail.com Phone no.: 0651-2290103 Websitz : www.elespi.co.in



TEST REPORT

Test Report No.	: ELES/RNC/2024/2680	Report Release Date	: 18.05.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400000649F			

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

AKREMMENIAR Quality Managur FLES PVT. LTD.

****End of Report****

Anthorised Signatory

Dr. Deependra Kumar Sintra Ph. D Enwoomental Enga. ELES Pvt. Ltd. Technical Literany

Page 2 of 2

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (IHARITHAND) GST NO-20AAECE97180124

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/2024/2681	Report Release Date	: 18.05,2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2924	
ULR No.	: TC135872400000650F			

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2024/AA/2972 : Near Pol Pol Village : 10.05,2024 to 11.05,2024
Address	: Lohardaga, Jharkhand-835302	Sample Received Date Type of Sample	: 13.05.2024 : Ambient Air
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	± 13.05.2024 to 18.05.2024	Sample Condition	: Sealed & Preserved

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

Discipline: 0	Chemical	Group: Alm	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	μg/m²	IS 5182 (Part- 23): 2022	60	100 (24hrs)		
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	32	60 (24hrs)		
Sulphur Di-Oxide (SO ₂)	µg/m ¹	IS 5182 (Part-II/Sec-1): 2023	8.5	80 (24hrs)		
Nitrogen Di-Oxide (NO ₁)	µg/m³	IS-5182 (Part- 6): 2022	24.7	80 (24hrs)		
Ozone (O ₃)	µg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)		
Ammonia (NH _s)	μg/m ³	15 5182 (Part- 25): 2018	<10.0	400 (24hns)		
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)		
Lead (Pb)	htt/m _g	IS 5182 (Part-22): 2019	0.009	1 (24hs)		
Nickel (Ni)	og/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 634003 (JHABRHAND) 05T NO-20A6CE97140124

ENGINEERING SERVICES PVT. LTD.

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TEST REPORT

Test Report No.	: ELES/RNC/2024/2681	Report Release Date	: 18.05.2024
Work Order No.	: 13612312113	Work Order Date	: 28.63.2024
ULR No.	: TC135872400000650F		

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₀ H ₄)	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)	

Reviewed by

Quality Managor FLES PVT, LTD. ****End of Report****

Authorised Signatory

Dr. Deependra Kurnar Sinha Ph. D Environmenta Fings.

ELES Pyt. Ltd. Technical Manager

Page 2 of 2

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



TEST REPORT

Test Report No.	: ELES/RNC/2024/2682	Report Release Date	: 18.05.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400000651F			

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2024/AA/2973 : Near Shakhuapani Village : 10.05,2024 to 11.05,2024	
Address	: Lohardaga, Jhurkhand-835302	Sample Received Date Type of Sample Sampling Procedure	: 13.05.2024 : Ambient Air : ELES/DOC/SMPL/02	
Mines Status	: Operational	Sampling Done By	: ELES Pvt. Ltd.	
Period of Analysis	: 13.05.2024 to 18.05.2024	Sample Condition	: Sealed & Preserved	

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

Discipline: 0	Chemical	Group: Atm	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/m³	IS 5182 (Part- 24): 2019	33	60 (24hm)		
Suiphur Di-Oxide (SO ₂)	µg/m³	IS 5182 (Part-II/Sec- 1): 2023	7.1:	80 (24hrs)		
Nitrogen Di-Oxide (NO ₂)	µg/m³	IS 5182 (Part- 6): 2022	23.5	80 (24hrs)		
Ozone (O ₁)	µg/m²	IS 5182 (Part- 9); 2019	<20.0	100 (Shrs)		
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 (8hrs)		
Lead (Pb)	µg/m ²	IS 5182 (Part- 22): 2019	0.008	1 (24hrs)		
Nickel (NI)	ng/m³	15 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



PLOT NO-30, MANSAROVAR ENCLAYE, TUPUDANA NATIA, RANCHI-BIANOS (JHARNHAND) GST NO-20AAECER713DLDI

ENGINEERING SERVICES PVT. LTD.

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TEST REPORT

Text Report No. : ELES/RNC/2024/2682 Report Release Date : 18.05.2024

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC135872400000651F

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

AKASAPPONIAR

Ouality Managur

ELES PVT. LTD.

****End of Report****

Authorised Signatory

Ph. D Environmental Enga ELES Pvt. Ltd. Technical Manne

Page 2 of 2

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ENGINEERING SERVICES PVT. LTD.

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



15-1107

TEST REPORT

Test Report No.	: ELES/RNC/2624/2683	Report Release Date	: 18,05,2024
Work Order No.	: 13612312113	Work Order Date	: 28.03,2024
ULR No.	: TC135872400000652F		

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2024/AA/2974 : Near Dipa Kujam Village : 10.05.2024 to 11.05.2024	
Address	: Lohardaga, Jharkhand-835302	Sample Received Date Type of Sample	: 13.05.2024 : Ambient Air	
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 13.05.2024 to 18.05.2024	Sample Condition	: Sealed & Preserved	

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

Discipline: 0	Chemical	Group: Atm	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	µg/m³	IS 5182 (Part-23): 2022	61	100 (24hrs)		
Particulate Maner (PM2.5)	µg/m³	JS 5182 (Part- 24): 2019	35	60 (24hrs)		
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-11/Sec-1): 2023	7.6	80 (24hm)		
Nitrogen Di-Oxide (NO ₂)	μg/m³	1S 5182 (Part- 6): 2022	24.7	80 (24hrs)		
Ozone (O ₃)	µg/m³	1S 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)		
Lend (Pb)	µg/m²	IS 5182 (Part- 22): 2019	0.009	I (24hrs)		
Nickel (Ni)	ng/m³	IS 5182 (Purt- 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-36, MANSAROVAR ENCLAVE, TUPLIDANA HATIA, RANCH-834803 (HARKHANO) GST NO-28AAECBT13D124

ENGINEERING SERVICES PVT. LTD.

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TEST REPORT

Test Report No. : ELES/RNC/2024/2683 Report Release Date : 18.05.2024

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC135872400000652F

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

AKASH KOMAR

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

Authorised Signatory

Ph. D Environmental Enga.

ELES Pvt. Ltd. Technical Manner.

Page 2 of 2

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (IHARKHAND) GST NO:-20ARCEFF13D124

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10-12581

TEST REPORT

Test Report No.	: ELES/RNC/2024/2895	Report Release Date	: 28.05.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400000855F			

CUSTOMER DE	TAILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Sampling Date Sample Received Date	: ELES/RNC/2024/DW/3017 : 14.05.2024 : 15.05.2024	
Address	: Lohardaga, Jharkhand-835302	Type of Sample Source/Location of Sample	: Drinking Water : Near Camp Area, Kujam-I Bauxite Mines (80,87 ha)	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/01	
Period of Analysis	: 15.05.2024 to 23.05,2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Scaled & Preserved	

Discipline : Chemical		Group :	Water		ory Limit 10500:2012
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
pH (at 25.5°C)	7.0	APHA 24th Ed.2023, 4500-H	6.56	6.5-8.5	No Relaxation
Turbidity	NTU	APHA 24th Ed.2023, 2130 B	1.55	1.0	5.0
Taste	7.5	APHA 24th Ed.2023, 2160 C	Agreeable	Agreeable	Agrecable
Odour	- 6	IS 3025 (Part-5) :2018	Agreeable	Agroeable	Agrecable
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	48	500	2000
Chloride (as CI)	mg/L	APHA 24 th Ed.2023, 4500 Cl B	7.71	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 ₂)	mg/L	APHA 24 th Ed.2023, 2320 B	14.4	200	600
Total Hardness (as CaCO ₁)	mg/L	APHA 24th Ed 2023, 2340 C	12.2	200	600
Sulphate (as SO ₄)	mg/L	APHA 24 th Ed.2023, 4500 SO ₁ ⁻¹ -E	1.26	200	400

Page 1 of 4

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TEST REPORT

Test Report No. : ELES/RNC/2024/2895 Report Release Date : 28.05.2024

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC135872400000855F

Discipline: Chemical		Gree	ip: Water		ory Limit 10500:2012
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Peromisible Limit
Nitrate (as NO ₃)	mg/L	APHA 24 th Ed.2023, 4500 NO ₃ -B	BDL (DL: 0.5)	45	No Relaxation
Phenolic Compound (as C _c H ₂ 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 Car B	3.2	75	200
Anionic Surfactums (as MBAS)	mg/L	APHA 24 th Ed 2023, 5540-C	BDL (DL:: 0.025)	0.2	1.0
Discipline : Chemi	çal	Gre	up: 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	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 (au Cu)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL: 0.03)	0.05	1.5
Cyanide (as CN)	mg/L	APHA 24th Ed.2023, 4500 CN-E	BDL. (DL: 0.012)	0.05	No Relaxation
Iron (as Fe)	mg/L	APHA 24th Ed.2023; 3111B	0.087	1.0	1.0
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

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

ENGINEERING SERVICES PVT. LTD.

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TEST REPORT

Test Report No. : ELES/RNC/2024/2895 Report Release Date : 28.05.2024

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC135872400000855F

Discipline : Chemical		Group: Resid	ues in Water		ory Limit 10500:2012
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
Selenium (as Se)	mg/L	IS 3025 (Part-56): 2019	BDL, (DL: 0.01)	0.01	No Relaxation
Zinc (as Zn)	mg/L	APHA 246 Ed.2023; 3111B	BDL (DL: 0.1)	3	15
Polymelear 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
esticides					mit
Alachior	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	- 3	20
Atrazine	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	2.0	
Butachlor	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	- 1	25
Chlorpyriphos	μg/L	ELES/GC/SOP/01; 2023	BDL (DL: 0.5)	3	30
Ethion	μg/L	ELES/GC/SOP/01; 2023	BDL (DL: 0.5)	3	0.0
Malathion	μg/L	ELES/GC/SOP/01; 2023	BDL (DL: 0.5)	3	90
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)	- 8	
Dieldrin	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.01)	0	.03

Page 3 of 4

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PLOT NO-30, MANSABOVAR ENCLAVE, TUPUIDANA HATIA, RANCHI-834003 (IHARKHANO) EST NO: 20A6ECE9713D124

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



16-1406

TEST REPORT

Test Report No.	: ELES/RNC/2024/2895	Report Release Date	: 28.05.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400000855F			

Pesticides				
Parameter	Unit	Test Protocol	Result	Limit
Alphu HCH	µg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.006)	10.0
Delta HCH	pg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.02)	0.04
Gamma HCH (Lindane)	μg/L	ELES/GC/SOP/02: 2023	BDL (DL; 0.02)	2.0
Endosulfan (alpha, beta and sulphate)	µg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.05)	0,40
DDT(o,p and p.p-isomers of DDT,DDEand DDD)	μg/L.	ELES/GC/SOP/02: 2023	BDL (DL: 0.05)	1.0
Discipline : Biological		Gree	ip: Water	
Total Coliform (Qualitative)	Per 100 mL	IS 15185: 2021	Not Detected	Shall not be detected
Escherichia coli (Qualitative)	Per 100 mL	IS 15185: 2021	Not Detected	Staff for the detector

Remarks: L. pH and RFC done at Lah.

Reviewed by AKASH KUMAR Quality Managar ELES PVT LTD

****End of Report****

Authorised Signatory

Dr. Deependra Kurnar Sinha Ph. D Environmental Engg. ELES Pvt. Ltd. Technical Memorin

Page 4 of 4

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TEST REPORT

Test Report No.	: ELES/RNC/2024/2895	Report Release Date	: 28.05.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	

CUSTOMER DET	TAILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Sampling Date Sample Received Date	: ELES/RNC/2024/DW/3017 : 14.05.2024 : 15.05.2024	
Address	: Lohardaga, Jharkhand-835302	Type of Sample Source/Location of Sample	: Drinking Water : Near Camp Area, Kujam-I Bauxite Mines (80.87 ha)	
Mines Status	1 Operational	Sampling Procedure	: ELES/DOC/SMPL/01	
Period of Analysis	: 15.05.2024 to 23.05.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

Discipline : Chemical		Discipline : Chemical Group : Water		Regulatory Limit as per 15 10500-2012	
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Perminible Limit
Mineral Oil*	mg/L	CL-6, 1S: 3025 (P-39)	BDL (DL: 0.1)	1.0	No Relaxation

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

Reviewed by

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

Authorised Signatory

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

Page 1 of 1

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ENVIRONMENTAL LABORATORIES & ENGINEERING SERVICES PVT.LTD.

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

KujamI Bauxite Mine-Environmental Monitoring Report

June 2024



CONTENT

	Hindalco Industries : Kujam-I Bauane Mine Environmental Monitoring Report June 2024
	Kujam-I Bauxite Mine
	AMBIENT AIR QUALITY- CORE ZONE
1.	Kojam Quarry 449
1	Talahkhanta 4A33
3	4 A11 Football Ground
4	Camp
	AMBIENT AIR QUALITY-BUFFER ZONE
1	Near PakriGada Village
2	Near Pol Pol Village
3	Near Shakhunpuni Village
4	Near DipaKujam Village





PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO-20445C597130124

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TEST REPORT

Test Report No.	: ELES/RNC/2024/3514	Report Release Date	z 29.06.2924
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400001465F		

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/4022 : Kujam Quarry- 449	
Address	: Lohardaga, Jhazkhand-835302	Sampling Date Sample Received Date	Kujam-I Bauxite Mine (80.87ha) : 19.06.2024 to 20.06.2024 : 24.06.2024	
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 24.06.2024 to 29.06.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

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

Discipline:	Chemical	Group: Atm	ospheric Polle	rtion
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/m³	IS 5182 (Part- 24): 2019	31	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m ¹	IS 5182 (Part- II/Sec- 1): 2023	6.8	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m³	1S 5182 (Part- 6): 2022	22.3	80 (24hrs)
Ozone (O ₃)	µg/m³	1S 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 ¹	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	μg/m ¹	1S 5182 (Part- 22): 2019	0.007	1 (24hrs)
Nickel (Ni)	ng/m	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m²	ELES/AIR/SOP/0): 2021	<2.0	06 (Annual)

Page 1 of 2

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPLIDANA HATIA, RANCHI-834003 (IHARKHANO) GST NO-200AECE97130124

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TE-FAMI

TEST REPORT

Test Report No.	: ELES/RNC/2024/3514	Report Release Date	: 29.06.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	

ULR No. : TC135872400001465F

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)	
Вепго-(а)-Рутепе	eg/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 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-834063 (IHARKHAND) GST NO: 20AAEC297130124



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TEST REPORT

ULR No.	: TC135872400001466F			
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
Test Report No.	: ELES/RNC/2024/3515	Report Release Date	1 29.86.2824	

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2024/AA/4023	
Address	: Lohardaga, Jharkhand-835302	Location Sampling Date	: Talahkhanta 4A13 Kujam-I Bauxite Mine (80.87ha) : 19.06.2024 to 20.06.2024	
Address	: Lonardaga, markinino-655302	Sample Received Date	: 24,06.2024	
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 24.06.2024 to 29.06.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

METEOROLOGICAL INFORMATION					
1	Average Temperature (*C)	: 32	2	Barometric Pressure (mmFlg)	: 742
3	Relative Humidity (%)	: 58	4	Weather Condition	: Partly Cloudy

Discipline: Chemical		Group: Atm	ospheric Polls	ition
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	60	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part- II/Sec- 1); 2023	7.1	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	° µg/m³	IS 5182 (Part- 6): 2022	22.5	80 (24hrs)
Ozone (O ₁)	µg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₂)	μg/m ²	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	1S 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	ELES/AIR/SOP/01: 2021	<2.9	06 (Annual)

Page 1 of 2

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TEST REPORT

Test Report No. : ELES/RNC/2024/3515 Report Release Date : 29.06.2024

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC135872400001466F

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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PLOT NO-30, MANSAROVAN ENCLAVE, TUPUDANA HATIA, RANCHI-934003 (HARKHAND) GST NO-30A6CE97130124

ENGINEERING SERVICES PVT. LTD.

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TEST REPORT

Test Report No.	: ELES/RNC/2024/3516	Report Release Date	: 29.06.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400001467F	710 2		

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/4024 : 4 A11 Football Ground Kujam-I Bauxite Mine (80.87ha)	
Address	: Lohardaga, Jharkhund-835302	Sampling Date Sample Received Date	: 19.06.2024 to 20.06.2024 : 24.06.2024 : Ambient Air	
Mines Status	: Operational	Type of Sample Sampling Procedure	: ELES/DOC/SMPL/02	
Period of Analysis	: 24.06.2024 to 29.06.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

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

Discipline: 0	Chemical	Group: Atm	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/m³	IS 5182 (Part- 24): 2019	33	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part- II/Sec- 1): 2023	7.5	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	µg/m³	IS 5182 (Part- 6): 2022	24.7	80 (24hrs)	
Ozone (O ₂)	µg/m²	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH ₂)	µg/m ³	JS 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	0.006	1 (24hrs)	
Nickel (Ni)	ng/m ¹	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

The Document mated at Test Report, is issued by the Laboratory under General Turns and Conditions, only on Company letter bank in pre-approved format. The results shown in the Test Report reflects the findings done by the Laboratory only. The information stated on the Test Report reflects the findings done by the Laboratory at the time of involvement only and within the litture of client's indirection. The Laboratory is responsible for all the information or data provided on the report, example the information which is provided by the aftern. The Report current be reported according to find and any part of the support is one taken and if context, without prior written approved in the Laboratory. The Report in full or in part shall not be published, advertise, used for tarty legal actions unless from permission has been record from the Management of the Laboratory. And station is drawn to the limitation of liability, computations and principles in times. Any unsuffering distriction of the context or appearance of the Test Report is unlessful and offenders may be provided to the fallest extent of the law. All the samples are remained in Malays from the Date of systems been found to be fallest extent of the law. All the samples are remained in Malays from the Date of Test Report released/visual. After the time period stated before, no compliants regarding the Reports shall be done within 15days from the Date of Test Report released/visual. After the time period stated before, no compliants will be accepted. The curior Time schedule mentioned in Test Report to in 3 thours format. Abbreviation isself. NA (Not Applicable), BUI. (Selow Detection Limit), LER. (Lower Detection Limit).



PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (IHARKHAND) GIT NO-20A4ECERTISULN

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TEST REPORT

Test Report No. : ELES/RNC/2024/3516 Report Release Date : 29.06.2024

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC135872400001467F

Discipline	e: Chemical	Group: Att	mospheric Polli	ition
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (C ₄ H ₄)	µg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzu-(n)-Pyrene	ng/m ²	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

AKASH KUMAR

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

Dr. Deependra Kumar Sinha Ph. Denvironmental Enga

ELES Pvt. Ltd. Technical Manager

Page 2 of 2

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834083 (JHARKHAND) GST NO-20A8CE97130124

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TEST REPORT

Test Report No.	: ELES/RNC/2024/3517	Report Release Date	: 29.06.2024	
Work Onler No.	; 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400001468F		710.040.000 1410	

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2024/AA/4025	
	STOCK HER STEELING TO STREET STOCK	Location	; Comp;	
			Kujam-I Banxise Mine (80.87ha	
Address	: Lohandaga, Jharkhand-835302	Sampling Date	: 19.06.2024 to 20.06.2024	
	CALCULATION OF THE PROPERTY OF THE PARTY OF	Sample Received Date	: 24,06,2024	
		Type of Sample	: Ambient Air	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02	
Period of Analysis	: 24.06.2024 to 29.06.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Souled & Preserved	

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

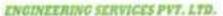
Discipline: 0	Chemical	Group: Atm	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	µg/m³	IS 5182 (Part-23): 2022	59	100 (24hrs)		
Particulate Matter (PM2.5)	μg/m ³	IS 5182 (Part-24): 2019	31	60 (24hrs)		
Sulphur Di-Oxide (SO ₂)	µg/m³	IS 5182 (Part- II/Sec- 1): 2023	7.2	80 (24hrs)		
Nitrogen Di-Oxide (NO ₂)	µg/m	IS 5182 (Part- 6): 2022	23.5	80 (24hrs)		
Ozone (O ₃)	μg/m³	(S 5182 (Part- 9): 2019	<20.0	100 (8brs)		
Ammonia (NH ₂)	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)		
Lend (Pb)	µg/m²	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/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/2024/3517	Report Release Date	: 29.06.2024	
Work Order No.	: 13612312113	Work Order Date	: 28,03.2024	
ULR No.	: TC135872400001468F			

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₀ 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	Ol(Amuni)	

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

The Document mand as Test Report, is mand by the Laboratory order General Terms and Conditions, only on Company letter head at pre-approved format. The results shown in the Test Report refler or relates only to the job analysis done by the Laboratory only. The information stated on the Test Report reflects the findings done by the Laboratory at the same of new dominant or than provided on the information or than provided on the report, among the information which is prevaled by the above. The Report comes he reportional except in full and any part of the report is not taken as a function without approval of the Laboratory. The Report is influent in pair shall not be published, swell for any light actions ealers prior permission has been secured from the Management of the Laboratory. Assument is shown to the involution of tability, compensation and provided on some. Any unandocrated alternation & distillustries of the content or appearance of the Test Report to unlessed and offenders may be processed to the fallest extent of the law. All the samples are unlessed for Nichays from the Date of Test Report. The samples from Reports with the demandation of the Test Report. The samples from the Date of Laboratory within 15 days from the Date of Test Report released model. After the time period stand before, to complaints only the accepted. The samples recently results recently in 15 days from the Date of Test Report released model. After the time period stand before, to complaints will be accepted. The same Test schedule recently in 15 days from the Date of Test Report released model. After the time period stand before, to complaints will be accepted. The same Test schedule recently in 15 days from the Date of Test Report released model. After the time period stand before.



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TEST REPORT

Test Report No.	: ELES/RNC/2024/3393	Report Release Date	: 24.06.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400001344F		

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2024/AA/3844 : Neur Pakri Gada Village : 17.06.2024 to 18.06.2024
Address	: Lohardaga, Jharkhund-835302	Sample Received Date Type of Sample Sampling Procedure	: 20.06.2024 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Operational	Sampling Done By	: ELES Pvt. Ltd.
Period of Analysis	20.06,2024 to 24.06,2024	Sample Condition	: Sealed & Preserved

MI	TEOROLOGICAL INFORMATION			
11.77	Average Temperature (°C) : 38	2	Barometric Pressure (mmHg)	: 742
Linear	Relative Humidity (%) : 59	4	Weather Condition	: Cleur

Discipline: O	Chemical	Group: Atm	ospheric Pollu	tion
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m³	1S 5182 (Part-23): 2022	57	100 (24hm)
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part- 24): 2019	30	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	IS 5182 (Part- 6): 2022	24.1	80 (24hrs)
Ozone (O ₁)	µg/m²	1S 5182 (Part- 9): 2019	<20.0	100 (8lss)
Ammonia (NH ₃)	µg/m ¹	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)
Lend (Pb)	µg/m³	IS 5182 (Part- 22): 2019	< 0.002	1 (24hrs)
Nickel (Ni)	ng/m ⁴	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-JU, MANSAROVAR ENCLAVE, TUPUCANA HATIA, RANCHI-8340R3 (JHARXNANO) GST NO-20AAECESTIJDIJIR

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TEST REPORT

Test Report No.	: ELES/RNC/2024/3393	Report Release Date	: 24.06.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400001344F		

Discipline	:: Chemical	Group: Att	nospheric Polls	tion
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (C _e H _b)	pg/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)

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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PLOT NO-30, MANMAROVAN ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GET NO-30AAEE97130124

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TEST REPORT

Test Report No.	: ELES/RNC/2024/3394	Report Release Date	: 24.06.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400001345F	THE MINOR THE PERSON NAMED IN COLUMN TO THE PERSON NAMED IN COLUMN	

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindaleo Industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2024/AA/3845 : Near Pol Pol Village : 17.06.2024 to 18.06.2024
Address	: Lohardaga, Tharkhand-835302	Sample Received Date Type of Sample	: 20.06.2024 : Ambient Air
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 20.06.2024 to 24.06.2024	Sample Condition	Sealed & Preserved

ΜI	TEOROLOGICAL INFORT	MATION			
1	Average Temperature (*C)	: 38	2	Barometric Pressure (mmHg)	: 742
and the last	Relative Humidity (%)	: 59	4	Weather Condition	: Clear

Discipline: (Chemical	Group: Atm	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Mutter (PM10)	µg/m³	IS 5182 (Part-23): 2022	57	100 (24hrs)		
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part- 24): 2019	30	60 (24hrs)		
Sulphur Di-Oxide (SO ₂)	µg/m³	IS 5182 (Part-11/Sec- 1): 2023	7.2	80 (24hrs)		
Nitrogen Di-Oxide (NO ₂)	μg/m ³	1S 5182 (Part- 6): 2022	24.9	80 (24hrs)		
Ozone (O ₁)	pg/m ¹	IS 5182 (Part- 9): 2019	<28.0	100 (8hrs)		
Ammonia (NH ₃)	µg/m²	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)		
Lead (Pb)	µg/m²	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	ELES/ABR/SOP/01: 2021	<2.0	06 (Annual)		

Page 1 of 2

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TEST REPORT

Test Report No. : ELES/RNC/2024/3394 Report Release Date : 24.06.2024

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC135872400001345F

Discipline	Chemical	Group: Att	nospheric Polls	tion
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (C ₆ H ₆)	pg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(n)-Pyrene	ng/m³	ELES/GC/SOP/05: 2023	<0.5	01(Armual)

AKASSPIRE UMAR Quality Managur ELES PVT LTD.

****End of Report****

Dr. Deapendra 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, RANCHP-E340E3 (JHARKHAND) GST NO-20ARCE97130124

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TEST REPORT

Test Report No.	: ELES/RNC/2024/3395	Report Release Date	: 24,06.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400001346F			

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindulco Industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2024/AA/3846 : Near Shakhuanani Viliage : 17,06.2024 to 18.06.2024
Address	: Lohardaga, Jharkhand-835302	Sample Received Date Type of Sample Sampling Procedure	: 20.06.2024 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Mines Status : Operational		Sampling Done By	
Period of Analysis	: 20.06.2024 to 24.06.2024	Sample Condition	: Sealed & Preserved

MI	TEOROLOGICAL INFORMATION			
interest or to	Average Temperature (°C) : 38	2	Barometric Pressure (mmHg	: 742
	Relative Humidity (%) : 59	4	Weather Condition	: Clear

Discipline: (hemical	Group: Atm	ospheric Pollu	ntion
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m²	IS 5182 (Part- 23); 2022	58	300 (24hrs)
Particulate Matter (PM2.5)	μg/m³	15 5182 (Part- 24): 2019	31	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m³	IS 5182 (Part-11/Sec-1): 2023	6.9	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m³	15 5182 (Part- 6): 2022	24.2	80 (24hrs)
Ozone (O ₃)	µg/m ¹	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hm)
Carbon Monoxide (CO)	mg/m ¹	15 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Load (Pb)	µg/m³	IS 5182 (Part- 22): 2019	0.007	J. (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, TUPLIDANA HATTA, RANCHI-834002 (JHARKHAND) GET NOV ZOARECESTIBULAR

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TEST REPORT

Test Report No.	: ELES/RNC/2024/3395	Report Release Date	: 24.06.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400001346F		

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

AKASHRUMAR Quality Managur ELES PVT. LTD.

****End of Report****

Authorised Signatory Dr. Deependra Kumar Sinha Ph. D Environmental Enga. ELES Pvr. Ltd. Technical Manager

Page 2 of 2

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PROTREERING SERVICES PVT. LTD.

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TEST REPORT

Test Report No.	: ELES/RNC/2024/3396	Report Release Date	: 24.06.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400001347F		

CUSTOMER DET.	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2024/AA/3847 : Near Dipu Kujum Village : 17.06.2024 to 18.06.2024
Address	: Lohardaga, Jharkhand-835302	Sample Received Date Type of Sample Sampling Procedure	: 20.06.2024 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Operational	Sampling Done By	: ELES Pvt. Ltd.
Period of Analysis	; 20.06.2024 to 24.06.2024	Sample Condition	: Scaled & Preserved

MI	TEOROLOGICAL INFORMATION			
	Average Temperature (°C) : 38	2	Barometric Pressure (mmHg)	: 742
-	Relative Humidity (%) : 59	:4	Weather Condition	Clear

Discipline: O	bemical	Group: Atm	ospheric Pollu	tion
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	15 5182 (Part- 23): 2022	57	100 (24hm)
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part- 24): 2019	32	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m³	IS 5182 (Part- Il/Sec- 1); 2023	7.4	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m³	15 5182 (Part- 6): 2022	23.8	80 (24hrs)
Ozone (O ₁)	µg/m³	15 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₂)	µg/m ¹	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 (24hm)
Nickel (NI)	ng/m²	1S 5182 (Part-26): 2020	<6.0	20 (Annual)
Amenic (As)	ng/m ³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)

Page 1 of 2

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TEST REPORT

Test Report No.	: ELES/RNC/2024/3396	Report Release Date	: 24.06.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400001347F	THE STATE OF THE S		

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 ¹	ELES/GC/SOP/05: 2023	<0.5	OI(Annual)	

AKASH KUMAR Quality Managur

ELES PVT. LTD.

****End of Report****

(Sinha)

Authorised Signatory
Dr. Deependra Kumar Sinha
Ph. D Environmental Enga
ELES Pyt. Ltd. Technical Management

Page 2 of 2

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ENVIRONMENTAL LABORATORIES & ENGINEERING SERVICES PVT.LTD.

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

Kujamł Bauxite Mine-Environmental Monitoring Report

July 2024



CONTENT

	Hindalco Industries : Kujam-I Bauxote Mine Environmental Monitoring Report July2024
	Kujam-I Bauxite Mine
	AMBIENT AIR QUALITY- CORE ZONE
1	Kujam Quarry 449
2	Talabkhanta 4A13
3	4 A11 Football Ground
4	Camp
	AMBIENT AIR QUALITY- BUFFER ZONE
1	Near PakriGada Village
2	Near Pol Pol Village
3	Near Shakhuspani Village
4	Near DipaKujam Village





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TEST REPORT

Test Report No.	: ELES/RNC/2024/4145	Report Release Date	± 24.07.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400002080F			

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/4744 : Kujam Quarry- 449 Kujam-I Bauxite Mine (80.87ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 17.07.2024 to 18.07.2024 : 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			
Γ	Average Temperature (°C) : 30	2	Barometric Pressure (mmHg)	: 740
3	Relative Humidity (%) : 64	4	Weather Condition	: Partly Cloudy

Discipline: (hemical	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ¹	IS 5182 (Part-23): 2022	60	100 (24hrs)
Particulate Mutter (PM2-5)	μg/m³	IS 5182 (Part- 24): 2019	33	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m³	1S 5182 (Part-11/Sec-1): 2023	6.7	80 (24hni)
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part- 6): 2022	20.1	80 (24hrs)
Ozone (O ₂)	μg/m²	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₁)	pg/m³	1S 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	img/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	μg/m ⁵	IS 5182 (Part- 22): 2019	0.009	1 (24hrs)
Nickel (Ni)	ng/m²	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m1	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)

Page 1 of 2

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TEST REPORT

Test Report No.	: ELES/RNC/2024/4145	Report Release Date	: 24.07.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400002080F			

Discipline: Chemical		Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (C _s H ₆)	µg/m ⁴	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 AKASH KUMAR

Quality Managar 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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TEST REPORT

Test Report No.	: ELES/RNC/2024/4146	Report Release Date	: 24.07.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400002081F			

CUSTOMER DETAILS		SAMPLE DETAILS	
Cistomer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/4745 : Talabkhanta 4A13 Kujam-I Banxite Mine (80.87ha)
Address	: Lohardaga, Jharkhund-835302	Sampling Date Sample Received Date	: 17.07.2024 to 18.07.2024 : 19.07.2024
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 19.07.2024 to 24.07.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

M	ETEOROLOGICAL INFORMATION	
1	Average Temperature (°C) : 30	2 Barometric Pressure (mmHg) (740
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/m ¹	IS-5182 (Part- 23): 2022	61	100 (24hrs)
Particulate Matter (PM2.5)	µg/m³	15 5182 (Part- 24): 2019	32	60 (24hm)
Sulphur Di-Oxide (SO ₂)	µg/m ³	IS 5182 (Part- II/Sec- 1): 2023	6.5	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m²	IS 5182 (Part- 6): 2022	20.1	80 (24hrs)
Ozone (O ₁)	pg/m³	1S 5182 (Part- 9); 2019	<20.0	100 (Shra)
Ammonia (NH ₆)	jug/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	0.009	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)

Page 1 of 2

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TEST REPORT

Test Report No.	: ELES/RNC/2024/4146	Report Release Date	: 24.07.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03,2024
ULR No.	: TC135872400002081F	10.41.40.00.00.00.00.00.00.00.00.00.00	2.0.300111112122

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

AKASH KUMAR

Quality Manager ELES PVT_LTD. ****End of Report****

Dr. Debreichberkeimer Sinha Ph. D Environmental Engg-ELES Put. Ltd. Technical Manager

Page 2 of 2

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Email: info@ciespl.co.in , cies ranch(@gmail.com Phone no.: 0631-2290103

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TEST REPORT

Test Report No.	: ELES/RNC/2024/4147	Report Release Date	: 24.07.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03,2024
ULR No.	: TC135872400002082F		

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindaico Iodustries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/4746 : 4 A11 Football Ground Kujam-I Bauxite Mine (80,87ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 17.07,2024 to 18.07,2024 : 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	TEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 30	2	Barometric Pressure (mmHg)	1740
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	IS 51H2 (Part- 23): 2022	54	100 (24hrs)		
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part- 24): 2019	29	60 (24hrs)		
Sulphur Di-Oxide (SO ₂)	μg/m³	IS-5182 (Part-11/Sec-1): 2023	6.5	80 (24hrs)		
Nitrogen Di-Oxide (NO ₂)	µg/m³	IS 5182 (Part- 6): 2022	21.3	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 (24hm)		
Carbon Monoxide (CO)	mg/m²	IS 5182 (Part- 10); 2019 (NDIR Method)	<1.0	2 (8hm)		
Lead (Ph)	µg/m²	IS 5182 (Part- 22): 2019	0.005	1 (24hrs)		
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	29 (Annual)		
Amenic (Ax)	ng/m ¹	ELES/AlR/SOP/01: 2021	<2.0	06 (Annual)		

Page 1 of 2

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TEST REPORT

Test Report No. : ELES/RNC/2024/4147 Report Release Date : 24.07.2024

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC135872400002082F

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C _t H _t)	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 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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TEST REPORT

Test Report No. : ELES/RNC/2024/4148 Report Release Date : 24.07.2024

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC135872400002083F

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindulco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/4747 : Camp; Kujam-I Bauxite Mine (80.87h).	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 17.07.2024 to 18.07.2024 : 19.07.2024	
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 19.07.2024 to 24.07.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

303	ETEOROLOGICAL INFORMATION			
. 1	Average Temperature (*C) : 30	2	Barometric Pressure (mmHg)	: 740
3	Relative Humidity (%) : 64	4	Weather Condition	: Partly Cloudy

Discipline:	Chemical	Group: Atm	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/m³	IS 5182 (Part- 24): 2019	30	60 (24hrs)	
Sulphur Di-Oxide (\$O ₂)	μg/m [†]	1S 5T82 (Part- II/Sec- 1): 2023	6.4	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m [†]	JS 5182 (Part- 6): 2022	18.8	80 (24hrs)	
Ozone (O ₁)	http,m ₂	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ainmonia (NH ₃)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m ⁸	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	pg/m²	15 5182 (Part- 22): 2019	0.006	1 (24hrs)	
Nickel (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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TEST REPORT

Test Report No. : ELES/RNC/2024/4148 Report Release Date : 24.07.2024

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC135872400002083F

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C _s H ₆)	pg/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

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

Dr. Deependra Kurnar Sinha
Ph. D Environmental Engg.

ELES Pyt. Ltd. Technical Manager

Page 2 of 2

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TEST REPORT

Test Report No.	: ELES/RNC/2024/4097	Report Release Date	: 22.07.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400002032F			

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindulco Industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2024/AA/4692 : Near Pakri Gada Village : 15.07.2024 to 16.07.2024	
Address	: Lohardaga, Jharkhand-835302	Sample Received Date Type of Sample	: 17,07,2024 : Ambient Air	
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 17.07,2024 to 22.07,2024	Sample Condition	: Sealed & Preserved	

METEOROLOGICAL INFORMATION				
1 Average Temperature (°C) : 28	2	Barometric Pressure (mmHg)	; 741	
3 Relative Humidity (%) : 67	4	Weather Condition	: Cloudy	

Discipline: 0	Chemical	Group: Atm	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m³	IS 5182 (Part- 23): 2022	55	100 (24hrs)	
Porticulate Matter (PM2.5)	µg/m³	IS 5182 (Part-24): 2019	28	60 (24hm)	
Sulphur Di-Oxide (SO ₅)	µg/m³	IS 5182 (Part- II/Sec- 1): 2023	6.7	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	µg/m³	15 5182 (Part- 6): 2022	22.2	80 (24hrs)	
Orone (O ₁)	µg/m².	IS 5182 (Part- 9); 2019	<20.0	100 (8hrs)	
Ammoria (NH ₃)	μg/m ³	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 (Ph)	h8,m,	IS 5182 (Part- 22): 2019	< 0.002	1 (24hrs)	
Nickel (Ni)	ng/m³	IS 5182 (Part-26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	

Page 1 of 2

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TEST REPORT

Test Report No.	: ELES/RNC/2024/4097	Report Release Date	: 22.07.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400002032F			

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/m²	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

AKASH KUMAR

Quality Managur ELES PVT_LTD. ****End of Report****

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

Page 2 of 2

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10-1406

TEST REPORT

Test Report No.	: ELES/RNC/2024/4098	Report Release Date	: 22.07.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400002033F			

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindulco Industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2024/AA/4693 : Near Pol Pol Village : 15:07.2024 to 16:07.2024
Address	: Lohardaga, Jharkhand-835302	Sample Received Date Type of Sample	: 17,07,2024 : Ambient Air
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 17.07,2024 to 22.07,2024	Sample Condition	Sealed & Preserved

MI	TEOROLOGICAL INFORMATIO	N .	and the same of th	1400
1	Average Temperature (°C) : 28	2	Barometric Pressure (mmHg)	: 741
3	Relative Humidity (%) : 67	14	Weather Condition	: Cloudy

Discipline: 0	Chemical	Group: Atm	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m³	IS 5182 (Part-23): 2022	52	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	15 5182 (Part-24): 2019	26	60 (24hm)	
Sulphur Di-Oxide (SO ₂)	µg/m³	IS 5182 (Part-11/Sec-1): 2023	6.5	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μ <u>α</u> /m³	15 5182 (Part- 6): 2022	16.1	80 (24hrs)	
Ozone (O ₃)	µg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH ₀)	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m¹	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	pg/m ³	IS 5182 (Part- 22): 2019	<0.002	1 (24hn)	
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/2024/4098	Report Release Date	; 22.07.2024	
Work Order No.	: 13612312113	Work Order Date	; 28.03.2024	
ULR No.	: TC135872400002033F			

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₄ H ₆)	μg/m ³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene-	ng/m ⁸	ELES/GC/SOP/05: 2023	<0.5	O1(Annual)	

Reviewed by AKASH KUMAR Quality Managur ELES PVT_LTD

****End of Report****

Dr. Deependra Kufffar Sinho Ph. D Environmental Engg. ELES Pvt. Ltd. Technical Manager

Page 2 of 2

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TEST REPORT

Test Report No.	: ELES/RNC/2024/4099	Report Release Date	: 22,07,2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400002034F		

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindulco Industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2024/AA/4694 : Near Shakhunpani Village : 15.07.2024 to 16.07.2024	
Address	: Lohardago, Jharkhand-835302	Sample Received Date Type of Sample	: 17.07.2024 : Ambient Air	
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 17.07.2024 to 22.07,2024	Sample Condition	: Sealed & Preserved	

ME	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 28	2	Barometric Pressure (mmHg	: 741
3	Relative Humidity (%) : 67	4	Weather Condition	: Cloudy

Discipline:	Chemical	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	μg/m³	15 5182 (Part-23): 2022	58	100 (24hrs)		
Particulate Matter (PM2.5)	µg/m ¹	IS 5182 (Part- 24): 2019	29	60 (24hrs)		
Sulphur Di-Oxide (SO ₂)	µg/m²	IS 5182 (Part- II/Sec- 1): 2023	6.2	80 (24hrs)		
Nitrogen Di-Oxide (NO ₂)	µg/m³	IS 5182 (Part- 6): 2022	18.5	80 (24hrs)		
Ozone (O ₃)	ug/m²	3S 5182 (Part- 9): 2019	<20.0	100 (8hrs)		
Ammonia (NH ₁)	µg/m³	ES 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hm)		
Lead (Pb)	hilling.	1S 5182 (Part- 22): 2019	<0.002	1 (24hrs)		
Nickel (Ni)	ng/m²	JS 5182 (Part- 26); 2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m³	ELES/AB/SOP/01: 2021	<2.0	06 (Annual)		

Page 1 of 2

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TEST REPORT

 Test Report No.
 : ELES/RNC/2024/4099
 Report Release Date
 : 22,07,2024

 Work Order No.
 : 13612312113
 Work Order Date
 : 28,03,2024

ULR No. : TC135872400002034F

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₄ H ₄)	hft/uz,	ELES/GC/SOP/06: 2023	<2.5	OS(Annual)	
Benzo-(a)-Pyrene	ng/m ³	ELES/GC/SOP/05: 2023	<0.5	OI(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 Manar

Page 2 of 2

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TEST REPORT

Test Report No.	: ELES/RNC/2024/4100	Report Release Date	: 22.07.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400002835F			

CUSTOMER DET	CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2024/AA/4695 : Near Dipa Kujam Village : 15.07.2024 to 16.07.2024		
Address	: Lohardagu, Jharkhand-835302	Sample Received Date Type of Sample	: 17.07.2024 Ambient Air		
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.		
Period of Analysis	: 17.07.2024 to 22.07.2024	Sample Condition	: Sealed & Preserved		

M	ETEOROLOGICAL INFORM	ATION				
1	Average Temperature (°C) :	28	2	Barometric Pressure (mmHg)	: 741	
3	Relative Humidity (%)	67	4.	Weather Condition	: Cloudy	

Discipline:	Chemical	Group: Atm	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	28	60 (24hrs)		
Sulphur Di-Oxide (SO ₂)	µg/m²	IS 5182 (Part- Il/Sec- 1): 2023	6.1	80 (24hrs)		
Nitrogen Di-Oxide (NO ₂)	µg/m³	15 5182 (Part- 6): 2022	20.5	80 (24hrs)		
Ozone (O ₁)	µg/m²	IS 5182 (Part- 9): 2019	<20.0	100 (8hm)		
Ammonia (NH ₃)	µg/m³	1S 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Menoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)		
Lend (Pb)	ug/m³	IS 5182 (Part- 22); 2019	0.004	1 (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 (Annual)		

Page 1 of 2

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TEST REPORT

Test Report No. : ELES/RNC/2024/4100 Report Release Date : 22.07.2024

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC135872400002035F

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
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)	

AKASH KUMAR Quality Managur ELES PVT LTD

****End of Report****

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

Page 2 of 2

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

KujamI Bauxite Mine-Environmental Monitoring Report

August 2024



CONTENT

-	Hindales Industries: Knjans-I Hauxite Mine Environmental Monitoring Report August 2024
	Kujam-I Bauxite Mine
	AMBIENT AIR QUALITY- CORE ZONE
ľ.	Kujam Quarry 449
2	Trilabkhanta 4A13
3.	4 A11 Football Ground
4	Camp
	AMBIENT AIR QUALITY-BUFFER ZONE
1	Near Pakri Gada Village
2	Near Pol Pol Village
3	Near Shakhuapani Village
4	Near Dipa Kujum Village
	Drinking Water



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TEST REPORT

Test Report No.	: ELES/RNC/2024/4805	Report Release Date	: 23.08.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400002724F	100000000000000000000000000000000000000		

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/5498 : Kujam Quarry- 449 Kujam-I Bauxise Mine (80.87ha)	
Address	: Lohardaga, Jharkhund-835302	Sampling Date Sample Received Date Type of Sample	: 14.08.2024 to 15.08.2024 : 16.08.2024 : Ambient Air	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02	
Period of Analysis	: 16.98.2024 to 23.08.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

METEOROLOGICAL INFORMATION				
1	Average Temperature (°C) : 28	2	Barometric Pressure (mm	Hg) :740
3	Relative Humidity (%) : 67	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	47	100 (24hrs)	
Particulate Matter (PM2.5)	μ <u>α</u> /m³	IS 5182 (Part- 24): 2019	24	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	µg/m³	IS 5182 (Part-II/Sec- 1); 2023	6.1	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	µg/m ³	IS:5182 (Part- 6): 2022	17.3	80 (24hrs)	
Ozone (O ₃)	μg/m³	IS 5182 (Part- 9); 2019	<20.0	100 (8brs)	
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)	hilli, jur _{ij}	IS 5182 (Part- 22): 2019	0.006	1 (24hrs)	
Nickel (Ni)	ing/m²	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (Ax)	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/2024/4805 Report Release Date : 23.08.2024
Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC135872400002724F

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

AKASH KUMAR Quality Manager FLES PVT LTD

****End of Report****

Dr. Deependra Kumar Sinha Pn. Denvironmental Enga ELES Pvt. Ltd. Technical Manager

Page 2 of 2

The Demonstrations of the Report is issued by the Labritatory under Genaral Three and Conditions, only on Company better hand in pro-approved forms. The seminations in the Test Report refer is related only of the jubilizations done by the Labritatory only. The information stated on the Test Report referral date findings above by the Labritatory only is required to be the first provided on the report, recept the information which is provided by the chieft. The Report survey be reported and my part of the report is not taken out of contact out of contact, without provided the Labritation of the Labritation which is provided by the chieft. The Report survey be reported and my part of the report is not taken out of contact, without provided the Labritation of the part of the report of the Labritation of the Labritation of the labritation of the Management of the Labritation of the Indiana of the Management of the Labritation of the Indiana of the Indiana of the Contract of the Labritation of the Indiana of the Ind



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TEST REPORT

Test Report No.	: ELES/RNC/2024/4806	Report Release Date	: 23.08.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400002725F		- Catterfus Calif

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/5499 : Talabkhanta 4A13 Kujam-I Bauxite Mine (80.87ba)	
Address	: Lohardaga, Ibarkhand-835302	Sampling Date Sample Received Date Type of Sample	: 14.08.2024 to 15.08.2024 : 16.08.2024 : Ambient Air	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02	
Period of Analysis	± 16.08.2024 to 23.08.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

Mi	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 28	2	Barometric Pressure (mmHg)	: 740
3	Relative Humidity (%)	: 67	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	55	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m ¹	IS 5182 (Part- 24): 2019	28	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	µg/m³	1S 5182 (Part- II/Sec- 1): 2023	5.5	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	µg/m³	IS 5182 (Part-6): 2022	17.4	80 (24hrs)	
Ozone (O ₃)	µg/m ^T	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH ₂)	μg/m³	JS 5182 (Part-25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hm)	
Lead (Pb)	µg/m ³	15 5182 (Part- 22): 2019	0.007	1 (24hrs)	
Nickel (Ni)	rig/m ³	IS 5182 (Part-26): 2020	<6.0	20 (Annual)	
Arsenic (As)	eg/m ¹	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	

Page 1 of 2

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TEST REPORT

Test Report No.	: ELES/RNC/2024/4806	Report Release Date	: 23.08.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400002725F			

Discipline: Chemical		Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (C_sH_b)	hō,m,	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Henzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05: 2023	<0.5	91(Annual)

AKASH KUMAR Quality Managor ELES PVT, LTD

****End of Report****

Dr. Deependra Kumar Sinha Ph. D Emironmental Engg. ELES Pvt. Ltd. Technical Menager

Page 2 of 2

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TEST REPORT

Test Report No.	: ELES/RNC/2024/4807	Report Release Date	: 23.08.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400002726F	To south your marks	1111/2/2010/2011

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	ELES/RNC/2024/AA/5500 4 A11 Football Ground Kujam-I Bauxite Mine (80.87bs)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 14.08.2024 to 15.08.2024 : 16.08.2024 : Ambient Air
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02
Period of Analysis	: 16,08.2024 to 23.08.2024	Sampling Done By Sample Condition	ELES Pvt. Ltd. Sealed & Preserved

M	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 28	2	Barometric Pressure (mmHg)	:740
3	Relative Humidity (%)	: 67	4	Weather Condition	: Cloudy

Discipline: (Chemical	Group: Atm	ospheric Pollu	rtion
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m ¹	IS 5182 (Part- 23): 2022	45	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- II/Sec- 1): 2023	5.9	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m³	IS 5182 (Part- 6): 2022	18.1	80 (24hrs)
Ozone (O ₁)	µg/m³	IS 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	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	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ¹	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)

Page 1 of 2

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: 28.03.2024

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



TEST REPORT

Work Order Date

Test Report No. : ELES/RNC/2024/4807 Report Release Date : 23.08.2024 Work Order No. : 13612312113

ULR No. : TC135872400002726F

Discipline	: Chemical	Group: Att	mospheric Pollu	rtion
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (C ₆ H ₆)	jug/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 Enga.

ELES Pvt. Ltd. Technical Manager

Page 2 of 2

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TEST REPORT

Test Report No.	: ELES/RNC/2024/4808	Report Release Dute	: 23.08.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400002727F		The same of the sa

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/550) : Camp; Kujam-I Bauxite Mine (80.87ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 14.08.2024 to 15.08.2024 : 16.08.2024 : Ambient Air
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02
Period of Analysis	: 16.08.2024 to 23.08.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Seuled & Preserved

Mi	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (*C)	: 28	2	Barometric Pressure (mmHg)	740
3	Relative Humidity (%)	: 67	4	Weather Condition	: Cloudy

Discipline: Chemical		Group: Atm	ospheric Pollu	tion
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	26	60 (24hrx)
Sulphur Di-Oxide (SO ₅)	µg/m³	IS 5182 (Part-11/Sec-1); 2023	5.9	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m ³	IS 5182 (Part- 6): 2022	16.3	80 (24hrs)
Ozone (O ₅)	µg/m ¹	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₄)	μg/m²	1S 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10); 2019 (NDIR Method)	<1.0	2 (8hm)
Lead (Pb)	μp/m ³	IS 5182 (Part- 22): 2019	<0.002	1 (24hrs)
Nickel (Ni)	ng/m²	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/2024/4808 Report Release Date : 23.08.2024

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC135872400002727F

Discipline	r: Chemical	Group: Att	mospheric Pollu	rtion
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (C _s H _s)	µg/m²	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyzene	ng/m³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

AKASH KUMAR Quality Manager 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/2024/4757	Report Release Date	: 22.08.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03,2024	
ULR No.	: TC135872400002676F			

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2024/AA/5440 : Neur Pakri Gada Village : 12.08.2024 to 13.08.2024
Address	: Lohardagu, Jharkhand-835302	Sample Received Date	: 14.08.2024 : Ambient Air
Mines Status	: Operational	Type of Sample Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 14.08.2024 to 22.08.2024	Sample Condition	: Scaled & Preserved

MI	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (*C)	27	2	Barometric Pressure (mmHg)	: 741
3	Relative Humidity (%)	:68	4	Weather Condition	: Cloudy

Discipline: Chemical		Group: Atm	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	24	60 (24hrs)		
Sulphur Di-Oxide (SO ₂)	µg/m ³	IS 5182 (Part-II/Sec- 1): 2023	5.6	80 (24hni)		
Nitrogen Di-Oxide (NO ₂)	µg/m ³	IS 5182 (Part- 6): 2022	18.1	80 (24hrs)		
Ozone (O ₁)	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)		
Ammonia (NH ₃)	µg/m ¹	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)		
Lend (Pb)	µg/m	IS 5182 (Part- 22); 2019	<0.002	1 (24hrs)		
Nickel (Ni)	ng/m³	IS 5182 (Pairt- 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/2024/4757	Report Release Date	: 22.08.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
DI P No	- TC135872400002676F			

Discipline	:: Chemical	Group: Att	nospheric Polli	rtion
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****

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

Page 2 of 2

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TEST REPORT

Test Report No.	: ELES/RNC/2024/4758	Report Release Date	; 22.08.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400002677F	1-1000000000000000000000000000000000000	5.33/H5-1011/h

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2024/AA/8441 : Near Pol Pol Village : 12.08.2024 to 13.08.2024	
Address	: Lohardaga, Jhurkhand-835302	Sample Received Date Type of Sample Sampling Procedure	: 14.08.2024 : Ambient Air : ELES/DOC/SMPL/02	
Mines Status	: Operational	Sampling Done By	: ELES Pvt. Ltd.	
Period of Analysis	: 14.08.2024 to 22.08.2024	Sample Condition	: Senled & Preserved	

METEO	ROLOGICAL INFORMATION			
I Ave	ruge Temperature (°C) : 27	2	Barometric Pressure (mm)	g) :741
3 Reli	tive Humidity (%) : 68	(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	41	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part-24): 2019	19	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	IS 5182 (Part- 6): 2022	14.8	80 (24hrs)
Ozone (O ₁)	μg/m²	(\$ 3182 (Part-9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₂)	pg/m*	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 (8km)
Lond (Pb)	hilli, and	IS 5182 (Part- 22): 2019	< 0.002	1 (24hrs)
Nickel (Ni)	ng/m ³	1S 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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Phone no.: 0651-2290103 Website: www.elespl.co.in



TEST REPORT

Test Report No.	: ELES/RNC/2024/4758	Report Release Date	: 22.08.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULB No.	+ TC135877400002677F	The state of the s	- Addinional	

Discipline	:: Chemical	Group: Att	mospheric Pollu	nion
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (C ₄ H ₆)	jąg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annusl)
Benzo-(u)-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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TEST REPORT

Test Report No.	: ELES/RNC/2024/4759	Report Release Date	: 22.08.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400002678F	THE PROPERTY OF THE PARTY OF TH		

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindulco Industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2024/AA/5442 : Near Shakhuapani Village : 12.08.2024 to 13.08.2024	
Address	: Lohardago, Jharkhund-835302	Sample Received Date Type of Sample	: 14.08.2024 : Ambient Air	
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 14.08.2024 to 22.08.2024	Sample Condition	: Scaled & Preserved	

MI	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 27	2	Barometric Pressure (mmHg)	:741
3	Relative Humidity (%)	: 68	4	Weather Condition	: Cloudy

Discipline:	Chemical	Group; Atm	Group; Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	µg/m³	1S 5182 (Part- 23): 2022	44	100 (24hrs)		
Particulate Matter (PM2.5)	µg/m ^t	15:5182 (Part- 24): 2019	24	60 (24hrs)		
Sulphur Di-Oxide (SO ₂)	µg/m ³	IS 5182 (Part-II/Sec- 1): 2023	5.3	80 (24hrs)		
Nitrogen Di-Oxide (NO ₂)	µg/m ⁷	IS 5182 (Part- 6): 2022	15.1	80 (24hrs)		
Ozone (O ₃)	µg/m*	15 5182 (Part- 9): 2619	<20.0	100 (8hrs)		
Ammonia (NH ₃)	µg/m*	IS 5182 (Part- 25); 2018	<10.0	400 (24hrs)		
Curbon Monuside (CO)	mg/m1	1S 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)		
Lead (Pb)	µg/m²	15 5182 (Part- 22): 2019	< 0.002	1 (24hrs)		
Nickel (Ni)	ng/m³	15 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/2024/4759	Report Release Date	: 22.08.2924	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	+ TC135872400002678F		110000000000000000000000000000000000000	

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/m³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

AKASH KUMAR

Quality Manager ELES PVT_LTD. ****End of Report****

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

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TEST REPORT

Test Report No.	: ELES/RNC/2024/4760	Report Release Date	: 22.08.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400002679F	***************************************	117100000000

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2024/AA/5443 : Near Dipa Kojam Village : 12:08:2024 to 13:08:2024
Address	: Lohardaga, Jharkhand-835302	Sample Received Date Type of Sample Sampling Procedure	: 14.08.2024 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	Operational	Sampling Done By	ELES Pvt. Ltd.
Period of Analysis	: 14.08.2024 to 22.08.2024	Sample Condition	: Scaled & Preserved

MI	ETEOROLOGICAL INFORMATION			
1	Average Temperature (*C) : 27	2	Barometric Pressure (mm	(Hg) : 741
3	Relative Humidity (%) : 68	4.	Weather Condition	: Cloudy

Discipline: 0	Chemical	Group: Att	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	42	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m³	15 5182 (Part-24): 2019	21	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	µg/m³	IS 5182 (Part-11/Sec-1): 2023	5.4	80 (24brs)	
Nitrogen Di-Oxide (NO ₃)	μg/m³	IS 5182 (Part- 6): 2022	17.1	80 (24hrs)	
Ozone (O ₁)	µg/m³	IS \$182 (Part- 9): 2019	<20.0	100 (8hs)	
Ammonia (NH ₁)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hm)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Ph)	110/m	IS 5182 (Part- 22): 2019	<0.002	1 (24hrs)	
Nickel (Ni)	ng/m ¹	JS 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m ¹	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	

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Work Order No.

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: 28.03.2024

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



TEST REPORT

Work Order Date

Test Report No. : ELES/RNC/2024/4760 Report Release Date : 22.08.2024

ULR No. : TC135872400002679F

: 13612312113

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	91(Annual)	

AKASH KUMAR Quality Managor ELES PVT LTD

****End of Report****

Authorised Signatory
Dr. Deependra Kumar Sinha
Ph. D Environmental Enga
ELES Pvt. Ltd. Technical Managari

Page 2 of 2

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PLOT NO-30, MANSAROVAN ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) 637 NO-20A46097150124

ENGINEERING SERVICES PVT. LTD.

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

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



TEST REPORT

Test Report No.	: ELES/RNC/2024/4816	Report Release Date	: 24,08,2024
Work Order No.	: 13612312113	Work Order Date	; 28.03.2024
ULR No.	: TC135872400002735F		

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Sampling Date Sample Received Date Type of Sample Source of Sample Location of Sample	: ELES/RNC/2024/DW/5564 : 15.08.2024 : 16.08.2024 : Drinking Water : Tap Water : Near Camp
Mines Status	Operational	Sampling Procedure	(Kujam-I Bauxite Mines) : ELES/DOC/SMPL/01
Period of Analysis	16.08.2024 to 24.08,2924	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Scaled & Preserved

Discipline : Chemical			Group:	Water	The second secon	ory Limit
Parameter	Unit	Test Protocol		Result	Acceptable Limit	Permissible Limit
pH (at 24.6°C)	*	APHA 24 th Ed.2023, 45	11-00	6.60	6.5-8.5	No Relaxation
Turbidity	NTU	APHA 24 th Ed.2023, 2	130 B	0.87	1.0	5.0
Taste	*	APHA 24 th Ed.2023, 2	160 C	Agreeable	Agreeable	Agreeable
Odour		18 3025 (Part-5) :20	018	Agreeable	Agreeable	Agrecable
Colour	Hazen	APHA 24th Ed.2023, 212	26B&D	2.0	5.0	15
Total Dissolved Solids (TDS)	mg/L	APHA 24th Ed.2023, 254	B,C&D	84	500	2000
Chloride (as Cl)	mg/L	APHA 24th Ed 2023, 45th	00 Ci B	14.3	250	1000
Fluorido (as F)	mg/L	APHA 24th Ed.2023, 45	00 F-D	BDL (DL: 0.1)	1.0	1.5
Total Alkalinity (as CaCO ₂)	mg/L	APHA 24 th Ed.2023, 2	320 B	28.7	200	600
Total Hardness (as CaCO ₃)	mg/l.	APHA 24° Ed.2023, 2	340 C	34.8	200	600
Sulphate (as SO ₂)	mg/L	APHA 24th Ed.2023, 4500	SO₁²-E	2.91	200	400
Nitrate (as NO ₃)	mg/L	APHA 24th Ed.2023, 450	0 NO ₂ -B	1.82	45	No Relaxation

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TEST REPORT

Test Report No. : ELES/RNC/2024/4816 Report Release Date : 24.08.2024

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC135872400002735F

Discipline: Chemic	nl	Gre	up: Water		ory Limit 10500:2012
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
Phenolic Compound (as C ₄ H ₂ OH)	mg/L	IS 3025 (Part 43/Sec1): 2022	BDL (DL: 0.001)	100.0	0.002
Free Residual Chlorine (RFC)	mg/L	IS 3025 (Part-26): 2021	0.28	0.2(Min)	1.0(Min)
Calcium (as Ca)	mg/L	APHA 24th Ed.2023, 3500 Ca B	9.3	7.5	200
Anionic Surfactants (as MBAS)	mg/L	APHA 24th Ed.2023, 5540-C	BDL (DL: 0.025)	0.2	1.0
Discipline: Chemic	eal	Gr	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 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 24th Ed. 2023, 4500 CN-E	BDL (DL: 0.012)	0.05	No Relaxation
Iron (as Fe)	mg/L	APHA 24 ⁰ Ed.2023; 3111B	0.070	1.0	No Relaxation
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 24 th Ed.2023; 3111B	BDL (DL: 0.05)	1,0	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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TEST REPORT

 Test Report No.
 : ELES/RNC/2024/4816
 Report Release Date
 : 24.08.2024

 Work Order No.
 : 13612312113
 Work Order Date
 : 28.63.2024

ULR No. : TC135872400002735F

Discipline: Chemical		Group : Resid	lues in Water	Regulatory Limit as per IS10500:2012		
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit	
Zinc (us Zn)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL: 0.1)	5.0	15	
Polynoclear 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	
Alachior	J/gų	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	1	00	
Atrazine	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	2	.0	
Batachior	μg/1	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	125		
Chlorpytiphas	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		
Mulathion	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	190		
Methyl parathion	ив/Т.	ELES/GC/SOP/01: 2023	BDL (DL: 0.1)	0.	30	
Monocrotophes	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	1.0		
Phorate	μg/1.	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	2	2.0	
Phorate Sulphone	μg/L.	ELES/GC/SOP/01: 2023	BDL. (DL: 0.5)	1000		
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/1.	ELES/GC/SOP/02: 2023	BDL (DL: 0.02)	0.	04	

Page 3 of 4

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TEST REPORT

Test Report No. : ELES/RNC/2024/4816 Report Release Date : 24.08.2024

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC135872400002735F

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/I	ELES/GC/SOP/02: 2023	BDL (DL: 0.02)	2.0
Endosulfan (alpha, beta and sulphate)	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.05)	0.40
DDT(e.p and p.p-isomers of DDT) (e.p DDE and p.p DDD)	μg/1.	ELES/GC/SOP/02: 2023	BDL (DL: 0.05)	1.0
Discipline : Biological		Group	: Water	
Tatal Coliform (Qualitative)	Per 100 mL	IS 15185: 2021	Not Detected	
Escherichia coli (Oualitative)	Per 100 mL	15 15185: 2021	Not	Shall not be detected

Remarks: L. pH and RFC done at Lab.

AKASH KUMAR Quality Managur ELES PVT LTD.

****End of Report****

Hila

Authorised Signatory

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

Page 4 of 4

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PLOT NO-30, MANSAROVAR ENCLAYE, TUPUDANA HATIA, KANCHI-834003 (JHARKHAND) GST NO-20A8CC9713D124 ENGINEERING SERVICES PVT. LTD.

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TEST REPORT

Test Report No.	: ELES/RNC/2024/4816	Report Release Date	: 24.08.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name Address	: Hindalco Industries Limited : Lehardaga, Jharkhand-835302	Sample Ref. No. Sampling Date Sample Received Date Type of Sample Source of Sample Location of Sample	: ELES/RNC/2024/DW/5564 : 15.08:2024 : 16.08:2024 : Drinking Water : Tap Water : Near Camp	
Mines Status	: Operational	Sampling Procedure	(Knjam-I Bauxite Mines) : 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			Regulatory Limit as per IS 10500:2017		
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
Mineral Oil*	mg/L	1S 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 Managar ELES PVT LTD

****End of Report****

Authorised Signatory
Dr. Deependra Kumar Sinina
Ph. D Environmental Enga.
ELES Pv. Ltd. Technical Memoria

Page 1 of 1

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ENVIRONMENTAL LABORATORIES & ENGINEERING SERVICES PVT. LTD.

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

Kujaml Bauxite Mine-Environmental Monitoring Report

September 2024



CONTENT

	Hinduleo Industries: Kujam-I Bauxde Mine Environmental Monitoring Report September 2024 Kujam-I Bauxite Mine
	AMBIENT AIR QUALITY- CORE ZONE
	Kujan Quarry 449
2	Talabkhanta 4A13
1	4 A11 Football Ground
1	Camp
	AMBIENT AIR QUALITY- BUFFER ZONE
1	Near Pakri Gada Village
2	Near Pol Pol Village
3	Near Shukhtarpani Village
ŧ	Near Dipa Kujam Village
	AMBIENT NOISE
	WORKZONE NOISE
	Spring Water
1.	Chotang





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TEST REPORT

Test Report No.	: ELES/RNC/2024/5521	Report Release Date	: 28.09.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400003426F			

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/6367 : Kujum Quarry- 449 Kujum-I Bauxite Mine (80,87ha)	
Address	: Lohardagu, Jharkhand-835302	Sampling Date Sample Received Date	: 18.09.2024 to 19.09.2024 : 20.09.2024	
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 20:09:2024 to 28:09:2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Senled & Preserved	

METEOROLOGICAL INFORMATION			
1 Average Temperature (°C) : 29	2	Barometric Pressure (mmHg)	:741
3 Relative Humidity (%) : 61	4	Weather Condition	; Clear

Discipline : Chemic	ni la	Group :	Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m³	1S 5182 (Part- 23): 2022	54	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m³	18 5182 (Part- 24): 2019	27	60 (24hrs)	
Suiphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part- 2/Sec1): 2023	5.2	80 (24hrs)	
Nitrogen Di-Oxide (NO _c)	μg/m³	IS 5182 (Part- 6): 2022	19.7	80 (24hrs)	
Ozoste (O ₁)	pag/m*	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/m²	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	jag/m ³	1S 5182 (Part- 22): 2019	0.006	1 (24hrs)	
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Amenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	
Benzene (C ₄ H ₄)	µg/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)	

Reviewed by Akash Kumas

Quality Manager

****End of Report****

Dr. Other pendra Kumar Sinha

Ph. D. Environmental Engg.

Page 1 of 1 Technical Manager

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TEST REPORT

Test Report No.	: ELES/RNC/2024/5522	Report Release Date	: 28.09.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400003427F		

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	; ELES/RNC/2024/AA/6368 ; Talabkhunta 4A13 Kujum-I Bauxite Mine (80.87ha)	
Address	: Lohardaga, Tharkhand-835302	Sampling Date Sample Received Date	: 18.09.2024 to 19.09.2024 : 20.09.2024	
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 20:09.2024 to 38:09:3024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

METEOROLOGICAL	INFORMATION
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0.000	STEOROLOGICAL INFOR	MEATINA			
1	Average Temperature (°C)	: 29	2	Barometric Pressure (mmHg)	: 741
3	Relative Humidity (%)	: 61	4	Weather Condition	: Clear

Discipline : Chemic	ai	Group :	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m³	18 5182 (Part-23): 2022	58	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part-24); 2019	31	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	µg/m³	1S-5182 (Part-2/Sec1): 2023	7.2	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part- 6): 2022	20.5	80 (24hrs)	
Ozone (O ₃)	µg/m²	1S 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonin (NH ₃)	pg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrv)	
Carbon Monoxide (CO)	mg/m²	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8brs)	
Lead (Pb)	µg/m³	IS 5182 (Part- 22): 2019	0.007	I (24hrs)	
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Amenic (As)	ng/m²	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	
Benzene (C ₄ H ₆)	pg/m ³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05; 2023	< 0.5	01(Armusl)	

Reviewed by

Quality Manager

****End of Report****

Dr. Delephintirs climar Sinha

Ph. D. Environmental Engg. regionical Manager

Page Lof L

The Distance ment in Ten Septe, in count by the Labourous seder General Term and Conditions, only on Company in the based in pro-opposed Sense. The results stores to the Fact Report radia on relation only to the july worky-us drown by the Laboratory redy. The information stand on the Lan Report reflects the Statings drow by the Laboratory at the time of incompanion with and wides the heats of closer's nutractions. The Laboratory is impossible for all the information or data provided in the expert, record the information which is provided by the object. The Rapies assess the reproduced energy on that and any part of the expert is not of powers, without prior writers agreed of the Laborators. The Report is that or to peer shall on the published. advertise, and for my high actions action proving new tests around from the Minagement of the Laboratory Advertises to district of Making, compensation and paradicular towns. Any report of tests in the Section of Making, compensation and paradicular towns. Any report of tests of the Compensation of Making, compensation and the face of the Compensation of the Compe



PLOT NO-30, MANSAROVAN ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GIT NO- 20A4ECESTLIDIZE

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

Website: www.elespi.co.in



TEST REPORT

Test Report No.	: ELES/RNC/2024/5523	Report Release Date	: 28.09.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
222 12 22	THE RESERVE AND A STREET			

ULR No. : TC135872400003428F

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hirdalco Industries Limited	Sample Ref. No.	: ELES/RNC/2024/AA/6369	
	PROPERTY OF THE PROPERTY OF TH	Location	: 4 A11 Football Ground Kujam-I Bauxite Mine (80.87ha : 18,09,2024 to 19,09,2024	
Address	: Lohardaga, Jharkhand-835302	Sampling Date		
/(4000/5-5)		Sample Received Date	: 20,09,2024	
		Type of Sample	: Ambient Air	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02	
Period of Analysis	: 20.09.2024 to 28.09.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

METEOROLOGICAL INFORMATION			
1 Average Temperature (°C) : 29	2	Barometric Pressure (mml	lg) :741
3 Relative Hamidity (%) : 61	4	Weather Condition	: Clear

Discipline: Chemie	al	Group :	Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m³	18 5182 (Part- 23): 2022	49	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part-24): 2019	27	60 (24hrs):	
Sulphur Di-Oxide (SO ₂)	μg/m ⁹	1S 5182 (Part- 2/Sec1): 2023	6.3	80 (24hrs)	
Nitrogen Di-Oxide (NO ₁)	μg/m³	IS 5182 (Part- 6): 2022	20.7	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/m ²	IS 5182 (Part-10): 2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	µg/m¹	IS-5182 (Part- 22): 2019	< 0.002	1 (24hrs)	
Nickel (Nii)	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 ₆ H ₆)	µg/m*	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m ³	ELES/GC/SOP/05: 2023	<0.5	01(Annusī)	

Reviewed by

Akesh Kumat

****End of Report****

Authorised Signatory Dr. Deependra Kumar Sinha

Ph. D. Environmental Enga.

Page 1 of 1

Technical Manager

The Discount stand of Too Report, is countd by the Laboratory unite Constitution, only of Company when head in pro-approved forms. The revent shows in the Test Report refer to relate only in the philametric down by the Laboratory only. The information metal on the Test Report reflects the findings done by the Laboratory at the time of involvement only and writes of closer's exercication. The Laboratory is expressed to the information of the report of the time of control to one believes the report of the Laboratory and the time of control, without prove extent appeared of the Laboratory to the time of the time of control, which prove extent appeared of the Laboratory to time to the laboratory and the time of the Laboratory and the Laboratory of the Laboratory



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TEST REPORT

Test Report No.	: ELES/RNC/2024/5524	Report Release Date	: 28.09.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400003429F			

CUSTOMER DET	TAILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2024/AA/6370
	DOMESTIC CONTRACTOR OF THE CONTRACTOR	Location	: Camp;
			Kujam-I Bauxite Mine (80.87ha)
Address	: Lohardaga, Tharkhand-835302	Sampling Date	: 18.09.2024 to 19.09.2024
Transaction 1		Sample Received Date	:20.09.2024
		Type of Sample	: Ambient Air
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02
	- Carlotte	Sumpling Done By	: ELES Pvt. Ltd.
Period of Analysis	: 20:09:2024 to 28:09:2024	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	29	2	Barometric Pressure (mmHg)	: 741
1	Relative Humidity (%)	:61	4.5	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	52	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m³	1S 5182 (Part- 24): 2019	29	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	1S 5182 (Part- 6): 2022	19.7	80 (24hrs)	
Ozone (O ₂)	µg/m²	IS 5182 (Part- 9): 2019	<20.0	100 (8hm)	
Ammonia (NH ₁)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part- 10): 2019 (NDHL Method)	<1.0	2 (8hrs)	
Lead (Pb)	µg/m	IS 5182 (Part- 22): 2019	< 0.002	1 (24hn)	
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 ₂ H ₄)	pg/m ²	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m ^k	ELES/GC/SOP/05: 2023	<0,5	01(Annual)	

Reviewed by Akash Kumar Smalley Manager

****End of Report****

Authorised Signatory Dr. Deependra Kumar Sinha

Ph. D. Environmental Engo

Page Lof I

Technical Manager

The Decrement stand as Jose Report, to covered by the Laboratory under German Terms and Conditions, only no Congressy better hand to pre-approved Estate. The reflects shown to the Laboratory only. The information enterly on the Term Segret reflects the findings date by the Laboratory of the time of spready and within the factor of claric a contraders. The Laboratory is required to the information of the provided the first of claric a contraders. The Report of the information is the information of the first of the first of the provided course in the Information of Information Information of Information Informat



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TEST REPORT

Test Report No.	: ELES/RNC/2024/5350	Report Release Date	: 23.09.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400003263F		

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Location Sampling Date Sample Received Date	: ELES/RNC/2024/A A/6184 : Near Pakri Goda Village : 14.09.2024 to 15.09.2024 : 16.09.2024
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt, Ltd.
Period of Analysis	: 16.09,2024 to 23.09,2024	Sampling Done By Sample Condition	: Scaled & Preserved

METEOROLOGICAL INFOR	MATION			
1 Average Temperature (°C)	: 26	2	Barometric Pressure (mmHg)	742
3 Relative Humidity (%)	: 72	4	Weather Condition	Rainy

Discipline: Chemic	Atmospheric l	Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ¹	IS 5182 (Part- 23); 2022	38	100 (24hrs)
Particulate Matter (PM2.5)	µg/m¹	1S 5182 (Part- 24): 2019	17	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m²	1S 5182 (Part- 2/Sec1); 2023	<5.0	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m³	IS 5182 (Part- 6): 2022	13.8	80 (24fus)
Ozone (O ₃)	μg/m ¹	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₂)	µg/m [†]	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoside (CO)	mg/m*	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Ph)	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 (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)
Benzene (C ₅ 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 Akash Kumur Quality Managar

****End of Report****

n. Authorised Signatu

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

Technical Manager

Page 1 of 1

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TEST REPORT

Test Report No.	: ELES/RNC/2024/5351	Report Release Date	: 23.09.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400003264F		255 21100-005111	

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Location Sampling Date	: ELES/RNC/2024/AA/6185 : Near Pol Pol Village : 14.09.2024 to 15.09.2024
Mines Status	: Operational	Sample Received Date Type of Sample Sampling Procedure	: 16.09.2024 : Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 16.09.2024 to 23.09.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Scaled & Preserved

MB	TEOROLOGICAL INFOR	MATION			
1	Average Temperature (*C)	: 26	2	Barometric Pressure (mmHg)	: 742
3	Relative Humidity (%)	: 72	4	Weather Condition	: Rainy

Discipline : Chemic	Atmospheric l	Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m²	15 5182 (Part- 23): 2022	31	100 (24hrs)
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part- 24): 2019	15	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m ⁸	18 5182 (Part- 2/Sec1): 2023	<5.0	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	18:5182 (Part- 6): 2022	15.5	80 (24hrs)
Ozone (O ₃)	μμ/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/m ³	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/m	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)
Beszene (C ₆ H ₆)	pg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05: 2023	<0.5	O1(Annual)

Reviewed by
Alcach Kumar
Quality Manager

****End of Report****

Authorised Signatury

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

Technical Manager

Page Lot 1

The Document mental on Test Report, to personal by the Laboratory beside General Terms and Constitutes, only on Compute Series hand in pre-impressed Series. The results during a few Series of the Se



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TEST REPORT

Test Report No.	: ELES/RNC/2024/5352	Report Release Date	: 23.09.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400003265F		

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2024/AA/6186 : Near Shakhuapani Village : 14.09.2024 to 15.09.2024
Address	: Lohardaga, Jharkhand-835302	Sample Received Date Type of Sample	: 16.09.2024 : Ambient Air
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 16.09.2024 to 23.09.2024	Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMAT	ION		- Tallet
1 Average Temperature (°C) = 26	2	Burgenetric Pressure (mmHg)	: 742
3 Relative Humidity (%) : 72	4	Weather Condition	: Rainy

Discipline: Chemie	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/m²	IS 5182 (Part- 24): 2019	26	60 (24hrs)	
Sulphur Di-Oxide (SO ₅)	µg/m³	IS 5182 (Part- 2/Sec1): 2023	5.8	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m*	IS 5182 (Part-6): 2022	16.3	80 (24hrs)	
Ozone (O ₃)	µg/m³	18 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	1S 5182 (Part- 10); 2019 (NDIR Method)	<1.0	2 (8bm)	
Lead (Pb)	pg/m³	1S 5182 (Part- 22): 2019	< 0.002	1 (24hrs)	
Nickel (Ni)	ng/m²	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	96 (Armual)	
Benzene (C _a H _b)	jighn [†]	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
Akanh Kumar
Quality Managar

****End of Report****

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

Technical Manager

Page I of 1

The Decisions send in Tair Separt is issued by the Laboratory under General Lemm and Conclusion, only in Congress better head in pre-approved instead. The remain shows to the Test Separt refer or relates only to the physical decision down by the Laboratory only. The information of the Remain selection is the Remain of Section 1 to the Separt relates the Remain of Section 1 to the Separt relates the Remain of Section 1 to the Separt relates the Remain of Section 1 to the Separt relates the Remain of Section 1 to the Separt relates the Remain of Section 1 to the Separt relates the Remain of Section 1 to the Separt relates the Remain of Section 1 to the Separt relates the Section 1 to the Secti



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TEST REPORT

Test Report No.	± ELES/RNC/2024/5353	Report Release Date	; 23.09.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024

ULR No. : TC135872400003266F

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name Address	: Hindakoo Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Location Sampling Date Sample Received Date	: ELES/RNC/2024/AA/6187 : Near Dipa Kujam Village : 14.09.2024 to 15.09.2024 : 16.09.2024
Mines Status	: Operational	Type of Sample Sampling Procedure Sampling Done By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 16.99,2024 to 23.09,2024	Sample Condition	: Sealed & Preserved

Mi	ETEOROLOGICAL INFOR	MATION		III.	
1	Average Temperature (°C)	: 26	2	Barometric Pressure (mmHg)	: 742
3	Relative Humidity (%)	: 72	4	Weather Condition	Rainy

Discipline: Chemic	al .	Groop:	Atmospheric l	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ¹	IS 5182 (Part- 23): 2022	48	100 (24hrs)
Particulate Matter (PM2.5)	μg/m ⁴	IS 5182 (Part- 24): 2019	24	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	15 5182 (Part- 6): 2022	19.4	80 (24hrs)
Ozone (O ₃)	µg/m²	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/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hm)
Lead (Pb)	µg/m"	IS 5182 (Part- 22): 2019	0.007	1 (24brs)
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 ₄)	upin ³	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 Akash Kumar Quality Manager

****End of Report****

Authorised Signature

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

Technical Menager

Page Laf 1

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TEST REPORT

Test Report No.	± ELES/RNC/2024/5528	Report Release Date	: 28.09.2024
Work Order No.	13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400003433F		

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sampling Date Sampling Received Date Type of Sample Sampling procedure Sampling Done By	: 18.09/2024 to 19.09/2024 : 20.09/2024 : Ambient Noise : ELES/DOC/SMPL/63 : ELES Pvt. Ltd.
Mines Status	: Operational	Period of Analysis	: 20.09.2024 to 28.09.2024

MI	ETEOROLOGICAL INFO	RMATION				
1	Average Temperature (°C)	- 29	2	Barometric Pressure (mmHg	() :741	
3	Relative Humidity (%)	: 61	4	Weather Condition	: Clear	

Discipline: Chemical	Group : Atn	acspherie l	Pollution		
Location	Unit	Test Protocol	Resu	dt	Regulatory Limit (Industrial Zons)
55 85500			Time	Len	
Near Office Kujam-I Bauxite Mine (80,87ha)	dB(A)	IS 9989: 2020	Day Time	64	75 dB(A) Day Time
Sample ID: ELES/RNC/2024/AN/6374			Night Time	49	70 dB(A) Night Time



****End of Report****

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

Page 1 of 1

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TEST REPORT

Test Report No.	: ELES/RNC/2024/5532	Report Release Date	: 28.09.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400003437F		

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sampling Date Sampling Received Date Type of Sample Sampling procedure Sample Drawn By	: 19.09.2024 : 20.09.2024 : Workzone Noise : ELES/DOC/SMPL/03 : ELES Pvt. Ltd.
Mines Status	: Operational	Period of Analysis	: 20.09.2024 to 28.09.2024

Mi	ETEOROLOGICAL INFORMATI	ON		
1	Average Temperature (°C) : 29	2	Barometric Pressure (mml-	(g) :741
3	Relative Humidity (%) : 60	4	Weather Condition	: Clear

Location	Unit	Test Protocol	Result		Regulatory Limit (Industrial Zone)
Drill rig at Working Pit -			Time	L_{eq}	
Kujam-I Bauxite Mine (80.87ha)	dB(A)	IS 4758: 2017	90 dB (/	90 dB (A)	
Sample ID: ELES/RNC/2024/WN/6378			Day Time	79	



****End of Report****

Orthorised Signatory
Ph. D. Environmental Engg.
Technical Manager

Page 1 of 1

The Decement nated at Test Report refer or relates only for Laboratory under General Terms and Complicions, only on Corregany letter hand in pre-approved forms. The terms in the Test Report refer or relates only for the job; analysis done by the Laboratory only. The information stated on the Test Report refer or relates only for the job; and within the latest of client's mutualistic. The Laboratory is traponophic for all the information on data provided on the report, except the information which is gravitated by the client. The Report cannot be reported except in full stat any part of the report is not taken out of cases, without prior section approved of the Laboratory. The Report in full not be published, advertise, and for any large actions unless one permission has been secured from the Managament of the Laboratory. Advertise is cleaved to the function and jurisdefine masses. Any situation of the information of the arction of the Test Report is unlessful and effective may be presected to the fullest extent of the fact of the Test Report. The namelies from Regulatory budget are to be returned as specified. Any type of Observations of Completes see against the laborator in the fact of the fact of the Test Report. The namelies from Regulatory budget are to be returned as openified. Any type of Observations of Completes regarding the Reports shall be done within 15 days from the Test Complete actioned finance. After the time period search before, no complicate will be accepted. The extremal laboration Limity, LTR. (Lower December December).



PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (IHARKHAND) GIT NO-30ARCEST330128

ENGINEERING SERVICES PVT. LTD.

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Website I www.elespi.co.in



TEST REPORT

Test Report No.	: ELES/RNC/2024/5540	Report Release Date	: 28.09.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400003445F		

CUSTOMER DET	AHS	SAMPLE DETAILS	
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Sampling Date Sample Received Date Type of Sample Source of Sample Location of Sample	: ELES/RNC/2024/SW/638/ : 19.09.2024 : 20.09.2024 : Surface Water : Spring Water : Chotang, Kujam-I Bauxite Mine (80.87 ha)
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/01
Period of Analysis	20.09.2024 to 28.09,2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Scaled & Preserved

Discipline: Chemical		G	roup: Water	Tolerance Limits
Parameter	Unit	Test Protocol	Result	as per IS 2296-1992 Class C (Inland Surface Water)
pH (at 24.6 °C)	-6.7	IS 3025 (Part-11): 2022	6.55	6.5-8.5
Colour	Hazen	IS 3025 (Part -4): 2021	2.0	300
Odour	120	IS 3025 (Part-5) : 2018	Unobjectionable	39
Turbidity	NTU	IS 3025 (Pan-10): 2023	0.69	**
Total Dissolved Solids (TDS)	mg/L	fS 3025 (Part-16): 2023	61	1500
Total Alkalinity (as CoCO ₅)	mg/L	18:3025 (Part-23): 2023	10.8	94
Total Hardness (as CaCO ₂)	mg/L	IS 3025 (Part-21): 2019	17.5	22
Sulphate (as SO ₄)	mg/L	1S 3025 (Part-24/Sec1): 2022	BDL (DL: 1.0)	400
Chloride (as CI)	mg/L	1S 3025 (Part-32): 2019	8.7	600
Fluoride (as F)	mg/L	IS 3825 (Part-60): 2019	BDL, (DL: 0.1)	1.5
Nitrate (as NO ₃)	mg/L	APHA 24th Ed.2023, 4500 NO ₃ -B	BDL (DL: 0.5)	50

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The Document stated at Test Report is issued by the Laboratory under Ocean Terms and Conditions, only on Company letter head in pre-approved former. The remains shown in the Test Report reflects the findings done by the Laboratory only. The information stand on the Test Report reflects the findings done by the Laboratory at the tires of investment only and written the Report contacts. The Laboratory is responsible for all the information or also provided on the report, except the information which is provided by the client. The Report contact to reproduced except in full and any part of the report is not taken out of contact, orthogone written approach of the Laboratory. The Report is full or in part shall not be published, advertise, used for any legal actions settless prior perconnect has been second from the Management of the Laboratory. Attention to drawn to the institution of the ameters or approximate of the Test Report is infantly and offenders may be personally to the foliotic control the last. All the samples are retained for Malays from the Date of the response or Completions of Controlling the Reports shall be done within 15theys from the Date of the face within 15theys from the Date of Laboratory and Test Report is found to be retained in specified. Any type of Observations or Completion controlling the Reports shall be done within 15theys from the Date of Laboratory and the same period stand before, no compliants will be accepted. The control of the Report is in 24 hours. Report is in 24 hours. N/A Clieb Applicables. BDL (Below Docesian Limit), LDL (Lower Detection Limit).



PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATTA, RANCHI-834003 [JHARKHAND] ISST NO-20ARCESTESDEZIA

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75-1106

TEST REPORT

Test Report No.	: ELES/RNC/2024/5540	Report Release Date	: 28.09.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400003445F		

Discipline : Chemica	I	Group: Wa	iter	Tolerance Limits	
Purameter	Unit	Test Protocol	Result	as per IS 2296-1992 Class C (Inland Surface Water)	
Free Residual Chlorine (RFC)	mg/L	IS 3025 (Part-26) : 2021	BDL (DL: 0.1)	**	
Phenois Compounds (as C _b H ₁ OH)	mg/L	IS 3025 (Part-43/Sec1): 2022	BDL (DL: 0.001)	0.005	
Calcium (as Ca)	mg/L	1S 3025 (Part-40); 2019	4.6	_	
Discipline : Cher	nical	Gr	oup : Residues	in Water	
Aluminum (as Al)	mg/L	IS 3025 (Part-55); 2003;RA2019	BDL (DL: 0.02)	-	
Arsenic (as As)	mg/L	1S 3025 (Part 37):2022	BDL (DL: 0.005)	0.2	
loron (as B) mg/L		1S 3025 (Part-57): 2021	3025 (Part-57): 2021 BDL (DL: 0.2)		
Cadmium (as Cd) mg/L		APHA 24th Ed.2023; 3111B	BDL (DL: 0,003)	0.01	
Total Chromium (as Cr)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL: 0.03)	0.05	
Copper (as Cu)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL: 0.03)	15	
Iron (as Fe)	mg/L	APHA 24 ⁴ Ed.2023; 3111B	0.223	50	
Lead (us Pb)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL: 0.01)	1.0	
Manganese (as Mn)	mg/L	APHA 24 ⁸ Ed.2923; 3111B	BDL (DL: 0.05)		
Mercury (as Hg)	mg/L	IS 3025(Part-48): 1994; RA2019	BDL (DL: 0.001)	(144)	
Selenium (as Se)	mg/L	IS 3025(Part-56): 2019	BDL (DL: 0.01)	0.05	
Zinc (as Zn)	mg/L	APHA 24 th Ed.2023; 3111B	BDL (DL: 0.1)	15	

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PLOT NO-3E, MANSAROVAR ENCLAVE, TUPLIDANA HATIA, RANCHI-834003 (JHARKHAND) EST NO-30AANESTISDES

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TEST REPORT

Test Report No. : ELES/RNC/2024/5540 Report Release Date : 28.09,2024

Work Order No. : 13612312113 Work Order Date : 28.03,2024

ULR No. : TC135872400003445F

Discipline: Cher	mical	Group: Res	idues in Water	Tolerance Limits	
Parameter	Unit	Test Protocol	Result	us per 1S 2296-1992 Class C (Inland Surface Water	
Cyanide (as CN)	mg/L	APHA 24 th Ed.2023, 4500 CN-E	BDL (DL: 0.012)	0.05	
Polynuclear Aromatic Hydrocarbons (PAH)	pg/L	ELES/GC/SOP/04: 2023	BDL (DL: 0.05)	=	
Pesticides					
Alachior	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	(4)	
Atrazine	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	14.	
Butachlor	pg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	4	
Chlorpyriphos µ#1.		ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	47	
Ethion	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	14°	
Malathion	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	-	
Methyl parathion	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.1)	(a)	
Monocrotophos	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	(4)	
Phorate	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	34 .	
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)	-	

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PLOT NO-30, MANSARDVAR ENCLAVE, TUMUDANA HATIA, RANCH-834002 (HAZIRNAND) 651 NO-2048FCFF7130124

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TEST REPORT

Test Report No.	: ELES/RNC/2024/5540	Report Release Date	: 28.09.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400003445F		

Pesticides				Tolerance Limits
Parameter	Unit	Test Protocol	Result	ns per 1S 2296-1992 Class C (Inland Surface Water)
Alpha HCH	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.006)	(A)
Beta HCH	μgΊ.	ELES/GC/SOP/02: 2023	BDL (DL: 0.02)	120
Delta HCH	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.02)	(43)
Gamma HCH (Lindane)	μgΊ.	ELES/GC/SOP/02: 2023	BDL (DL: 0.02)	45
Endosulfan (alpha, beta and sulphate)	μgΊ.	ELES/GC/SOP/02: 2023	BDL (DL: 0.05)	148
DDT(o,p and p.p-isomers of DDT) (DDE and DDD)	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.05)	848
Discipline: Biole	ogical	Gre	oup: Water	
Total Coliforni	CFU/100 mL	IS 15185: 2021	1.12×10 ²	145
Escherichia coli	CFU/100 mL	IS 15185; 2021	BDL. (DL: 1.0)	-

Remarks: pH & RFC done at Lab.

Reviewed by go

****End of Report****

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

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PLOT NO-30, MAKSAROVAR ENCLAVE, TUPLIDANA HATIA, RANCHI-834003 (PHARRIHAND) 63T NO-20AAECES713D3ZA

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Website: www.elespl.co.in

TEST REPORT

Test Report No.	: ELES/RNC/2024/5540	Report Release Date	: 28.09.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name Address	: Hindulco Industries Limited : Loharduga, Jharkhand-835302	Sample Ref. No. Sampling Date Sample Received Date Type of Sample Source of Sample Location of Sample	: ELES/RNC/2024/SW/638/ : 19.09.2024 : 20.09.2024 : Surface Water : Spring Water : Chotang, Kujam-i Bauxite Mine (80.87 ha)
Mines Status	: Operational	Sampling Procedure	:ELES/DOC/SMPL/01
Period of Analysis	: 20.09.2024 to 28.09.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

Discipline : Chemic	ıl	Gro	Group: Water	
Parameter	Unit	Test Protocol	Result	as per IS 2296-1992 Class C (Inland Surface Water)
Taste	14.5	APHA 24th Ed.2023, 2160C	N/A	- Commenter Street
Anionic Surfactants (as MBAS)	mg/L	APHA 24 th Ed 2023, 5540-C	BDL (DL: 0.025)	0.1
Mineral Oil*	mg/L	1S 3025 (Part-39);2021 (Clause 6 Inflance Spectroscopic Method)	BDL (DL: 0.01)	

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

05 & En

Reviewed h

****End of Report****

Ph. D. Environmental Engg. Technical Manager

Page 1 of 1

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Annexure 3

Date - 06.11.2024

Office Order

Environmental Cell has been re-constituted at Kujam I Bauxite Mine (Area 80.87 ha) comprising below mentioned team members. The team will ensure compliance with the Environment Act, Regulation & Rule in respect of the said mines of Hindalco Industries Limited.

- 1. Mr. Pradeep Kumar (Coordinator)
- 2. Mr. Biswajeet Deogharia (Member)
- 3. Mr. Ankit Das (Environment Engineer)
- 4. Mr. Anand Prakash Tiwari (Environment Engineer)

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

Basudev Gangopadhyay AVP (Planning, Environment &Compliance)

Annexure 4

	Production, Mined Out, Back Filled and Over Burden removal from April'24 to September'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	Description	Budget (in Rupees) 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)

FORM "O'

(See Rule 29 F(2) and 29L) REPORT OF MEDICAL EXAMINATION UNDER RULE 29 B (TO BE ISSUED IN TRIPLICATE)**

Certificate No:	Kujam-101							
Certified that has been examined for ar The findings of the exami	Sanjay Yadav Periodical ining authority are given in the attached sheet. It is o	1110 011001		He Sanjay Ya	in Kujam Bauxite Mine appears to be 42 Yadav		, Form-A No. years of age.	{
✓	a. Is medically fit for any employment in mines	i.						
×	b. Is suffering from (i) Any employment in mines, or (ii) Any employment below ground (iii) Any employment or work	d, or	and is medicall	y unfit for				
	ii ii							
×	c. Is suffering from examined within a period of of test of			this disabilit		ed and should be again re-examination with the result		
	specialist from his duties during this period.		F	e	may be permitt	ed/not permitted to carry on		

Consultant

Hindalco ines Divi., Lohardaga Reg. Nr -33297, BR-2002

1 Sanjay Yadav

the examining a thority Signature Name and designation in Block Letter

> DR OMPRAKASH DUBEY Sr. CONSULATANT Reg-No-33297 BR2002

Dr. Omprakash Dukoy Sr. Consultant Hindalco Mines Divi., Lohardaga Reg. No.-33297, BR-2002

Place Rajendra Hospital, Lohardaga *Delete whatever not applicable.

**One copy of the certificate shall be handed over to the person concerned and another copy shall be sent to the Manager of the mine concerned by registered post and the third copy shall be retained by the examining authority.

pg. 1 of 5

Report of the Examining Authority
(To be filled in for every medical examination whether initial or periodical or re-examination or after cure/control of disability)

Amexure to certificate No.	Kujam-	101 as a r	result of medi	cal exam	ination on	5/7/2024	
ldentification Mark:		A mole on chest	t				
 General Development Height Weight Eyes (i) Visual Acuity - Distant Vision (169 70	Kgs				Left the le Candidate	
(ii) Any organic disease of eyes *(iii) Night Blindness *(iv) Colour Blindness (v) Squint (*to be tested in special cases)	Right Eye NO NO NO NO	6/6	Left	Eye	6/6	with glasses	
5 Ears (i) Hearing: (ii) Any organic disease 6 Respiratory System:	Right Ear	WNL NO	Left .	Ear	WNL		
Chest Measurement (i) After full inspiration (ii) After full expiration 7 Circulatory System		103	_ cms _ cms				
Blood Pressure Pulse 8 Abdomen Tenderness		0/90 72 NAD	_mm of Hg _per minute				
Liver Spleen Tumor 9 Nervous System	CI	NAD NAD NAD	7. # # # #				
History of Fits or Epilepsy Paralysis Mental Health	NOL	VO VO RMAL	=======================================				
10 Loco Motor System 11 Skin 12 Hernia 13 Hydrocele	F A	RMAL AIR VIL	-			ę ę.	
14 Any other abnormality 15 Urine Reaction Albumin	AC	IDIC	-				
Sugar 16 Skia gram of chest 17 Any other test considered neces 18 Any opinion of specialist considered	NOR	TL RMAL nining authority	+2 27 -33	ECG, S	SPIROMETRY TEST	T, AUDIOMETRY TEST & BLOOD TEST	
	,			71/3		Signature of Examining	67

Place: Hindalco Industries LTD

Mine Divn Shardaga

Sr. Consultant

Hindalco Mines Divi., Lohardaga Reg. No.-33297, BR-2002

Report of Medical Examination as per the recommendations of National Safety Conferences in Mines

(To be used in continuation with Form "O")

Certificate No.	Kujam-101	
Name	Sanjay Yadav	
Identification Marks	A mole on chest	

1. Cardiological Assessment

Auscultation	S1	
	S2	
	Additional Sound	
Electrocardiograph (12 Leads) Findings	Normal

Enclosed ECG

2.Neurological Assessment

Findings	Normal/Abnormal
Superficial Reflexes	NORMAL
Deep Reflexes	NORMAL
Peripheral Circulation	NORMAL
Vibrational Syndromes	NORMAL

3.ILO Classification of Chest Radiograph

Perfusion of	Grades	
neumoconiotic opacities	diades	Types
Absent	1	
	L	0/0

Enclosed Chest Radiograph

pg. 3 of 5

4. Audiometry Findings

Conduction Type	Left Ear	
Ear Conduction	Normal	Right Ear
Bone Conduction		Normal
	Normal/Abnormal	Normal/Abnormal

Enclosed Audiometry Report

5. Pathological/Microbiological Investigations

Torte	
	Findings
Blood-1C, DC, Hb%, ESR, Platelets Count	WNL
Blood Sugar- Random	135 mg/dl
Lipid Profile	
Blood Urea and Serum Croatining	WNL WNL
Routing Evanished CV	WNL
	WNL
Stool Routine	WNL
	Blood-TC, DC, Hb%, ESR, Platelets Count Blood Sugar- Random Lipid Profile Blood Urea and Serum Creatinine Routine Examination of Urine Stool Routine

Enclosed Investigation Reports

6. Special Test for Mn exposure (NOT APPLICABLE)

Beh.	avioral Disturbances	Procent/Nath
	Speech Defect	Present/Not Present
	Speech Delect	Present/Not Presen
Nouseles	Tremor	Present/Not Present
Neurological Disturbances	Adiadochokinesia	Present/Not Present
Distuibances	Emotional Changes	Present/Not Present

Any	other	special	Test	Require	d
					_

Signature of the Examination Authority

Dr. Omprakash Dubo Sr. Consultant Hindalco Missa Chil. Lohardaga

Reg. No.-33297, BR-2002

Report of Medical Examination under Mines Rule 29B (To be used in continuation with Form "0")

Certificate No.	Kujam-101
Name	Sanjay Yadav
Identification Marks	A Mole on Chest

Result of Lung Function Test (Spirometry)

Parameters	Predicted Value	Performed Value	% Of Predicted	
Forced Vital Capacity (FVC)	3.42	3.94	115	l
Forced Exhalation Volume in 1 st		3.0 1	115	-
Second(FEV1) FEV1/FVC	2.79	3.08	110	
Peak Expiratory Flow	81.58	78.17	96	
can Expiratory Flow	8.78	9.18	105	

Enclosed Spirometry Report:

Signature of the Examination Authority

Dr. Omprakash Duboy Sr. Consultant Hindalco Mines Divi., Lohardaga Reg. N. 33967 BR. 2002

Centre for Environment & Occupational Health

A Unit of Rajendra Hospital Lohrdaga

Certificate No.	Kujam-101	Date:	17/0	5/2024	-:
NameSanj	ay Yadav	Age:	42	Sex:	Male
CHEST X-RAY PA VIE	W REPORT				
Trachea:		:: -		CENT	⁻ RAL
Cardiac Shadow:		NORMAL			
Both Costophrenic &	NORMAL				
Both side Bronchiovas	PROMINENT				
I.L.O. Classification of	0/0				
Impression:			1	Normal C	hest X-Ray

Dr. OM ARAKASH DUBEY

Sr. Consultant
Sr. Consultant

Hindalco Mines Divi., Lohardaga Reg. No.-33297, BR-2002

				/						
			RAJEND	RA HOSPIT	AL, LO	HARDA	GA			
of Emplo	VAA		Sault M. I	REPORT ON E		G				
or ruibio.	yee	-	Sanjay Yadav		Age	4	2	Sex	Male	
ation			ForeMan		Work	ing 5 ####	!###			
of Employ	yer/Industr	y Hindalo	to Industries Lt	d.(Mines Div.)						
No.								-		
Acuity		7								
Vision		-	NORMAL							
r Segmen	t		NORMAL							
	_									
IPTION FO	UB CIVECE	C								
	OR GLASSE									
RIGHT	EYE	4			T			LEFT EVE		
		AXIS	VISION		SPH	CYŁ		LEFT EYE		
RIGHT	EYE	4	VISION	Distance	SPH	CYL	AXIS	LEFT EYE VISION		
RIGHT	EYE	4	VISION	Distance Reading	SPH	CYL				
RIGHT SPH	EYE CYL	4	VISION		SPH	CYL				
RIGHT SPH RIGHT	EYE CYL	AXIS	VISION		SPH LEFT EY					
RIGHT SPH RIGHT I	EYE CYL	4	VISION					VISION		
RIGHT SPH RIGHT	EYE CYL	AXIS			LEFT EY	/E	AXIS			
RIGHT SPH RIGHT I	EYE CYL	AXIS		Reading	LEFT EY	/E	AXIS	VISION		
RIGHT SPH RIGHT I SPH	EYE CYL CYL	AXIS	VISION	Reading Near Reading	LEFT EY	ZE CYL	AXIS	VISION		
RIGHT SPH RIGHT I SPH	EYE CYL CYL	AXIS		Reading Near Reading	LEFT EY	ZE CYL	AXIS	VISION		

Dr. Omprakash Dubing Sr. Consultationature Hindalco Mines Divi., Lohardaga Reg. No.-33297, BR-2002 [See rules 115 (2)]

· ŧ_

n Under Control Certificate

ised By:

ernment of Jharkhand

ate

25/07/2024

Time

13:44:45 PM

Validity upto

24/01/2025



Certificate SL. No.

Registration No.

Date of Registration

Month & Year of Manufacturing

Valid Mobile Number

Emission Norms

Fuel

JC Code

GSTIN

Fees

MIL observation

JH01900240003252

BR13G0874

31/Mar/1997

March-1991

*****1350

BHARAT STAGE I

DIESEL

JH0190024

Rs.300.0

· No

Vehicle Photo with Registration plate 60 mm x 30 mm



Sr. No.	Pollutant (as applicable)	Units (as applicable)	Emission limits	Measured Value (upto 2 decimal places)	
λ	2	3	4	5	
Idling Emissions	Carbon Monoxide (CO)	percentage (%)			
	Hydrocarbon, (THC/HC)	ppm			
High litting	СО	percentage (%)			
emissions	RPM ·	RPM	2500 ± 200		
	Lambda		1 ± 0.03	***soore*	
Smoke thenety	Light absorption coefficient	1/metre	2.45	0.67	

millicate is system generated through the national register of Motor vehicles and does not require any signature.

Note: The second waters to link their mobile numbers to registered vehicle by logging to https://whan.gov.in

Author with stamp of PUC Operator

60mm

411200



Date/Time Trigger Source

MicL at 12:51:28 June 17, 2024 Geo: 0.700 mm/s, Mic: 100.00 dB(L)

Geo: 254.0 mm/s Range 310 sec at 2048 sps **Record Time** Operator/Setup: Operator/BV.MMB

Notes

Location: Client: User Name: General:

Microphone **PSPL**

Linear Weighting 118.7 dB(L) at 0.001 sec

ZC Freq >200 Hz

Channel Test Passed (Freq = 19.7 Hz Amp = 1145 mv)

	Tran	Vert	Long	
PPV	4.059	5.139	5.139	mm/s
PPV (Ponderated)	3.734	4.753	5.234	mm/s
PPV	63.17	65.22	65.22	dB
ZC Freq	15.3	15.3	16.8	Hz
Time (Rel. to Trig)	0.543	0.285	0.385	sec
Peak Acceleration	0.089	0.071	0.145	g
Peak Displacement	0.052	0.044	0.047	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.5	7.3	7.1	Hz
Overswing Ratio	4.5	4.6	4.7	

Peak Vector Sum 5.513 mm/s at 0.284 sec

Serial Number Battery Level

File Name

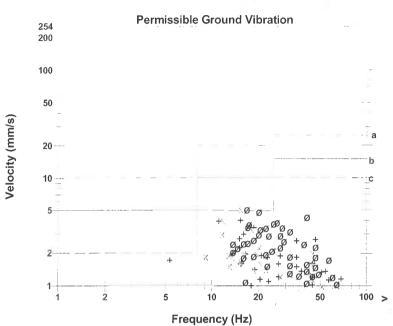
UM17410 V 10-89 Micromate ISEE

3.8 Volts

Unit Calibration October 13, 2023 by UES New Delhi

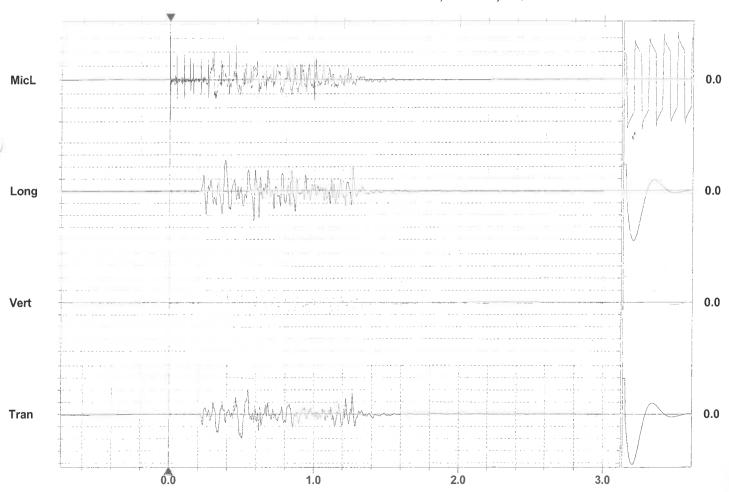
TEMP.EVT

DGMS India (A)



a)Industrial Buildings b)Domestic houses/structures c)Historic objects, sensitive structures

Tran: + Vert: x Long: ø



Trigger = ▶

Time Scale: 0.20 sec/div Amplitude Scale: Geo: 2.000 mm/s/div Mic: 5.000 pa.(L)/div

Sensor Check





Ref No: HIL/LHD/ENV/Kujam I / 37 Date: 19.10.2023

To

District Industries Centre, Gumla, Jharkhand.

Sub: Intimation of revalidated EC grant of Kujam I Bauxite Mine (Area: 80.87 Ha) of Hindalco Industries Limited, with production capacity of Bauxite 150000 TPA near Villages: Kujam, Dewragini & Chatam, Taluka: Bishunpur, District: Gumla, Jharkhand.

Sir,

We would like to bring this to your notice that revalidated EC has been granted for Kujam I Bauxite Mine by SEIAA, Jharkhand.

A copy of issued Environmental Clearnce is attached along with this letter for your ready reference.

Thanking You,

Yours Sincerely
For Hindalco Industries Ltd

(Basudev Gangopadhyay)

AVP (Planning, Environment & Compliance)



Received 10023



Ref No: HIL/LHD/ENV/Kujam I /メックタ

Date: 19.10.2023

To

Zilla Parishad, Gumla, Jharkhand.

Sub: Intimation of revalidated EC grant of Kujam I Bauxite Mine (Area: 80.87 Ha) of Hindalco Industries Limited, with production capacity of Bauxite 150000 TPA near Villages: Kujam, Dewragini & Chatam, Taluka: Bishunpur, District: Gumla, Jharkhand.

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(Basudev Gangopadhyay)

AVP (Planning, Environment & Compliance)

20/10/23

010



Ref No: HIL/LHD/ENV/Kujam I / 368

Date: 19.10.2023

То

The Deputy Commissioner,
Office of the Deputy Commissioner (District General Branch),
New Collectorate Building Nag-01, Room No.-09,
Gumla, Pin 835207 (Jharkhand)

Sub: Intimation of revalidated EC grant of Kujam I Bauxite Mine (Area: 80.87 Ha) of Hindalco Industries Limited, with production capacity of Bauxite 150000 TPA near Villages: Kujam, Dewragini & Chatam, Taluka: Bishunpur, District: Gumla, Jharkhand.

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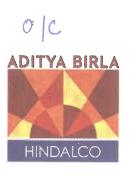
Thanking You,

Yours Sincerely

For Hindalco Industries Ltd

(Basudev Gangopadhyay)

AVP (Planning, Environment & Compliance)



Ref No: HIL/LHD/ENV/Kujam I / 😗 🎌 🖰

Date: 19.10.2023

To

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

Sub: Intimation of revalidated EC grant of Kujam I Bauxite Mine (Area: 80.87 Ha) of Hindalco Industries Limited, with production capacity of Bauxite 150000 TPA near Villages: Kujam, Dewragini & Chatam, Taluka: Bishunpur, District: Gumla, Jharkhand.

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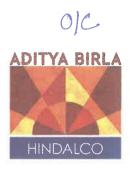
Thanking You,

Yours Sincerely
For Hindalco Industries Ltd

(Basudev Gangopadhyay)

AVP (Planning, Environment & Compliance)





Ref No: HIL/LHD/ENV/Kujam I / 3 69 Date: 19.10.2023

То

The Member Secretary,
Jharkhand State Pollution Control Board,
TA Building, Dhurwa,
Ranchi (Jharkhand).

Sub: Intimation of revalidated EC grant of Kujam I Bauxite Mine (Area: 80.87 Ha) of Hindalco Industries Limited, with production capacity of Bauxite 150000 TPA near Villages: Kujam, Dewragini & Chatam, Taluka: Bishunpur, District: Gumla, Jharkhand.

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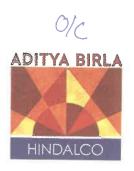
Thanking You,

Yours Sincerely
For Hindalco Industries Ltd

(Basudev Gangopadhyay)

AVP (Planning, Environment & Compliance)





Ref No: HIL/LHD/ENV/Kujam I / 36 7

Date: 19.10.2023

To

Gram Panchayat Mukhiya, Panchayat Bhawan, Chirodih, Block-Bishunpur, Gumla.

Sub: Intimation of revalidated EC grant of Kujam I Bauxite Mine (Area: 80.87 Ha) of Hindalco Industries Limited, with production capacity of Bauxite 150000 TPA near Villages: Kujam, Dewragini & Chatam, Taluka: Bishunpur, District: Gumla, Jharkhand.

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Yours Sincerely

For Hindalco Industries Ltd

(Basudev Gangopadhyay)

AVP (Planning, Environment & Compliance)

Registered Office: Ahura Centre, 1st Floor, B Wing, Mahakali Caves Road, Andheri (East), Mumbai 400 093, India T: +91 22 6691 7000 | F: +91 22 6691 7001

