

HIL/LHD/ENV/MoEF/418

Date: 25.11.2023

Τо,

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 Serengdag Bauxite Mining (77.89 ha) project of M/s Hindalco Industries Limited located in Dist- Gumla, Jharkhand for the period April'23 to September'23.

Ref: EC Identification No. EC23B001JH161552 dated 11th October 2023.

Sir,

With reference to the above, we are submitting herewith the Compliance status report of EC conditions for **Serengdag (77.89 Ha)** Bauxite Mining project of **M/s Hindalco Industries Limited** located in Gumla, Jharkhand for the period April'23 to September'23.

The lease detail is as below.

Lease area (ha)	Production Capacity (MT)	Lease Period	
77.89	100000	04.10.1978 to 31.03.2030	

Hope you will find the same in order. Thanking You

> Yours Sincerely FOR **HINDALCO INDUSTRIES LIMITED**

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

Enclosure: - As Above

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Name of the Project	: Serangdag-B Industries Ltd	Bauxite	Mine	(77.89ha)	M/s	Hindalco
Environment Clearance No & date	: EC23B001JH	161552, da	ted 11.	10.2023.		
Period of Compliance Report	: From 1 st Apri	1 2023 to 3	0 th Sep	otember 202	3	

A. Specific Conditions

Condition 1-This Environmental Clearance is valid subject to the following 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 decisions of SEIAA on the issue of Environmental Clearance are being/will be complied.

Condition 2- Gabion Plantation 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- Progressive plantation is being carried out in consultation with local forest Dept. Total 2000 nos. of saplings have been planted during the period from April'23 to September'23 within this lease. A total of 5.49 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 plantation work is already going on. 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 are attached below.









Plantation & Agricultural activities in reclaimed area at mines

Condition 3- No mining/activity shall be undertaken in the forest land or deemed forest without obtaining requisite prior forestry clearance.

Reply to Condition 3- 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 4 - 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 4 - Noted. However, this mine is located beyond the ESZ boundary. Hence, it 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 condition 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 far away from Mahuadanr ESZ boundary.

Condition 3- The Project proponent complies with all the statutory requirements and judgement of Hon'ble Supreme Court dated 2nd 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 condition 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 matter 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 fit for growth of fodder, flora, fauna etc."

Reply to Condition 4- This is running mine. Backfilling & 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 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 activity 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. 114 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 Serangdag-B 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, it 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. So 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/Committee.

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 purpose only after getting the written consent from the respective land owners 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-11013/57/2014-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 withdrwal of groundwater for drinking purposes only from CGWA/CGWB.



CGWA License

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 Gram Panchayat Mukhiya, District Industries Centre, MoEF&CC, JSPCB, Deputy Commissioner and Zila Parishad. Letters are attached 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 Gram Panchayat Mukhiya, District Industries Centre, MoEF&CC, JSPCB, Deputy Commissioner and Zila Parishad. Letters are attached 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 grant of EC has been published in two local newspaper named Hindustan and Hindustan Times. The granted EC Letter has been submitted to Gram Panchayat Mukhiya, District Industries Centre, MoEF&CC, JSPCB, Deputy Commissioner and Zila Parishad. Paper-cutting is attached below.

पर्यावरण स्वीकृति के संबंध में

हिण्डालको इण्डस्ट्रीज लिमिटेड की सेरेंगदाग बॉक्साईट खदान (क्षेत्रफल : 77.89 हे०), बॉक्साईट 100000 टी.पी.ए की उत्पादन क्षमता के साथ गांव : सेरेंगदाग, हंनरूप एवं पवनरी तालुका बिशुनपुर एवं घघरा, जिला गुमला, झारखंड का एस.ई.आई.ए.ए, झारखंड से पुन: मान्य ईसी प्रदान किया गया है।

पर्यावरण स्वीकार करेक बारे में

हिण्डालको इण्डस्ट्रीज लिमिटेड कर सेरेंगदाग बॉक्साईट खदान (क्षेत्रफल : 77.89 हे०), बॉक्साईट १००००० टी.पी.ए कर उत्पादन क्षमता कर साथ गांव : सेरेंगदाग, हंनरूप औउर पवनरी तालुका बिशुनपुर एवं घघरा, जिला गुमला, झारखंड कर एस.ई.आई.ए.ए, झारखंड बट से फिर से मानेक ले ईसी देवल गेले है।

Advertisement in the Hindustan newspaper

पर्यावरण स्वीकृति के संबंध में

हिण्डालको इण्डस्ट्रीज लिमिटेड की सेरेंगदाग बॉक्साईट खदान (क्षेत्रफल : 77.89 हे०), बॉक्साईट 100000 टी.पी.ए की उत्पादन क्षमता के साथ गांव : सेरेंगदाग, हंनरूप एवं पवनरी तालुका बिशुनपुर एवं घघरा, जिला गुमला, झारखंड का एस.ई.आई.ए.ए, झारखंड से पुन: मान्य ईसी प्रदान किया गया है।

पर्यावरण स्वीकार करेक बारे में

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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 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 Serangdag 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 I (one) in upwind and 2 (two) in downwind direction based on long term climatological data about wind direction such that an angle of 120° is made between the monitoring locations to monitor critical parameters, relevant for mining operations, of air pollution viz. PM10. PM2.5. NO2: CO and S02 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. Report is attached as **Annexure 2.** Digital 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. The 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 to prevent dust suppression on haul road. Online PM10 analyser has been installed for regular monitoring purpose. Suitable water-soluble chemical dust suppressing agents will be used in future if required.

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.



Dust Suppression through water tanker

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. Periodical Occupational health surveillance program of the workers is being carried out and records maintained as per statute. IME & PME report has been 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 company in the company in the public domain.

Reply to Condition 5- Half-yearly EC compliance along with Environmental monitoring reports is being uploaded on company website regularly. The same is also being intimated to PCBs and RO, MOEF & CC. Environmental Display board is already installed at 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. However, shallow depth mining is being carried out in Serangdag-B Bauxite Mine. Hence, Mining operation does not involve intersection of ground water table.

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 done and the water analysis report is attached as **Annexure-2**. However, the flow rate of the springs and perennial nallahs flowing in and around the mine lease area will be monitored. Piezometer is installed in mine to monitor ground water table. Shallow depth mining is being carried out, hence there is no intersection of ground water table during the mining process. Drinking water is being provided to nearby villages regularly.

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. There is no chance of intersection of ground water table during mining operation at present and in future. A piezometer

has been installed for monitoring of ground water level. Water quality and level report are attached herewith as **Annexure 1 & 2**.



Piezometer

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 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 out and record is being maintained for the same. Water quality Report is attached as **Annexure-2** and level report are attached herewith as **Annexure 1**.

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-IAJI (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 runoff water from the mines. Also, all water parameters as per the norm are being monitored regularly. The report is attached as **Annexure-2**.

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 in the Sherangdag group of mines. Photographs of the same have been attached below. Water Positivity study fro Sherangdag Group of Mines has been carried out recently. Total amount of water recharge has been found to be 22092.50 m3.





Rainwater Harvesting Pond

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.

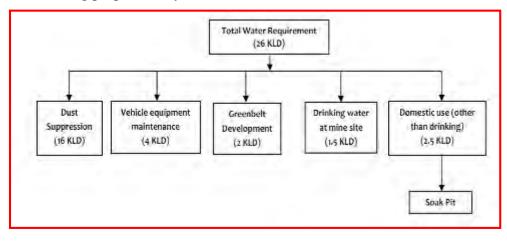
Reply to Condition 7- There is no industrial wastewater generation within the mine lease area. We are not discharging any wastewater outside the mine lease area. However, for washing of HEMM, Effluent treatment mechanism (Oil and grease trap) has been installed in Serangdag mine.



Oil & 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 this mines is attached below. We are taking water from rainwater harvesting pond located at adjacent mine for sprinkling and other activities. We are not abstracting any ground water for mining purposes. However, we have obtained NOC from CGWA for drinking purposes only.



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.

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. Shallow depth mining methodology is adopted for mining process. Hence, 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 rainwater harvesting plan to augment ground water has been prepared and suitable measures like water harvesting pond etc. are created for augmentation of ground water in Sherangdag Group of Mines in consultation with CGWB.

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 Serangdag mine has been obtained for drinking purposes only. However, for sprinkling on haul roads and raising plantation, rainwater harvested during rainy season, is being used. No natural water resource/ground water is being used for mining purpose.

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- A detailed rainwater harvesting plan to augment ground water has been prepared and suitable measures like water harvesting pond etc. are created for augmentation of ground water in Sherangdag Plateau of Mines.

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 study 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.

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- Noted

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-àvis 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 selfsustaining. 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 Land

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 bauxite ore and waste is being done as per IBM approved mining plan scheme in scientific manner. Report is attached herewith 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. However, 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 in Serangdag Bauxite Mine. Photographs are attached below.



Dispensary Facility at mines

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:- Backfilling and reclamation is being done concurrently by overburden and waste rock. No OB dump is present in mines. The mining is being carried out as per the approved mining plan by IBM as well as the guidelines of DGMS. Data pertaining to backfilling is enclosed as **Annexure 4.** Monitoring and management of rehabilitated areas is being done through effective supervision.

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- Backfilling and reclamation is being done concurrently by overburden and waste/reject rock. No waste dump is present in mines. The mining is being carried out as per the approved mining plan by IBM as also the guidelines of DGMS. Data pertaining to backfilling is enclosed as **Annexure 4.** Monitoring and management of rehabilitated areas is being done through effective supervision.

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 in scientific manner.

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. There is no dump present currently on site as we are following concurrent reclamation process

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 appliacable 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- No run-off is generated from mining activities. However, 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.



Garland drains

Siltation pond

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- No run-off is generated from mining activities. However, 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.

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 concurrently and back filled 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 facility 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**.



Tarpaulin covering during material loading-unloading

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 long-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.

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- Haul road has been constructed for transportation of minerals. Mobile water tankers with sprinkling facilities have been provided on long-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.

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 in progress in safety zone of mine lease already. Plantation work is being governed as per approved mining plan and EC granted.



Plantation at mines

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. 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 2000 nos. of saplings have been planted during the period April'23 to September'23 within this lease. A total of 5.49 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.



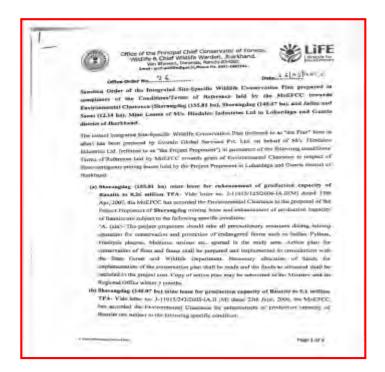
Plantation at mines

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 provides 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 lease basis in consultation with State Government. After mining we reclaim and rehabilitate the mined out areas and return it back to the land owners for agriculture purpose or plantation whichever is desired by the landowners (villagers). No trees are being fallen in the mines..

Condition 4- The Project Proponent shall undertake all precautionary measures for conservation and protection of endangered flora and fauna and Schedule-I 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 Wildlife Conservation Plan in consultation with State Forest Department and also obtained approval letter from Principal Chief Conservator of Forest, Wildlife & Chief Wildlife Warden, Jharkhand for conservation and protection of flora and fauna in the core and buffer zone for Serangdag Bauxite Mines. Approval letter (Office Order No 26, dated 26.05.2023) .However, Mine is located outside an eco-sensitive zone.



Approved Letter

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- 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 carried out to educate the local community on healthcare, sanitation, hygiene etc. We have organised preventive and curative camps to control Malaria epidemic. Also, the Tuberculosis patient in the neighborhood are being provided with the "Poshan Kit" under PM Nikshye Yojana. We collaborate with Jharkhand State AIDS control society to conduct awareness programme. Moreover, we are working to make Ghagra and Bishunpur block Anaemia free, in this regard we have conducted more than 7000 strip tests to identify cases and take proper actions.

Also, awarness has been created for Sanitation, Personal Hygiene, Hand washing and not to defecate in the open periodically through "Swacchta Abhiyan". Education and awareness for Women Health and Hygiene, hazard of tobacco and alcohol use is being given on regular intervals to the local villagers.

All workers and company staff are provided with proper PPEs. Base line HRA for all the categories of workers will be carried out in the future. However, we conduct IME/PME for the health and wellbeing of the workers in the mines.



Regular Health Awareness Programmes

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. A total 6 number of medical camp and 1 nos of mega medical camps have been organized in the period from April'23 to September'23. IME/PME is being conducted whenever required. QNEA are being conducted periodically to monitor the levels of Silica, Asbestos, Iron etc. Report is being attached as **Annexure 6**.

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 in compliance report 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- Rest shelters have been provided to laborers. As most of the workers/laborers 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.

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 22-65/2017 -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- Year wise expenditure is being reported to the ministry and its Regional Office located at Ranchi. Report 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- Year wise expenditure is being reported to the ministry and its Regional Office located at Ranchi. Report 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- Year wise expenditure is being reported to the ministry and its Regional Office located at Ranchi. Report 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 complaince 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 will be submitted to IRO, Ranchi with EC compliance report as **Annexure 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- This is an operative mine hence provision related to financial closure is not applicable.

Condition 3- 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/JCPCB/ SEIAA.

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

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. 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.

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. 12:00 PM -1:00 PM. Controlled blasting method is in practice. Ground vibration study has been conducted by IIT, Kharagpur. All efforts are being taken to mitigate the impact of blasting.

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.



Wet Drilling

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.

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/ labour 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 are extracting 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.

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. No suggestions were received from urban bodies/ local NGOs while processing the proposal.

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 duly and timely submitted.

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 Wate-(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 26- 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						
Piez S No	Month	g - Shrengdag-B (140.06) Depth (meter)					
1	Apr-23	36.42					
2	May-23	36.50					
3	Jun-23	36.71					
4	Jul-23	36.83					
5	Aug-23	36.74					
6	Sep-23	37.12					

ENVIRONMENTAL LABORATORIES & ENGINEERING SERVICES PVT.LTD.

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

Shrengdag-B Bauxite Mine-Environmental Monitoring Report

April 2023



CONTENT

Hind:	alco Industries : Shrengdag B Bauxite Mine Environmental Monitoring Report April 2023
	Shrengdag B Bauxite Mine
6	AMBIENT AIR QUALITY- CORE ZONE
1	Mine Pit Quarry No 2B
2	Near Baisbhatan Village
3	Block 2A (Prohopat Village)
4	Harup Block C (Proposed)
	AMBIENT AIR QUALITY- BUFFER ZONE
1	Near Banjari Village
2	Near Pauri Village
3	Near Harup Village
4	Near Paintoli Village





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ENGINEERING SERVICES PVF. LTD.



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	TE	ST REPORT		
Test Report No.	: ELES/RNC/2023/1948	Report Release Date	: 12.06.2023	_
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
ULR No,	: TC883923000000909F			

CUSTOMER DET.	AILS	SAMPLE DETAILS		
Customer Name Address	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/1375 : Mine Pit Quarry No 2B Serengdag-B Bauxite Mines	
Plant Status	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sample Drawn By	(140.07ha) : 17.04.2023 to 18.04.2023 : 10.05.2023 : Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 10.05.2023 to 08.06.2023	Sample Condition	: Scaled & Preserved	

METEOROLOGICAL INFORMATION

 Average Temperature (°C) : 32 	2	Barometric Pressure (mml	Hg) : 743	
3 Relative Humidity (%) : 60	4	Weather Condition	: Clear	

NABL Accredited

Discipline :	Chemical	Group :	Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m ¹	IS 5182 (Part-23): 2006; RA2022	63	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	37	60 (24hrs)	
Sulphur Di-Oxide (SO2)	µg/m ³	18 5182 (Part-2): 2001; RA2022	11.6	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	25,5	80 (24hrs)	
Ozone (O3)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH3)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	µg/m ¹	IS 5182 (Part-22): 2004; RA2019	0.013	1 (24hrs)	
Nickel (Ni)	ng/m ³	1S 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	2.7	06 (Annual)	

Reviewed by

Dr. DAuthorized Signatory

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TEST REPORT				
Test Report No.	: ELES/RNC/2023/1948	Report Release Date	: 12.06.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

USTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/1375 : Mine Pit Quarry No 2B Serengdag-B Bauxite Mines	
Address	+ Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	(140.07ha) : 17.04.2023 to 18.04.2023 : 10.05.2023 : Ambient Air : ELES/DOC/SMPL/02	
Plant Status	: Operational	Sample Drawn By	: ELES/DOC/SMPL/02	
Period of Analysis	: 10.05.2023 to 08.06.2023	Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 32	2	Barometric Pressure (mn	nHg) ±743
3	Relative Humidity (%) : 60	4	Weather Condition	: Clear

Discipline : Chemical		Group : Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene*	µg/m ³	IS:5182 (part-11): 2006;RA2017	<1.0	05(Annual)	
Benzo (a) Pyrene*	ng/m ²	IS:5182 (Part-12): 2004;RA2019	<0.5	01(Annual)	

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



**** End of Report****

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Page 1 of 1

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Contraction of the local division of the loc	TE	ST REPORT	
Test Report No.	: ELES/RNC/2023/1949	Report Release Date	: 12.06.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC88392300000910F		

CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/1376 : Near Baisbhatan Village Serengdag-B Bauxite Mines
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	(140.07ha) : 17.04.2023 to 18.04.2023 : 10.05.2023
Plant Status	: Operational	Type of Sample Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 10.05.2023 to 08.06.2023	Sample Condition	: Sealed & Preserved

1	Average Temperature (°C) : 32	2	Barometric Pressure (mm	Hg) : 743
	Relative Humidity (%) : 60	4	Weather Condition	: Clear

NABL Accredited

Discipline :	Chemical	Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	62	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	.30	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	6.5	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	15.2	80 (24hrs)
Ozone (O1)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	1S 5182 (Part-22): 2004; RA2019	0.008	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ¹	ELES/AIR/SOP/01	2.1	06 (Annual)

Reviewed by

Dr. Authorized Signatory

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Page 1 of 1



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	TE	ST REPORT		
Test Report No.	: ELES/RNC/2023/1949	Report Release Date	: 12.06.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET.	AILS	SAMPLE DETAILS	- Contrast - Contrast C
Customer Name	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Location	ELES/RNC/2023/AA/1376 Near Baisbhatan Village Serengdag-B Bauxite Mines
Plant Status	: Operational	Sampling Date Sample Received Date Type of Sample	(140.07ha) 17.04.2023 to 18.04.2023 10.05.2023 : Ambient Air
Plant Status	: Operational	Sample Drawn By	: ELES/DOC/SMPL/02
Period of Analysis	: 10.05.2023 to 08.06.2023	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFORMATION			
1	Average Temperature (*C) : 32	2	Barometric Pressure (mm	nHg) : 743
3	Relative Humidity (%) : 60	4	Weather Condition	: Clear

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

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



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	TE	ST REPORT		
Test Report No.	: ELES/RNC/2023/1950	Report Release Date	: 12.06.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
ULR No.	: TC883923000000911F			

CUSTOMER DET.	AILS	SAMPLE DETAILS	
Customer Name	THindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/1377 : Block 2A (Prohopat Village) Serengdag-B Bauxite Mines
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	(140.07ha) : 17.04.2023 to 18.04.2023 : 10.05.2023
Plant Status	: Operational	Type of Sample Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 10.05.2023 to 08.06.2023	Sample Condition	: Sealed & Preserved

L	Average Temperature ("C) : 32	2 2	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%) : 60	0 4	Weather Condition	: Clear

NABL A	Accredited

Discipline :	Chemical	Group :	Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	67	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m ³	1S 5182 (Part- 24): 2019	38	60 (24hrs)	
Sulphur Di-Oxide (SO2)	µg/m³	IS 5182 (Part-2): 2001; RA2022	7,3	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	18.5	80 (24hrs)	
Ozone (O3)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH3)	μg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	0.009	1 (24hrs)	
Nickel (Ni)	ng/m ¹	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)	

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	TE	ST REPORT		
Test Report No.	: ELES/RNC/2023/1950	Report Release Date	: 12.06.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET/	AILS	SAMPLE DETAILS	
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Location	: ELES/RNC/2023/AA/1377 : Block 2A (Prohopat Village) Serengdag-B Bauxite Mines (140.07ha)
Plant Status	: Operational	Sampling Date Sample Received Date Type of Sample Sample Drawn By	: 17.04.2023 to 18.04.2023 : 10.05.2023 : Ambient Air ; ELES/DOC/SMPL/02
Period of Analysis	: 10.05.2023 to 08.06.2023	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFORMATION				_
1	Average Temperature (°C) : 32	2	Barometric Pressure (mm	(Hg) : 743	-
3	Relative Humidity (%) : 60	4	Weather Condition	: Clear	

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

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



End of Report*

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	TE	ST REPORT	
Test Report No.	: ELES/RNC/2023/1951	Report Release Date	: 12.06.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883923000000912F		

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	 ELES/RNC/2023/AA/1378 Harup Block C (Proposed) Serengdag-B Bauxite Mines 	
Address Plant Status	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sample Drawn By	(140.07ha) = 17.04.2023 to 18.04.2023 = 10.05.2023 = Ambient Alr = ELES/DOC/SMPL/02	
Period of Analysis	: 10.05.2023 to 08.06.2023	Sample Condition	1 Sealed & Preserved	

M	ETEOROLOGICAL INFOR	EMATION		and the second sec	
1	Average Temperature (°C)	: 32	2	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%)	: 60	4	Weather Condition	: Clear

4 Weather Condition 3 Relative Humidity (%) :60

NABL Accredited

Discipline : Chemical		Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	64	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	29	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	6.3	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	18.5	80 (24hrs)
Ozone (O ₁)	µg/m²	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m ³	IS 5182 (Part-25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m³	15 5182 (Part-22): 2004; RA2019	0.009	1 (24hrs)
Nickel (Ni)	ng/m²	1S 5182 (Part-26):2020	<6,0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	.06 (Annual)

EP12 Reviewed by

Authorized Signatory Dr. Deependra Kumar Sini.

****End of Report**** Page 1 of 1

Ph. D. Environmental Engo

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834005 (IHARKHAND) GST NO:- 20AAECE9713D124

ENGINEERING SERVICES PTT. L

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



	TE	ST REPORT		
Test Report No.	: ELES/RNC/2023/1951	Report Release Date	: 12.06.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/1378 : Harup Block C (Proposed) Serengdag-B Bauxite Mines	
Address Plant Status	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sample Drawn By	(140.07ha) : 17.04.2023 to 18.04.2023 : 10.05.2023 : Ambient Air : ELES/DOC/SMPL/02	
	and the second se			
Period of Analysis	: 10.05.2023 to 08.06.2023	Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFORMATION			1
	Average Temperature (°C) : 32	2	Barometric Pressure (inn	nHg) : 743
3	Relative Humidity (%) : 60	4	Weather Condition	: Clear

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

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



End of Report

Authorized Signatory Dr. Despenditionarian Sinhi Pr. D. Engrandition Engg ELES Pvt. Ltd. Treamini Manac

Page 1 of 1

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VMENTAL LABORATORIES

PEDT HO-30, MANSAROVAR ENGLINE TUMUDANA NATIA RANCHERSARUS (///ARREAND) 657 W/R-20x471207110124

Emuil: Info@etaspl.co.ia , eles.canchi@amail.com Phone no.: 0651-3290103 Weesan : www.ulasel.co.in



Test Report No.	: ELES/RNC/2023/1944	Report Release Date	: 12.06.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883923000000905F		

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	; Hindalco lodustries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/1371 : Near Banjari Village Screngdag-A Bauxite Mines
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 14.04.2023 to 15.04.2023 : 10.05.2023
Plant Status	: Operational	Type of Sample Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 10.05.2023 to 08.06.2023	Sample Condition	: Scaled & Preserved

Ł	Average Temperature (°C) : 32	2	Barometric Pressure (mn	nHg) : 743
3	Relative Humidity (%) : 60	4	Weather Condition	; Clear

NABL Accredited Discipline :	Chemical	Group	: Atmospheri	e Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ¹	IS 5182 (Part-23): 2006; RA2022	63	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	30	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	6.9	80 (24hrs)
Nitrogen Di-Oxide (NO7)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	19.1	80 (24hrs)
Ozone (O3)	μg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH3)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ⁴	IS 5182 (Part-22): 2004; RA2019	0,008	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6,0	20 (Annual)
Arsenic (As)	ng/m ^T	ELES/AIR/SOP/01	<2.0	06 (Annual)

Reviewed by

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Joerews Kumsi Sinha

Anthonized Signatory

**** End of Report****

Page 1 of 1

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PLOT NO-30, MAIUSAROVAR ENCLAVE, TUPUDANA HATUA, RANCH-834003 (IHARKHAND) SST ND- 20445CE9713D174

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NOINEERING SERVICES PVT. LTD.

Website : www.elespl.co.in

	TE	ST REPORT		
Test Report No.	: ELES/RNC/2023/1944	Report Release Date	: 12.06.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET/	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/1371 : Near Banjari Village Serengdag-A Bauxite Mines
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 14.04.2023 to 15.04.2023 : 10.05.2023
Plant Status	(Operational	Type of Sample Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	10.05.2023 to 08.06.2023	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 32	2	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%)	: 60	4	Weather Condition	: Clear

Discipline	: Chemical	Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene*	µg/m ²	IS:5182 (part-11): 2006;RA2017	<1.0	05(Annual)
Benzo (a) Pyrene*	ng/m ³	IS:5182 (Part-12): 2004;RA2019	<0.5	01(Annual)

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

Reviewed by

**** End of Report****

Authorized Signatory Dr. Descender Kumor Sistre Ph. C. Environment (Stang ELES Pet Ud. Technical Michage)

Page 1 of 1

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FLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCH-UBIOD3 (JHARNIANID) 657 NO:- 30AJECEPTI3DIDI

Email: Injo@eleasl.co.in , eles.concil@gmoil.com Phone mi = 0651-2290103 Webstle : www.elespi.co.in



Test Report No.	: ELES/RNC/2023/1945	Report Release Date	: 12.06.2023	
Work Order No.	; 13612310218	Work Order Date	: 21,04.2023	
ULR No.	: TC883923000000906F			

CUSTOMER DET/	AILS	SAMPLE DETAILS	
Custonier Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/1372 : Near Pauri Village Serengdag-A Bauxite Mines
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 14.04.2023 to 15.04.2023 : 10.05.2023 : Ambient Air
Plant Status	: Operational	Sample Drawn By	: ELES/DOC/SMPL/02
Period of Analysis	: 10.05.2023 to 08.06.2023	Sample Condition	: Sealed & Preserved

1	Average Temperature (°C) : 32	2	Barometric Pressure (nunE	4g) = 743
3	Relative Humidity (%) : 60	4	Weather Condition	: Clear

NABL Accredited				
Discipline :	Chemical	Group	: Atmospheri	e Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ²	IS 5182 (Part-23): 2006; RA2022	60	100 (24hrs)
Particulate Matter (PM2.5)	μg/m ³	IS 5182 (Part- 24): 2019	27	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	7.6	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m ¹	IS 5182 (Part-6): 2006; RA2022	12.4	80 (24hrs)
Ozone (O3)	µg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ¹	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (Shrs)
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	0,015	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	2.2	06 (Annual)

Reviewed by

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Anthonized Signatory Dr. Dse

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Page 1 of 1

ELES PW. Ltd. Technical Manager

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PLOT NO-30, MANSAROVAR ENCLAVE, TURUDANA HATIA, RANCH-834003 (IHARKNAND) GST NO:- JDAAEE57130120 ENGINEERING SERVICES POP. 120

Email: Info@elesp1.co.in , stes.ranchi@amail.com Phone no.: 0651-2290103 Website : www.elesp1.co.in

TEST REPORT				
Test Report No.	: ELES/RNC/2023/1945	Report Release Date	: 12.06.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/1372 : Near Pauri Village Serengdag-A Bauxite Mines
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 14.04.2023 to 15.04.2023 : 10.05.2023
Plant Status	: Operational	Type of Sample Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 10.05.2023 to 08.06.2023	Sample Condition	: Sealed & Preserved

MI	TEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 32	2	Barometric Pressure (mmHg)	; 743
3	Relative Humidity (%) : 60	4	Weather Condition	: Clear

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

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

Reviewed by

****End of Report****

Authorized Signatory Dr. Despendration Elition Pla. D. Sovietmental Ergg ELES Pvc. Ltd. Techarten Meneger

Page 1 of 1

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TRONMENTAL LABORATORIE

PLOT NO 30, MANSAROVAR ENCLAVE, TUPUDANA HETIA, RANCHI-884003 (IHERNHAND) GET NO- 20//AF097130121

Etsail: lalo@elessi.co.in . eles.concht/Parrall.com Phune up.: 0651-2290103

Website i www.alrepl.ca.in



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TEST REPORT

Test Report No.	: ELES/RNC/2023/1946	Report Release Date	: 12.06.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
ULR No.	: TC88392300000907F			

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/1373 : Near Harup Village Serengdag-A Bauxite Mines	
Address	Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 14.04.2023 to 15.04.2023 : 10.05.2023	
Plant Status	: Operational	Type of Sample Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 10.05.2023 to 08.06.2023	Sample Condition	: Sealed & Preserved	

M	ETEOROLOGICAL INFORMATION		Second		
1	Average Temperature (°C) : 32	2	Barometric Pressure (mm	Hg) : 743	
3	Relative Humidity (%) : 60	4	Weather Condition	: Clear	

NABL Accredited			-	
Discipline :	Chemical	Group	: Atmospheri	e Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	60	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	37	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	6.9	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	11.8	80 (24hrs)
Ozone (O ₃)	µg/m ²	15 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH3)	µg/m ²	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	18 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ^A	IS 5182 (Part-22): 2004; RA2019	<0.002	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)

Reviewed by

Authorized Signatory Dr. Daep

****End of Report****

Page 1 of 1

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PLOT ND-30, MANSAROVAN ENCLAVE, TUPUDANA HATIA, PANCHI-E34003 (JHARKHAND) GST NO- TUMAECE37130174 NGINEERING SERVICES PPT. LTD.

Email: Info@elesnl.co.in _ elet.ronchi@amail.com Phone no.: 0651-2290103 Website : www.elesnl.co.in

	TE	ST REPORT	
Test Report No.	: ELES/RNC/2023/1946	Report Release Date	: 12.06.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	 ELES/RNC/2023/AA/1373 Near Harup Village Serengdag-A Bauxite Mines 	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 14.04.2023 to 15.04.2023 : 10.05.2023	
Plant Status	: Operational	Type of Sample Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 10.05.2023 to 08.06.2023	Sample Condition	: Sealed & Preserved	

ME	ETEOROLOGICAL INFORMATION				
1	Average Temperature (°C) : 32	2	Barometric Pressure (mm)	Hg) :743	
3	Relative Humidity (%) : 60	4	Weather Condition	: Clear	

Discipline : Chemical		Group : Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene*	µg/m ³	IS;5182 (part-11): 2006;RA2017	<1.0	05(Annual)	
Benzo (a) Pyrene4	ng/m ³	IS:5182 (Part-12): 2004;RA2019	<0.5	01(Annual)	

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



**** End of Report****

Page 1 of 1

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FLOT NO-30, TJANSARDVAB ENGLAVE, TUPUDAN HATIN, RANCHI-434005 (JHARKHAND) 657 HD - 20 (STT115037)

CWI UT/USE/HZQUILPTCALL125

Sciell: n.10@elcopi.co.la . elco.renchi@pmeli.com Phone na.: 0551-2200105 Website : www.elcopi.co.in



TERT	REPORT
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Test Report No.	t ELES/RNC/2023/1947	Report Release Date	: 12.06.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
ULR No.	: TC883923000000908F			

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/1374	
		Location	: Near Paintoli Village	
	and the second second	Contraction of the second	Serengdag-A Banxite Mines	
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 14.04.2023 to 15.04,2023	
		Sample Received Date	: 19.05.2023	
	1	Type of Sample	: Ambient Air	
Plant Status	: Operational	Sample Drawn By	ELES/DOC/SMPL/02	
Period of Analysis	: 10.05.2023 to 08.06.2023	Sample Condition	: Sealed & Preserved	

1	Average Temperature (°C) : 32	2	Barometric Pressure (mm.	Hg) : 743
3	Relative Humidity (%) : 60	4	Weather Condition	: Clear

NABL Accredited					
Discipline :	Chemical	Group	Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	63	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m ³	IS 3182 (Part- 24): 2019	34	60 (24hrs)	
Sulphur Di-Oxide (SO2)	µg/m ³	1S 5182 (Part-2): 2001; RA2022	8.8	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	pg/m ³	IS 5182 (Part-6): 2006; RA2022	13,2	80 (24hrs)	
Ozone (O3)	µg/m ¹	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH ₁)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	µg/m²	IS 5182 (Part-22): 2004; RA2019	0.012	1 (24hrs)	
Nickel (Ni)	ng/m ¹	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)	

Reviewed by

exception extended as a branch.

Anthonized Signatory Dr. Decast

****End of Report**** Page 1 of 1

ELES Pv), Ltd. Teannicht Idanaed

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PLDT NO-EG, MANSAROVAR ENCLAVE, TUPLIDANA HATM, RANCHI-BERGE (INARKHAND) GST ND- 204AECE9715D124 NGINEERING SERVICES PVT_1TB.

Email: info@elesol.co.in , eles.ronchi@amail.com Phone no.: 0651-2290303 Website : www.elesol.co.in

TEST REPORT					
Test Report No.	: ELES/RNC/2023/1947	Report Release Date	: 12.06.2023		
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023		

CUSTOMER DET/	AILS	SAMPLE DETAILS			
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/1374 : Near Paintoli Village Serengdag-A Bauxite Mines		
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 14.04.2023 to 15.04.2023 : 10.05.2023		
Plant Status	(Operational	Type of Sample Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02		
Period of Analysis	= 10.05.2023 to 08.06.2023	Sample Condition	: Sealed & Preserved		

MI	TEOROLOGICAL INFOR	MATION				
1	Average Temperature (°C)	: 32	2	Barometric Pressure (mmH	(g) : 743	
3	Relative Humidity (%)	: 60	4	Weather Condition	: Clear	

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

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

****End of Report****

Dr. Debision Ph. D. Environment-12, 637 ELES Ph. Ltd. Technical Manager

Page 1 of 1

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AND CONSTRAINTMENT SHOW PURISON



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

NOINCERENG SERVICES PVT. LTD.

Email: info@elesol.co.in , eles.ranchi@gmail.com Phone no.: 0651-1290103 Website : www.elesol.co.in

TEST REPORT

Test Report No.	: ELES/RAN/2023/0504	Report Release Date	: 06.05.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Sampling Date Sample Received Date	ELES/RAN/2023/DW/0389 : 12.04.2023 : 26.04.2023	
Address	: Lohardaga, Jharkhand-835302	Type of Sample Source/Location of Sample Sampling Procedure	: Drinking Water : Serengdag-B Bauxite Mines : ELES/DOC/SMPL/01	
Mines Status	: Operational	Sample Collected By	: ELES Pvt. Ltd.	
Period of Analysis	: 26.04.2023 to 05.05.2023	Sample Condition	: Sealed & Preserved	

Discipline : Chem	ical	Group : Water		Regulatory Limit as per IS 10500:2012	
Parameter	Unit	Test Protocol	Result	Acceptable	Permissible
pH (at 25.2 °C)	211	APHA 23 rd Ed.2017, 4500-H'	7.16	6.5-8.5	No Relaxation
Turbidity	NTU	APHA 23rd Ed.2017, 2130 B	0.24	1.0	5.0
Taste	14	APHA 23 rd Ed.2017, 2160 C	Agreeable	Agreeable	Agreeable
Odour	14	IS 3025 (Part-5) 2018	Agreeable	Agreeable	Agreeable
Colour	Hazen	APHA 23 ^m Ed.2017, 2120B&D	1.0	5	15
Total Dissolved Solids (TDS)	mg/L	APHA 23 rd Ed.2017, 2540B,C&D	348	500	2000
Chloride (as Ci)	mg/L	APHA 23rd Ed.2017, 4500 CI B	52.8	250	1000
Fluoride (as F)	mg/L	APHA 23 ^{ad} Ed.2017, 4500 F-D	BDL (DL: 0.1)	1.0	1,5
Total Alkalinity (as CaCO3)	mg/L	APHA 23rd Ed.2017, 2320 B	130	200	600
Total Hardness (as CaCO ₁)	mg/L	APHA 23 rd Ed.2017, 2340 C	146	200	600
Sulphate (as SO ₄)	mg/L	APHA 23" Ed.2017, 4500 SO4 -E	17,8	200	400
Nitrate (as NO3)	mg/L	APHA 23 rd Ed.2017, 4500 NO ₂ -B	1.48	45	No Relaxation
Phenolic Compound (as C ₆ H ₅ OH)	mg/L	IS 3025 (Part-43):1992;RA2019	BDL (DL: 0.0005)	0.001	0.002

Page 1 of 4

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NTAL LABORAT

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

RING SERVICES PVT. ATD.

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

TEST REPORT

Test Report No.	: ELES/RAN/2023/0504	Report Release Date	: 06.05.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

Discipli	ine : Cher	nical Group : W	ater		tory Limit 10500:2012
Parameter	Unit	Test Protocol	Result	Acceptable	Permissible
Cyanide (as CN)	mg/L	APHA 23 rd Ed.2017, 4500 CN-E	BDL (DL: 0.012)	0.05	No Relaxation
Residual Free Chlorine (RFC)	mg/L	IS 3025 (Part-26):2021	BDL (DL: 0.1)	0.02	1.0
Calcium (as Ca)	mg/L	APHA 23 rd Ed.2017, 3500 Ca B	39.2	75	200
Discipli	ne: Cher	mical Group	: Residues in	Water	_
Aluminum (as Al)	mg/L	IS 3025 (Part-55): 2003; RA2019	BDL (DL: 0.02)	0.03	0.2
Arsenic (as As)	mg/L	IS 3025 (Part 37): 2022	BDL (DL: 0.005)	0.01	No Relaxation
Boron (as B)	mg/L	15 3025(Part-57): 2005; RA2021	BDL (DL: 0.2)	0.5	1.0
Cadmium (as Cd)	mg/L	APHA 23 rd Ed.2017, 3111B	BDL (DL: 0.003)	0.003	No Relaxation
Total Chromium (as Cr)	mg/L	APHA 23rd Ed.2017, 3111B	BDL (DL: 0.03)	0.05	No Relaxation
Copper (as Cu)	mg/L	APHA 23 rd Ed.2017, 3111B	BDL (DL: 0.03)	0.05	1.5
Iron (as Fe)	mg/L	APHA 23 rd Ed.2017, 3111B	0.316	1,0	1.0
Lead (as Pb)	mg/L	APHA 23 rd Ed.2017, 3111B	BDL (DL: 0.01)	0.01	No Relaxation
Manganese (as Mn)	mg/L.	APHA 23rd Ed.2017, 3111B	BDL (DL: 0.05)	0.1	0.3
Mercury (as Hg)	mg/L	IS 3025 (Part-48): 1994; RA2019	BDL (DL: 0.001)	0.001	No Relaxation
Selenium (as Se)	mg/L	IS 3025 (Part-56): 2003; RA2019	BDL (DL: 0.01)	0.01	No Relaxation
Zinc (as Zn)	mg/L	APHA 23rd Ed.2017, 3111B	BDL (DL: 0.1)	5	15

Remarks: 1. pH & RFC done at Lab.

Page 2 of 4

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

SERVICES PVT. L1

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

<u>TEST REPORT</u>							
Test Report No.	: ELES/RAN/2023/0504	Report Release Date	: 06.05.2023				
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023				

Discipline : Che	mical		Group: Water	
Parameter	Unit	Test Protocol	Result	Regulatory Limit as per 1S 10500:2012
Pesticides				
Alachlor*	µg/L	АРНА	BDL (DL: 1.0)	20
Atrazine*	µg/L	АРНА	BDL (DL: 1.0)	2
Aldrin/Dieldrin*	µg/L	АРНА	BDL (DL: 0.01)	0.03
Alpha HCH*	µg/L	АРНА	BDL (DL: 0.001)	0.01
Beta HCH*	µg/L	APHA	BDL (DL: 0.01)	0.04
Butachlor*	µg/L	АРНА	BDL (DL: 10)	125
Chlorpyriphos*	µg/L	APHA	BDL (DL: 10)	30
Delta HCH*	µg/L	APHA	BDL (DL: 0.01)	0.04
2,4 dichlorophenoxyacetic acid*	μg/L	APHA	BDL (DL: 10)	30
DDT(0,p and p,p-isomers of DDT,DDE and DDD)*	µg/L	АРНА	BDL (DL: 0.5)	1
Endosulfan (alpha, beta, and sulphate)*	µg/L	АРНА	BDL (DL: 0.1)	0.4
Ethion*	µg/L	АРНА	BDL (DL: 0.5)	3.
Gamma HCH (Lindane)*	μg/L	АРНА	BDL (DL: 0.5)	2
Isoproturon*	µg/L	APHA	BDL (DL: 0.5)	9

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PLOT NO 30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) 657 NO:- 20AAECE9713D124

CINEERING SERVICES PVT. LTD

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

	TE	ST REPORT		
Test Report No.	: ELES/RAN/2023/0504	Report Release Date	: 06.05.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

Discipline : Bi	ological	Group : V	Water	And the second sec	ory Limit
Discipline . Di	ulogical	croup / mater		as per 1S 1	10500:2012
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
Total Coliform	Per 100 mL	IS 15185:2016; RA 2021	Not Detected	Chall not i	he detected
Escherichia Coli (E. Coli)	Per 100 mL	IS 15185:2016; RA 2021	Not Detected	Shall like	le detected
Discipline :	Chemical	Group :	Water	the second se	ory Limit 10500:2012
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible
Anionic Surfactants (as MBAS)*	mg/L	IS 3025 Part 68	BDL (DL: 0.1)	0,2	1.0
Mineral Oil*	mg/L	CL-6, IS: 3025 (P-39)	BDL (DL: 0.1)	1.0	No relaxation
Polynuclear Aromatic Hydrocarbons (PAH) ⁸	mg/L	APHA 23rd Edition	BDL (DL: 0.0001)	0.0001	No relaxation
Polychlorinated Biphenyls (PCB)*	mg/L	APHA 23 rd Edition	BDL (DL: 0.0005)	0.0005	No relaxation

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



****End of Report****

Rekha Laxena

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

Page 4 of 4

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ENVIRONMENTAL LABORATORIES & ENGINEERING SERVICES PVT.LTD.

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

Shrengdag-B Bauxite Mine-Environmental Monitoring Report

May 2023



CONTENT

Hind	alco Industries : Shrengdag B Bauxite Mine Environmental Monitoring Report	May 2023
	Shrengdag B Bauxite Mine	
	AMBIENT AIR QUALITY- CORE ZONE	
1	Mine Pit Quarry No 2B	
2	Near Baisbhatan Village	
3	Block 2A (Prohopat Village)	
4	Harup Block C (Proposed)	
	AMBIENT AIR QUALITY- BUFFER ZONE	
1	Near Banjari Village	
2	Near Pauri Village	
3	Near Harup Village	
4	Near Paintoli Village	





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

ENGINEERING SERVICES PVT, LTD. Email: info@elespl.co.in , eles.ranchi@amail.com



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

TES	T REPORT
1270	Demont Delense Date

Test Report No.	: ELES/RNC/2023/2279	Report Release Date	: 01.07.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04,2023	
ULR No.	: TC883923000001201F			

CUSTOMER DET/	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/1752 : Mine Pit Quarry No 2B Serengdag-B Bauxite Mines
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	(140.07ha) : 14.05.2023 to 15.05.2023 : 06.06.2023
Plant Status	: Operational	Type of Sample Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 06.06.2023 to 08.06.2023	Sample Condition	: Sealed & Preserved

M	ETEOROLOGICAL INFORMATION				
1	Average Temperature (°C) : 35	2	Barometric Pressure (mm	Hg) : 743	
3	Relative Humidity (%) 59	4	Weather Condition	: Clear	

NABL Accredited

Discipline :	Chemical	Group :	Group : Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	µg/m ¹	IS 5182 (Part-23): 2006; RA2022	60	100 (24hrs)		
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	33	60 (24hrs)		
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	10.2	80 (24hrs)		
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	23,7	80 (24hrs)		
Ozone (O ₃)	µg/m ³	1S 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)		
Ammonia (NH3)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m ¹	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)		
Lead (Pb)	µg/m ⁴	IS 5182 (Part-22): 2004; RA2019	0.017	1 (24hrs)		
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	2.7	06 (Annual)		

Enginee CUTTER' Reviewed by

Authorized Signatory Sinha Dr. Deependra

****End of Report**** Page 1 of 1

Telefinical Manager

Page 1 of 1 ELES Pol Ltd Toolinical Manager The Document stated as Test Report, it issued by the Laboratory under General Terms and Conditions, only on Company letter head in pre-approved format. The results shown in the Test Report refer or relates only 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 time of involvement only and within the limits of client's instructions. The Laboratory is responsible for all the information or data provided on the report, except the information which is provided by the client. The Report cannot be reproduced except in full and any part of the report is not taken out of context, without prior written approval of the Laboratory. The Report in full or in part shall not be published, advertise, used for any legal actions unless price permission has been secured from the Management of the Laboratory. Attention is drawn to the limitation of liability, compensation and jurisdiction issues. Any unauthorized alteration & falsification of the content or appearance of the Test Report is unlawful and offenders may be prosecuted to the fullest extent of the law. All the samples are retained for 30days from the Date of release/issue of the Test Report. The samples from Regulatory bodies are to be retained as specified. Any type of Observations or Complaints regarding the Reports shall he done within 15days from the Date of Test Report released/assued. After the time period stated before, no complaints will be accepted. The entire Time schedule mentioned in Test Report is in 24hours format. Abbreviation used; N/A (Not Applicable), BDL (Below Detection Limit), LDL (Lower Detection Limit).



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

ENGINEERING SERVICES PVT, LTD.

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

CIN: U749993H2018PT0711125

	TES	ST REPORT		
Test Report No.	: ELES/RNC/2023/2279	Report Release Date	: 01.07.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETA	alls	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Location	: ELES/RNC/2023/AA/1752 : Mine Pit Quarry No 2B Serengdag-B Bauxite Mines (140.07ha)
Plant Status	: Operational	Sampling Date Sample Received Date Type of Sample Sample Drawn By	: 14.05.2023 to 15.05.2023 : 06.06.2023 : Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 06.06.2023 to 08.06.2023	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFORMATION				_
1	Average Temperature (°C) : 35	2	Barometric Pressure (mm	1Hg) : 743	-
	Relative Humidity (%) : 59	4.	Weather Condition	: Clear	

Discipline : Chemical		Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene*	µg/m ³	1S 5182 (Part-11)2006;RA2017	<1.0	05(Annual)
Benzo (a) Pyrene*	ng/m ²	IS 5182 (Part-12)2004;RA2019	<0.5	01(Annual)

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



****End of Report****

D Authorized Signatory a Kumar Sinha Ph. D. Environments (Engg. ELES Pyt. Ltd. Tuchmoni Atanager

Page 1 of 1

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



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

ENGINEERING SERVICES FIT, LTD.



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

	TES	ST REPORT	
Test Report No.	: ELES/RNC/2023/2280	Report Release Date	: 01.07.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883923000001202F		

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/1753 : Near Baisbhatan Village Serengdag-B Bauxite Mines	
Address Plant Status	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sample Drawn By	(140.07ha) : 14.05.2023 to 15.05.2023 : 06.06.2023 : Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 06.06.2023 to 08.06.2023	Sample Condition	: Sealed & Preserved	

	Average Temperature (°C) : 35		Barometric Pressure (mm	Hg) ±743
3	Relative Humidity (%) : 59	4	Weather Condition	; Clear

NABL Accredited			in and the	
Discipline :	Chemical	Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	67	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	35	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	8.1	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	19.5	80 (24hrs)
Ozone (O3)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH3)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	0.015	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	2.1	06 (Annual)

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Authorized Signatory Sinha Dr.

****End of Report**** Page 1 of 1

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

ENGINEERING SERVICES FVT. LTD.

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

CIN: U7499804201897C011125

Test Report No.	: ELES/RNC/2023/2280	Report Release Date : 01.07.2023
Work Order No.	: 13612310218	Work Order Date : 21.04.2023

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CUSTOMER DETA	AILS	SAMPLE DETAILS	and the second has been
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/1753 : Near Baisbhatan Village Serengdag-B Bauxite Mines
Address	: Lohardaga, Jharkhand-835302	Sampling Date	(140.07ha) : 14.05.2023 to 15.05.2023
		Sample Received Date Type of Sample	: 06.06.2023 : Ambient Air
Plant Status	: Operational	Sample Drawn By	: ELES/DOC/SMPL/02
Period of Analysis	: 06.06.2023 to 08.06.2023	Sample Condition	: Sealed & Preserved

	Average Temperature (°C) : 35	12	Barometric Pressure (mm	(He) : 743
4	Average remperature (-C) . 55		and the second se	and a strate
3	Relative Humidity (%) : 59	4	Weather Condition	: Clear

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

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



****End of Report****

Authorized Signatory Dr. Deependra Kumar Sinna Ph. D. Environmental Erigg. ELES Pyl. Ltd. Tuchnical Managor

Page 1 of 1

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

ENGINEERING SERVICES PVT. LTD.

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



Test Report No.	: ELES/RNC/2023/2281	Report Release Date	: 01.07.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883923000001203F		

CUSTOMER DET/	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref, No, Location	:: ELES/RNC/2023/AA/1754 : Block 2A (Prohopat Village Serengdag-B Bauxite Mines
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	(140.07ha) : 14.05.2023 to 15.05.2023 : 06.06.2023
Plant Status	: Operational	Type of Sample Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 06.06.2023 to 08.06.2023	Sample Condition	: Sealed & Preserved

1	Average Temperature (°C) : 35	2	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%) : 59	4	Weather Condition	: Clear

NABL Accredited Group : Atmospheric Pollution Discipline : Chemical Result **Regulatory Limit Test Protocol** Parameter Unit Particulate Matter (PM10) µg/m IS 5182 (Part-23): 2006; RA2022 62 100 (24hrs) 33 60 (24hrs) Particulate Matter (PM2.5) µg/m³ IS 5182 (Part- 24): 2019 Sulphur Di-Oxide (SO2) $\mu g/m^3$ IS 5182 (Part-2): 2001; RA2022 6.7 80 (24hrs) $\mu g/m^3$ 80 (24hrs) IS 5182 (Part-6): 2006; RA2022. 15.2 Nitrogen Di-Oxide (NO2) µg/m³ Ozone (O₃) IS 5182 (Part-9): 1974; RA2019 <20.0 100 (Shrs) µg/m IS 5182 (Part-25): 2018 <10.0 400 (24hrs) Ammonia (NH₃) Carbon Monoxide (CO) mg/m³ IS 5182 (Part-10): 1999; RA2019 <1.0 2 (8hrs) µg/m Lead (Pb) IS 5182 (Part-22): 2004; RA2019 0.012 1 (24hrs) ng/m³ 1S 5182 (Part-26):2020 <6.0 20 (Annual) Nickel (Ni) ELES/AIR/SOP/01 2.0 06 (Annual) ng/m³ Arsenic (As)

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Dr. Defutionized Signatory Sinha Oh

****End of Report**** Page 1 of 1

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

Cile: U74993/H2018PTCD11125

Plant Status

ENGINEERING SERVICES PVT. LTD.

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

	TEST	REPORT	
Test Report No.	: ELES/RNC/2023/2281	Report Release Date	: 01.07.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
CUSTOMER DET	AILS	SAMPLE DETAILS	and the second second second
Customer Name	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Location	: ELES/RNC/2023/AA/1754 : Block 2A (Prohopat Village) Serengdag-B Bauxite Mines (140.07ha)
Audress	- Comercia par companya a so so a	Sampling Date Sample Received Date Type of Sample	: 14.05.2023 to 15.05.2023 : 06.06.2023 : Ambient Air

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MI	TEOROLOGIC	AL INFORMATION			
1	Average Temper	rature (°C) : 35	2	Barometric Press	are (mmHg) : 743
3	Relative Humidi	ity (%) : 59	4	Weather Conditio	n : Clear

Sample Drawn By

Discipline : Chemical		Group : Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene*	µg/m ⁸	IS 5182 (Part-11)2006;RA2017	<1,0	05(Annual)	
Benzo (a) Pyrene*	ng/m ³	1S 5182 (Part-12)2004;RA2019	<0.5	01(Annual)	

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



: Operational

****End of Report****

: ELES/DOC/SMPL/02

Authorized Signatory Dr. Deependra Kumar Sinha Ph. D. Environmental Engg. ELES Pvt. Ltd. Techninni Monager

Page 1 of 1

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

ENGINEERING SERVICES PVT. LTD.

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

TEST REPORT					
Test Report No.	: ELES/RNC/2023/2282	Report Release Date	: 01,07.2023		
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023		

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Location	: ELES/RNC/2023/AA/1755 : Harup Block C (Proposed) Serengdag-B Bauxite Mines (140.07ha)	
Plant Status	: Operational	Sampling Date Sample Received Date Type of Sample Sample Drawn By	: 14.05.2023 to 15.05.2023 : 06.06.2023 : Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 06.06.2023 to 08.06.2023	Sample Condition	: Sealed & Preserved	

1	Average Temperature (°C) : 35	2	Barometric Pressure (mm	(Hg) : 743
	Relative Humidity (%) : 59	4	Weather Condition	: Clear

Discipline : Chemical		Group : Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene*	µg/m ³	IS 5182 (Part-11)2006;RA2017	<1.0	05(Annual)	
Benzo (a) Pyrene*	ng/m ³	1S 5182 (Part-12)2004;RA2019	<0.5	01(Annual)	

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



****End of Report****

Dr. Deepended Signatory Sinha Ph. D. Environmental Engla ELES Pvs. Ltd. Tochmich Manager

Page 1 of 1

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

ENGINEERING SERVICES PVT. LTD.

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



TEST REPORT

Test Report No.	: ELES/RNC/2023/2282	Report Release Date	: 01.07.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
ULR No.	: TC883923000001204F			

CUSTOMER DET/	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/1755 : Harup Block C (Proposed) Serengdag-B Bauxite Mines	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	(140.07ha) : 14.05.2023 to 15.05.2023 : 06.06.2023	
Plant Status	: Operational	Type of Sample Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 06.06.2023 to 08.06.2023	Sample Condition	: Sealed & Preserved	

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	the second s			

1	Average Temperature (°C)	: 35	2	Barometric Pressure (mm	Hg) : 743	
3	Relative Humidity (%)	: 59	4	Weather Condition	: Clear	-

NABL Accredited

Discipline :	Chemical	Group :	Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	60	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	27	60 (24hrs)	
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	6.5	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	19.7	80 (24hrs)	
Ozorie (O3)	µg/m ²	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH3)	µg/m ³	1S 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hts)	
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	0.013	1 (24hrs)	
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)	

Reviewed by

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****End of Report****

Dr. Deependra Kumar Sinha

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PLOT ND-30, MANSAROVAR ENCLEVE TLIPUDANA HATIA RANCHI-204000 (JHARNHAND) GST NO - IMAGEESTIBULZA

NGINEERING SERVICES PUT_LTD. Email: (nfo@elespl.co.in , eles.romchi@omail.com



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

	TES	ST REPORT	
Test Report No.	: ELES/RNC/2023/2275	Report Release Date	: 01.07.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883923000001197F		

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/1748 : Near Banjari Village Serengdag-A Bauxite Mine	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 13.05.2023 to 14.05.2023 : 06.06.2023 : Ambient Air	
Plant Status	; Operational	Sample Drawn By	: ELES/DOC/SMPL/02	
Period of Analysis	± 06.06.2023 to 08.06.2023	Sample Condition	: Sealed & Preserved	

M	ETEOROLOGICAL INFORMATION				
i	Average Temperature (°C) : 35	2	Barometric Pressure (mm	Hg) : 743	
3	Relative Humidity (%) : 59	4	Weather Condition	: Clear	

NABL Accredited				
Discipline :	Chemical	Group	: Atmospheri	c Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	jug/m ³	1S 5182 (Part-23): 2006; RA2022	59	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	26	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m ³	1S 5182 (Part-2): 2001; RA2022	5.7	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m ³	1S 5182 (Part-6): 2006; RA2022	13,5	80 (24hrs)
Ozone (O1)	µg/m²	1S 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Anumonia (NH3)	ug/m²	IS 5182 (Part- 25); 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ⁷	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	0.005	(24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<5.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)

Reviewed by

Authorized Signatory Dr. Deependra Kumar Sinha Designation of the second

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Page 1 of 1

ELES P. J. Ud. Tech - Manager The Document stated as Test Report, seconderby the Laboratory onder General Terms and Conditions, only on Company latter head in pre-approved format. The results shaws in the Test Report refer to relates only to the jobhandysis done to the Laboratory only. The information stated in the Test Report reflects the distings done to the Laboratory at the time of involvement only and within the linkux of client's instructions. The Laboratory is responsible for all the information or data provided on the report. except the unkernation which is provided by the client. The Report connot be reproduced except in full and any part of the report is not taken out of contest, without prior written approval of the Laboutory. The Report in fail or in part shall not be published, advertise, used for any legal attitute unless prior permission has been secured from the Management of the Laboratory. Attention is drawn to the limitation of liability, compensation and jurisdiction mores. Any creativerized alteration & laboration of the control or appearance of the Test Report in uninvital and attenders may be prosecuted to the fullest extent of the law. All the samples are retained for 30days from the Date of release/basic of the Test Report. The samples from Regulatory bodies are to be retained as specified. Any type of Observations or Complaints regarding the Reports shall be done within (idags from the Dese of Test Report refersed mond). After the time partial trated before, no compliants will be accepted. The entire Time schedule mentioned in Tell Renard is in 24 yours Termat. Abbreviation used: K/A (Vol Applicable), BDL (Below Descende Luton), LUL (Lower Descende Luton).



FLOT NO-36, MANSAROVAR ENGLAVE TUPUDANA HATIA RANCHI-B34003 (JHARKHAND) G57 NO- 20AAECE97130124

GINXERING SERVICES PVT. LVD. Email: Info@elesul.co.in , eles.ranchi@amail.com

Phone no.1 0651-2290103 Website / www.elesol.co.In

	TEST	REPORT	
Test Report No.	: ELES/RNC/2023/2275	Report Release Date	: 01.07/2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
CUSTOMER DET/	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/1748 : Neat Banjari Village Serengdag-A Bauxite Mines
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 13.05.2023 to 14.05.2023 : 06.06.2023 : Ambient Air
Plant Status	: Operational	Sample Drawn By	: ELES/DOC/SMPL/02
Period of Analysis	: 06.06.2023 to 08.06.2023	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFORMATION			
-	Average Temperature (°C) : 35	2	Barometric Pressure (mml	lg) : 743
	Relative Humidity (%) : 59	4	Weather Condition	: Clear

Discipline : Chemical		Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene*	ug/m ²	IS 5182 (Part-11)2006;RA2017	<1.0	05(Annual)
Benzo (a) Pyrene*	ng/m ⁴	IS 5182 (Part-12)2004;RA2019	<0.5	01(Annual)

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



****End of Report****

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

Page 1 of 1

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PLOT NO-30, MANSAROVAR ENCLAVE, TVRUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:-253AECE97190.124

CW: UT-INENH2018FTC011125

Emaili (nfo@elexpl.co.in , elex.conchr.Wannall.com Phone no.: 0651-2290103 Website 7 www.elasoi.co.in



Test Report No.	: ELES/RNC/2023/2276	Report Release Date	: 01.07.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
ULR No.	: TC883923000001198F			

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/1749 : Near Pauri Village Serengdag-A Bauxite Mines	
Address	: Lohardaga, Jharkhund-835302	Sampling Date Sample Received Date Type of Sample	: 13.05.2023 to 14.05.2023 : 06.06.2023 : Ambient Air	
Plant Status	: Operational	Sample Drawn By	: ELES/DOC/SMPL/02	
Period of Analysis	: 06,06,2023 to 08,06,2023	Sample Condition	: Sealed & Preserved	

110	Average Temperature (°C)	: 35	2	Barometric Pressure (mmHg)	: 743
-	Relative Humidity (%)	: 59	4	Weather Condition	: Clear

NABL Accredited				
Discipline :	Chemical	Group :	Atmospheri	e Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	57	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	34	60 (24tirs)
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	6.8	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m ³	1S 5182 (Part-6): 2006; RA2022	13.3	80 (24hrs)
Ozone (O ₂)	µg/m ²	1S 5182 (Part-9): 1974; RA2019	<20.0	100 (Shrs)
Ammonia (NH ₃)	µg/m ³	IS 5182 (Part- 25); 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	0.10	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6,0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	2.2	06 (Annual)

Reviewed by

Authorized Signatory Deependra Kumar Sinha Ðr. PH D Faviliant Lub Engle

Page 1 of 1

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Phone no.: 0651/2290103

Website ; www.elesol.co.in

	TEST	REPORT	
Test Report No.	: ELES/RNC/2023/2276	Report Release Date	: 01.07.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
CUSTOMER DET/	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/1749 : Near Pauri Village Serengdag-A Bauxite Mines
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 13.05.2023 to 14.05.2023 : 06.06.2023 : Ambient Ait
Plant Status	i: Operational	Sample Drawn By	: ELES/DOC/SMPL/02
Period of Analysis	: 06.06.2023 to 08.06.2023	Sample Condition	: Sealed & Preserved

METEOR	OLOGICAL INFORMATION			
	ige Temperature (°C) : 35	2	Barometric Pressure (mm	Hg) : 743
	ve Humidity (%) : 59	4	Weather Condition	: Clear

Discipline : Chemical		Group : Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene®	µg/m ³	IS 5182 (Part-11)2006;RA2017	<1.0	05(Annual)	
Benzo (a) Pyrene*	ng/m ²	IS 5182 (Part-12)2004;RA2019	<0.5	Q1(Annual)	

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



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Authorized Signatory Or, Deependre N., no., Sinha Ph.D. Styrenning 2099 EXES 5. 115 Team., Lanager

Page 1 of 1

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PLDT NO-30, MANSAROVAR ENCLAVE, TLMJDANA HATLA, RANCHI-854003 (JHARNHAND) GST ND- JO44ECEE7130123

Eman inte Belesal.co.in , electronchi Bauaaii.com Phone no.: 0651-1290103 Websile : www.stespl.co.in



		ST REPORT		
Test Report No.	: ELES/RNC/2023/2277	Report Release Date	: 01.07.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
ULR No.	: TC883923000001199F			

CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name	Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/1750 : Near Harup Village Serengdag-A Bauxite Mines
Address	Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 13.05.2023 to 14.05.2023 : 06.06.2023 : Ambient Air
Plant Status	: Operational	Sample Drawn By	: ELES/DOC/SMPL/02
Period of Analysis	: 06,06,2023 to 08,06,2023	Sample Condition	: Sealed & Preserved

_	ETEOROLOGICAL INFORM Average Temperature (°C) :	and the second se	2	Barometric Pressure (mmHg)	: 743
_	Relative Humidity (%)	59	4	Weather Condition	: Clear

NABL Accredited				W. H. of Los		
Discipline :	Chemical	Group	Group : Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	59	100 (24hrs)		
Particulate Matter (PM2.5)	µg/m³	1S 5182 (Part- 24): 2019	31	60 (24hrs)		
Sulphur Di-Oxide (SO2)	ug/m ³	IS 5182 (Part-2): 2001; RA2022	5.7	80 (24hrs)		
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	13.2	80 (24hrs)		
Ozone (O ₂)	µg/m ³	1S 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)		
Ammonia (NH ₃)	µg/m ³	1S 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m ²	1S 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)		
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	<0.002	1 (24hrs)		
Nickel (Ni)	ng/m ³	1S 5182 (Part-26):2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)		

Reviewed by

Sinhä

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Page 1 of 1

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The Doesment striled at Trai Report, is dissed by the Laboratory under General Terms and Codditions, only an Company letter letal in pie approved format. The results shown in the Test Report relates only to the job/analysis dove by the Laboratory under General Terms and Codditions, only an Company letter letal in pie approved format. The results shown in the Test Report relates only in the job/analysis dove by the Laboratory only. The information cased on the Test Report relates the findings done by the Laboratory at the time of involvement only on the other structures. The Laboratory is responsible for all the information of done to the report, except the information which is provided to the client. The Report control be reportated except in fill and any part of the report is not taken out of context, without prior ornitil approval of the Laboratory. After them is drawn to the laboratory in the plantant of the tablet of the Laboratory. After them is drawn to the laboratory and provided in the tablet estimation states of the Test Report to undownline the laboratory before are to be related as specifies. Any type of Chierrations of Compliants regording the Report shall be noted to be related as used. After the time period as specifies. Any type of Chierrations of Compliants regording the Report shall be interested as used. After the time period and before, no compliants will be accepted. The entire Time stabeluic neuronal in Test Report in 24bourd Serma. Abherentian and After the time Detection Limits.

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

	TEST	REPORT	
Test Report No.	: ELES/RNC/2023/2277	Report Release Date	: 01.07.2023
Work Order No.	: 13612310218	Work Order Date	; 21.04.2023
CUSTOMER DET/	AILS	SAMPLE DETAILS	
Customer Name	2 Hindalco Industries Limited.	Sample Ref. No. Location	: ELES/RNC/2023/AA/1750 : Near Harup Village Serengdag-A Bauxite Mines
Address	: Lohurdaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 13.05.2023 to 14.05.2023 : 06.06.2023 : Ambient Air
Plant Status	: Operational	Sample Drawn By	: ELES/DOC/SMPL/02
Period of Analysis	: 06,06.2023 to 08.06,2023	Sample Condition	: Sealed & Preserved

MI	TEOROLOGICAL INFORMATION				
1	Average Temperature (°C) : 35	2	Barometric Pressure (mm	iHg) : 743	
_	Relative Humidity (%) : 59	4	Weather Condition	: Clear	_

Discipline : Chemical		Group : Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene®	µg/m ³	IS 5182 (Part-11)2006;RA2017	<1.0	05(Annual)	
Benzo (a) Pyrene*	ng/m²	IS 5182 (Part-12)2004;RA2019	<0.5	01(Annual)	

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

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****End of Report****

Authorized Signatory Dr. Deependra Kumar Sinha 9n. D. Environmental Erigg ELES Por List Tell Manager

Page 1 of 1

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	TES	T REPORT
Test Report No.	: ELES/RNC/2023/2278	Report Release Date : 01.07.2023
Work Order No.	: 13612310218	Work Order Date : 21.04.2023
ULR No.	: TC883923000001200F	
CUSTOMER DET.	AILS	SAMPLE DETAILS
Customer Mame	· Hindalao Inductriase Limitad	Samela Daf Nov + ELES/DNC/2023/AA/1751

Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/1751
		Location	: Near Paintoli Village
			Serengdag-A Bauxite Mines
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 13.05.2023 to 14.05.2023
		Sample Received Date	: 06,06,2023
	1	Type of Sample	: Ambient Air
Plant Status	: Operational	Sample Drawn By	: ELES/DOC/SMPL/02
Period of Analysis	: 06,06.2023 to 08.06.2023	Sample Condition	: Sealed & Preserved

M	ETEOROLOGICAL INFORMATION				
1	Average Temperature (°C) : 35	2	Barometric Pressure (mm	Hg) : 743	
3	Relative Humidity (%) : 59	4	Weather Condition	: Clear	

NABL Accredited				
Discipline :	Chemical	Group	: Atmospheri	e Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m³	IS 5182 (Part-23): 2006; RA2022	60	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	29	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	7.5	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m ³	18 5182 (Part-6): 2006; RA2022	12.5	80 (24hrs)
Ozone (O ₃)	µg/m ³	18 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Aramonia (NH ₂)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	ug/m ³	IS 5182 (Part-22): 2004; RA2019	0.016	T (24hrs)
Nickel (Ni)	ng/m ³	1S 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ²	ELES/AIR/SOP/0)	<2.0	06 (Annual)

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Authorized Signator

Sinha

****End of Report****

Foo Pn 1 Manager ELES PVI, LIU TAU

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PLOT NO-30 MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO: 2044ECE9713D124 Email: Info@elesal.co.in . eles.ranchi@gmail.com

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

	TEST	REPORT	
Test Report No.	: ELES/RNC/2023/2278	Report Release Date	: 01.07.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04,2023
CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindateo Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/1751 : Near Paintoli Village Serengdag-A Bauxite Mines
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 13.05.2023 to 14.05.2023

		Sample Received Date	: 06.06,2023
		Type of Sample	: Ambient Air
Plant Status	: Operational	Sample Drawn By	: ELES/DOC/SMPL/02
Period of Analysis	: 06.06.2023 to 08.06.2023	Sample Condition	: Sealed & Preserved

Average Temperature (°C) : 35	2	Barometric Pressure (mm	(Hg) : 743
Relative Humidity (%) : 59	4	Weather Condition	: Clear

Discipline	: Chemical	Group	: Atmospheri	e Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene®	µg/m ³	1S 5182 (Part-11)2006;RA2017	<1.0	05(Annual)
Benzo (a) Pyrene®	ng/m ³	1S 5182 (Part-12)2004;RA2019	<0,5	01(Annual)

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

11221 Reviewed by

**** End of Report****

Authorized Signatory Dr. Deependra Kumar Sinha Ph. D. Environmental Eagg ELES Pvi. US, Tacun

Page 1 of 1

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ENVIRONMENTAL LABORATORIES & ENGINEERING SERVICES PVT.LTD.

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

Shrengdag-B Bauxite Mine-Environmental Monitoring Report

June 2023



CONTENT

Hind	alco Industrics : Shrengdag B Bauxite Mine	Environmental Monitoring Report	June 2023
	Shrengda	g B Bauxite Mine	
	AMBIENT AIR QUALITY- CORE ZONE		
1	Mine Pit Quarry No 2B		
2	Near Baisbhatan Village		
3	Block 2A (Prohopat Village)		
4	Harup Block C (Proposed)		
	AMBIENT AIR QUALITY- BUFFER ZO	NE	
1	Near Banjari Village		
2	Near Pauri Village		
3	Near Harup Village		
4	Near Paintoli Village		
F	DRINKING WATER ANALYSIS	+	





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ENGINEERING SERVICES PVT. LTD





CIN-1/7471-9/H2018FTC011115

	TE	ST REPORT	
Test Report No.	: ELES/RNC/2023/2791	Report Release Date	: 29.07.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883923000001656F		

CUSTOMER DETA	uls	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/1971 : Mine Pit Quarry No 2B Serengdag-B Bauxite Mines
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	(140.07ha) : 13.06.2023 to 14.06.2023 : 17.06.2023
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 17.06.2023 to 27.06.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

	TEOROLOGICAL INFORMATION	12	Barometric Pressure (mmh	Te) : 742	-
£.	Average Temperature (°C) : 33		the second se		_
3	Relative Humidity (%) : 59	4	Weather Condition	: Clear	

NABL Accredited Discipline :	Chemical	Group :	: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	67	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	38	60 (24hrs)	
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	13.8	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	22.9	80 (24hrs)	
Ozone (O3)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH3)	µg/m ³	IS 5182 (Part-25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	0.012	1 (24hrs)	
Nickel (Ni)	ng/m ³	1S 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	2.1	06 (Annual)	

Reviewed by

****End of Report****

Authorised Signatory Jr. Deependra Kumar Sinha Ph. D. Environmental Enge

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

ENGINEERING SERVICES PVT. LTD.

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

	TE	ST REPORT	
Test Report No.	: ELES/RNC/2023/2791	Report Release Date	: 29.07.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

CUSTOMER DETA	AILS	SAMPLE DETAILS	and the second second second
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/1971 ; Mine Pit Quarry No 2B Serengdag-B Bauxite Mines
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	(140.07ha) : 13.06.2023 to 14.06.2023 : 17.06.2023
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 17.06.2023 to 27.06.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

METEOR	OLOGICAL INFORMATION	100		
1 Averas	ge Temperature (°C) : 33	2	Barometric Pressure (mm	Hg) : 742
	ve Humidity (%) : 59	4	Weather Condition	: Clear

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

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



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

Page 1 of 1

****End of Report****

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

ENGINEERING SERVICES PVT. LTD.

Phane no.: 0651-2290103

Website : www.elespl.co.in



ON: U74899Ht2818PTC011125

	TEST	REPORT	
Test Report No.	: ELES/RNC/2023/2792	Report Release Date	: 29.07.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883923000001657F		
CUSTOMER DET.	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	t ELES/RNC/2023/AA/1972 Near Baisbhatan Village Serengdag-B Bauxite Mines
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	(140.07ha) : 13.06.2023 to 14.06.2023 : 17.06.2023
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02

Period of Analysis	: 17.06.2023 to 27.06.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved
METEOROLOGIC	AL INFORMATION		
1 Augroup Temps	22 · ///// enume	2 Descenation Descent	(mmlla) . 747

1	Average Temperature (°C) : 33	2	Barometric Pressure (mml-	lg) : 742	-
3	Relative Humidity (%) ± 59	4	Weather Condition	: Clear	

Discipline :	Chemical	Group :	Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	60	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	32	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	7.4	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	22.7	80 (24hrs)	
Ozone (O3)	µg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Antmonia (NH3)	μg/m ²	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	0.011	1 (24hrs)	
Nickel (Ni)	ng/m [®]	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m ¹	ELES/AIR/SOP/01	<2.0	06 (Annual)	



****End of Report****

Authorised Signatory **Dr. Deependra Kumar Sinha**

Ph. D. Environmental Engg.

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



PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) 65T NO:- 20AAECE97130124

ENGINEERING SERVICES PVT. LTD.

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

CIN: U74995/H2018PTC011125

	TES	ST REPORT		
Test Report No.	: ELES/RNC/2023/2792	Report Release Date	: 29.07.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET.	AILS	SAMPLE DETAILS	
Customer Name Address	: Hindalco Industries Limited : Löhardaga, Jharkhand-835302	Sample Ref. No. Location Sampling Date	: ELES/RNC/2023/AA/1972 : Near Baisbhatan Village Serengdag-B Bauxite Mines (140,07ha) : 13.06.2023 to 14.06.2023
Mines Status	: Operational	Sample Received Date Type of Sample Sampling Procedure	: 17.06.2023 : Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 17.06.2023 to 27.06.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

METEOROLOGICAL INFORMATION

	Average Temperature (°C) : 33	2	Barometric Pressure (mm	Hg) : 742	
3	Relative Humidity (%) : 59	4	Weather Condition	: Clear	

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

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



****End of Report****

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

Page 1 of 1

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) G5T NO:- 20AAECE971301Z4

ENGINEERING SERVICES PVF. LTD.



21N-U749000H2018PF(2011125

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

	TE	ST REPORT	
Test Report No.	: ELES/RNC/2023/2793	Report Release Date	: 29.07.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883923000001658F		

CUSTOMER DET.	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/1973 : Block 2A (Prohopat Village) Serengdag-B Bauxite Mines
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	(140.07ha) : 13.06.2023 to 14.06.2023 : 17.06.2023
Mines Status	: Operational	Type of Sample Sampling Procedure Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 17.06.2023 to 27.06.2023	Sample Condition	: Sealed & Preserved

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

Discipline :	Chemical	Group :	oup : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	68	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	37	60 (24hrs)	
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	7.3	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	18.6	80 (24hrs)	
Ozone (O3)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH3)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	0.008	1 (24hrs)	
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)	

Reviewed by

Authorised Signatory

****End of Report****

Jr. Deependra Kumar Sinha Ph D

Page 1 of 1 ELES PvL Ltd. Technical Manager The Document stated as Test Report, is issued by the Laboratory under General Terms and Conditions, only on Company letter head in pre-approved format. The results shown in the Test Report refer or relates only 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 time of involvement only and within the limits of client's instructions. The Laboratory is responsible for all the information or data provided on the report, except the information which is provided by the client. The Report cannot be reproduced except in fall and any part of the report is not taken out of context, without prior written approval of the Laboratory. The Report in full or in part shall not be published, advertise, used for any legal actions unless prior permission has been secured from the Management of the Laboratory. Attention is drawn to the limitation of limbility, compensation and jurisdiction issues. Any unauthorized alteration & falsification of the content or appearance of the Test Report is unlawful and offenders may be prosecuted to the fullest extent of the law. All the samples are retained for 30days from the Date of release/issue of the Test Report. The samples from Regulatory bodies are to be retained as specified. Any type of Observations or Complaints regarding the Reports shall be done within 15days from the Date of Test Report released/issued. After the time period stated before, no complaints will be accepted. The entire Time schedule mentioned in Test Report is in 24hnurs format. Abbreviation used: N/A (Not Applicable); BDL (Below Detection Limit), LDL (Lower Detection Limit).



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

ENGINEERING SERVICES PVT. LTD.

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

CWI: U749930H2018FTC011125

	TE	ST REPORT		
Test Report No.	: ELES/RNC/2023/2793	Report Release Date	: 29.07.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	_

CUSTOMER DET/	AILS	SAMPLE DETAILS	
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Location	: ELES/RNC/2023/AA/1973 : Block 2A (Prohopat Village) Serengdag-B Bauxite Mines (140.07ha)
Mines Status	: Operational	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 13.06.2023 to 14.06.2023 : 17.06.2023 : Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	= 17.06.2023 to 27.06.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

MI	ETEOROLOGICAL INFORMATION			Den 700	_
1	Average Temperature (°C) : 33	2	Barometric Pressure (mm	Hg) : 742	
3	Relative Humidity (%) : 59	4	Weather Condition	: Clear	

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

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



****End of Report****

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

Page 1 of 1

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

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

ENGINEERING SERVICES PVT. 278



Test Report No.	: ELES/RNC/2023/2794	Report Release Date	: 29.07.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883923000001659F		

CUSTOMER DET.	AILS	SAMPLE DETAILS	
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Location Sampling Date Sample Received Date	: ELES/RNC/2023/AA/1974 : Harup Block C (Proposed) Serengdag-B Bauxite Mines (140.07ha) : 13.06.2023 to 14.06.2023 : 17.06.2023
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 17.06.2023 to 27.06.2023	Sample Drawn By Sample Condition	: ELES Pvt, Ltd. : Sealed & Preserved

1	Average Temperature (°C) : 33	2	Barometric Pressure (mm	Hg) : 742	
3	Relative Humidity (%) : 59	the second se	Weather Condition	: Clear	

Discipline :	Discipline : Chemical Group			
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	55	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	1S 5182 (Part- 24): 2019	23	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m ³	1S 5182 (Part-2): 2001; RA2022	7.3	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	23,9	80 (24hrs)
Ozone (O3)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (Shrs)
Ammonia (NH ₃)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ²	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	0.008	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)



METEOROLOGICAL INFORMATION

Authorised Signatory

****End of Report****

Dr. Deependra Kumar Sinha

Page 1 of 1

Ph. D. Environmental Engg.

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

ENGINEERING SERVICES PVT. LTD.

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

Cile: U74999/H2018PTC011123

	TE	ST REPORT		
Test Report No.	: ELES/RNC/2023/2794	Report Release Date	: 29.07.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	_

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/1974 : Harup Block C (Proposed) Serengdag-B Bauxite Mines	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	(140.07ha) : 13.06.2023 to 14.06.2023 : 17.06.2023	
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 17,06.2023 to 27.06.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

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

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

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



****End of Report****

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

Page 1 of 1

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PLOT NO-30, MANSAROVAR ENGLAVE, TUPUDANA PATIA RANCHI-234903 (JRARKRAND) GST NO:- 20AABCE57130124

ENGINEERING SERVICES I



Phone no.: 0851-2290103 Websitte 2 Wahak elegeli ba An

Test Report No.	: ELES/RNC/2023/2787	Report Release Date	: 29.07.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
ULR No.	: TC883923000001652F			

CUSTOMER DET/	AILS	SAMPLE DETAILS	5
Customer Name	; Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/1967 : Near Banjari Village Serengdag-A Bauxite Mines
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 12.06.2023 to 13.06.2023 : 17.06.2023 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Operational	Sample Drawn By	: ELES Pyt. Ltd.
Period of Analysis	: 17.06.2023 to 27.06.2023	Sample Condition	: Sealed & Preserved

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

NABL Accredited				
Discipline :				e Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	55	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	28	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	6.1	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	11.2	80 (24hrs)
Ozone (O3)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (Shrs)
Ammonia (NH3)	µg/m ³	IS 5182 (Part- 25): 2018	<10,0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	0.007	1 (24hrs)
Nickel (Ni)	og/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)

Ēħ Reviewed by

Authorised Signatory Dr. Deependra Kumar Sinhu Ph. D. Environmental Endo

****End of Report****

Page 1 of 1 ELES Pvt. Ltd. Technical Manager The Document stated as Test Report, is issued by the Laboratory under General Terms and Conditions, only as Company letter head in pre-approved formal. The results shown in the Test Report refer or relates only to the job/analysis done by the Laboratory only. The information matted on the Test Report reflects the findings done by the Laboratory of the time of involvement only and within the limits of client's instructions. The Laboratory is responsible for all the information of data provided on the report, except the information which is provided by the client. The Report cannot be reproduced except in full and any part of the report is not taken out of context, without provwritten approval of the Laboratory. The Report in full or in part shall not be published, advertise, used for any legal actions soless prior permission has been around from the Management of the Laboratory Attention is drawn to the fimitation of Inbility, compensation and jurisdiction issues. Any inmotherized alteration & field fication of the content or appearance of the Tmi Report is unlawful and offenders may be prosecuted to the fullest extent of the law. All the samples are retained for 30days from the Date of reicase/issue of the Test Report. The amples from Regulatory bodies are to be retrined as specified. Any type of Observations or Complaints regarding the Reports shall be done within 15days from the Date of Test Report released/assued. After the time period stated before, no complaints will be accepted. The entire Time sebedule mentioned in Test Report is in 24inueri format, Abbreviation und. N/A (Not Applicable), BDL (Below Detection Limit), LDL (Lower Detection Limit).



ENVIRONMENTAL LABORATORIES & ENGINEERING SERVICES PVT. LTD.

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA. HATTA, RANCHI-834003 (JHARNHAND) GST.NO:- Z04AE0E971301Z4

Email: Info@elespl.co.in . eles.ranchi@amali.com Phone no.: 0551-2290103 Website : www.eleipl.co.in

	TEST	REPORT	
Test Report No.	: ELES/RNC/2023/2787	Report Release Date	: 29.07.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
CUSTOMER DET/	AILS	SAMPLE DETAILS	
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample	: ELES/RNC/2023/AA/1967 : Near Banjari Village Serengdag-A Bauxite Mines : 12.06.2023 to 13.06.2023 : 17.06.2023 : Ambient Air
Mines Status	: Operational	Sampling Procedure Sample Drawn By	: ELES/DOC/SMPL/02 : ELES Pyt. Ltd.
Period of Analysis	: 17.06.2023 to 27.06,2023	Sample Condition	: Sealed & Preserved

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

Discipline : Chemical Group			: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene®	µg/m³	1S:5182 (Part-11): 2006;RA2017	<1.0	05(Annual)	
Benzo (a) Pyrene*	ng/m ³	IS:5182 (Part-12): 2004;RA2019	<0.5	01(Annual)	

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



****End of Report****

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

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Email: info@elesor.co.in , eles ronchi@omail.com Phone no.: 0652-2290103 Website : www.elesor.co.in

	TE	ST REPORT		
Test Report No.	: ELES/RNC/2023/2788	Report Release Date	: 29.07.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
ULR No.	: TC883923000001653F			

CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/1968 ; Near Pauri Village Serengdag-A Bauxite Mine
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 12.06.2023 to 13.06.2023 : 17.06.2023 : Ambient Air
Mines Status	: Operational	Sampling Procedure Sample Drawn By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 17.06,2023 to 27,06.2023	Sample Condition	: Sealed & Preserved

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

NABL Accredited	Chamberland .	Group	Atmospheri	e Pollution
Discipline :	Unit	Test Protocol	Result	Regulatory Limit
Parameter Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	60	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ¹	IS 5182 (Part- 24): 2019	36	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m ³	1S 5182 (Part-2): 2001; RA2022	7.3	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	15.5	80 (24hrs)
Ozone (O ₃)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	15 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	0.10	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2,0	06 (Annual)

Ene Reviewed by

Authorised Signatory Dr. Deependra Kumar Sinha Ph. D. Equipamontol E. 33 ELES Pvt. Ltd. Technical Manager

Page 1 of 1

****End of Report****

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ENGINEERING SERVICES FVT. LTD.

Email: info@elespl.co.in , eles.rprichi@qmail.com Phone no.: 0651-2290103 Website : www.elespl.oz.in

	TEST	REPORT	
Test Report No.	: ELES/RNC/2023/2788	Report Release Date	: 29.07.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
CUSTOMER DET/	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/1968 : Near Pauri Village Serengdag-A Bauxite Mines
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 12.06.2023 to 13.06.2023 : 17.06.2023 : Ambient Air
Mines Status	: Operational	Sampling Procedure Sample Drawn By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 17.06.2023 to 27.06.2023	Sample Condition	: Sealed & Preserved

ME	TEOROLOGICAL INFORMATION			
	Average Temperature (°C) : 33	2	Barometric Pressure (mml-	lg) : 742
	Relative Humidity (%) : 59	4	Weather Condition	: Clear

Discipline : Chemical		Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene*	µg/m ³	IS:5182 (Part-11): 2006;RA2017	<1.0	05(Annual)
Benzo (a) Pyrene*	ng/m ³	1S:5182 (Part-12): 2004;RA2019	<0.5	01(Annual)

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



****End of Report****

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

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ENGINEERING SERVICES PIT. LTD

Email: jato Seleto, co. la , Man Janchi Gamail.com Phone no.: 0651-2390103 Website - www.elespi.co.in



Test Report No.	: ELES/RNC/2023/2789	Report Release Date	: 29.07,2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883923000001654F	Contraction of the second second	

CUSTOMER DET/	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/1969 : Near Harup Village Serengdag-A Bauxite Mines
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 13.06.2023 to 14.06.2023 : 17.06.2023 : Ambient Air
Mines Status	: Operational	Sampling Procedure Sample Drawn By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 17.06.2023 to 27.06.2023	Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION

1	Average Temperature (°C)	: 32	2	Barometric Pressure (mmHg)	- 5
3	Relative Humidity (%)	: 59	-4	Weather Condition	12

NABL Accredited				B. H. A.		
Discipline :	Chemical	Group : Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	51	100 (24hrs)		
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	27	60 (24hrs)		
Sulphur Di-Oxide (SO2)	µg/m ³	1S 5182 (Part-2): 2001; RA2022	6.4	80 (24hrs)		
Nitrogen Di-Öxide (NOz)	µg/m ³	1S 5182 (Part-6): 2006; RA2022	15.3	80 (24hrs)		
Ozonie (O3)	µg/m ²	1S 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)		
Ammonia (NH ₂)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)		
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	< 0.002	1 (24hrs)		
Nickel (Ni)	ng/m ²	1S 5182 (Part-26):2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)		

Reviewed by

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Anthorised Signatory Or, Deependra Kumar Sinha Ph. D. Environmental English ELES Pvt. Ltd., Technical Manager

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PLOT NO-S0, MANSAROVAR ENCLAVE, TURUDANA HATIA RANCHI-E34003 (IHARKHAND) GRT.NO.- JUAAECE9713D124

Email: Info@elesal.co.in . eles.ranchl@gmail.com Phone no.: 0651-2290103 Website : www.elestil.co.in

Test Report No.	; ELES/RNC/2023/2789	Report Release Date	: 29.07.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/1969 : Near Harup Village Serengdag-A Bauxite Mines	
Address Mines Status	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 13.06,2023 to 14.06,2023 : 17.06,2023 : Ambient Air : ELES/DOC/SMPL/02	
	and some state of the second	Sample Drawn By	: ELES Pvt, Ltd.	
Period of Analysis	: 17.06.2023 to 27.06.2023	Sample Condition	: Sealed & Preserved	

MI	TEOROLOGICAL INFORMATION			
	Average Temperature (°C) ; 32	2	Barometric Pressure (mm	Hg) : 742
	Relative Humidity (%) : 59	4	Weather Condition	; Clear

Discipline : Chemical		Group	: Atmospheri	e Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene#	µg/m ³	1S:5182 (Part-11): 2006;RA2017	<1,0	05(Annual)
Benzo (a) Pyrene*	ng/m ¹	IS:5182 (Part-12): 2004;RA2019	<0.5	01(Annual)

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



**** End of Report****

Authorised Signatory **Jr. Deependra Kumar Sinna** Ph. D. Environmental Engg. ELES Pvt. Ltd. Technical Manager

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PLOT NO-30, MANSAROVAR ENGLAVE, TURUDANA HATIA RANCHI-E34003 (INARKHAND) GST NO: - 30AABCE9713D124

ENGINEERING SERVICES PVT. ATC. Email, Info dialosal co.in , elas ranga Elamai trut



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

	TE	ST REPORT	
Test Report No.	: ELES/RNC/2023/2790	Report Release Date	: 29.07.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883923000001655F		

CUSTOMER DET.	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/1970 : Near Paintoli Village Serengdag-A Bauxite Mine:
Address	: Lohardaga, Jharkhand-835302 : Operational	Sampling Date Sample Received Date Type of Sample Sampling Procedure Sample Drawn By	: 13.06.2023 to 14.06.2023 : 17.06.2023 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Mines Status			
Period of Analysis	: 17.06.2023 to 27.06.2023	Sample Condition	: Sealed & Preserved

L.	Average Temperature (°C) : 32	2	Barometric Pressure (mmHg) ; 742
3	Relative Humidity (%) : 59	4	Weather Condition	: Clear

NABL Accredited				
Discipline :	Chemical	Group	Atmospheri	c Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23); 2006; RA2022	54	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	1S 5182 (Part- 24): 2019	25	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	6.7	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	15.9	80 (24hrs)
Ozone (O3)	µg/m ³	IS 5182 (Part-9); 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	15 5182 (Part-10): 1999; RA2019	<1.0	2 (Shrs)
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	0.011	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ²	ELES/AIR/SOP/01	<2.0	06 (Annual)

Reviewed to

A Jin 4

Authorised Signatory Jr. Deependra Kumar Sinh Ph. D. Environmental Enco

****End of Report****

ELES Pvt, Ltd, Technical Manager

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PLOT NO-36, MANBAROVAR ENCLAVE ("JEJDANA HATIA, RANCHI-BEGICE (PARKHAND) GET NG- 204420597130124

ENGINEERING SERVICES PUT, LTD.

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

	TE	ST REPORT		
Test Report No.	: ELES/RNC/2023/2790	Report Release Date	: 29.07.2023	-
Work Order No.	: 13612310218	Work Order Date	: 21.04,2023	

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Location Sampling Date Sample Received Date	: ELES/RNC/2023/AA/1970 : Near Paintoli Village Serengdag-A Bauxite Mines : 13.06.2023 to 14.06.2023 : 17.06.2023	
Mines Status : Operational Period of Analysis : 17.06.2023 to 27.06.2023		Type of Sample Sampling Procedure Sample Drawn By Sample Condition	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd. : Sealed & Preserved	

MI	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 32	2	Barometric Pressure (mmHg	; 742
3	Relative Humidity (%) : 59	4	Weather Condition	: Clear

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

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



---*End of Report****

Authorised Signatory Jr. Deependra Kumar Sinhe Ph. D. Environmental Engg. ELES Pvt. Ltd., Technice) Manager

Page 1 of 1

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

CEERENC SERVICES PVT, LTD.

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

TEST REPORT				
Test Report No.	: ELES/RNC/2023/3389	Report Release Date	: 09.09.2023	
Work Order No.	; 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET/	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/3013 : Mine Pit Quarry No 2B Serengdag-B Bauxite Mines (140.07ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 17.08.2023 to 18.08.2023 : 26.08.2023
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 26.08.2023 to 08.09.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

MI	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 24	2	Barometric Pressure (mm	Hg) : 735
	Relative Humidity (%) : 65	4	Weather Condition	+ Partly Cloudy

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

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



****End of Report****

Authorised Signatory Dr. Deependra Kumar Sinha Ph. D. Environmental Eriog. **ELES PVI. Lid. Technical Manager**

Page 1 of 1

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 20AAECES7130124

ENGINEERING SERVICES PVE. LTB.



Email: info@elespl.co.in ; eles.ronchi@amail.com Phone na.; 0651-2290103 Website : www.elespl.co.in

	TE	ST REPORT	
Test Report No.	: ELES/RNC/2023/2930	Report Release Date	: 08.08.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883923000001777F		

CUSTOMER DET/	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/2601 : Mine Pit Quarry No 2B Serengdag-B Bauxite Mines
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	(140.07ha) 16.07.2023 to 17.07.2023 25.07.2023
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 25.07.2023 to 02.08.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

t	Average Temperature (°C) : 28	2	Barometric Pressure (mm	(Hg) : 738
3	Relative Humidity (%) : 67	.4	Weather Condition	: Partly Cloudy

Discipline :	Chemical	Group :	Atmospheri	e Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	56	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	30	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m ³	1S 5182 (Part-2): 2001; RA2022	9.1	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	19.7	80 (24hrs)
Ozone (O ₁)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₂)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	1S 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	μg/m ³	IS 5182 (Part-22): 2004; RA2019	0.008	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	2.4	06 (Annual)

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*****End of Report***** Dr. Deependra Kumar Sinha

Page 1 of 1 Ph

Ph. D. Environmental Engg.

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

ENGINEERING SERVICES PVT. LTD.



CIN: U749990H2018PTC011125

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

	TE	ST REPORT	
Test Report No.	: ELES/RNC/2023/2931	Report Release Date	: 08.08.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883923000001778F		

CUSTOMER DET/	AILS	SAMPLE DETAILS		
Customer Name	t Hindalco Industries Limited	Sample Ref. No. Location	ELES/RNC/2023/AA/2602 Near Baisbhatan Village Serengdag-B Bauxite Mines (140.07ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 16.07.2023 to 17.07.2023 : 25.07.2023 : Ambient Air	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02	
Period of Analysis	: 25.07.2023 to 02.08.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

M	TEOROLOGICAL INFORMATION			
1	Average Temperature ("C) : 28	2	Barometric Pressure (mmHg)	: 738
	Relative Humidity (%) : 67	4	Weather Condition	: Partly Cloudy

NABL Accredited Discipline :	Chemical	Group :	Atmospheri	c Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	15 5182 (Part-23): 2006; RA2022	56	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	29	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	6.1	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m ¹	1S 5182 (Part-6): 2006; RA2022	16.4	80 (24hrs)
Ozone (O3)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH3)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	0.007	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ¹	ELES/AIR/SOP/01	<2.0	06 (Annual)



****End of Report****

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

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ENGINEERING SERVICES PVT. LTD.

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

CIN: U74995/H2018PTC011125

	TES	ST REPORT	The second second	
Test Report No.	: ELES/RNC/2023/2931	Report Release Date	: 08.08.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/2602 : Near Baisbhatan Village Serengdag-B Bauxite Mines (140.07ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 16.07.2023 to 17.07.2023 : 25.07.2023 : Ambient Air	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02	
Period of Analysis	: 25.07.2023 to 02.08.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

METEOROLOGICAL	INFORMATION
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11	Average Temperature (°C)	: 28	2	Barometric Pressure (mm	Hg) :738
3	Relative Humidity (%)	: 67	4	Weather Condition	: Partly Cloudy

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

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



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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 20AAECE3713D124

CIN: U74399/H201/PTE011125

ENGINEERING SERVICES PVF. LTD.



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

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Test Report No.	: ELES/RNC/2023/2932	Report Release Date	: 08.08,2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883923000001779F		

TEST REPORT

CUSTOMER DET/	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/2603 : Block 2A (Prohopat Village Serengdag-B Bauxite Mines (140.07ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 16.07.2023 to 17.07.2023 : 25.07.2023 t Ambient Air
Mines Status	: Operational	Sampling Procedure Sample Drawn By	ELES/DOC/SMPL/02 ELES Pvt. Ltd.
Period of Analysis	: 25.07.2023 to 02.08.2023	Sample Condition	: Sealed & Preserved

	Average Temperature (°C) : 28	2	Barometric Pressure (mmHg)	: 738
_	Relative Humidity (%) : 67		Weather Condition	: Partly Cloudy

Discipline :	Chemical	Group :	Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m ¹	IS 5182 (Part-23): 2006; RA2022	56	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	28	60 (24hrs)	
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	5.7	80 (24hrs)	
Nitrogen Di-Oxide (NO1)	µg/m ³	1S 5182 (Part-6): 2006; RA2022	14.1	80 (24hrs)	
Ozone (O3)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH ₃)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	<0.002	1 (24hrs)	
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2,0	06 (Annual)	



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

ENGINEERING SERVICES PVT. LTD.

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

	TE	ST REPORT		
Test Report No.	: ELES/RNC/2023/2932	Report Release Date	: 08.08.2023	
Work Order No.	: 13612310218	Work Order Date	; 21.04.2023	

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Location Sampling Date	: ELES/RNC/2023/AA/2603 : Block 2A (Prohopat Village) Serengdag-B Bauxite Mines (140.07ha) : 16.07.2023 to 17.07.2023	
Mines Status	: Operational	Sample Received Date Type of Sample Sampling Procedure	: 25.07.2023 : Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 25.07.2023 to 02.08.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

METEOROLOGICAL INFORMATION

1	Average Temperature (°C)	: 28	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	: 67	4	Weather Condition	: Partly Cloudy

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

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



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

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ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARNHAND) GST ND-- ZDAAECE9713D124

ENGINEERING SERVICES PVT. LTD.



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

	TE	ST REPORT	
Test Report No.	: ELES/RNC/2023/2933	Report Release Date	: 08.08.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883923000001780F		

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/2604 : Harup Block C (Proposed) Serengdag-B Bauxite Mines (140,07ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 16.07.2023 to 17.07.2023 : 25.07.2023 : Ambient Air : ELES/DOC/SMPL/02	
Mines Status	: Operational	The second se		
Period of Analysis	: 25.07.2023 to 02.08.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

·		
2	Barometric Pressure (mm	Hg) : 738
4	Weather Condition	: Partly Cloudy
1	2	2 Barometric Pressure (mm 4 Weather Condition

NABL Accredited Discipline :	Chemical	Group :	Atmospheri	e Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	51	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	22	60 (24hrs)
Sulphur Di-Oxide (SO1)	µg/m ³	15 5182 (Part-2): 2001; RA2022	5.7	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m ³	1S 5182 (Part-6): 2006; RA2022	21.2	80 (24hrs)
Ozone (O3)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	0.005	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)



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**** End of Report****

Dr. Deepending Kur unite columnation

Page 1 of 1

Ph. D. Environmental Engo The Document stated as Test Report, is issued by the Laboratory under General Terms and Conditions, only 5h Conferent detter for an experiment of format. The results above in the Test Report refer or relates dely to the job/analysis done by the Laboratory only. The information stated on the Test Report reflect the Change done by the Laboratory at the time of involvement only and within the limits of client's instructions. The Laboratory is responsible for all the information or data provided on the report, except the information which is provided by the client. The Report cannot be reproduced except in fall and any part of the report is not taken out of contest, without prior written approval of the Laboratory. The Report in fall or in part shall not be published, advertise, used for any legal actions unless prior permission has been secured from the Management of the Laboratory Amention is drawn to the limitation of limbility, compensation and jurisdiction issues. Any unauthorized alteration & falsification of the convent or appearance of the Test Report is unlawful and offenders may be prosecuted to the fullest extent of the law. All the samples are retained for 30days from the Date of releasenssue of the Test Report. The samples from Regulatory bodies are to be retained as specified. Any type of Observations or Complaints regarding the Reports shall be done within 15days from the Date of Test Report released/issued. After the time period stated before, no complaints will be accepted. The entire Time schudule mentioned in Test Report is in 24hours format. Abbreviation used: N/A (Not Applicable), BDL (Below Detection Limit), LDL (Lower Detection Limit).



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

ENGINEERING SERVICES PVT. LTD.

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

TEST REPORT				
Test Report No.	: ELES/RNC/2023/2933	Report Release Date	: 08.08.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/2604 : Harup Block C (Proposed) Serengdag-B Bauxite Mines (140.07ha)	
Address	± Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 16.07.2023 to 17.07.2023 : 25.07.2023 : Ambient Air	
Aines Status : Operational		Sampling Procedure	: ELES/DOC/SMPL/02	
Period of Analysis	: 25.07.2023 to 02.08.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

Average Temperature ("C) : 28	2	Barometric Pressure (mm	Hg) : 738
Relative Humidity (%) : 67	4	Weather Condition	: Partly Cloudy

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

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



****End of Report****

Dr. Unterised Signatory Sinha Ph. D. Environmental Enog. ELES Pvi. Ltd. Technical Manager

Page 1 of 1

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PLOT NO-\$0, MANKAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-234003 (JHARKHAND) GST NO:- 20AAECE9713D174

ENGINEERING SERVICES PET, LTD.

Email: Info@elespl.co.in , eles-ranch@amail.com Phane no.: 0651-2290103 Website I www.elespi.co.in



Test Report No.	: ELES/RNC/2023/2926	Report Release Date	: 08.08.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883923000001773F		

CUSTOMER DET/	CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/2597 : Near Banjari Village Serengdag-A Bauxite Mines		
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 15,07.2023 to 16.07.2023 : 25.07.2023 : Ambient Air		
Mines Status	: Operational	Sampling Procedure Sample Drawn By	ELES/DOC/SMPL/02 ELES Pvt Ltd.		
Period of Analysis	: 25,07,2023 to 02,08,2023	Sample Condition	: Sealed & Preserved		

METEOROLOGICAL INFORMATION			
1 Average Temperature (%C) : 27	2	Barometric Pressure (mm	Hg) : 738
3 Relative Humidity (%) : 66	4	Weather Condition	: Partly Cloudy
3 Relative minimuty (74) . 39	1.11		

NABL Accredited		Come	Atmospheri	e Pollation
Discipline :	1 1			
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	49	100 (24hrs)
Particulate Matter (PMZ.5)	µg/m ³	IS 5182 (Part- 24): 2019	23	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	5.5	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	9,2	80 (24hrs)
Ozone (O ₃)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	(00 (Shrs)
Ammonia (NHs)	'µg/m'	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	LS 5182 (Part-10); 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	<0,002	1 (24brs)
Nickel (Ni)	ng/m ³	1S 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m²	ELES/AIR/SOP/01	<2,0	06 (Annual)

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Dr. Deependra Kuntar Sinha

Page 1 of 1 ELEG PV. Ltd. Technical Wanager The Unciment stoled in Test Report, in issued by the Laboratory under General Terms and Conditions, only on Complexy latter head in per-approved formal. The results above in the Test Report reference relates only to the job/analysis done by the Laborency only. The information match on the Test Report reflects the findings done by the Laborency and the information or data provided on the report. Laborency at the time of two contacts only and under the findings of class?'s materianses. The Laborency is responsible for all the information or data provided on the report. except the information which is prevaled by the client. The Report cannot be reproduced except in full and any part of the report is not taken out of context, without prior written approval of the Laboratory. The Report in full or in part shall not be possished, advertise, used for any legal actions utiless prior permission has been secured from the Management of the Laboratory. Attention is drawn to the limitation of liability, controllection and jurnelicities pours. Any una discrete alteration & fulrafication of the contents of appearance of the Text Report resolveryful and offenders may be prosecuted to the fullest extent of the law. All the samples are retained for foldays from the Date of robuse insure of the Test Report. The scoping from Regularize baller set to be reasonal as specified. Any type of Olisov us us or Compliants regarding the Regularize daily to the robuse of states before, no compatible will be accepted. The scoping from the Olisov United States and the robuse of the Test Report of Test Regularize for the scoping for Regularize of N/6 (Nor Applicable), BDL (Balow Deneties Firm), LDL (Lower Ortechno Linut).

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

ENGINEERING SERVICES PVT. LTD.

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

	TE	STREPORT		
Test Report No.	: ELES/RNC/2023/2926	Report Release Date	: 08.08.2023	_
Work Order No.	: 13612310218	Work Order Date	; 21.04.2023	

CUSTOMER DET/	AILS	SAMPLE DETAILS		
Customer Name	: Hindaleo Industries Limited	Sample Ref. No. Location	 ELES/RNC/2023/AA/2597 Near Banjari Village Serengdag-A Bauxite Mines 	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure Sample Drawn By	: 15.07.2023 to 16.07.2023 : 25.07.2023 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Mines Status	: Operational			
Period of Analysis	: 25.07.2023 to 02.08.2023	Sample Condition	: Sealed & Preserved	

1 Average Temperature (°C) : 27 2 Barometric Pressure (mmHg) : 738 2 Relative Humidity (%) : 65 4 Weather Condition : Partly Cloud	METEOROLO	GICAL INFORMATION			
	1 Average Te	moerature (°C) : 27	2	Barometric Pressure (mm	(Hg) : 738
			4	Weather Condition	: Partly Cloudy

Discipline	: Chemical	Group	: Atmospheri	e Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene®	u2/m ³	IS:5182 (Part-11); 2006;RA2017	<1.0	05(Annual)
Benzo (a) Pyrene*	ng/m ³	IS:5182 (Part-12); 2004(RA2019	<0.5	01(Annual)

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



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Page 1 of 1

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PLDT NO-30, MANSAROVAF ENCLEVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) 977 ND-30AA8659713D124

ENGINEERING SERVICES FVT. LTD

Email: <u>info®elespl.co.in</u> , eles ranchi@amail.com Phone no.+ 0651-2290103 Website ; www.elespl.co.in



Test Report No.	: ELES/RNC/2023/2927	Report Release Date	: 08.08.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No	: TC883923000001774F		

CUSTOMER DET/	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/2598 : Near Pauri Village Serengdag-A Bauxite Mines	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	= 15.07.2023 to 16.07.2023 = 25.07.2023 = Ambient Air	
Mines Status	: Operational	Sampling Procedure Sample Drawn By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 25.07.2023 to 02.08,2023	Sample Condition	: Sealed & Preserved	

M	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (%C)	: 27	2	Barometric Pressure (mm]	Hg) :738
3	Relative Humidity (%)	: 66	4	Weather Condition	: Partly Cloudy

NABL Accredited				15 11 at	
Discipline :	Chemical	Group	Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM1D)	µg/m ³	1S 5182 (Part-23); 2006; RA2022	54	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	30	60 (24hrs)	
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	8.1	80 (24hrs)	
Nitrogen Di-Oxide (NO1)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	12.2	80 (24hrs)	
Ozone (O3)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<2().()	100 (Shrs)	
Ammonia (NH ₂)	µg/m ³	15 5182 (Part-25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m ⁷	1S 5182 (Part-10): 1999; RA2019	<1.0	2 (Shrs)	
Lead (Pb)	µg/m ³	1S 5182 (Part-22): 2004: RA2019	0,10	1 (24hrs)	
Nickel (Ni)	ng/m ¹	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m ⁵	ELES/AIR/SOP/01	<2.0	06 (Annual)	

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Dr. Deependra Kuntar Sinha Ph. D. Environmental Epog

ELCOVICIDO, Vectifical Manager

Page 1 of 1

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FLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST ND-204AECEST13D124 ENGINEERING SERVICES PVT. LTD.

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

			P(

Test Report No.	: ELES/RNC/2023/2927	Report Release Date	: 08.08.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	_

CUSTOMER DET/	AILS	SAMPLE DETAILS		
Customer Name	: Hindaleo Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/2598 : Near Pauri Village Serengdag-A Bauxite Mines	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 15.07.2023 to 16.07.2023 : 25.07.2023 : Ambient Air	
Mines Status	: Operational	Sampling Procedure Sample Drawn By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 25.07.2023 to 02.08.2023	Sample Condition	: Sealed & Preserved	

METEOROLOGICAL INFORMATION			
1 Average Temperature (°C) : 27	2	Barometric Pressure (mm	(Hg) : 738
3 Relative Humidity (%) : 66	4	Weather Condition	: Partly Cloudy

Discipline : Chemical		Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene®	µg/m ³	1S:5182 (Part-11): 2006;RA2017	<1.0	05(Annual)
Benzo (a) Pyrene*	ng/m ³	IS:5182 (Part-12): 2004;RA2019	<0.5	01(Annual)

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



The End of Report****

Authorised Signatory Dr. Despandric Kumar Sinha Ph. D. Smithamenisi E. go ELES (M. U.S. Technical Manager

Page 1 of 1

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#LOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATTA, RANCHI-B34003 (JHARKBAND) G57 NO:- 10AAECE97130174

ENGINEERING SERVICES PVT. LTU

Email: info@elesor.co.in , eles.ronchi@amail.com Phone no.: 0651-2290103 Website : www.slessi.co.in



Test Report No.	: ELES/RNC/2023/2928	Report Release Date	1 08.08.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
ULR No.	± TC883923000001775F			_

CUSTOMER DET.	AILS	SAMPLE DETAILS	
Customer Name	4 Hindalco Industries Limited	Sample Ref. No. Location	 ELES/RNC/2023/AA/2599 Near Harup Village Serengdag-A Bauxite Mines
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 16.07.2023 to 17.07.2023 : 25.07.2023 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Operational	Sample Drawn By	: ELES Pvt. Ltd.
Period of Analysis	25.07.2023 to 02.08.2023	Sample Condition	: Sealed & Preserved

METEOROLOGICAL IN	FORMATION			
1 Average Temperature (*	and the second se	2	Barometric Pressure (mn	iHg) :738
3 Relative Humidity (%)		4	Weather Condition	: Partly Cloudy

NABL Accredited		0.000		Delledlas
Discipline :	Chemical	Group	: Atmospheri	T
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	47	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	23	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m³	IS 5182 (Part-2): 2001, RA2022	6.1	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m ¹	IS 5182 (Part-6): 2006; RA2022	12.7	80 (24hrs)
Ozone (O3)	µg/m ³	15 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24brs)
Carbon Monoxide (CO)	mg/m ³	15 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	μg/m ³	IS 5182 (Part-22): 2004; RA2019	<0.002	1 (24hrs)
Nickel (Ni)	ng/m²	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)

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Authorised Signatory Dr. Deependre Kumar Sinha

****End of Report****

ELSS PVI. Ltd. Technical Manager

Address & Address of

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (IHARKHAND) BST ND-- 20AAECE3713D324

ENGINEERING SERVICES PVT. LTD.

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

	TEST	REPORT	
Test Report No.	: ELES/RNC/2023/2928	Report Release Date	; 08.08.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/2599 : Near Harup Village Serengdag-A Bauxite Mines
Address	: Lohardaga, Jharkhand-835302	Sampling Data Sample Received Date	: 16.07.2023 to 17.07.2023 : 25.07.2023 : Ambient Air

Address	: Lohardaga, Jharkhand-835302	Sample Received Date Type of Sample	: 25.07.2023 : Ambient Air
Mines Status	: Operational	Sampling Procedure Sample Drawn By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 25.07.2023 to 02.08.2023	Sample Condition	: Sealed & Preserved

Average Temperature (*C) : 28	2	Barometric Pressure (mm	Hg) ±738
Relative Humidity (%) : 67	4	Weather Condition	: Partly Cloudy

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

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



**** End of Report****

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Page 1 of 1

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PLOT NO-30, MANSAROVAN ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKMAND) GST NO:- 23AAECE9713DX24

ENGINEERING SERVICES PUT. LTD.

Email: <u>Info@elesal.co.in</u> ...elus.ranch/@gmail.com Phone.no.: 0851-12290103 Website : www.elesal.co.in



Test Report No.	: ELES/RNC/2023/2929	Report Release Date	: 08.08.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883923000001776F		

CUSTOMER DET/	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/2600 : Near Paintoli Village Serengdag-A Bauxite Mines
Address	; Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 16.07.2023 to 17.07.2023 : 25.07.2023 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Operational	Sampling Procedure Sample Drawn By	: ELES Pvi. Ltd
Period of Analysis	: 25.07.2023 to 02.08.2023	Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION			
1 Average Temperature (%C) : 28	2	Barometric Pressure (mm	iHg) ±738
3 Relative Humidity (%) : 67	4	Weather Condition	: Panly Cloudy

NABL Accredited					
Discipline : Chemical Group :			Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limi	
Particulate Matter (PM10)	μg/m ³	IS 5182 (Part-23): 2006; RA2022	51	100 (24firs)	
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	27	60 (24hrs)	
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	5.4	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	13.2	\$0 (24hrs)	
Ozone (O ₇)	µg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (Shrs)	
Ammonia (NH ₃)	µg/m ²	IS 5182 (Part- 25): 2018	<10.0	400 (24ftrs)	
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (Shrs)	
Lead (Pb)	µµ/m3	IS 5182 (Part-22): 2004; RA2019	0.008	1 (24hrs)	
Nickel (Ni)	ng/m ³	1S 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m3	ELES/AIR/SOP/01	<2.0	06 (Annual)	

Reviewed & ÷

Dr. Deeperson Standy Sinha Ph. D. Environmental Enge.

****End of Report****

Page 1 of 1

The Document stated as Test (opport, is issued by the Laboratory ender Goronal Term) and Conditions, only in Company Jener head in pre-approved format. The results shown in the Test Report refer to individually to the jubically to due by the Laboratory or b. The information attact on the Test Report refer to individually and one by the Laboratory or b. The information attact on the Test Report refer to individually on done by the Laboratory at the time of involvement only and within the time of instructions. The Expension for of the information of data provided on the report, askept the information which is provided by the direct the Report example on except in fall and any proved the report is no plan out of context, while in previded on the report, askept the information which is provided by the direct the Report example of output direct provided for any previded on the report, askept the information which is provided by the direct the Report example of the Laboratory. The Report is full of to part that if no to part that free the public output direct example, used for any legal unlines index provided by the report is full of to part that or to part that free the public output direct example. Any semichtrinol direction & Report is full of to part that or to part that or boots, advertise, used for any legal unlines index provided by the report of the Mathematic of the Laboratory. Attention is drawn to the initian of forbidly, compensation and previded in the response of the falls. All the respects of the Test Report is using the minimum to be remained in specified. Any type of Original context for Educe or the Report in the Report is the Report in the Report in the remained in a provided at specified. Any type of Original context region or the Report is and the Report in the Report in the date without the anti-remained in approval of the farma of the Report is the Report in the Report in the Report of the Report of the remained in approximation of the farma of the Report is the Report in the Report in the Repo

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PLOT NO-30, MANSARDVAR ENELAVE, TUPUDANA HATIA, RANCHI-834003 (IHARKHAND) GST NO-20AAECE9713D124

ENGINEERING SERVICES PVT. LTD.

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

TEST REPORT				
Test Report No.	: ELES/RNC/2023/2929	Report Release Date	: 08.08.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/2600 : Near Paintoli Village Serengdag-A Bauxite Mines	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 16.07.2023 to 17.07.2023 : 25.07.2023 : Ambient Air : ELES/DOC/SMPL/02	
Mines Status	: Operational	Sample Drawn By	: ELES Pvt. Ltd.	
Period of Analysis	: 25,07,2023 to 02.08,2023	Sample Condition	: Sealed & Preserved	

METEOROLOGICAL INFORMATION			
1 Average Temperature (°C) : 28	2	Barometric Pressure (mm	iHg) : 738
3 Relative Humidity (%) : 67	4	Weather Condition	: Partly Cloudy

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

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



-Har End of Reportants

Dr. Deependre Kunner Sinha Ph. D. Emfronmen Bros ELES PV. Ltd. Technical Manager

Page 1 of 1

The Decision stated as Test Report, is usual by the Laboratory under General Terms and Conditions, only ne Company listic need in prosperso of forest. The results there is no in the Test Report reflects buy to the joburnation done by the Laboratory only. The information stated on the Test Report reflects the following done by the Laboratory only. The information stated on the Test Report reflects the following done by the Laboratory only. The information stated on the Test Report reflects the following done by the Laboratory of the information stated on the Test Report reflects the following done by the Laboratory of the information stated on the Test Report reflects the following done by the laboratory of the information which is provided by the client. The Report control for mutational the Laboratory of the report is ont alternation of data provided on the report except the information which is provided by the client. The Report control for provided extent in full and any part of the report is ont alternation & context, without provide extent in full and any part of the report is ont alternation & context, without provide of the Laboratory. The Report is failed to the provided extent in full or in the taboratory. The Report is an alternation of lability, competitions and period on onlines provided alternation & falsification of the context, or appearance of the Test Report is unlawn as the lineation of lability, competitions and period to noise. Any tone for the samples are returned for 30days from the Date context of a period extended for folders may be prosecured to the fullered extend of the samples are returned for 30days from the Date of reflects insee of the Test Report The amplies from Regulatory tradecated wated to be returned to reflect. Any type of Oktor to any the compliants regarding the Reports shall be done within 15days from the Oktor of Test Report released/wated. After the test before, no compliants with the accepted. The entite Time schedule numbers and the first regord to be returned to the

Save Environment Save Future



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

INVERSION

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



TEST	REPORT

Test Report No.	: ELES/RNC/2023/3389	Report Release Date	: 09.09.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883923000002157F	and the second se	

CUSTOMER DET/	AILS	SAMPLE DETAILS	-
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/3013 : Mine Pit Quarry No 2B Serengdag-B Bauxite Mines (140.07ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 17.08.2023 to 18.08.2023 : 26.08.2023 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd. : Sealed & Preserved
Mines Status	: Operational		
Period of Analysis	: 26.08.2023 to 08.09.2023	Sample Drawn By Sample Condition	

Average Temperature (°C) : 24	2	Barometric Pressure (mml	lg) : 735
Relative Humidity (%) : 65	4	Weather Condition	+ Partly Cloudy

NABL Accredited Discipline :	Chemical	Group :	Atmospheri	e Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	51	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	27	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m ³	1S 5182 (Part-2): 2001; RA2022	8.4	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m ³	15 5182 (Part-6): 2006; RA2022	17.2	80 (24hrs)
Ozone (O ₃)	µg/m ²	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH3)	µg/m ¹	1S 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	1S 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	0.01	1 (24hrs)
Nickel (Ni)	ng/m [*]	1S 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)

Reviewed by

****End of Report****

Dr. Deependra Kumar Sinha

Authorised Signatory

Page 1 of 1

ELES Pyt. Ltd. Technical Manager

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

CEERENC SERVICES PVT, LTD.

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

TEST REPORT				
Test Report No.	: ELES/RNC/2023/3389	Report Release Date	: 09.09.2023	
Work Order No.	; 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/3013 : Mine Pit Quarry No 2B Serengdag-B Bauxite Mines (140.07ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 17.08.2023 to 18.08.2023 : 26.08.2023
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 26.08.2023 to 08.09.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

MI	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 24	2	Barometric Pressure (mm	Hg) : 735
	Relative Humidity (%) : 65	4	Weather Condition	+ Partly Cloudy

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

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



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Authorised Signatory Dr. Deependra Kumar Sinha Ph. D. Environmental Eriog. **ELES PVI. Lid. Technical Manager**

Page 1 of 1

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

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STNLERING SERVICES PVT. L1

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



TEST REPORT				
Test Report No.	: ELES/RNC/2023/3390	Report Release Date	: 09.09.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	_
ULR No.	: TC883923000002158F	and the second sec		_

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/3014 : Near Baisbhatan Village Serengdag-B Bauxite Mines (140.07ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 17.08.2023 to 18.08.2023 : 26.08.2023 : Ambient Air	
Mines Status	: Operational	Sampling Procedure Sample Drawn By Sample Condition	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd. : Scaled & Preserved	
Period of Analysis	: 26.08.2023 to 08.09.2023			

	Average Temperature (°C) ± 24	2	Barometric Pressure (mm	Hg) : 735
_		the second se	the second se	: Partly Cloudy
3	Relative Humidity (%) : 65	4	Weather Condition	. Parity Cloudy

NABL Accredited Discipline :	Chemical	Group :	Atmospheri	e Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	48	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	25	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	5.5	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	19.1	80 (24hrs)
Ozone (O ₃)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	0.010	1 (24hrs)
Nickel (Ni)	ng/m ²	1S 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ¹	ELES/AIR/SOP/01	<2.0	06 (Annual)



Authorised Signatory Deependra Rumar Sinha Dr. Deependra f Ph. D. Environmenial Engo ELES Pyl. Ltd. Technical Manage

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Page 1 of 1

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Period of Analysis

ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUFUDANA HATIA, RANCHI-834003 (JHARKHAND) 53T NO:- 20AAECE97130124

: 26.08.2023 to 08.09.2023

GINEERING SERVICES PVT, LTD.

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

	TEST	REPORT	
Test Report No.	: ELES/RNC/2023/3390	Report Release Date	: 09.09.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Location Sampling Date	 ELES/RNC/2023/AA/3014 Near Baisbhatan Village Serengdag-B Bauxite Mines (140.07ha) 17.08.2023 to 18.08.2023
Mines Status	: Operational	Sample Received Date Type of Sample Sampling Procedure Sample Drawn By	: 26.08.2023 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.

Sample Condition

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ME	TEOROLOGICAL INFORMATION			
1.	Average Temperature (%C) : 24	2	Barometric Pressure (mmH	lg) : 735
	Relative Humidity (%) : 65	4	Weather Condition	: Partly Cloudy

Discipline : Chemical		Group : Atmospheric Pollution			
Parameter Uni		Test Protocol	Result	Regulatory Limit	
Benzene*	µg/m ³	IS:5182 (Part-11): 2006;RA2017	<1.0	05(Annual)	
Benzo (a) Pyrene*	ng/m ³	1S:5182 (Part-12): 2004;RA2019	<0.5	01(Annual)	

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



**** End of Report****

: Sealed & Preserved

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

Page 1 of 1

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

GINEERING SERVICES FVT. I.T.D.

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



Test Report No.	: ELES/RNC/2023/3391	Report Release Date	: 89.09.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883923000002159F		

CUSTOMER DETA	AILS	SAMPLE DETAILS	The second second second second second
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/3015 : Block 2A (Prohopat Village Serengdag-B Bauxite Mines
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	(140.07ha) : 17.08.2023 to 18.08.2023 : 26.08.2023
Mines Status	: Operational	Type of Sample Sampling Procedure Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 26.08.2023 to 08.09.2023	Sample Condition	: Sealed & Preserved

1	Average Temperature (°C) : 24	2	Barometric Pressure (mm	Hg) : 735
-	Relative Humidity (%) : 65	4	Weather Condition	: Partly Cloudy

NABL Accredited Discipline :	Chamical	Group :	Atmospheri	e Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	1S 5182 (Part-23): 2006; RA2022	51	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	25	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Pari-2): 2001; RA2022	6.3	80 (24hrs)
Nitrogen Di-Oxide (NO1)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	16,7	80 (24hrs)
Ozone (O ₃)	µg/m ²	1S 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₂)	µg/m ³	15 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	<0.002	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)



Authorised Signatory

****End of Report****

Dr. Deependra Kumar Sinha Ph. D. Enumental Snot

Page 1 of 1

ELES Pvi. Ltd. Technical Manager

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

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

	TE	ST REPORT	and the second se
Test Report No.	: ELES/RNC/2023/3391	Report Release Date	: 09.09.2023
Work Order No.	: 13612310218	Work Order Date	: 21,04.2023

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Location Sampling Date Sample Received Date	 ELES/RNC/2023/AA/3015 Block 2A (Prohopat Village) Serengdag-B Bauxite Mines (140.07ha) 17.08.2023 to 18.08.2023 26.08.2023 	
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 26.08.2023 to 08.09.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

M	ETEOROLOGICAL INFORMATION			
1	Average Temperature (%C) : 24	2	Barometric Pressure (mm	Hg) : 735
3	Relative Humidity (%) : 65	4	Weather Condition	: Partly Cloudy

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

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



****End of Report****

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

Page 1 of 1

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

GINEERING SERVICES PVT. LTD

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



	TEST	REPORT	
Test Report No.	: ELES/RNC/2023/3392	Report Release Date	: 09.09.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883923000002160F		
CUSTOMER DET.	AILS	SAMPLE DETAILS	
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample	: ELES/RNC/2023/AA/3016 : Harup Block C (Proposed) Serengdag-B Bauxite Mines (140.07ha) : 17.08.2023 to 18.08.2023 : 26.08.2023 : Ambient Air
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02
Period of Analysis	: 26.08.2023 to 08.09.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Scaled & Preserved

METEOROLOGICAL INFORMATION			
1 Average Temperature (°C) : 24	2	Barometric Pressure (mm	Hg) : 735
3 Relative Humidity (%) :65	4	Weather Condition	: Partly Cloudy

Discipline :	Chemical	Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	45	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	19	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	5.1	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	18.5	80 (24hrs)
Ozone (O ₃)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m [#]	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	1S 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	0.002	1 (24hrs)
Nickel (Ni)	ng/m ³	1S 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)

Reviewed by

Dr. Deependra Kumar Sinha

**** End of Report****

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

Page 1 of 1

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPLIDANA HATIA, RANCHI-R34003 (JHARKHAND) GST NO:- 20AAECE9713D124

VOINCERING SERVICES PVT, LTD.

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

	TEST REPORT			
Test Report No.	: ELES/RNC/2023/3392	Report Release Date	: 09.09.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET/	AILS	SAMPLE DETAILS	Constant of the second of the
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Location Sampling Date Sample Received Date	: ELES/RNC/2023/AA/3016 : Harup Block C (Proposed) Serengdag-B Bauxite Mine: (140.07ha) : 17.08.2023 to 18.08.2023 : 26.08.2023
Mines Status	: Operational	Type of Sample Sampling Procedure Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 26.08.2023 to 08.09.2023	Sample Condition	: Sealed & Preserved

-	ETEOROLOGICAL INFORMATION Average Temperature (°C) : 24	2	Barometric Pressure (mm	Hg) : 735
	Relative Humidity (%) : 65		Weather Condition	: Partly Cloudy

Discipline	: Chemical	Group	: Atmospheri	c Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene*	µg/m ³	1S:5182 (Part-11): 2006;RA2017	<1.0	05(Annual)
Benzo (a) Pyrene*	ng/m ³	IS:5182 (Part-12): 2004;RA2019	<0.5	01(Annual)

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



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Authorised Signatory Dr. Deependra Rumar Sinha Ph. D. Environmental Engl. ELES Pyl. Ltd. Technical Nanager

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	TE	ST REPORT		
Test Report No.	: ELES/RNC/2023/3381	Report Release Date	: 09.09.2023	-
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
ULR No.	: TC883923000002149F			

CUSTOMER DET/	ILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/2948 : Near Banjari Village Serengdag-A Bauxite Mines
Address Mines Status	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 15.08.2023 to 16.08.2023 : 19.08.2023 : Ambient Air : ELES/DOC/SMPL/02
witnes status		Sample Drawn By	: ELES Pvr. Ltd.
Period of Analysis	: 19.08,2023 to 29.08.2023	Sample Condition	: Sealed & Preserved

Average Temperature (°C) : 26	2	Barometric Pressure (mm	Hg) : 735
Relative Humidity (%) : 64	4	Weather Condition	: Parily Cloudy

NABL Accredited				
Discipline :	Chemical	Group	Armospheric	The second se
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	43	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	1S 5182 (Part- 24): 2019	19	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m ³	1S 5182 (Part-2): 2001; RA2022	<5.0	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	10.7	80 (24hrs)
Ozone (O ₃)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₂)	ug/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8brs)
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	< 0.002	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)

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Test Report No.	: ELES/RNC/2023/3381	Report Release Date	: 09.09.2023
Work Order No.	:13612310218	Work Order Date	: 21.04.2023

PURCHAST PARTY PARTY PARTY	8 3 3	the set of error of a state	
Customer Name	: Hindaleo Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/2948 : Near Banjari Village Serengdag-A Bauxite Mines
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 15.08.2023 to 16.08.2023 : 19.08.2023 : Ambient Air
Mines Status	; Operational	Sampling Procedure Sample Drawn By	: ELES/DOC/SMPL/02 : ELES Pvt, Ltd.
Period of Analysis	7 19.08.2023 to 29.08.2023	Sample Condition	: Sealed & Preserved

Average Temperature (°C) : 26	2	Barometric Pressure (mm)	Hg) : 735
Relative Humidity (%) : 64		Weather Condition	: Partly Cloudy

Discipline : Chemical		Group : Atmospheric Pollution		
Farameter	Unit	Ten Traincal	Reault	Regulatory Limit
Benzenes	µg/m ³	IS:5182 (Part-11): 2006;RA2017	<1.0	05(Annual)
Benzo (a) Pyrene*	ng/m ³	IS:5182 (Part-12): 2004;RA2019	<0.5	01(Annual)

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



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	TE	STREPORT		
Test Report No.	: ELES/RNC/2023/3382	Report Release Date	: 09.09.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
ULR No.	: TC883923000002150F			

CUSTOMER DETA	ILS	SAMPLE DETAILS	
Customer Name Address	: Hindateo Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Location Sampling Date	: ELES/RNC/2023/AA/2949 : Near Pauri Village Screngdag-A Bauxite Mines : 15.08.2023 to 16.08.2023
Mines Status	: Operational	Sample Received Date Type of Sample Sampling Procedure Sample Drawn By	: 19.08.2023 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 19.08.2023 to 29.08.2023	Sample Condition	: Sealed & Preserved

Average Temperature (°C) : 26	2	Barometric Pressure (mmHg)	; 735
Relative Humidity (%) : 64	4	Weather Condition	: Partly Cloudy

NABL Accredited				
Discipline :	Chemical	Group	: Atmospheri	
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Pari-23): 2006; RA2022	50	100 (24hrs)
Particulate Matter (PM2.5)	μg/m ³	IS 5182 (Part- 24): 2019	27	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m ³	1S 5182 (Part-2): 2001; RA2022	6.8	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m ³	1S 5182 (Part-6): 2006; RA2022	14.4	80 (24hrs)
Ozone (O ₃)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m ³	1S 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	1S 5182 (Part-22): 2004; RA2019	0.008	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ²	ELES/AIR/SOP/01	<2.0	06 (Annual)

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	TE	ST REPORT		
Test Report No.	: ELES/RNC/2023/3382	Report Release Date	: 09.09,2023	
Work Order No.	:13612310218	Work Order Date	: 21.04.2023	-

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/2949 : Near Pauri Village Serengdag-A Bauxite Mines	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 15.08.2023 to 16.08.2023 : 19.08.2023 : Ambient Air	
Mines Status	: Operational	Sampling Procedure Sample Drawn By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 19:08:2023 to 29:08:2023	Sample Condition	: Sealed & Preserved	

Average Temperature (°C) : 26	2	Barometric Pressure (mm	Hg) 1735
Relative Humidity (%) : 64	4	Weather Condition	: Partly Cloudy

Discipline : Chemical		Group	: Atmospheri	e Pollution
Farameter	Uuit (Test Protocol	Result	Regulatory Limit
Benzene*	µg/m ³	IS:5182 (Part-11): 2006;RA2017	<1.0	05(Annual)
Benzo (a) Pyrene*	ng/m ²	IS:5182 (Part-12): 2004;RA2019	<0,5	01(Annual)

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



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	TE	ST REPORT	
Test Report No.	: ELES/RNC/2023/3383	Report Release Date	: 09.09.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883923000002151F		

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name Address	 Hindalco Industries Limited Lohardaga, Jharkhand-835302 	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure	: ELES/RNC/2023/AA/2950 : Near Harup Village Serengdag-A Bauxite Mines : 16.08.2023 to 17.08.2023 : 19.08.2023 : Ambient Air : ELES/DOC/SMPL/02	
Mines Status	: Operational	Sample Drawn By	ELES Pvt. Ltd.	
Period of Analysis	: 19.08.2023 to 29.08.2023	Sample Condition	: Scaled & Preserved	

Average Temperature (°C) : 24	2	Barometric Pressure (mm	Hg) : 735
Relative Humidity (%) : 66	4	Weather Condition	: Partly Cloudy

NABL Accredited				
Discipline :	Chemical	Group	: Atmospheri	e Politition
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	43	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	19	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m ²	IS 5182 (Part-2): 2001; RA2022	5.4	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	10.5	80 (24hrs)
Ozone (O ₃)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	< 0.002	I (24hrs)
Nickel (Ni)	ng/m?	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)

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The Document scaled as Text Report, is issued by the Laboratory under General Terms and Conditions, only on Company lener head in pre-approved format. The results shown in the Text Report reflects or relates only to the jobianalysis done by the Laboratory only. The information stated on the Text Report reflects the findings done by the Laboratory and the information stated on the Text Report reflects the findings done by the Laboratory and the information stated on the Text Report reflects the findings done by the Laboratory at the information stated on the Text Report reflects the findings done by the Laboratory in temporable for all the information of context, without prior except the information of the Laboratory. The Report is provided by the client. The Report cannot be reporticed except in full and any part of the report is not taken out of context, without prior written approval of the Laboratory. The Report in full or in part shall not be published, advertise, used for any legal actions unless prior permission has been second from the Management of the Laboratory. Attention to drawn to the United of Hubbing, compensation and president issues. Any unalthorized alteration & fibrilitation of the Date context or appearance of the Text Report is colorable and offensives may be prosecuted to the fullet enters of the taw. All the samples are retained for 30 days from the Date context of the Gate of Text Report is colorable to the immediated alteration appendict. Any type of Observations of Contextaints regarding the Report shall be form appealing to immediate before, no compliants regarding the Report shall be formed as specified. Any type of Observations of Contextaints regarding the Report shall be done within 15 days from the Cate of Text Report released anneed. Alter the imme period stated before, no compliants regarding the entire Time ashed an method and within 15 days from the Cate of Text Report released anneed. Alter the immediate period stated before, no compliants will be accepted. The entire Time a



TEST REPORT				
Test Report No.	1 ELES/RNC/2023/3383	Report Release Date	: 09.09.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/2950 Near Harup Village Serengdag-A Bauxite Mines	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 16.08.2023 to 17.08.2023 : 19.08.2023 : Ambient Air	
Mines Status	: Operational	Sampling Procedure Sample Drawn By	ELES/DOC/SMPL/02	
Period of Analysis	: 19.08.2023 to 29.08.2023	Sample Condition	Sealed & Preserved	

1	Average Temperature (°C) : 24	2	Barometric Pressure (mm	Hg) : 735
	Relative Humidity (%) : 66	.4	Weather Condition	: Partiy Cloudy

Discipline : Chemical		Group	: Atmospheri	e Pollution
Farameter	Unii	Test Protocui	Forsuit	Regulatory Limite
Benzene*	µg/m ³	IS:5182 (Part-11): 2006:RA2017	<1.0	05(Annual)
Benzo (a) Pyrene*	ng/m ³	IS:5182 (Part-12): 2004;RA2019	<0.5	01(Annual)

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



****End of Report****

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Page 1 of 1

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	TE	ST REPORT	
Test Report No.	: ELES/RNC/2023/3384	Report Release Date	: 09.09.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883923000002152F		

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No, Location	: ELES/RNC/2023/AA/2951 : Near Paintoli Village Serengdag-A Bauxite Mines	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	, 16.08.2023 to 17.08.2023 ; 19.08.2023 ; Ambient Air	
Mines Status	: Operational	Sampling Procedure Sample Drawn By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd	
Period of Analysis	: 19.08.2023 to 29.08.2023	Sample Condition	: Sealed & Preserved	

Average Temperature (%C) : 24	2	Barometric Pressure (mm)	Hg) : 735
Relative Humidity (%) : 66	4	Weather Condition	: Partly Cloudy

NABL Accredited				
Discipline :	C.hemicai	Group	Aunospheri	
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	15 5182 (Part-23): 2006; RA2022	45	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	22	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part-2); 2001; RA2022	<5.0	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	16.7	80 (24hrs)
Ozone (Os).	µg/m ³	1S 5182 (Part-9): 1974; RA2019	<20.0	100 (Shrs)
Ammonia (NH2)	µg/m ³	1S 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part-22); 2004; RA2019	0.005	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)

Reviewed by

Authorised Signatory

DUDE

**** End of Report****

Ph D Environment ELES PVI LLO

Dr. Deepenore K.

Page 1 of 1

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

NGINEERING SERVICES PVT. LTD.

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

TEST REPORT

Test Report No.	: ELES/RAN/2023/1726	Report Release Date	: 10.09.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Sampling Date Sample Received Date Type of Sample Source/Location of Sample Sampling Procedure	: ELES/RAN/2023/DW/1613 : 12.08.2023 : 28.08.2023 : Drinking Water : Serengdag-B Bauxite Mines : ELES/DOC/SMPL/0)
Mines Status	Derational	Sample Collected By	: ELES Pvt. Ltd.
Period of Analysis	: 28.08.2023 to 09.09.2023	Sample Condition	: Sealed & Preserved

Discipline : Chemical		Group : Water		Regulatory Limit as per IS 10500:2012		
Parameter Unit		Test Protocol	Result	Acceptable Limit	Permissible	
pH (at 24.8 °C)		APHA 23" Ed.2017, 4500-H	7.28	6.5-8.5	No Relaxation	
Turbidity	NTU	APHA 23 rd Ed.2017, 2130 B	0.46	1.0	5.0	
Taste		APHA 23 rd Ed.2017, 2160 C	Agreeable	Agreeable	Agreeable	
Odour		IS 3025 (Part-5) :2018	Agreeable	Agreeable	Agreeable	
Colour	Hazen	APHA 23rd Ed.2017, 2120B&D	1.0	5	15	
Total Dissolved Solids (TDS)	mg/L	APHA 23rd Ed.2017, 2540B,C&D	340	500	2000	
Chloride (as Cl)	mg/L	APHA 2318 Ed.2017, 4500 CI B	48.6	250	1000	
Fluoride (as F)	ing/L	APHA 23 nd Ed.2017, 4500 F-D	BDL (DL: 0.1)	1.0	1.5	
Total Alkalinity (as CaCO ₁)	mg/L	APHA 23 rd Ed.2017, 2320 B	148	200	600	
Total Hardness (as CaCO3)	mg/L	APHA 23 rd Ed.2017, 2340 C	150	200	600	
Sulphate (as SO4)	mg/L	APHA 23rd Ed.2017, 4500 SO4-2-E	20.8	200	400	
Nitrate (as NO3)	mg/L	APHA 23rd Ed.2017, 4500 NO3-B	1.36	45	No Relaxation	
Phenolic Compound (as C ₆ H ₃ OH)	mg/L	IS 3025 (Part-43):1992;RA2019	BDL (DL: 0.0005)	0.001	0,002	

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (IHARKHAND) 657 NO:- 20AAECE97130324

CINELRING SERVICES PYT, LTD.

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

	TES	TREPORT	
Test Report No.	: ELES/RAN/2023/1726	Report Release Date	: 10.09.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

Discipli	ine : Cher	mical Group : W	ater		ory Limit 10500:2012
Parameter	Unit	Test Protocol	Result	Acceptable	Permissible Limit
Cyanide (as CN)	mg/L	APHA 23 nd Ed.2017, 4500 CN-E	BDL (DL: 0.012)	0.05	No Relaxation
Residual Free Chlorine (RFC)	mg/L	IS 3025 (Part-26):2021	BDL (DL: 0.1)	0.02	1.0
Calcium (as Ca)	mg/L	APHA 23rd Ed.2017, 3500 Ca B	35.8	75	200
Discipl	ine : Che	mical Group	: Residues in	Water	_
Aluminum (as Al)	mg/L	IS 3025 (Part-55): 2003; RA2019	BDL (DL: 0.02)	0.03	0.2
Arsenic (as As)	mg/L	IS 3025 (Part 37): 2022	BDL (DL: 0.005)	0.01	No Relaxation
Boron (as B)	mg/L	IS 3025(Part-57): 2005; RA2021	BDL (DL: 0.2)	0.5	1.0
Cadmium (as Cd)	mg/L	APHA 23rd Ed.2017, 3111B	BDL (DL: 0.003)	0,003	No Relaxation
Total Chromium (as Cr)	mg/L	APHA 23 rd Ed.2017, 3111B	BDL (DL: 0.03)	0.05	No Relaxation
Copper (as Cu)	mg/L	APHA 23 rd Ed.2017, 3111B	BDL (DL: 0.03)	0.05	1.5
Iron (as Fe)	mg/L	APHA 23th Ed.2017, 3111B	0.284	1.0	1.0
Lead (as Pb)	mg/L	APHA 23 rd Ed.2017, 3111B	BDL (DL: 0.01)	0.01	No Relaxation
Manganese (as Mn)	mg/L	APHA 23rd Ed.2017, 3111B	BDL (DL: 0.05)	0.1	0.3
Mercury (as Hg)	mg/L	IS 3025 (Part-48): 1994; RA2019	BDL (DL: 0.001)	0.001	No Relaxation
Selenium (as Se)	mg/L	IS 3025 (Part-56): 2003; RA2019	BDL (DL: 0.01)	0.01	No Relaxation
Zinc (as Zn)	mg/L	APHA 23rd Ed.2017, 3111B	BDL (DL: 0.1)	5	15

Remarks: 1. pH & RFC done at Lab.

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

NGINEERING SERVICES PVT. LTD.

Email: <u>Info@elespl.co.in</u>, <u>eles.ranchi@gmail.com</u> Phone no.: 0651-2290103 Website : www.elespl.co.in

CIN: U74999JH2018PTC011129

TEST REPORT					
Test Report No.	: ELES/RAN/2023/1726	Report Release Date	± 10.09.2023		
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023		

Discipline : Che	mical		Group: Water	
Parameter	Unit	Test Protocol	Result	Regulatory Limit as per 1S 10500:2012
Pesticides		and the second	1	A CARL MANAGEMENT
Alachlor*	µg/L	АРНА	BDL (DL: 1.0)	20
Atrazine*	µg/L	АРНА	BDL (DL: 1.0)	2
Aldrin/Dieldrin*	µg/L	APHA	BDL (DL: 0.01)	0.03
Alpha HCH*	µg/L	АРНА	BDL (DL: 0.001)	0.01
Beta HCH*	µg/L	АРНА	BDL (DL: 0.01)	0.04
Butachlor*	µg/L	АРНА	BDL (DL: 10)	125
Chlorpyriphos*	μg/L	АРНА	BDL (DL: 10)	30
Delta HCH*	µg/L	АРНА	BDL (DL: 0.01)	0.04
2,4 dichlorophenoxyacetic acid*	µg/L	АРНА	BDL (DL: 10)	30
DDT(o,p and p,p-isomers of DDT,DDE and DDD)*	µg/L	АРНА	BDL (DL: 0.5)	1
Endosulfan (alpha, beta, and sulphate)*	µg/L	АРНА	BDL (DL: 0.1)	0.4
Ethion*	µg/L	АРНА	BDL (DL: 0.5)	3
Gamma HCH (Lindane)*	μg/L.	АРНА	BDL (DL: 0.5)	2
Isoproturon*	µg/L	АРНА	BDL (DL: 0.5)	9

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

NGINEERING SERVICES PFT. LTD.

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

CON-UTARRAH2033PTC011125

	TE	ST REPORT	
Test Report No.	: ELES/RAN/2023/1726	Report Release Date	: 10.09.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

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

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



****End of Report****

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B. Sc. M. Sc. (Botany) Director ELES PVL Ltd.

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:~ 20AAECE97130224

ENGINEERING SERVICES PVT. LTD.

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

	TI	ST REPORT	
Test Report No.	: ELES/RNC/2023/3989	Report Release Date	: 28.10.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

CUSTOMER DET/	AILS	SAMPLE DETAILS		
Customer Name	; Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/3406 : Mine Pit Quarry No 2B Serengdag-B Bauxite Mines	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	(140.07ha) : 12.09.2023 to 13.09.2023 : 29.09.2023 : Ambient Air	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02	
Period of Analysis	: 29.09.2023 to 10.10.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Scaled & Preserved	

METEOROLOGICAL	INFORMATION	

	Average Temperature (°C)	: 25	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	: 66	4	Weather Condition	: Partly Cloudy

Discipline : Chemica	d.	Group : Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	43	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m ³	1S 5182 (Part- 24): 2019	25	60 (24hrs)	
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	7.1	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	15.8	80 (24hrs)	
Ozone (O ₃)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH ₃)	µg/m ¹	IS 5182 (Part-25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	0.006	1 (24hrs)	
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)	

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ENVIRONMENTAL LABORATORIES &

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

ENGINEERING SERVICES PVT. LTD.

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

Test Report No.	TE	ST REPORT	
	: ELES/RNC/2023/3989	Report Release Date	: 28.10.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

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

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



****End of Report****

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

Page 2 of 2

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

ENGINEERING SERVICES PVT. LTD.

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

TEST REPORT

Test Report No.	: ELES/RNC/2023/3990	Report Release Date	: 28.10.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

Discipline : Chemi	cal	Group :	Atmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (C6H6)*	µg/m ³	IS 5182 (Part-11)2006;RA2017	<1.0	05(Annual)
Benzo-(a)-Pyrene*	ng/m ³	IS 5182 (Part-12)2004;RA2019	<0.5	01(Annual)

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



****End of Report****

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

Page 2 of 2

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ve Loviennout, Save Future"



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

ENGINEERING SERVICES PVT. LTD.

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

	<u>11</u>	EST REPORT		
Test Report No.	: ELES/RNC/2023/3991	Report Release Date	: 28,10.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/3408 : Block 2A (Prohopat Village) Serengdag-B Bauxite Mines	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	(140.07ha) : 12.09.2023 to 13.09.2023 : 29.09.2023 : Ambient Air	
Mines Status : Operational		Sampling Procedure	: ELES/DOC/SMPL/02	
Period of Analysis	: 29.09.2023 to 10.10.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

M	ETEOROLOGICAL INFORM	IATION		datum inter an inter an	
1	Average Temperature (°C)	: 25	2	Barometric Pressure (mmH	g) : 736
3	Relative Humidity (%)	: 66	4	Weather Condition	: Partly Cloudy

Discipline : Chemica	d .	Group : 4	tmospherie	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m³	IS 5182 (Part-23): 2006; RA2022	43	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	20	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	5.2	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	17.3	80 (24hrs)
Ozone (O ₃)	µg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH3)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	< 0.002	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)

Page 1 of 2

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

ENGINEERING SERVICES PVT. LTD.

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

 	 _	-		

	11	STREPORT		
Test Report No.	: ELES/RNC/2023/3991	Report Release Date	: 28.10.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

Discipline : Chemi	cal	Group :	Atmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (C ₆ H ₆)*	µg/m ³	IS 5182 (Part-11)2006;RA2017	<1.0	05(Annual)
Benzo-(a)-Pyrene*	ng/m ³	1S 5182 (Part-12)2004;RA2019	<0.5	01(Annual)

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



****End of Report****

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

Page 2 of 2

The Document stated as Tess Report, is issued by the Laboratory under General Terms and Conditions, only on Company letter head in pre-approved format. The results shown in the Test Report refer or relates only 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 time of involvement only and within the lamits of client's instructions. The Laboratory is responsible for all the information or data provided on the report, except the information which is provided by the client. The Report cannot be reproduced except in full and any part of the report is not taken out of context, without prior written approval of the Laboratory. The Report in full or in part shall not be published, advertise, used for any legal actions unless prior permission has been secured from the Management of the Laboratory. Attention is drawn to the limitation of liability, compensation and jurisdiction issues. Any unauthorized alteration & falsification of the content or appearance of the Test Report is unlawful and offenders may be prosecuted to the fullest extent of the law. All the samples are retained for 30days from the Date of release/issue of the Test Report. The samples from Regulatory bodies are to be retained as specified. Any type of Observations of Comparise regarding the Reports shall be done within 15days from the Date of Test Report test Report as and N/A (Not Applicable), BDL (Below Detection Limit), LDL (Lower Detection Limit).



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

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

	TES	TREPORT	
Test Report No.	: ELES/RNC/2023/3992	Report Release Date	: 28.10.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/3409 : Harup Block C (Proposed) Serengdag-B Bauxite Mines

Address	: Lohardaga, Jharkhand-835302		(140.07ha)
		Sampling Date	: 12.09.2023 to 13.09.2023
		Sample Received Date	: 29.09.2023
		Type of Sample	: Ambient Air
Mines Status	: Operational	Sampling Procedure	; ELES/DOC/SMPL/02
		Sample Drawn By	; ELES Pvt. Ltd.
Period of Analysis	: 29.09.2023 to 10.10.2023	Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION

1 Average Temperature (°C)	: 25	2	Barometric Pressure (mmHg)	: 736
3 Relative Humidity (%)	: 66	4	Weather Condition	: Partly Cloudy

Discipline : Chemica	d.	Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	38	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	17	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m ³	1S 5182 (Part-2): 2001; RA2022	<5.0	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	17.1	80 (24hrs)
Ozone (O3)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH3)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ²	(S 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	0.005	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ⁴	ELES/AIR/SOP/01	<2.0	06 (Annual)

Page 1 of 2

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ENGINEERING SERVICES PVT. LTD.

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

TEST REPORT

Test Report No.	: ELES/RNC/2023/3992	Report Release Date	: 28.10.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

Discipline : Chemi	cal	Group : Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C6H6)*	µg/m ³	IS 5182 (Part-11)2006;RA2017	<1.0	05(Annual)	
Benzo-(a)-Pyrene*	ng/m ³	IS 5182 (Part-12)2004;RA2019	<0.5	01(Annual)	

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

Reviewed by

****End of Report****

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

Page 2 of 2

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ante Estato dattiment. Sinten Fratrare



ENVIRONMENTAL LABORATORIES & GUNEERING SERVICES PVT. LTD.

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

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

Website : www.elespi.co.in

	TEST	REPORT	
Test Report No.	: ELES/RNC/2023/3981	Report Release Date	: 28.10.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
CUSTOMER DET/	AILS	SAMPLE DETAILS	
Customer Name Address Mines Status	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure	: ELES/RNC/2023/AA/3398 : Near Banjari Village Serengdag-A Bauxite Mines (155.81ha) : 10.09.2023 to 11.09.2023 : 29.09.2023 : Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 29.09.2023 to 10.10.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

METEOROLOGICAL	INFORMATION

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	A١	1000	100	1/5-
	121	151		0.0
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3

ETEOROLOGICAL INFORMATION	-		
Average Temperature (°C) : 25	2	Barometric Pressure (mmHg) : 736	
	4	Weather Condition	: Partly Cloudy
Relative Humidity (%) : 66	-	The work of the second s	

Discipline : Chemica	d	Group : Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23); 2006; RA2022	37	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m ³	1S 5182 (Part- 24): 2019	15	60 (24hrs)	
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	<5.0	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	12.4	80 (24hrs)	
Ozone (O ₃)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH2)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m ³	1S 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	µg/m ²	IS 5182 (Part-22): 2004; RA2019	< 0.002	1 (24hrs)	
Nickel (Ni)	ng/m ¹	IS 5182 (Pari-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m ²	ELES/AIR/SOP/01	<2.0	06 (Annual)	

Page 1 of 2

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PLOT NO-38, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-234003 (JHAR/(HAND) GET NO:- 20AAECE9713D124

ENGINEERING SERVICES PVT. LTD.

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

TEST REPORT						
Test Report No.	: ELES/RNC/2023/3981	Report Release Date	: 28.10.2023			
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023			
WOLK OTHER TWO	1 10 0 1 0 0 0 0 0 0 0 0					

Discipline : Chemical		Group :	Atmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (C6H6)*	µg/m ^{il}	IS 5182 (Part-11)2006;RA2017	<1,0	05(Annual)
Benzo-(a)-Pyrene*	ng/m ³	1S 5182 (Part-12)2004;RA2019	<0.5	01(Annual)

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



****End of Report****

Authorised Signatory Dr. Deepandra Kumar Sinha Ph. D. Environmental Engg. ELES P.t. Ltd. Technical Manager-

Page 2 of 2

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 20AAECE97130324

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

	TEST	REPORT	
Test Report No.	: ELES/RNC/2023/3982	Report Release Date	: 28.10.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
CUSTOMER DET/	AILS	SAMPLE DETAILS	
Customer Name Address Mines Status	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample	: ELES/RNC/2023/AA/3399 : Near Pauri Village Serengdag-A Bauxite Mines (155.81ba) : 10.09.2023 to 11.09.2023 : 29.09.2023 t Ambient Air
Period of Analysis	: 29.09.2023 to 10.10.2023	 Sampling Procedure Sample Drawn By Sample Condition 	: ELES/DOC/SMPL/02 : ELES PvL Ltd. : Scaled & Preserved

METEOROLOGICAL INFORMATION			
Average Temperature (°C) : 25	2	Barometric Pressure (mm	Hg) : 736
3 Relative Humidity (%) : 66	4	Weather Condition	; Partly Cloudy

Discipline : Chemica	d	Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	43	.100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	21	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	5.3	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	11.8	80 (24hrs)
Ozone (O ₃)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	0.005	1 (24hrs)
Nickel (NI)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m	ELES/AIR/SOP/01	<2.0	06 (Annual)

Page 1 of 2

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATLA, RANCHI-834003 (JHARKHAND) GST ND.- 20A4ECE97130124 NGINEERING SERVICES PVT. LTD.

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

TE	TEST REPORT		
FS/RNC/2023/3982	Report Release Date	: 28.10	

Test Report No.	: ELES/RNC/2023/3982	Report Release Date	: 28.10.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

Discipline : Chemical		Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (C ₆ H ₆)*	µg/m ⁵	IS 5182 (Part-11)2006;RA2017	<1.0	05(Annual)
Benzo-(a)-Pyrene*	ng/m ³	IS 5182 (Part-12)2004;RA2019	<0.5	01(Annual)

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



****End of Report****

Authorised Signatory Dr. Deepandra Kumar Sinha Ph. O. Environmental Enge SLES Put. Ltd. Technical Manager

Page 2 of 2

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PLOT ND-30, MANSAROVAR ENCLAVE, TUPUBANA HATIA, RANCHI-834003 (JHARKHAND) GST ND:- 208AECE9713D124 Email: info@elespl.co.in , eles.ranchi@amall.com Phone no.: 0651-2290103

Website ; www.elespi.co.ia

	TEST	REPORT	
Test Report No.	: ELES/RNC/2023/3983	Report Release Date	: 28.10.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
CUSTOMER DET.	AILS	SAMPLE DETAILS	
Customer Name Address Mines Status	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302 : Operational	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure	: ELES/RNC/2023/AA/3400 : Near Harup Village Serengdag-A Bauxite Mines (155.81ha) : 10.09,2023 to 11.09.2023 : 29.09.2023 : Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 29.09.2023 to 10.10.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Scaled & Preserved

ETEOROLOGICAL INFORMATION			
Average Temperature (°C) : 25	2	Barometric Pressure (mm	iHg) : 736
Relative Humidity (%) : 66	4	Weather Condition	: Partly Cloudy

Discipline : Chemica	4	Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	38	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	17	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	<5,0	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	11.7	80 (24hrs)
Ozone (O ₃)	μg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH3)	µg/m³	1S 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	15 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ²	IS 5182 (Part-22): 2004; RA2019	< 0.002	1 (24hrs)
Nickel (Ni)	ng/m ³	1S 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2,0	06 (Annual)

Page 1 of 2

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ENGINEERING SERVICES PVT. LTD.

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

Test 1	REPOR	Ľ
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Test Report No.	: ELES/RNC/2023/3983	Report Release Date	: 28.10.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

Discipline : Chemical		Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (C _s H ₆)*	µg/m ³	1S 5182 (Part-11)2006;RA2017	<1.0	05(Annual)
Benzo-(a)-Pyrene*	ng/m ³	IS 5182 (Part-12)2004;RA2019	<0.5	01(Annual)

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



****End of Report****

Authorised Signatory **Ur Despendra Kumar Sinha** Ph D. Environmental Engg.

ELES Pvt. Ltd. Technical Manager

Page 2 of 2

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

	TEST	REPORT		
Test Report No.	: ELES/RNC/2023/3984	Report Release Date	: 28.10.2023	
Work Order No. : 13612310218		Work Order Date : 21.04.2023		
CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/3401 : Near Paintoli Village Serengdag-A Bauxite Mines (155.81ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 10.09.2023 to 11.09.2023 : 29.09.2023	

Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 29.09.2023 to 10.10.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Scaled & Preserved

METEOROLOGICAL INFORMATION			11 2 727
1 Average Temperature (°C) : 25	2	Barometric Pressure (mm	Hg) : /36
3 Relative Humidity (%) : 66	4	Weather Condition	: Partly Cloudy

Discipline : Chemica	d.	Group : Atmospheric Pollution			
Parameter Unit		Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	40	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24); 2019	20	60 (24hrs)	
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	<5.0	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part-6); 2006; RA2022	15,2	80 (24hrs)	
Ozone (O ₃)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20,0	100 (8hrs)	
Ammonia (NH ₃)	µg/m ³	1S 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	0.007	1 (24hrs)	
Nickel (Ni)	ng/m*	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m²	ELES/AIR/SOP/01	<2.0	06 (Annual)	

Page 1 of 2

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Ernail: <u>Info@elespl.co.in</u> . <u>eles.ranchi@gmall.com</u> Phone no.: 0651-2290103 Website : www.elespl.co.in

TROT	REPORT
	REFUR

Test Report No.	: ELES/RNC/2023/3984	Report Release Date	: 28.10.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

Discipline : Chemi	cal	Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (C ₆ H ₆)*	µg/m ⁵	IS 5182 (Part-11)2006;RA2017	<1.0	05(Annual)
Benzo-(a)-Pyrene*	ng/m ¹	IS 5182 (Part-12)2004;RA2019	<0.5	01(Annual)

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

Reviewed by

****End of Report****

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

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ENGINEERING SERVICES PVT, LTD.

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

	T	EST REPORT		
Test Report No.	: ELES/RNC/2023/4132	Report Release Date	: 31.10.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

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	: 12.09.2023 to 13.09.2023 : 30.09.2023 : Ambient Noise : ELES/DOC/SMPL/03 : ELES Pvt. Ltd.	
Mines Status	: Operational	Period of Analysis	: 30.09.2023 to 10.10.2023	

M	ETEOROLOGICAL INFORMAT	TON		
1	Average Temperature (°C) : 25	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%) : 66	4	Weather Condition	: Partly Cloudy

Location	Unit	Test Protocol	Result		Regulatory Limit (Industrial Zone)	
			Time	L _{sq}		
Serengdag- B Bauxite Mines (140.07ha) Mines Pit	dB(A)	dB(A)	dB(A) IS 9989:1981, RA 2020	Day Time	70	75 dB(A) Day Time &
Sample ID: ELES/RNC/2023/AN/3524		KA 2020	Night Time.	55	70 dB(A) Night Time	

Reviewed by

****End of Report****

Authorised Signatory Dr. Deependra Kumar Sinha Ph. D. Environmental Engo. ELES Pvt. Ltd. Technical Manage

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	TE	ST REPORT		
Test Report No.	: ELES/RNC/2023/4154	Report Release Date	: 31.10.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DE	TAILS	SAMPLE DETAILS	
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sampling Date Sampling Received Date Type of Sample Sampling procedure	: 12.09.2023 : 30.09.2023 : Workzone Noise : ELES/DOC/SMPL/03
Mines Status	: Operational	Sample Drawn By Period of Analysis	: ELES Pvt. Ltd. : 30.09.2023 to 11.10.2023

METEOROLOGICAL INFORMATION

1	Average Temperature (°C)	: 26	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%)	: 64	4	Weather Condition	: Partly Cloudy

Location	Unit	Test Protocol	Result		Regulatory Limit (Industrial Zone)
Mine Pit Quarry No 2B	dB(A)	IS 4758:1968; RA 2017	Time	Leq	90 dB (A)
Serengdag-B Bauxite Mines (140.07ha)			Day Time	74	
Sample ID: ELES/RNC/2023/WN/3546		ALCOL!			



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TEST REPORT

Test Report No.	: ELES/RNC/2023/4105	Report Release Date	: 31.10.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	-

CUSTOMER DET.	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/SW/3497	
	The second second second	Sampling Date	: 12,09.2023	
		Sample Received Date	: 29.09.2023	
		Type of Sample	: Surface Water	
Address	: Lohardaga, Jharkhand-835302	Source of Sample	: Spring Water	
		Location of Sample	: Serengdag-B Bauxite Mines (140.07ha)	
		Sampling Procedure	: ELES/DOC/SMPL/01	
Mines Status	: Operational	Sample Collected By	: ELES Pvt. Ltd.	
Period of Analysis	: 29.09.2023 to 17.10.2023	Sample Condition	: Sealed & Preserved	

Discipline : Chemic	Tolerance Limits			
Parameter	Unit	Test Protocol	Result	as per 1S 2296-1992 Class C (Inland Surface Water)
pH (at 24.9 °C)	-	IS 3025 (Part 11) : 2022	6.75	6.5-8.5
Colour	Hazen	IS 3025 (Part -4) : 2021	5.0	300
Odour	-	IS 3025 (Part-5) : 2018	Unobjectionable	
Taste		APHA 23rd Ed.2017, 2160 C	N/A	
Turbidity	mg/L	IS 3025 (Part-10) :1984;RA2017	0.93	
Total Dissolved Solids (TDS)	mg/L	IS 3025 (Part 16):1984; RA2017	208	1500
Total Alkalinity (as CaCO3)	mg/L	IS 3025 (Part-23) :1986; RA2019	89.7	77
Total Hardness (as CaCO3)	mg/L	IS 3025 (Part-21) : 2009; RA2019	100.7	-07
Sulphate (as SO4)	mg/L	IS 3025 (Part 24) : 1986; RA2019	4.6	400
Nitrate (as NO3)	mg/L	APHA 23rd Ed.2017, 4500 NO1-B	1.28	50
Chloride (as Cl)	mg/L	IS 3025 (Part-32) :1988; RA2019	4.7	600
Fluoride (as F)	mg/L	IS 3025 (Part-60) :2008; RA2019	BDL (DL: 0.1)	1.5
Cyanide (as CN)	mg/L	APHA 23 ^{ad} Ed.2017, 4500 CN-E	BDL (DL: 0.012)	0.05
Phenols Compounds (as C ₈ H ₈ OH)	mg/L	IS 3025 (Part-43): 1992;RA2019	BDL. (DL: 0.0005)	0.005

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TEST REPORT					
Test Report No.	: ELES/RNC/2023/4105	Report Release Date	: 31.10.2023		
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023		

Discipline: C	hemical	Group: Wate	Tolerance Limits	
Parameter	Unit	Unit Test Protocol		as per IS 2296-1992 Class C (Inland Surface Water)
Calcium (as Ca)	mg/L	IS 3025 (Part-40): 1991;RA2019	26.8	
Free Residual Chlorine (RFC)	mg/L	ÍS 3025 (Part-26) :2021	BDL (DL: 0.1)	
Discipline: Ch	iemical	Group: Residue	and the second se	
Aluminium (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
Boron (as B)	mg/L	IS 3025 (Part-57) :2021	BDL (DL: 0.2)	. i.
Cadmium (as Cd)	mg/L	APHA23rd Ed.2017; 3111B	BDL (DL: 0.003)	0.01
Total Chromium (as Cr)	m (as Cr) mg/L APHA 23 rd Ed 2017: 3111B BDL		BDL (DL: 0.03)	
Copper (as Cu)	mg/L	APHA 23rd Ed.2017; 3111B	BDL (DL: 0.03)	1.5
Iron (as Fe)	mg/L	APHA 23rd Ed.2017; 3111B	0.317	50
Lead (as Pb)	mg/L	APHA 23 rd Ed.2017, 3111 B	BDL (DL: 0.01)	.0.1
Manganese (as Mn)	mg/L	APHA 23rd Ed.2017; 3111 B	BDL (DL: 0.05)	-
Mercury (as Hg)	mg/L	1S 3025 (Part-48) :1994; RA2019	BDL (DL: 0.001)	Ť
Selenium (as Se)	mg/L.	IS 3025 (Part-56) :2003; RA2019	BDL (DL: 0.01)	0.05
Zinc (as Zn)	mg/L	APHA 23 ^{nt} Ed.2017, 3111 B	BDL (DL: 0.1)	15
Discipline: Bi	ological	Group: Wat	er	
Total Coliform	CFU/100 mL	IS 15185: 2016, RA2021	90	5000
Escherichia Coli	CFU/100 mL	IS 15185:2016; RA2021	27	-

Page 2 of 3

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ENVIRONMENTAL LABORATORIES &

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

CIN: U749999/H3018PTC011125

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Test Report No.	: ELES/RNC/2023/4105	Report Release Date	: 31.10.2023		
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023		
the second se					

Discipline: Che	emical	Group:	Water
Parameter	Unit	Test Protocol	Result
Anionic Surfactants (as MBAS)*	mg/L	IS 3025 Part 68	<0.1
Mineral Oil*	mg/L	CL-6, IS: 3025 (P-39)	<0.1
Polynuclear Aromatic Hydrocarbons (PAH)*	mg/L	APHA 23 rd Edition	<0.0001
Pesticides			
Alachlor*	µg/L	APHA	<1.0
Atrazine*	µg/L	APHA	<1.0
Aldrin/Dieldrin*	µg/L	APHA	<0.01
Alpha HCH*	µg/L	APHA	<0.001
Beta HCH*	µg/L	АРНА	<0.01
Butachlor*	µg/L	АРНА	<10
Chlorpyriphos*	µg/L	АРНА	<10
Delta HCH*	µg/L	APHA	<0.01
2,4 dichlorophenoxyacetic acid*	µg/L	APHA	<10
DDT(0,p and p,p-isomers of DDT,DDE and DDD)*	µg/L	АРНА	<0.5
Endosulfan (alpha, beta, and sulphate)*	µg/L	АРНА	<0.1
Ethion*	µg/L	АРНА	<0.5
Gamma HCH (Lindane)*	µg/L	APHA	<0.5
Isoproturon*	µg/L	APHA	<0.5

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

n automot Reviewed by

Authorised Signatory Or. Deependra Kurnar Sinha Ph. D. Environmental Engg. ELES Pvt. Ltd. Technical Manager

****End of Report****

Page 3 of 3

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

ave Kostanoonini, Save Eilene



Annexure 3

Date - 28.10.2023

Office Order

Environmental Cell has been re-constituted at Serengdag Bauxite Mine (Area 77.89 ha) comprising below mentioned team members. The team will ensure compliance of Environment Act, Regulation & Rule in respect of the said mines of Hindalco Industries Limited.

- 1. Mr. Akhilesh Sinha (Coordinator)
- 2. Mr. Narayan Pramanik (Geologist)
- 3. Ms. Abhilasha Singh– Environment Engineer
- 4. Mr. Anand Prakash Tiwari Environment Engineer

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

Basudev Gangopadhyay AVP (Planning, Environment &Compliance)

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

Annexure 4

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

*Static information about the mines included in the above table



Basudev Gangopadhyay AVP (Planning, Environment and Compliance)

Annexure-5

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

The composite cost during the year 2023-24 for environmental protection & pollution control by Jharkhand Mines division of M/s Hindalco Industries Ltd & M/s Minerals & Minerals Ltd for implementation of the suggested measures in EC at our all the operating mines in the state of Jharkhand-namely Pakhar (115,13 ha), Pakhar (15.58 ha), Pakhar (109.507 ha), Pakhar (8.09 ha), Pakhar (35.12 ha), Serengdag (140.06 ha), Serengdag (155.81 ha), Jalim & Sanai (12.14 ha), Gurdari (584.19 ha), Amtipani (190.95 ha), Kujam I (80.97 ha) Kujam II (157.38 ha), Bagru (75.41 ha), Hisri New (14.55 ha), Chiro kukud (152.57 ha), Orsa pat (196.36 ha), Bhusar (65.31 ha), Bimarla Bauxite Mines (134.52 ha) and Amtipani Chirodih (130.01 ha) Bauxite Mine.

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

**Part of OB removed cost.

Basudev Gangopadhyay AVP (Planning, Environment & Compliance)

	HINDAL	CO INDUSTRIES LIN	IITED	
	SHREN	GDAG B BAUXITE M	INES	
	Detai	Is of IME done in 20	23	
SI. No.	Name of Employee	Father's Name	Date of Birth	IME Date
1	Shri Manoj Kumar Singh	Late Rameshwar Singh	01.01.1977	08.11.2023

HR. Shrengdag Bauxite Mines Hindalco Industrise Limited

Mines Manager
 Sherengdag B Bauxite Mines
 Hindalco industries Ltd.

		HINDALCO INDUST	RIES LIMITED							
	SHRENGDAG B BAUXITE MINES									
Details of PME done in 2022										
SI. No.	Name of Employee	Father's Name	Date of Birth	DOJ	Form A no	PME Date				
1	Shri Fikwa Oraon	Shri Aitwa Oraon	30.09.1969	24.10.2007	32	16.11.2022				
2	Shri Rajendra Oraon	Shri Gandira Oraon	15.01.1970	12.05.2008	42	16.11.2022				
3	Shri Mahesh Oraon	Shri Bandhan Oraon	14.03.1973	25.12.2009	47	16.11.2022				
4	Shri Parmeshwar Oraon	Shri Karma Oraomn	05.03.1973	01.03.2010	54	16.11.2022				
5	Shri Balkishan Oraon	Shri Musku Oraon	01.01.1982	06.03.2013	68	16.11.2022				
6	Shri Bhuneshwar Oraon	Shri Ramdayal Oraon	01.01.1987	30.08.2018	89	16.11.2022				
7	Shri Bihari Oraon	Shri Kishun Oraon	01.01.1968	24.01.2019	97	16.11.2022				
8	Shri Anil Oraon	Shri Chuyu Oraon	01.01.1984	24.02.2019	98	16.11.2022				
9	Shri Sudesh Kumar Prajapati	Shri Hari Prajapati	01.01.1992	24.02.2019	116	16.11.2022				
10	Shri Jaleshwar Oraon	Shri Karma Oraon	01.01.1984	24.02.2019	122	16.11.2022				
11	Shri Mahendra Oraon	Shri Bhajan Oraon	05.10.1981	22.01.2008	37	17.11.2022				
12	Shri Gandhira Oraon	Shri Bandhu Oraon	02.05.1985	17.04.2008	40	17.11.2022				
13	Shri Mahabir Oraon	Shri Budhwa Oraon	01.01.1979	27.07.2010	57	17.11.2022				
14	Shri Mukesh Yadav	Shri Bandhan Yadav	19.07.1994	01.05.2012	58	17.11.2022				
15	Shri Sudhram Oraon	Shri Sabur Oraon	01.01.1978	16.03.2013	71	17.11.202				
16	Shri Sajit Bhagat	Shri Lakshman Bhagat	01.01.1973	24.10.2018	91	17.11.202				
17	Shri Karamchand Oraon	Shri Saniya Oraon	01.01.1990	05.02.2019	94	17.11.202				
18	Shri Sukheshwar Tana Bhagat	Shri Ramcharan Tana Bhagat	30.10.1989	24.02.2019	119	17.11.202				
19	Shri Parmeshwar Oraon	Shri Bandhu Oraon	01.01.1996	24.02.2019	121	17.11.202				
20	Shri Binod Oraon	Shri Bhikhnu Oraon	19.01.1980	24.10.2007	3	18.11.202				
21	Shri Kaleshwar Oraon	Shri Birsaiya Oraon	30.08.1988	24.10.2007	14	18.11.202				
22	Shri Budhram Oraon	Shri Jhanda Oraon	11.09.1975	24.10.2007	30	18.11.202				
23	Shri Nirmal Oraon	Shri Tija Oraon	10.04.1986	24.10.2007	31	18.11.20				
24	Shri Mange Oraon	Shri Soma Oraon	10.10.1982	24.10.2007	36	18.11.20				
25	Shri Rabindra Oraon	Shri Ramdhan Oraon	01.01.1968	24.04.2008	41	18.11.20				
26	Shri Rabi Oraon	Shri Biju Oraomn	01.01.1978	05.04.2010	55	18.11.20				
27	Shri Basu Oraon	Shri Sukra Oraon	17.08.1980	01.06.2012	63	18.11.20				

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Shrengdag Bauxite Mines Hindalco Industrise Limited

Mines Manager Sherengdag B Bauxite Mines Hindalco industries Ltd.

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CONTRACTOR AND AND AND AND

			See rules 115 (2)]					
Pollution Under Authorised By :	<u>Control</u>	<u>Certificate</u>						
Government of Odis	sha							
Date	:	12/11/2023						
Time	,,							
Validity upto	:	11/05/2024			JH09BB5582 0			
		,,						
Certificate SL. No.		:	OR028000900005	88				
Registration No.		:	JH09BB5582					
Date of Registration		:	06/Sep/2016	06/Sep/2016				
Month & Year of Manufacturing			May-2016	May-2016				
Valid Mobile Number			*****5465	*****5465				
Emission Norms	Emission Norms			BHARAT STAGE III				
Fuel	Fuel			DIESEL				
	PUC Code			OR0280009				
GSTIN			21CHSPB9476L1ZR					
Fees			Rs.300.00					
			(GST to be paid extra as applicable)					
MIL observation			No					
Vehicle Photo 60 mm x 30 m		egistration plate		BB5582				
Sr. No.		ollutant (as pplicable)	Units (as applicable)	Emission limits	Measured Value (upto 2 decimal places)			
1		2	3	4	5			
	Carbo	n Monoxide (CO)	percentage (%)					
Idling Emissions								

			places
2	3	4	5
Carbon Monoxide (CO)	percentage (%)		
Hydrocarbon, (THC/HC)	ppm		
CO	percentage (%)		
RPM	RPM	2500 ± 200	
Lambda	-	1 ± 0.03	
Light absorption coefficient	1/metre	2.45	0.12
	Carbon Monoxide (CO) Hydrocarbon, (THC/HC) CO RPM Lambda Light absorption	Carbon Monoxide (CO)percentage (%)Hydrocarbon, (THC/HC)ppmCOpercentage (%)RPMRPMLambda-Light absorption1/metre	Carbon Monoxide (CO)percentage (%)Hydrocarbon, (THC/HC)ppmCOpercentage (%)RPMRPMLambda-Light absorption1/metre2.45

This PUC certificate is system generated through the national register of motor vehicles and does not require any signature.

Note : 1. Vehicle owners to link their mobile numbers to registered vehicle by logging to https://puc.parivahan.gov.in

Authorised Signature with stamp of PUC operator 60mm x 20 mm



MicL at 12:50:27 September 12, 2023

Geo: 0.500 mm/s, Mic: 2.000 pa.(L)

3.82 sec (Auto=3Sec) at 1024 sps

Geo: 254.0 mm/s

Date/Time

Range

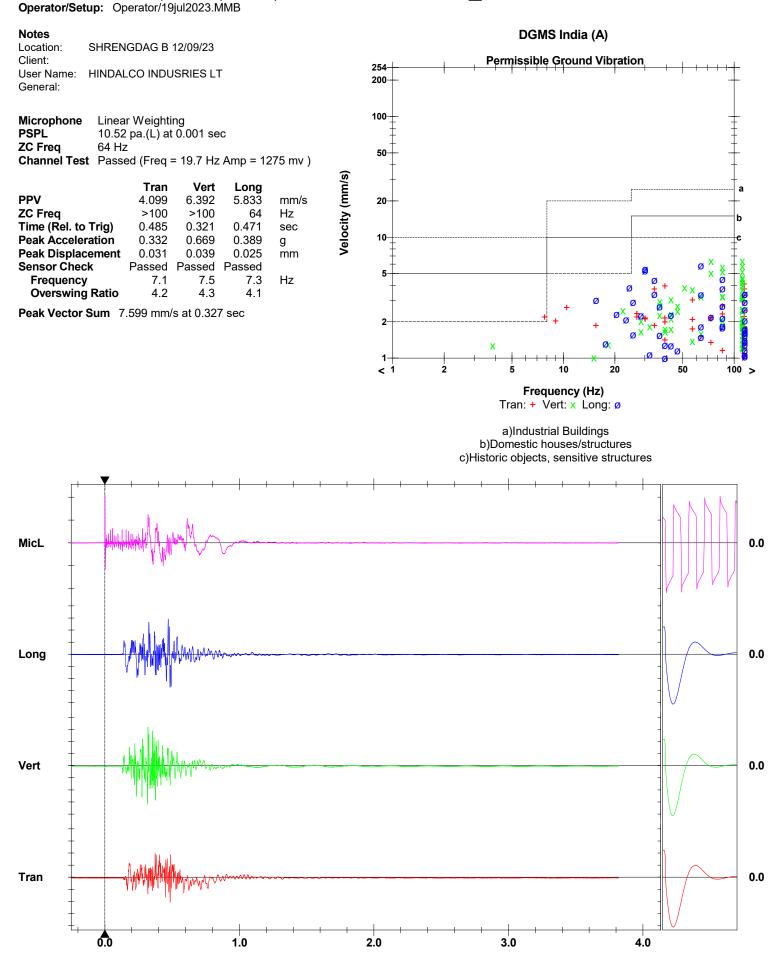
Trigger Source

Record Time

Event Report

Annexure-8

Serial NumberUM17407 V 10-72 Micromate ISEEBattery Level3.7 VoltsUnit CalibrationFebruary 15, 2021 by UES New DelhiFile Name__TEMP.EVT



Time Scale: 0.20 sec/div Amplitude Scale: Geo: 2.000 mm/s/div Mic: 5.000 pa.(L)/div Trigger = ►------ Sensor Check

ro. ranchi - mof agov. in







Ref No: HIL/LHD/ENV/ SERANGDAG-B / 3874

Date: 02.11.2023

То

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 Serangdag Bauxite Mine (Area: 77.89 Ha) of Hindalco Industries Limited, with production capacity of Bauxite 100000 TPA Villages: Serangdag, Hanrup and Paunri, Taluka: Bishunpur & Ghagra, District: Gumla, Jharkhand.

Sir,

We would like to bring this to your notice that revalidated EC has been granted for Serangdag-B 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)







Ref No: HIL/LHD/ENV/SERANGDAG-B/386

Date: 02.11.2023

То

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

Sub: Intimation of revalidated EC grant of Serangdag Bauxite Mine (Area: 77.89 Ha) of Hindalco Industries Limited, with production capacity of Bauxite 100000 TPA near Villages: Serangdag, Hanrup and Paunri, Taluka: Bishunpur & Ghagra, District: Gumla, Jharkhand.

Sir,

We would like to bring this to your notice that revalidated EC has been granted for Serangdag-B 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)







Ref No: HIL/LHD/ENV/ SERANGDAG-B / 388

Date: 02.11.2023

To

Gram Panchayat Mukhiya, Panchayat Bhawan, Aadar, Block-Ghagra, Gumla.

Sub: Intimation of revalidated EC grant of Serangdag Bauxite Mine (Area: 77.89 Ha) of Hindalco Industries Limited, with production capacity of Bauxite 100000 TPA Villages: Serangdag, Hanrup and Paunri, Taluka: Bishunpur & Ghagra, District: Gumla, Jharkhand.

Sir,

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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)

आशामनी लुमारी मुखिया ग्राम-आदर पंचायत-आदर . धाघरा गुमला





Ref No: HIL/LHD/ENV/ SERANGDAG-B / 390

Date: 02.11.2023

То

Zilla Parishad, Gumla, Jharkhand.

Sub: Intimation of revalidated EC grant of Serangdag Bauxite Mine (Area: 77.89 Ha) of Hindalco Industries Limited, with production capacity of Bauxite 100000 TPA Villages: Serangdag, Hanrup and Paunri, Taluka: Bishunpur & Ghagra, District: Gumla, Jharkhand.

Sir,

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Thanking You,

Yours Sincerely For Hindalco Industries Ltd

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



0/0



Ref No: HIL/LHD/ENV/ SERANGDAG-B / 389

Date: 02.11.2023

То

District Industries Centre, Gumla, Jharkhand.

Sub: Intimation of revalidated EC grant of Serangdag Bauxite Mine (Area: 77.89 Ha) of Hindalco Industries Limited, with production capacity of Bauxite 100000 TPA Villages: Serangdag, Hanrup and Paunri, Taluka: Bishunpur & Ghagra, District: Gumla, Jharkhand.

Sir,

We would like to bring this to your notice that revalidated EC has been granted for Serangdag-B 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)



Hindalco Industries Limited Mines Division, Court Road, Lohardaga 835302, Jharkhand, India T: +91 6526 224112/224015/223113 | E: hindalco@adityabirla.com | W: www.hindalco.com Registered Office: Ahura Centre, 1st Floor, B Wing, Mahakali Caves Road, Andheri (East), Mumbai 400 093, India T: +91 22 6691 7000 | F: +91 22 6691 7001 Corporate ID No.: L27020MH1958PLC011238

0/0



Ref No: HIL/LHD/ENV/ SERANGDAG-B /3 85

Date: 02.11.2023

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 Serangdag Bauxite Mine (Area: 77.89 Ha) of Hindalco Industries Limited, with production capacity of Bauxite 100000 TPA Villages: Serangdag, Hanrup and Paunri, Taluka: Bishunpur & Ghagra, District: Gumla, Jharkhand.

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Thanking You,

Yours Sincerely For Hindalco Industries Ltd

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

Hindalco Industries Limited Mines Division, Court Road, Lohardaga 835302, Jharkhand, India T: +91 6526 224112/224015/223113 | E: hindalco@adityabirla.com | W: www.hindalco.com Registered Office: Ahura Centre, 1st Floor, B Wing, Mahakali Caves Road, Andheri (East), Mumbai 400 093, India T: +91 22 6691 7000 | F: +91 22 6691 7001 Corporate ID No.: L27020MH1958PLC011238

